CRISTIANE BACCIN BENDO

TRAUMATISMO DENTÁRIO EM ADOLESCENTES: PREVALÊNCIA, FATORES ASSOCIADOS E INFLUÊNCIA NA QUALIDADE DE VIDA

BELO HORIZONTE

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TRAUMATISMO DENTÁRIO EM ADOLESCENTES: PREVALÊNCIA, FATORES ASSOCIADOS E INFLUÊNCIA NA QUALIDADE DE VIDA

Dissertação apresentada ao Programa do Colegiado de Pós-Graduação da Faculdade de Odontologia da Universidade Federal de Minas Gerais, como requisito parcial para obtenção do grau de Mestre em Odontologia.

Área de concentração: Odontopediatria

Orientadora: Profa. Dra. Miriam Pimenta Parreira do Vale

Co-orientador: Prof. Dr. Saul Martins de Paiva

BELO HORIZONTE

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Av. Antônio Carlos, 6627 - Campus Pampulha - CEP: 31270-901 - Belo Horizonte - Minas Gerais

Dissertação intitulada **"Traumatismo dentário em adolescentes: prevalência, fatores associados e influência na qualidade de vida"**, Área de Concentração em Odontopediatria, apresentada pela candidata **Cristiane Baccin Bendo**, para obtenção do grau de Mestre em Odontologia, aprovada pela banca examinadora constituída pelos seguintes professores:

Profa. Dra. Míriam Pimenta Parreira do Vale
Orientadora – FO-UFMG

Prof. Dr. Saul Martins de Paiva
Co-Orientador – FO-UFMG

Profa. Dra. Luciane Ribeiro de Rezende Sucasas da Costa
FO-UFG

Profa. Dra. Júnia Maria Cheib Serra-Negra
FO-UFMG

Profa. Dra. Maria Cássia Ferreira de Aguiar
Subcoordenadora do Colegiado do
Programa de Pós-Graduação em Odontologia

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RESUMO

Traumatismo dentário em adolescentes: prevalência, fatores associados e influência na qualidade de vida

RESUMO

O traumatismo dentário é um evento que atinge principalmente crianças e adolescentes. Sua prevalência, etiologia, tipo de lesão e associação com fatores como gênero, idade e *overjet* já foram largamente estudados em adolescentes brasileiros. Entretanto, não há consenso na literatura acerca da influência das condições sócio-econômicas na ocorrência de traumatismos dentários, bem como da associação entre traumatismos e cárie dentária. Além disso, como afetam principalmente dentes anteriores, é importante investigar a influência dos traumatismos dentários na qualidade de vida dos adolescentes. Diante disso, realizou-se um estudo transversal representativo do município de Belo Horizonte, MG, Brasil. O estudo contou com 1612 escolares na faixa etária de 11 a 14 anos, de ambos os gêneros, alunos de escolas públicas e particulares, selecionados de forma aleatória e em duplo estágio. A classificação de Andreasen foi utilizada para o diagnóstico de traumatismos dentários e o CPO-D para diagnóstico de cárie dentária. O Índice de Vulnerabilidade Social (IVS) do município de Belo Horizonte foi utilizado para classificação sócio-econômica. A avaliação da influência dos traumatismos dentários na qualidade de vida dos adolescentes foi realizada através da aplicação da versão brasileira do *Child Perceptions Questionnaire* (CPQ_{11-14}) – Impact Short Form (ISF:16), composto por 16 itens. Foi realizada análise descritiva e analítica dos dados, utilizando os testes Qui-quadrado e Exato de Fisher, com nível de significância de 5%. A prevalência de traumatismos dentários foi de 17,1%. A principal causa dos traumatismos foram as quedas (43,6%), e o local mais frequente foi a própria casa do adolescente (41,8%). O gênero masculino foi mais afetado do que o gênero feminino, 19,9% e

15,0% respectivamente (P = 0,009). Não houve associação significativa entre a condição sócio-econômica e a ocorrência de traumatismos dentários (P = 0,294). Entretanto, foi encontrada forte associação de traumatismos dentários com experiência de cárie (P < 0,001) e *overjet* (P = 0,016). Quanto à influência dos traumatismos dentários na qualidade de vida observou-se que adolescentes que tiveram fraturas de esmalte-dentina tiveram 1,9 vezes (95% CI = 1,1-3,7) mais chance de apresentar impacto no item "outras crianças lhe fizeram perguntas sobre seus dentes, lábios, maxilares ou boca" do que aqueles que não tiveram história de traumatismo dentário. Da mesma forma, adolescentes que possuíam traumatismos tratados com restaurações apresentaram duas vezes (95% CI = 1,1-3,5) mais chance de impacto no mesmo item do que adolescentes que não tiveram traumatismos dentários. Não houve associação significativa entre qualidade de vida e fraturas de esmalte-dentina e fraturas restauradas (Fisher = 1,000 e Fisher = 0,610, respectivamente). Concluí-se que a ocorrência de traumatismos dentários está associada à experiência de cárie e *overjet* acentuado, ocasionando impacto negativo principalmente no bem-estar social dos adolescentes.

Descritores: Traumatismos dentários, saúde bucal, classe social, cárie dentária, qualidade de vida.

ABSTRACT

Traumatic dental injuries in adolescents: prevalence, associated factors and impact on quality of life

ABSTRACT

The traumatic dental injury is an event that affects mainly children and adolescents. Its prevalence, etiology, type of lesion and association with factors such as gender, age and overjet have been widely studied in Brazilian adolescents. However, there is no consensus in the literature about the influence of socioeconomic conditions in the occurrence of traumatic dental injuries and the association between that and dental caries. Moreover, as affecting mainly anterior teeth, it is important to investigate the influence of traumatic dental injuries in adolescents' quality of life. Considering that, there was a cross-sectional survey representative of the municipality of Belo Horizonte, MG, Brazil. The study involved 1612 schoolchildren aged 11 to 14 years, both genders, students from public and private schools, selected at random and double stage. The classification of Andreasen was used to diagnose traumatic dental injuries and DMFT for dental caries. The Social Vulnerability Index (SVI) of the city of Belo Horizonte was used for socioeconomic classification. The evaluation of the influence in quality of life by traumatic dental injuries in adolescents was performed by applying the Brazilian version of the Child Perceptions Questionnaire (CPQ_{11-14}) - Impact Short Form (ISF:16), composed of 16 items. Data analysis included descriptive and analitic statistics. The chi-square test and Fisher's test were used. The significance level was set at 5%. The prevalence of traumatic dental injuries was 17.1%. The main cause of traumatic dental injuries were falls (43.6%), and the most common place was the own home of the adolescent (41.8%). The males were more affected than the females, 19.9% and 15.0% respectively (P = 0.009). There was no significant association between socioeconomic status and the occurrence

of traumatic dental injuries (P = 0.294). However, it was found strong association of traumatic dental injuries with experience of dental caries (P <0.001) and overjet (P = 0.016). As the influence of traumatic dental injuries of quality of life showed that adolescents who had enamel-dentin fractures were 1.9 times (95% CI = 1.1-3.7) more chance to make impact in the item "other children made you questions about your teeth, lips, jaw or mouth" than those who had no history of traumatic dental injury. Similarly, adolescents who had traumatic dental injuries treated with restorations presented twice (95% CI = 1.1-3.5) more likely to impact on the same item than adolescents who had no traumatic dental injuries. There was no significant association between quality of life and enamel-dentin fractures and restored fractures (Fisher = 0.610 and Fisher = 1.000, respectively). The conclusion is that the occurrence of traumatic dental injuries is associated with experience of dental caries and overjet pronounced, causing a negative impact mainly on social well-being of adolescents.

Keywords: Tooth injuries, oral health, social class, dental caries, quality of life.

LISTA DE ABREVIATURAS

CI	*Confidence Intervals*
CNPq	Conselho Nacional de Desenvolvimento Científico e Tecnológico
COEP	Comitê de Ética em Pesquisa
COHQoL	*Child Oral Health Quality of Life*
CPO-D	Dentes permanentes cariados, perdidos e obturados
CPQ	*Child Perceptions Questionnaire*
DAI	*Dental Aesthetic Index*
DMFT	*Decayed, Missing and Filled Teeth Index*
FIS	*Family Impact Scale*
IED	Índice Estético Dental
ISF:16	*Impact Short Form – 16 items*
IVS	Índice de Vulnerabilidade Social
MG	Minas Gerais
MeSH	*Medical Subject Heading*
OHRQoL	*Oral Health-Related Quality of Life*
OIDP	*Oral Impact on Daily Performances*
OMS	Organização Mundial da Saúde
P-CPQ	*Parental-Caregiver Perceptions Questionnaire*
QoL	*Quality of Life*
SEE-MG	Secretaria Estadual de Educação de Minas Gerais
SME-BH	Secretaria Municipal de Educação de Belo Horizonte
SPSS	*Statistical Package for the Social Sciences*
PR	*Prevalence Ratio*

SVI	*Social Vulnerability Index*
TDI	*Traumatic dental injuries*
UFMG	Universidade Federal de Minas Gerais
WHO	*World Health Organization*

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CONSIDERAÇÕES INICIAIS

CONSIDERAÇÕES INICIAIS

Tradicionalmente, saúde é definida pela Organização Mundial de Saúde (OMS) como um estado de completo bem-estar físico, mental e social, e não apenas a ausência de doença (WHO, 1948). A saúde bucal é considerada fundamental para a saúde geral, bem-estar e qualidade de vida, sendo definida como o estado de saúde da boca e dos tecidos relacionados que capacitam os indivíduos a comer, falar e socializar-se, na ausência de atividade de doença, desconforto e embaraço, contribuindo para o bem estar geral (Oral Health Strategy Group, 1994). Entretanto, a definição de saúde como completo bem-estar é considerada irreal e ultrapassada, por visar a uma perfeição inatingível, além de fazer distinção entre o físico, o mental e o social (Donnangelo, Pereira, 1979; Segre, Ferraz, 1997). Autores sugerem que uma melhor definição para saúde seria um estado de razoável harmonia entre o sujeito e a sua própria realidade (Segre, Ferraz, 1997).

A avaliação da qualidade de vida relacionada à saúde bucal tem se tornado uma parte importante na evolução das políticas de saúde pública (Barbosa, Gavião, 2008[a]). A maioria dos estudos encontrados na literatura avalia a influência de alterações como cárie dentária, maloclusão e condições orofaciais na qualidade de vida (Locker et al., 2005; Marques et al., 2006; Do, Spencer, 2007; Agou et al., 2008; Biazevic et al., 2008; Barnabé et al., 2009).

A partir de um levantamento bibliográfico realizado em maio de 2009 na base de dados PubMed/Medline, utilizando unitermos encontrados no Medical Subject Heading Terms (MeSH) (“tooth injuries”, “tooth fractures”, “tooth avulsion” e “quality of life”), observou-se que existem apenas seis estudos que avaliaram o impacto do traumatismo dentário na qualidade de vida, sendo dois desenvolvidos no Brasil (Cortes et al., 2002; Ramos-Jorge et al., 2007), dois no Canadá (Locker, 2007; Fakhruddin et al., 2008), um na Itália (Giannetti et al., 2007) e um na Tailândia (Tsakos et al., 2006).

Como o traumatismo dentário é uma alteração que atinge principalmente os dentes anteriores, fraturas ou perda desses dentes podem ocasionar grave impacto estético, social e psicológico nos indivíduos, e desta forma repercutir negativamente na qualidade de vida (Cortes et al., 2002).

Dependendo da idade em que ocorre, a repercussão que o traumatismo dentário causa pode dar-se em maior ou menor grau. Na adolescência, fase em que os relacionamentos afetivos e a inserção no grupo de amigos são fatores importantes, qualquer alteração física pode causar rejeição por parte do grupo social onde estão inseridos, originando em importante impacto negativo na qualidade de vida dos adolescentes (Bee, 1998; Jokovic et al., 2005).

Tendo em vista a importância da repercussão dos traumatismos dentários na qualidade de vida de adolescentes, foi desenvolvido um estudo com o propósito de verificar esta associação em escolares na faixa etária de 12 a 14 anos no município de Belo Horizonte, Brasil (Cortes et al., 2002). Os resultados desta pesquisa demonstraram que adolescentes com experiência de traumatismo dentário apresentaram maiores índices de repercussão negativa na qualidade de vida (66,0%) do que aqueles que nunca tiveram esta experiência (14,7%). Os autores ressaltaram que as alterações estéticas decorrentes do traumatismo afetaram mais os adolescentes do que as limitações funcionais. Para mensurar o impacto dos traumatismos dentários na qualidade de vida, este estudo utilizou o Oral Impact on Daily Performances (OIDP) (Adulyanon et al., 1996). O OIDP é um instrumento que se propõe a avaliar as desordens funcionais e psicossociais que as condições bucais provocam nas atividades diárias dos indivíduos. Entretanto, o OIDP foi desenvolvido para a aplicação em adultos.

Considerando que a auto-percepção das crianças e adolescentes sobre sua saúde depende da idade, como resultado de seu contínuo desenvolvimento cognitivo, emocional, social e de linguagem, é fundamental o uso de instrumentos validados e confiáveis, apropriados para esta faixa etária (Jokovic et al., 2004; Gavião, Barbosa, 2008[b]). Adolescentes

entendem sua saúde dentro de um conceito multidimensional, no qual são consideradas a função, o comportamento, o estilo de vida, o bem-estar e a relação com os outros (Rebok et al., 2001). Indivíduos entre 11 e 14 anos de idade são capazes de responder a questões referentes aos efeitos da saúde em sua vida, bem como no seu estado emocional e sua relação com os outros. Desta forma, é possível obter dos adolescentes a percepção sobre sua qualidade de vida relacionada à saúde bucal (Gavião, Barbosa, 2008[b]).

Em 2002 foi desenvolvido no Canadá um conjunto de instrumentos que se propôs a avaliar o impacto que as alterações bucais ocasionam no bem-estar funcional e psicossocial de crianças e adolescentes entre 6 e 14 anos de idade, o Child Oral Health-Related Quality of Life (COHQoL). O COHQoL é composto por cinco questionários, três versões do Child Perceptions Questionnaire (CPQ_{6-7}, CPQ_{8-10} e CPQ_{11-14}), o Family Impact Scale (FIS) e o Parental-Caregivers Perceptions Questionnaire (P-CPQ) **(**Jokovic et al., 2002; Jokovic et al., 2004).

Dentre esses, há um instrumento especialmente desenvolvido para a faixa etária de 11 a 14 anos, o CPQ_{11-14}. Este instrumento visa determinar o impacto das alterações bucais e orofaciais na qualidade de vida, segundo a visão dos próprios adolescentes (Jokovic et al., 2002). O CPQ_{11-14} foi adaptado transculturalmente e validado para aplicação em adolescentes brasileiros. A versão brasileira completa do instrumento, contendo 37 itens, foi validada por Goursand et al. (2008), e as formas curtas de oito e 16 itens, foram validadas por Torres et al. (2009).

Finalmente, o traumatismo dentário apresenta grande variabilidade quanto à prevalência em adolescentes (10,5% a 58,6%) (Marcenes et al., 2001; Soriano et al., 2007), atingindo principalmente indivíduos em fase de crescimento e desenvolvimento. Possui tratamento geralmente complexo e oneroso, além de ser, em muitos casos, um dano irreversível. Há consenso na literatura a respeito da etiologia e do tipo de traumatismo que

mais afeta os dentes permanentes (Hamilton et al., 1997; Marcenes et al., 2000; Cortes et al., 2001; Marcenes et al., 2001; Marcenes, Murray, 2001; Traebert et al., 2003; Malikaew et al., 2006; Traebert et al., 2006; Soriano et al., 2007; Fakhruddin et al., 2008). Da mesma forma, a maioria dos estudos aponta o *overjet* acentuado como fator de risco para ocorrência de traumatismos dentários (Nguyen et al., 1999; Cortes et al., 2001; Malikaew et al., 2003; Soriano et al., 2007; Ramos-Jorge et al., 2008). Resultados de uma revisão sistemática sugerem ainda que fatores como gênero e idade provavelmente possuem pouca importância na ocorrência de traumatismos dentários, comparado com outras variáveis, tais como sócio-econômicas, ambientais e atividades individuais (Glendor, 2008).

Entretanto, há poucos trabalhos que estudaram a correlação entre os traumatismos dentários e estas variáveis. Em relação à associação entre traumatismos dentários e condições sócio-econômicas, não há consenso nos resultados (Glendor, 2008; Bendo et al., 2009). Um estudo desenvolvido com adolescentes ingleses mostrou que a maior prevalência de traumatismos ocorreu entre aqueles com nível sócio-econômico mais baixo (Hamilton et al., 1997). Da mesma forma, dois estudos realizados na Tailândia concluíram que adolescentes que freqüentavam escolas com melhor suporte social, pertencentes a famílias com renda e nível educacional mais elevados apresentavam menor risco para sofrer traumatismos dentários (Malikaew et al., 2003; Malikaew et al., 2006). Outros estudos com adolescentes brasileiros encontraram maior prevalência de traumatismo dentário entre indivíduos que apresentavam nível sócio-econômico mais elevado (Cortes et al., 2001, Ramos-Jorge et al., 2008).

Para se avançar nesses resultados é importante que os estudos utilizem indicadores sócio-econômicos mais completos, compostos pela associação de diversas variáveis, possibilitando uma expressão mais realista da condição de vida de uma determinada população (Bendo et al., 2009). Um indicador que busca definir a condição sócio-econômica utilizando de diversas variáveis é o Índice de Vulnerabilidade Social (IVS) do município de

Belo Horizonte. O IVS dimensiona o acesso da população residente na cidade a cinco dimensões específicas (ambiental, cultural, econômica, jurídica e segurança de sobrevivência) (Nahas et al., 2000).

Outro ponto que necessita ser elucidado é a associação entre traumatismos dentários e experiência de cárie em adolescentes. Estudos recentes realizados no Canadá com a faixa etária de 12 a 14 anos observaram uma forte associação entre estas duas variáveis (Locker, 2005; Fakhruddin et al., 2008). Entretanto, não foi encontrado na literatura nenhum estudo que se propôs a investigar esta associação em adolescentes brasileiros.

Assim sendo, este estudo tem como objetivo levantar a prevalência de traumatismos dentários e observar sua associação com variáveis como vulnerabilidade social, presença de cárie dentária e *overjet*, bem como avaliar a influência dos traumatismos dentários na qualidade de vida de adolescentes. Observando a importância da publicação das pesquisas para o desenvolvimento científico, essa dissertação foi estruturada na forma de dois artigos. O primeiro artigo apresenta um estudo da prevalência e características dos traumatismos dentários em escolares de 11-14 anos de idade e sua associação com vulnerabilidade social, presença de cárie dentária e *overjet* acentuado. O segundo artigo apresenta um estudo sobre a influência dos traumatismos dentários na qualidade de vida de escolares de 11-14 anos do município de Belo Horizonte, utilizando-se um instrumento específico para esta faixa etária e validado para a cultura brasileira (CPQ_{11-14} – ISF:16).

ARTIGO 1

Prevalence and associated factors of traumatic dental injuries in Brazilian schoolchildren

Cristiane B. Bendo[1], MSc; Saul M. Paiva[1], PhD; Ana C. Oliveira[2], PhD; Daniela Goursand[1], MSc; Cíntia S. Torres[1], MSc; Isabela A. Pordeus[1], PhD; Miriam P. Vale[1], PhD

Address: [1]Departament of Pediatric Dentistry and Orthodontics, School of Dentistry, Federal University of Minas Gerais, Av. Antônio Carlos 6627, Belo Horizonte, MG, 31270-901, Brazil, [2]Departament of Oral Public Health, School of Dentistry, Federal University of Minas Gerais, Av. Antônio Carlos 6627, Belo Horizonte, MG, 31270-901, Brazil.

Corresponding author:

Cristiane B. Bendo

Rua Professor Otaviano 131/2002, Belo Horizonte, MG, 30260-020, Brazil

Phone: +55 31 2526 5486, Fax: +55 31 3409 2472

E-mail: crysbendo@yahoo.com.br

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(Anexo I)

Abstract

Objectives: Investigate the prevalence of traumatic dental injury (TDI) and associated factors in the permanent incisors of Brazilian schoolchildren.

Methods: A cross-sectional survey was carried out with 1612 male and female children aged 11 to 14 attending public and private elementary schools in Belo Horizonte, Brazil. A multi-stage sampling technique was adopted to select the children. Oral examinations were performed by calibrated examiners for the diagnosis of TDI (criteria proposed by Andreasen), and dental caries [Decayed, Missing and Filled Teeth Index (DMFT)]. The Social Vulnerability Index (SVI) was used for socioeconomic classification.

Results: The prevalence of TDI was 17.1%. Falls (43.6%) were the most common cause of TDI, mainly at home (41.8%). Boys were more affected than girls ($P = 0.009$). There was no statistically significant association between TDI and socioeconomic status ($P = 0.294$). The adjusted results revealed that TDI was significantly associated with the DMFT ($P < 0.001$) and overjet ($P = 0.016$).

Conclusions: TDI was associated with dental caries and overjet and was not influenced by socioeconomic status.

Key words: tooth injuries, prevalence, social class, dental caries, oral health, child

Introduction

The prevalence and characteristics of traumatic dental injury (TDI) in schoolchildren have been extensively studied. The majority of these studies conclude that falls are the most common cause of TDI (1-4) and enamel fracture is the most prevalent type (1-3,5,6-9) These studies demonstrate that the upper central incisors are the most affected teeth (2,3,6) and boys experience more TDI than girls (1,5,7-12). Increased overjet is considered a risk factor for the occurrence of TDI (2,6,11,13,14).

However, there is no agreement in the literature regarding the relationship between TDI and other factors, such as socioeconomic status and dental caries experience. Studies offer conflicting results regarding socioeconomic status (1,3,5,6,14,15). A higher prevalence of traumatic dental injury has been reported in children from low socioeconomic groups when compared to those from high socioeconomic groups (1,5). In contrast, other studies have reported a higher prevalence of TDI among high socioeconomic groups (6,14). Moreover, findings from a number of studies suggest that the occurrence of TDI is not influenced by socioeconomic status (2,3,7,8,12).

The association between the experience of TDI and dental caries in permanent teeth has not been extensively studied, especially in Brazil. In Canada, children with caries were found to have more experience with TDI than those who were caries-free (3,16).

The aim of the present study was to investigate the prevalence of TDI and associated factors in the permanent incisors of 11-to-14-year-old schoolchildren in the city of Belo Horizonte, Brazil.

Methods

A cross-sectional survey was carried out in Belo Horizonte, capital of the state of Minas Gerais, Brazil, from September 2008 to May 2009. A total of 1612 male and female children aged from 11 to 14 years were selected from a population enrolled at 456 public and private

elementary schools. These children were randomly selected to represent the population of schoolchildren in Belo Horizonte.

The sample size was calculated to give a standard error of 2%. The 95% confidence interval level and a 16.1% prevalence of TDI (6) were used for the calculation of the sample. A correction factor of 1.2 was applied to increase the precision, as a multi-stage sampling method was adopted rather than random sampling (17). The minimal sample size needed to satisfy the requirements was estimated as 1558 individuals. However, an additional 20.0% were asked to participate in the study (n=1870) in order to compensate for potential refusals.

For the list of all elementary schools in Belo Horizonte, the State of Minas Gerais Department of Education was contacted and provided the following information for each school: name of school, address, telephone number, total number of students in each grade and type (public or private). The first-stage units comprised randomly selected public and private elementary schools in Belo Horizonte. In order to ensure representativity, the sample was stratified based on the administrative districts in the city and type of institution – one public and one private school in each of the nine administrative districts were selected. The second-stage units comprised randomly selected classes within the selected schools. All 11-to-14-year-old students attending the selected classes on the day the researcher visited the school were asked to participate. The sample size was completed when the target number was reached. A letter was sent to the parents of the selected children, explaining the aim, characteristics, importance and methods of the study, and asking for their children's participation.

Dental examinations were carried out by three calibrated dentists (CBB, DG and CST), who had participated in a training and calibration exercise based on the criteria proposed by Andreasen (18): Code 1 – enamel fractures (uncomplicated crown fractures); Code 2 – enamel-dentin fractures (uncomplicated crown fractures); Code 3 – complicated

crown fractures; Code 4 – extrusive luxation; Code 5 – lateral luxation; Code 6– intrusive luxation; Code 7 – avulsion; Code 8 - discoloration; Code 9 - restoration with composite or stainless steel crown. It was not possible to register root fractures, as radiography was not employed in the present study. The clinical examination also collected data on dental caries experience and incisal overjet, using the Decayed, Missing and Filled Teeth Index (DMFT) (19) and Dental Aesthetic Index (DAI) (20), respectively. Training for the three clinical diagnoses entailed the use of color photography to show the major clinical characteristics of each condition and the conditions to be considered in the differential diagnosis. Seventy-six children (not part of the study population) were randomly selected and included in the calibration process. Forty-four children were examined by each of the three dentists separately for the purposes of determining inter-examiner agreement and 10 children were re-examined after a one-month interval for the calculation of intra-examiner agreement. Kappa values ranged from 0.70 to 1.00 for intra-examiner agreement and from 0.68 to 1.00 for inter-examiner agreement, thereby demonstrating good to excellent agreement.

The children were examined in a predetermined order at school during class hours. Artificial illumination (Petzl Zoom head lamp, Petzl America, Clearfield, UT, USA) was used and the examiners used appropriate individual cross-infection protection equipment. Disposable mouth mirrors (PRISMA®, São Paulo, SP, Brazil) and periodontal probes (WHO-621 Trinity, Campo Mourão, PA, Brazil) were packed and sterilized in sufficient quantities for each day of work. Children who were diagnosed with TDI answered a questionnaire addressing the history of the injury.

The Social Vulnerability Index (SVI) was used for socioeconomic classification. The SVI is developed by the City of Belo Horizonte and was used to analyze family exposure to social influence factors. This index measures the vulnerability of the population to social exclusion through the determination of neighborhood infrastructure, access to work, income,

sanitation services, healthcare services, education, legal assistance and public transportation. Thus, the SVI measures social access and determines to what extent the population of each region of the city is vulnerable to social exclusion. There are five different classes – class I comprises the most socially vulnerable families and class V the least socially vulnerable families. SVI scores from the city hall database were used for each district. As children usually live near their schools and study in social environments similar to their homes, the school districts were used for this classification (21,22).

A pilot study was carried out in order to test the methods, dental examination and administration of the questionnaires as well as to prepare the examiners. Seventy-six children, who did not participate in the study population, were selected for the pilot study.

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS for Windows, version 15.0, SPSS Inc., Chicago, IL, USA). Overjet was dichotomized using five millimeters as the cutoff point (6,7,14). DMFT was dichotomized as caries-free children (DMFT = 0) and children with one or more teeth affected (DMFT $\geq$ 1). Classes I and II of the SVI were grouped in the “high vulnerability” category and classes III–V were grouped in the “low vulnerability” category (22). Data analysis involved descriptive statistics (frequency distribution and cross-tabulation). The chi-square was used to determine the statistical significance of associations between the occurrence of TDI and gender, age, socioeconomic status, DMFT and incisal overjet. Multiple logistic regression was used in the multivariate analysis. The independent variables were introduced in the backward logistic model based on their significance ($p<0.25$; backward stepwise procedure) or their clinic-epidemiologic importance. The significance level was set at 5%.

The Human Research Ethics Committee of the Federal University of Minas Gerais approved the study and informed consent forms were obtained from the parents and children.

Results

A total of 1612 children (41.7% boys and 58.3% girls) representing the 11-to-14-year-old schoolchildren living in Belo Horizonte, Brazil, participated in this survey. Due to the good response rate (86.2%), the sample size was slightly larger than the estimated minimal size to satisfy the requirements (n=1558).

There was a 17.1% prevalence of TDI. Falls were most common cause (43.6%), followed by sports-related injuries (20.4%) and “unknown cause” (25.5%). The majority of accidents occurred at home (41.8%), followed by those at school (14.2%) and on the street (9.1%). Sixty-seven children (24.4%) could not remember where the accident had occurred. Fractures in enamel only (63.6%) and fractures in enamel and dentin (15.3%) were the most common types of TDI. Only 23.0% of the children had undergone restorative treatment for teeth due to TDI (Table 1).

The results of bivariate analysis (Table 2) reveal that boys had more TDIs than girls [19.9% and 15.0%, respectively ($P = 0.009$)]. There was no statistically significant association between TDI and age of the children.

A higher proportion of children with dental caries experience had TDI (22.4%) compared with those who were caries-free (15.0%) ($P < 0.001$). Children with overjet equal to or greater than 5 mm had more TDIs than those with overjet less than 5 mm ($P = 0.007$). Socioeconomic status was not statistically associated with the occurrence of TDI in these children ($P = 0.294$), despite the fact that children with high social vulnerability had a tendency toward a higher prevalence of TDI (18.2%) (Table 2).

The results of multiple logistic regression (Table 3) confirmed that TDI was significantly associated with DMFT ($P < 0.001$) and overjet ($P = 0.016$) after adjusting for the other variables. Socioeconomic status remained without a statistically significant association after being adjusted in the model ($P > 0.571$). The adjusted prevalence ratio revealed that

children with dental caries experience were 1.81-fold (95% CI = 1.39-2.35) more likely to have TDI than children who were caries-free. Moreover, children with overjet equal to or greater than 5 mm were 1.86-fold (95% CI = 1.12-3.09) more likely to have TDI than those with overjet less than 5 mm.

Discussion

The present cross-sectional survey identified a 17.1% prevalence of TDI in permanent incisors among schoolchildren aged 11 to 14 years in the city of Belo Horizonte, Brazil. This result corroborates a previous study carried out in Belo Horizonte involving 9-to-14-year-old schoolchildren, which found a 13.6% prevalence among 12-year-olds and 16.1% among 14-year-old children (6). Most studies carried out in Brazil on a similar age group have found a prevalence of TDI ranging from 10.5 to 20.4% (2,9,10,12). Only one study carried out in southern Brazil found a higher prevalence (58.6%) (7). Studies on the prevalence of TDI in a similar age group have also been carried out in developed countries. Two studies carried out in Canada found an 11.4% and 18.5% prevalence of TDI (3,16). In the United Kingdom, the prevalence has been reported to be 34.4% and 23.7% (8,5).

Boys had more episodes of TDI than girls and this association was statistically significant (P = 0.009), which corroborates previous studies on the same age group using a similar methodology (4,6-8,12). Behavioral factors in early adolescence may explain this fact, as boys tend to be more energetic and aggressive than girls and engage in vigorous outdoor activities or sports (2). On the other hand, a recent study carried out with Brazilian schoolchildren found that girls may be exposed to the same risk behavior with regard to TDI as boys, which is becoming a characteristic of modern Western society. However, the study in question was carried out in a small town, where girls are probably more involved in physical leisure activities, such as cycling, skateboarding, roller-skating and playing volleyball (9).

The most common site of occurrence of TDI was the home (41.8%). In agreement with previous studies carried out in developing countries, the present study found that falls (43.6%) were the most common cause of TDI (1-4). Sports-related injuries were the second most common (20.4%), thereby corroborating findings described in studies carried out in Canada and South Africa (3,4). As behavioral risk factors involve aggressive and leisure activities, it is necessary for families to provide safe environments and equipment for children's activities and for local authorities to draft effective preventive strategies for preserving dental health (2,9).

Few children reported violence as a cause of TDI. Cases of violence may go unreported due to fear or shame. In the present study, the answer "unknown cause" was given by 25.5% of the children with TDI, when asked about the cause of the injury. When TDI is a result of violence, children tend to report they do not remember what caused the injury (10,18). A previous study carried out in Brazil found that children who suffered high degrees of paternal punishment are 1.89-fold more likely to have a TDI than those who suffered low degrees of paternal punishment. Moreover, children in an adverse family environment throughout the course of life had more TDIs than those who experienced a more favorable family environment (10). It is important to recognize the signs and symptoms of violence and physical abuse. Oral health professionals should be responsible for reporting suspected cases to the authorities, thereby contributing to prevent violence (12). Considering the importance of this issue, further studies should be encouraged, including those with a qualitative approach, to investigate the role of domestic violence and physical abuse in depth as reasons for the occurrence of TDI. Consequently, the high rate of "unknown cause" answers could be biased information. Perhaps the children did not state the truth due to fear or shame. However, these responses may also be due to recall bias (12,23).

Fractures in the enamel alone (63.6%) and fractures in the enamel and dentin (15.3%) were the most common types of TDI, which corroborates findings from previous studies (1-4,6-8,12). The present study found that only 23.0% of the children had restorative treatment in teeth due to a TDI. Previous studies have found that the treatment of TDI is generally neglected (8,9). A study carried out in southern Brazil found that 27.6% of TDIs were treated, while 66.7% needed treatment (9). A study carried out in the UK found that only 4.8 per thousand incisors were treated with restorations or crowns, whereas 20.7 per thousand incisors needed treatment (8). In developing countries, the majority of the population cannot afford private dental care and public services are unable to offer complex treatment. Another factor that may determine the low treatment rates in both developing and developed countries is related to the fact that TDI is not a disease and parents do not pay the necessary attention to it (9). However, depending on the severity and extension of the fracture, physical and psychosocial consequences can occur, as TDI is generally an irreversible lesion affecting anterior teeth (24,25). Although treatments provided for TDI do not eliminate the impact on a child's life, they can reduce it, especially in terms of social aspects (24).

No statistically significant association was found between socioeconomic status and the occurrence of TDI. This result corroborates findings from other studies on the same age group (2,8,10,12). The socioeconomic classification criterion used in the present study was the Social Vulnerability Index (SVI), which measures social access and determines to what extent the population of each region of the city is vulnerable to social exclusion. Another study on TDI in the city Belo Horizonte also used the SVI and found that children from families of low socioeconomic status had greater chance of exhibiting TDI; however, the study was carried out on children in a different age group (1 to 3 years) (26).

Another two studies carried out in Belo Horizonte, which used the ABA-ABIPEME (Brazilian Advertising Association/Brazilian Association of Market Institutes) criteria, also

found different results. One study involving schoolchildren from 9 to 14 years of age concluded that those from families with a higher socioeconomic status were more likely to have a TDI than those from families with a lower socioeconomic status (6). Another study involving preschool children (1 to 5 years of age) found no such association (27). The ABA-ABIPEME criteria classify the population into socioeconomic classes and estimate buying power, as measured by the quantity of products each family can afford. It is possible that these socioeconomic indicators alone (which mainly consider the physical environment) are not enough. It is necessary to investigate the influence of social conditions over the occurrence of TDI. Social environments, such as family structure, family relationships and social relationships at school have been correlated with the occurrence of TDI in previous studies (10,11).

These conflicting results may be due to differences in the age groups studied as well as the socioeconomic classification used. There is no consensus in the literature regarding this association. However, a previous critical review revealed that the majority of the studies involving children and adolescents have found no significant association between TDI in permanent teeth and socioeconomic status (15).

A statistically significant association was found between TDI and incisal overjet, regardless of the influence of the other variables studied. Children with overjet equal to or greater than 5 mm were 1.86-fold more likely to have a TDI than those with an overjet of less than 5 mm. Other studies have also described overjet as an important risk factor for the occurrence of TDI (2,6,11,14). Incisal overjet has been associated with the occurrence of new episodes of TDI in children who had suffered this injury, thereby demonstrating the importance of this malocclusion (14). A systematic review concluded that children with accentuated overjet are approximately twice as much at risk of TDI as those with lesser overjet and the risk of injury tends to increase with the increase in overjet (13). These findings

are important, as this malocclusion is an important risk predictor for the occurrence of TDI and correcting it is a necessary preventive measure for avoiding TDI.

The most interesting finding in the present study was the strong association between the experience of dental caries and TDI. After adjusting for control variables (gender and age) and independently from the other variables studied (overjet and socioeconomic conditions), children with caries experience were almost twice as likely to exhibit TDI as children who were caries-free. A study carried out in Belo Horizonte involving children from one to three years of age found no association between TDI and dental caries in the primary dentition (26). However, two studies carried out in Canada involving schoolchildren from 12 to 14 years of age found such an association; these studies suggest common risk factors for both conditions and indicate the best approach to the prevention of TDI and dental caries (3,16).

The association between the occurrence of TDI and dental caries could be explained by the environment in which children live or their behavior (16). Health-related behavioral problems or other psychosocial risk factors may be common-risk factors of TDI and dental caries (3). In a developing country such as Brazil, where the majority of the population is low-income and access to the public healthcare system is difficult, oral healthcare is often neglected, as oral problems such as dental caries and TDI are not considered a health priority.

In summary, the results of the present study support the hypothesis that children with accentuated incisal overjet, those with dental caries experience and boys are more likely to experience TDI. The important association found between the experience of TDI and dental caries suggests that further studies are needed to investigate the common risk factors between these two conditions. Consequently, such knowledge could enable the drafting of common preventive actions, thereby reducing the costs and increasing the effectiveness of oral healthcare programs.

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Table 1: Frequency distribution of children with TDI (n = 275) according to etiology, site and type of TDI; Belo Horizonte, Brazil, 2009.

Variables	Frequency n (%)
Etiology of TDI	
Falls	120 (43.6)
Sports	56 (20.4)
Others	29 (10.5)
Unknown	70 (25.5)
Site of TDI	
Home	115 (41.8)
School	39 (14.2)
Street	29 (10.5)
Others	25 (9.1)
Unknown	67 (24.4)
Type of lesion	
Enamel fracture	175 (63.3)
Enamel-dentin fracture	42 (15.3)
Complicated crown fracture	5 (1.8)
Lateral luxation	1 (0.4)
Avulsion	2 (0.7)
Restoration	64 (23.0)

Table 2: Association between traumatic dental injuries (TDI) in schoolchildren (n=1612) and gender, age, experience of dental caries, incisal overjet and socioeconomic status; Belo Horizonte, Brazil, 2009.

Variables	***TDI***		**P-value***
	Yes n(%)	No n(%)	
Gender			
Boys	134 (19.9)	538 (80.1)	0.009
Girls	141 (15.0)	799 (85.0)	
Age (years)			
11-12	133 (15.5)	723 (84.5)	0.084
13-14	142 (18.8)	614 (81.2)	
DMFT			
DMFT = 0	119 (13.3)	776 (86.7)	< 0.001
DMFT ≥ 1	156 (21.8)	561 (78.2)	
Overjet			
< 5 mm	252 (16.5)	1278 (83.5)	0.007
≥ 5 mm	23 (28.0)	59 (72.0)	
Socioeconomic status			
High vulnerability	124 (18.2)	557 (81.8)	0.294
Low vulnerability	151 (16.2)	780 (83.3)	

*Chi-square test.

Table 3: Multiple logistic regression models explaining the independent variables in children with TDI (n=1612); Belo Horizonte, Brazil, 2009.

Variables	*Unadjusted PR (95% CI)*	*Adjusted PR (95% CI)* †	P-value
Model A (Enter)			
DMFT			
DMFT = 0	1	1	< 0.001
DMFT ≥ 1	1.81 (1.39-2.35)	1.80 (1.38-2.35)	
Overjet			
< 5 mm	1	1	0.016
≥ 5 mm	1.97 (1.19-3.26)	1.86 (1.12-3.09)	
Socioeconomic status (SVI)			
High vulnerability	1	1	0.571
Low vulnerability	1.15 (0.88-1.49)	1.08 (0.82-1.42)	
Model B (Stepwise)			
DMFT			
DMFT = 0	1	1	< 0.001
DMFT ≥ 1	1.81 (1.39-2.35)	1.81 (1.39-2.35)	
Overjet			
< 5 mm	1	1	0.016
≥ 5 mm	1.97 (1.19-3.26)	1.86 (1.12-3.09)	

PR: Prevalence ratio.
CI 95%: Confidence intervals.
†Adjusted for control variables (age and gender).

ARTIGO 2

Impact of treated and untreated traumatic dental injuries on the quality of life of Brazilian schoolchildren

Cristiane B. Bendo[1], Saul M. Paiva[1], Cíntia S. Torres[1], Ana C. Oliveira[2], Daniela Goursand[1], Isabela A. Pordeus[1], Miriam P. Vale[1]

[1]Departament of Pediatric Dentistry and Orthodontics, Faculty of Dentistry, Federal University of Minas Gerais, Belo Horizonte, Brazil.

[2]Departament of Oral Public Health, Faculty of Dentistry, Federal University of Minas Gerais, Belo Horizonte, Brazil.

Author for correspondence:

Cristiane B. Bendo

Rua Professor Otaviano 131/2002

30260-020, Belo Horizonte, MG, Brazil

Phone: +55 31 2526 5486

e-mail: crysbendo@yahoo.com.br

Traumatic dental injuries and quality of life

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(Anexo J)

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Abstract

Background/Aim: Traumatic dental injuries (TDI) could have physical and psychosocial consequences for children. Thus, it is important to measure the impact of TDI in children's quality of life (QoL). The aim of the present study was to investigate the association between treated and untreated TDI and the quality of life in Brazilian schoolchildren.

Materials and Methods: A cross-sectional study was carried out on 1612 schoolchildren aged from 11 to 14 years, both genders, who attended in public and private elementary schools in Belo Horizonte, Brazil. A multi-stage sampling technique was adopted to select the children. Calibrated three examiners used the Andreasen classification for TDI diagnosis. Oral health-related quality of life (OHRQoL) was assessed, using Brazilian version of the Child Perceptions Questionnaire (CPQ_{11-14}) - Impact Short Form (ISF:16), composed by 16 items, self-completed by all children. Other oral children's conditions, such as dental caries and malocclusion and Social Vulnerability Index (SVI), were collected and used as controlling variables.

Results: There were 42 children diagnosed with enamel-dentin fractures and 64 with treated fractures. There were no statistically significant association between them with enamel-dentin fractures or treated fractures and overall CPQ_{11-14} (Fisher = 1.000 and Fisher = 0.610, respectively). The item of CPQ_{11-14} - ISF:16 "other children asked questions about the tooth", was the only one which presented a statistically significant association with the both untreated and treated tooth. Children with untreated tooth had 1.9 times (95% CI = 1.1-3.7) more likely to present impact in the item "other children asked questions about the tooth" than those without TDI, while children with treated TDI had twice (95% CI = 1.1-3.5).

Conclusions: Children with enamel-dentin fractures and treated TDI had more social impact in QoL than children without TDI.

Introduction

The assessment of quality of life (QoL) has become an integral part of evaluating health programmes. Only traditional methods as indicators of clinical dental without information about the oral well-being are not sufficient. Thus, it is important to measure the physical and psychosocial impact of oral health (1). However, relationships between biological or clinical variables and health-related quality of life are mediated by a variety of personal, social, environmental, and cultural circunstances (1,2).

Previous studies have observed that traumatic dental injuries (TDI) have biological, emotional, and psychosocial consequences for young people (2-4). A Brazilian case-control study showed that children with fractured tooth were more likely to have impact on quality of life than other ones without injuried tooth. Furthermore, children with fractured teeth were more concerned with aesthetic than with their function. Feeling embarrassed to smile, laugh and show their teeth, having difficult to social relationship, falling in an irritable mood, and incapable to maintain the emotional state are some of consequences of injuried tooth (3).

The treatment of the TDI can be a strategy to improve quality of life in children with injured tooth. The dental injuries not treated are more likely to have an impact on children's quality of life than restorations; the restorations by crowns seem to mean a social aspect improvement of QoL (4). Nevertheless, the treatment of the crown's fractures does not eliminate the impact of TDI on children's quality of life, though it possibly reduces the impact (2).

Children's development has influence on the comprehension about their relationship between health, illness and QoL, and children's self-consciouness is age-dependent resulting from their continuous cognitive, emotional, social and language development. It is fundamental to use appropriate questionnaire, to obtain references about their oral health-related quality of life (OHRQoL) (1,5). The first special instrument to children between 11

and 14 years-old was the Child Perceptions Questionnaire (CPQ_{11-14}) (6). This instrument has the reliability and validity proved for use on Brazilian children (7,8).

The aim of this study was investigate the impact of treated and untreated TDI on quality of life of 11 to 14 years-old Brazilian schoolchildren, using a specific instrument for this age group.

Materials and Methods

A cross-sectional study was carried out on 1612 children aged from 11 to 14 years who attended either public or private elementary schools in Belo Horizonte, Brazil, from September 2008 to May 2009. Participants were selected from a population of 170289 children of the same age group enrolled in 311 public system and 145 private system of elementary school (9). Belo Horizonte is the capital of the state of Minas Gerais (Brazil). It has approximately two million in habitants and is geographically divided into nine administrative districts, with considerable social, economical, and cultural disparities.

The sample size of the study was calculated to give a standard error of 2% or less with the level of 95% confidence interval. To calculate the sample, 16.1% (10) of prevalence of TDI were used. A correction factor equal to 1.2 was used to increase precision as well as a multi-stage sampling technique was adopted rather than a random sampling technique (11). Thus, the minimal sample size to satisfy the requirements was estimated to be 1558 individuals. However, it was decided to invite 20.0% more children to participate in the study (n=1870), which would allow some potential refuses.

In order to ensure representativity, the sample was stratified, according to administrative districts and type of institution. Initially, the percentage distribution of schoolchildren, 11-14-years-old, pertaining to each administrative district, was calculated from information provided by local Department of Education. Next, the distribution of

participants was determined in the population's proportion of the respective school systems, using data from samples. The first-stage comprised units randomly selected between public and private elementary schools from each administrative district of Belo Horizonte. In the second-stage, some school classes were randomly chosen among the selected schools.

Following authorization from the Human Research Ethics Committee of the Federal University of Minas Gerais, the permission was granted by the administration of the schools. Next, an invitation letter was sent to selected children's parents, explaining the aim, characteristics, importance, methods of the study, and asking for permission to their children's participation.

The research team was made up of three dentists (CBB, DG and CST), who had participated in a training and calibration exercise for each clinical condition. The Andreasen classification (12) was used to recode TDI evidence to upper and lower incisors: non-complicated fractures (enamel and enamel-dentin fractures), complicated fractures (enamel-dentin-pulp fractures), teeth dislocations (lateral luxation, intrusion and extrusion), avulsion, teeth discoloration, and restoration of the fractured teeth. As possible confounding variables, conditions of occlusion and decay lesions were identified. The diagnosis was made using the Dental Aesthetic Index (DAI) (13) and Decayed, Missing and Filled Teeth Index (DMFT) (14), respectively. Seventy-six children (not part of the study population) were randomly selected and included in the calibration process. Forty-four children were examined by each of three dentists separately for the calculation of interexaminer agreement and 10 were re-examined with a one-month interval for the calculation of intraexaminer's agreement. Kappa values ranged from 0.68 to 1.00 for the interexaminer's agreement, and from 0.70 to 1.00 for the intraexaminer's agreement, thereby demonstrating a good agreement for all clinical conditions.

The methods' test, the dental examination and administration of the questionnaires, as well as the preparation of the examiners, were carried out on pilot study with 76 children, who did not participate of the studied population. The results of the pilot study indicated there was no need to change the methods previously proposed.

Dental clinical examinations were carried out at school during daytime hours. Head lamp (Petzl Zoom head lamp, Petzl America, Clearfield, UT, USA), disposable mouth mirror (PRISMA®, São Paulo, SP, Brazil), and periodontal probe (WHO-621, Trinity, Campo Mourão, PA, Brazil) were used for dental examination. The examiners were seated in front of the child, who remained standing. The examination included only upper and lower incisors for TDI. On the other hand, the examination included all tooth for the other two oral conditions. The examiners used appropriate equipment to protect against individual cross-infection, with all necessary instruments and materials packaged and sterilized in sufficient quantities for each workday.

The impact of TDI on children's QoL was measured using the Brazilian version of the Child Perceptions Questionnaire (CPQ_{11-14}) - Impact Short Form (ISF:16). CPQ_{11-14} is a part of the Child Oral Health Quality of Life (COHQoL), a set of questionnaires that aim to measure the impact of oral health abnormalities on children's QoL. CPQ_{11-14} - ISF:16 is composed by 16 items, allocated among 4 subscales: oral symptoms, functional limitations, emotional well-being and social well-being . Each item asked about the frequency of events, as applied to the teeth, lips, and jaws, in the last 3 months. A 5-point Likert scale is used, with the following options: "Never" = 0; "Once/twice" = 1; "Sometimes" = 2; "Often" = 3; and "Every day/almost every day" = 4 (6,15,16). This instrument was adapted cross-culturally and validated to be used in Brazilian children, presenting satisfactory psychometric properties (8).

The outcome variable was TDI. The main independent variable was the OHRQoL. Children's oral conditions (dental caries and malocclusion) and socioeconomic classification

were used as independent and controlling variables. The impact on OHRQoL was classified in absent ($CPQ_{11-14} = 0$) and present ($CPQ_{11-14} \geq 1$). The malocclusion was also classified in absent (DAI ≤ 25) and present (DAI > 25), and dental caries in caries-free (DMFT = 0) and with one or more teeth affected (DMFT ≥ 1).

The Social Vulnerability Index (SVI) was employed for socioeconomic classification. The SVI was developed by the City of Belo Horizonte to measure the social exclusion in the city. It encompasses over 20 variables that quantify population's access to housing, schooling, income, jobs, legal assistance, health, and nutrition. Thus, the SVI measures the social access and determines to what extend the population of each region of the city is vulnerable to social exclusion. These scores were calculated for each district in a previous study by the city of Belo Horizonte (17-19).

Statistical analysis was performed employing the software *Statistical Package for the Social Sciences* (SPSS for Windows, version 15.0, SPSS Inc., Chicago, IL, USA). Data analysis included descriptive statistics (frequency distribution and cross-tabulation). The chi-square test and Fisher's test was used to observe the statistical significance association between treated and untreated TDI and each item, and overall CPQ_{11-14} - ISF:16. Multiple logistic regression was used in the multivariate analysis. Each item and overall CPQ_{11-14} - ISF:16 was introduced in the backward logistic model, adjusted for control variables (age, gender, socioeconomic status, dental caries and malocclusion). The significance level was set at 5%.

Results

One thousand and six hundred and twelve (1612) children were examined. The response rate was 86.2%. However, 171 children were not included in this study because they had another types of TDI, different of enamel-dentin fractures and treated fractures. So, the sample was

composed by 1441 children (41.3% boys and 58.7% girls) representing the schoolchildren of 11 to 14 years-old (53.0% of 11-12 and 47.0% of 13-14) from Belo Horizonte, Brazil (Table 1).

The majority of children was caries-free (73.1%), did not have malocclusion (69.0), and lived on places of low vulnerability (58.4%). In respect to TDI, 1337 children (92.8%) did not have any type of TDI; while 40 (2.8%) had enamel-dentin fractures; 62 (4.3%) had treated fractures. Only two children had both enamel-dentin fractures and treated fractures in different teeth (Table 1).

Table 2 shows that there were no statistically significant differences between children with enamel-dentin fractures and without TDI, in respect to overall CPQ_{11-14} - ISF:16 (Fisher = 1.000). For the oral symptoms dimension, children with enamel-dentin fractures had more impact than the other ones, but it was not statistically significant ($P > 0.05$). Children with fractures were 1.3 (95% CI = 0.7-2.9) more likely having “difficulty eating/drinking hot/cold foods” and 1.3 (95% CI = 0.7-2.4) more likely to “feel irritable/frustrated” and “upset” than children without TDI, but it was also not statistically significant ($P > 0.05$). The most prevalent impact of TDI was on the dimension of social well-being. Significantly differences between fractured and no fractured teeth were found in “other children asked questions about the tooth” item (PR = 1.9, 95% CI = 1.1-3.6, P = 0.026). The remaining two questions in the dimension of social well-being (“avoided smiling/laughing” and “teased/called names”) were not statistically significant; however children with fractured teeth had experienced the increasing impact in these items of CPQ_{11-14} - ISF:16 ($P > 0.05$).

When the sample of children with treated fractures was compared with those without TDI (Table 3), the absence of association in respect to overall CPQ_{11-14} - ISF:16 was persistent between children with treated fractures and without TDI (Fisher = 0.610). The “oral pain” and “chewing difficulty” were most prevalent in children with treated tooth compared with those

without TDI, but this association was not statistically significant (P > 0.05). In the dimension of social well-being, only the item “other children asked questions about the tooth” was statistically associated with treated teeth (PR = 1.5, 95% CI = 1.1-2.8, P = 0.027).

In the multiple logistic regression (Table 4), CPQ_{11-14} - ISF:16 items separately and overall CPQ_{11-14} - ISF:16 were adjusted by age, gender, socioeconomic status, dental caries and malocclusion. When it was considered the enamel-dentin fractures, the items “difficulty eating/drinking hot/cold foods” and “other children asked questions about the tooth” maintained in the model, just the item “other children asked questions about the tooth” was statistically significant (PR = 1.9, 95% CI = 1.1-3.7, P = 0.036). For treated TDI, three items continued in the model (“pain”, “chewing difficulty” and “other children asked questions about the tooth”). Just as the previous analysis, the children with treated TDI were twice (95% CI = 1.1-3.5) more likely to present impact in the item “other children asked questions about the tooth” than those without TDI, being statistically significant (P = 0.012).

Discussion

All children answered the 16 items of the CPQ_{11-14} - ISF:16 questionnaire. However, as the CPQ_{11-14} - ISF:16 was not developed specifically to measure the impact of TDI, some questions were not necessarily relevant to children with TDI. Thus, in the bivariate and multivariate analyses, we presented the overall CPQ_{11-14} and only the questions, which could be affected by TDI. Likewise, in studies developed in Canadian children to evaluate the impact of TDI in the QoL using the CPQ_{11-14}, only some questions linking with TDI were selected (4,20).

The overall CPQ_{11-14} - ISF:16 was not related with TDI in the present study, corroborated by Canadian study of children from 11-14 years-old, that used the same questionnaire to measure the QoL (4). Another study with Canadian children had showed

different impacts of TDI, according to socioeconomic status. In children from higher income groups, there were no differences in CPQ_{11-14} scores for children with and without TDI. However, the differences were significant for children in the lower income group (20). The present study, although adjusting the results for control variables, including socioeconomic status, did not find any association between overall CPQ_{11-14} - ISF:16 and TDI. Though, previous studies developed in Brazil found a statistically significant association between QoL and children with untreated (3) and treated teeth that suffered TDI (2). These studies used another instrument to measure the impact of TDI, the Oral Impact on Daily Performances (OIDP) (21).

The impact of TDI in the present study was higher on social well-being than on oral symptoms, functional limitations, and emotional well-being. Similar results were found in a Canadian study that demonstrated children with untreated dental injuries experienced higher social impacts on their daily living than those without injuries (4).

Children of the present study diagnosed with untreated enamel-dentin fractures felt greater dissatisfied with their appearance than those without TDI, mainly for the reason that other people can think and ask about their teeth. The question about this item shows that children with fractured tooth had almost twice more likely to be worried with the thinking and asking of other people about their tooth, lips, mouth or jaws than children without TDI.

When the impact of treated TDI in children was observed, the present study concluded that the restorations do not eliminate the impact mainly in social well-being. Children with restored anterior tooth continue worried about what the other people think and ask. In Canadian study, the restoration of TDI reduces the social well-being impact (4). The difference between Canadian and Brazilian studies could be explained by highlighting the aesthetic conditions of the restorations. In a developing country as Brazil, the access to public

services is limited and it is difficult to care the maintenance of the restorations, indispensable to aesthetic.

Despite other items of CPQ_{11-14} - ISF:16 were not statistically significant associated with untreated and treated TDI, the bivariate and multivariate analyses showed a tendency of association between them. The results show that difficulty eating or drinking hot or cold foods was more prevalent in children with fractured tooth involving dentin, though this relation has not being statistically significant. Furthermore, it is possible to understand this fact because it is common to feel sensibility in the teeth, when the dentinal tubules are exposed. Previous study developed in Belo Horizonte using OIDP also found an association between eating food and the presence of TDI, and this association was statistically significant (3).

When the treated TDI was considered, children with anterior tooth restored with composite in dentin fractures are more likely to present pain in it. The composite restorations could influence on postoperative sensitivity, and the cavity depth is an important predictor of this (22). According to hydrodynamic theory, the dentin sensitivity is mediated by fluid movements within the dentinal tubules (23). Chewing difficulty was also more present in children with treated tooth than those without TDI. An explanation to this fact is that people who have large anterior restoration are afraid to fracture tooth again and the restoration.

So, the present study concluded that the main concerns of these children are related with the perception of their dental fracture by other people. At the age 11-14 years old relationships between peers are important components to their health and quality of life, when judgments occur, concerning their emotional states and relationship with others (24). Dentofacial esthetic plays an important role in social interaction and psychological well-being to the adolescence's stage (25).

Health and quality of life experienced by an individual are not determined only by the nature and severity of the disease/disorder. Social environment, affective relationships, and

insertion in friends group are important factors to people in early adolescence. At this age, any alteration in dental aspects can generate a negative impact on their QoL (24,26).

It can be concluded that either, the enamel-dentin fractures or treated fractures, did not have important impact on oral symptoms, functional limitations, and emotional well-being. However, children with these oral conditions in anterior tooth are more likely to present impact on social well-being, mainly in respect to what the other people can think or ask.

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Table 1: Frequency distribution of the sample (n = 1441) for the gender, age, dental caries, malocclusion, socioeconomic status and TDI, Belo Horizonte, Brazil, 2009.

Variables	Frequency n (%)
Gender	
Male	595 (41.3)
Female	846 (58.7)
Age (years)	
11-12	764 (53.0)
13-14	677 (47.0)
Dental caries	
Caries-free	1054 (73.1)
One or more tooth afected	387 (26.9)
Malocclusion	
Absent	994 (69.0)
Present	447 (31.0)
Socioeconomic status	
High vulnerability	600 (41.6)
Low vulnerability	841 (58.4)
TDI	
Absence fractures	1337 (92.8)
Enamel-dentin fractures	40 (2.8)
Treated fractures	62 (4.3)
Both enamel-dentin fractures and treated fractures	2 (0.1)

Table 2: Frequency distribution of each item and overall CPQ_{11-14} for children with enamel-dentin fractures and non-fractured teeth (n = 1379), Belo Horizonte, Brazil, 2009.

Variables	TDI		Unadjusted PR (95% CI)	P value
	Enamel-Dentin fractures (n=42)	Absence fractures (n=1337)		
Oral symptoms				
Pain				
$CPQ_{11-14} = 0$	16 (38.1)	541 (40.5)	1	0.758*
$CPQ_{11-14} \geq 1$	26 (61.9)	796 (59.5)	1.1 (0.5-2.0)	
Mouth sores				
$CPQ_{11-14} = 0$	13 (31.0)	475 (35.5)	1	0.542*
$CPQ_{11-14} \geq 1$	29 (69.0)	862 (64.5)	1.2 (0.6-2.3)	
Functional limitations				
Chewing difficulty				
$CPQ_{11-14} = 0$	27 (64.3)	772 (57.7)	1	0.398*
$CPQ_{11-14} \geq 1$	15 (35.7)	565 (42.3)	0.7 (0.4-1.4)	
Eating/drinking hot/cold foods difficulty				
$CPQ_{11-14} = 0$	11 (26.2)	455 (34.0)	1	0.290*
$CPQ_{11-14} \geq 1$	31 (73.8)	882 (66.0)	1.3 (0.7-2.9)	
Emotional well-being				
Felt irritable/frustrated				
$CPQ_{11-14} = 0$	23 (54.8)	827 (61.9)	1	0.352*
$CPQ_{11-14} \geq 1$	19 (45.2)	510 (38.1)	1.3 (0.7-2.4)	
Upset				
$CPQ_{11-14} = 0$	22 (52.4)	795 (59.5)	1	0.358*
$CPQ_{11-14} \geq 1$	20 (47.6)	545 (40.5)	1.3 (0.7-2.4)	
Concerned with what others think				
$CPQ_{11-14} = 0$	16 (38.1)	548 (41.0)	1	0.707*
$CPQ_{11-14} \geq 1$	26 (61.9)	789 (59.0)	1.1 (0.6-2.1)	
Social well-being				
Avoided smiling/laughing				
$CPQ_{11-14} = 0$	29 (69.0)	939 (70.2)	1	0.869*
$CPQ_{11-14} \geq 1$	13 (31.0)	398 (29.8)	1.0 (0.5-2.0)	
Teased/called names				
$CPQ_{11-14} = 0$	25 (59.5)	913 (68.3)	1	0.231*
$CPQ_{11-14} \geq 1$	17 (40.5)	424 (31.7)	1.4 (0.7-2.7)	
Other children asked questions				
$CPQ_{11-14} = 0$	19 (45.2)	832 (62.2)	1	0.026*
$CPQ_{11-14} \geq 1$	23 (54.8)	505 (37.8)	1.9 (1.1-3.6)	
Overall CPQ_{11-14}				
$CPQ_{11-14} = 0$	0	19 (1.4)	1	1.000 **
$CPQ_{11-14} \geq 1$	42 (100.0)	1318 (98.6)	0.9 (0.9-1.0)	

*Chi-square test, **Fisher's exact test.

Table 3: Frequency distribution of each item and overall CPQ_{11-14} for children with treated fractures and non-fractured teeth (n = 1401), Belo Horizonte, Brazil, 2009.

Variables	TDI		Unadjusted PR (95% CI)	P value
	Treated fractures (n=64)	Absence fractures (n=1337)		
Oral symptoms				
Pain				
$CPQ_{11-14} = 0$	20 (31.3)	541 (40.5)	1	0.142*
$CPQ_{11-14} \geq 1$	44 (68.8)	796 (59.5)	1.4 (0.8-2.5)	
Mouth sores				
$CPQ_{11-14} = 0$	23 (35.9)	475 (35.5)	1	0.947*
$CPQ_{11-14} \geq 1$	41 (64.1)	862 (64.5)	0.9 (0.5-1.6)	
Functional limitations				
Chewing difficulty				
$CPQ_{11-14} = 0$	32 (50.0)	772 (57.7)	1	0.221*
$CPQ_{11-14} \geq 1$	32 (50.0)	565 (42.3)	1.3 (0.8-2.2)	
Eating/drinking hot/cold foods difficulty				
$CPQ_{11-14} = 0$	25 (39.1)	455 (34.0)	1	0.407*
$CPQ_{11-14} \geq 1$	39 (60.9)	882 (66.0)	0.8 (0.4-1.3)	
Emotional well-being				
Felt irritable/frustrated				
$CPQ_{11-14} = 0$	43 (67.2)	827 (61.9)	1	0.390*
$CPQ_{11-14} \geq 1$	21 (32.8)	510 (38.1)	0.7 (0.4-1.3)	
Upset				
$CPQ_{11-14} = 0$	41 (64.1)	795 (59.5)	1	0.464*
$CPQ_{11-14} \geq 1$	23 (35.9)	542 (40.5)	0.8 (0.4-1.3)	
Concerned with what others think				
$CPQ_{11-14} = 0$	28 (43.8)	548 (41.0)	1	0.661*
$CPQ_{11-14} \geq 1$	36 (56.3)	789 (59.0)	0.8 (0.5-1.4)	
Social well-being				
Avoided smiling/laughing				
$CPQ_{11-14} = 0$	45 (70.3)	939 (70.2)	1	0.989*
$CPQ_{11-14} \geq 1$	19 (29.7)	398 (29.8)	0.9 (0.5-1.7)	
Teased/called names				
$CPQ_{11-14} = 0$	48 (75.0)	913 (68.3)	1	0.258*
$CPQ_{11-14} \geq 1$	16 (25.0)	424 (31.7)	0.7 (0.4-1.2)	
Other children asked questions				
$CPQ_{11-14} = 0$	31 (48.4)	832 (62.2)	1	0.027*
$CPQ_{11-14} \geq 1$	33 (51.6)	505 (37.8)	1.5 (1.1-2.8)	
Overall CPQ_{11-14}				
$CPQ_{11-14} = 0$	1 (1.6)	19 (1.4)	1	0.610**
$CPQ_{11-14} \geq 1$	63 (98.4)	1318 (98.6)	0.9 (0.1-6.8)	

*Chi-square test, **Fisher's exact test.

Table 4: Multiple logistic regression models explaining the influence of TDI in each item of CPQ_{11-14}, Belo Horizonte, Brazil, 2009.

Variables	Unadjusted PR (95% CI)	Adjusted PR (95% CI) †	P value
Enamel-Dentin Fractures			
Eating/drinking hot/cold foods difficulty			
$CPQ_{11-14} = 0$	1	1	0.211
$CPQ_{11-14} \geq 1$	1.4 (0.7-2.9)	1.5 (0.7-3.3)	
Other children asked questions			
$CPQ_{11-14} = 0$	1	1	0.036
$CPQ_{11-14} \geq 1$	1.9 (1.1-3.6)	1.9 (1.1-3.7)	
Treated fractures			
Pain			
$CPQ_{11-14} = 0$	1	1	0.214
$CPQ_{11-14} \geq 1$	1.4 (0.8-2.5)	1.4 (0.8-2.6)	
Chewing difficulty			
$CPQ_{11-14} = 0$	1	1	0.172
$CPQ_{11-14} \geq 1$	1.3 (0.8-2.2)	1.4 (0.8-2.5)	
Other children asked questions			
$CPQ_{11-14} = 0$	1	1	0.012
$CPQ_{11-14} \geq 1$	1.6 (1.1-2.8)	2.0 (1.1-3.5)	

PR: Prevalence ratio.
CI 95%: Confidence intervals.
†Adjusted for control variables (age, gender, socioeconomic status, dental caries and malocclusion).

CONSIDERAÇÕES FINAIS

CONSIDERAÇÕES FINAIS

O traumatismo dentário é um evento que atinge principalmente crianças e adolescentes. As estratégias de promoção de saúde para a redução dos traumatismos dentários talvez passem pelo reconhecimento dos gestores, profissionais de saúde, comunidades e famílias de que esta condição é passível de prevenção. Para tanto, é preciso conhecer quais são os fatores de risco para a ocorrência deste tipo de evento. Encontra-se bem estabelecido na literatura e confirmado por este estudo que o overjet acentuado é um fator de risco importante para os traumatismos. Este estudo mostrou que outro fator parece estar associado com os traumatismos dentários, a experiência de cárie dentária. Sabe-se também que as quedas e as atividades esportivas estão entre as principais causas de traumatismo, ocorrendo principalmente nas casas ou escolas dos adolescentes, e que meninos são mais afetados do que meninas.

Desta forma, seguindo-se as recomendações da Organização Mundial de Saúde (OMS), para o desenvolvimento de ações de promoção de saúde, devem-se buscar estratégias que visem intervir nos fatores de risco comum entre as doenças. Neste contexto, ações de promoção de saúde que atuem na correção de maloclusões e na redução da incidência de cárie dentária, estarão também atuando na prevenção da ocorrência de traumatismos. Conhecendo-se os fatores determinantes dos traumatismos dentários, é possível o desenvolvimento de políticas públicas para a adoção de ambientes físicos mais seguros, e maior orientação das famílias e comunidades para a prevenção de acidentes.

Além disso, é importante a disponibilização dos dados obtidos neste estudo para propiciar uma reorientação dos serviços públicos de saúde. No presente estudo observou-se uma forte associação entre traumatismos dentários e overjet acentuado. Entretanto, grande parte da população de crianças e adolescentes residentes em Belo Horizonte não tem acesso a

tratamento ortodôntico corretivo, uma vez que este serviço não é oferecido nos centros de saúde do município. Da mesma forma, muitos adolescentes que apresentavam lesões de cárie extensas ou fraturas de dentes anteriores relatavam encontrar dificuldade de acesso ao tratamento.

Outros pontos importantes são a qualidade do tratamento oferecido e o controle para manutenção de saúde bucal, principalmente por aqueles que necessitam do serviço público. Tanto aqueles que apresentaram fraturas de esmalte-dentina, como aqueles que receberam tratamento restaurador nas fraturas possuíam impacto negativo, principalmente no que tange as relações sociais. A preocupação com a percepção dos outros sobre seus dentes ficou bastante evidente neste estudo. Em contrapartida, o traumatismo dentário não influenciou de forma significativa aspectos do bem estar emocional, assim como não provocou limitações funcionais e nem sintomas bucais importantes.

Diante disso, conclui-se que apenas os indicadores normativos de traumatismos dentários diagnosticados pelos profissionais de saúde não são suficientes para a decisão de tratamento. Há necessidade de somarem-se ao diagnóstico profissional os indicadores de qualidade de vida, que consideram a visão do paciente sobre sua saúde. Esta união de indicadores objetivos e subjetivos de saúde torna possível um planejamento em saúde que respeite a percepção dos indivíduos, a fim de atender a demanda desta população de acordo com os seus valores e cultura.

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APÊNDICES

APÊNDICE A

FLUOXOGRAMA EXPLICATIVO DA METODOLOGIA

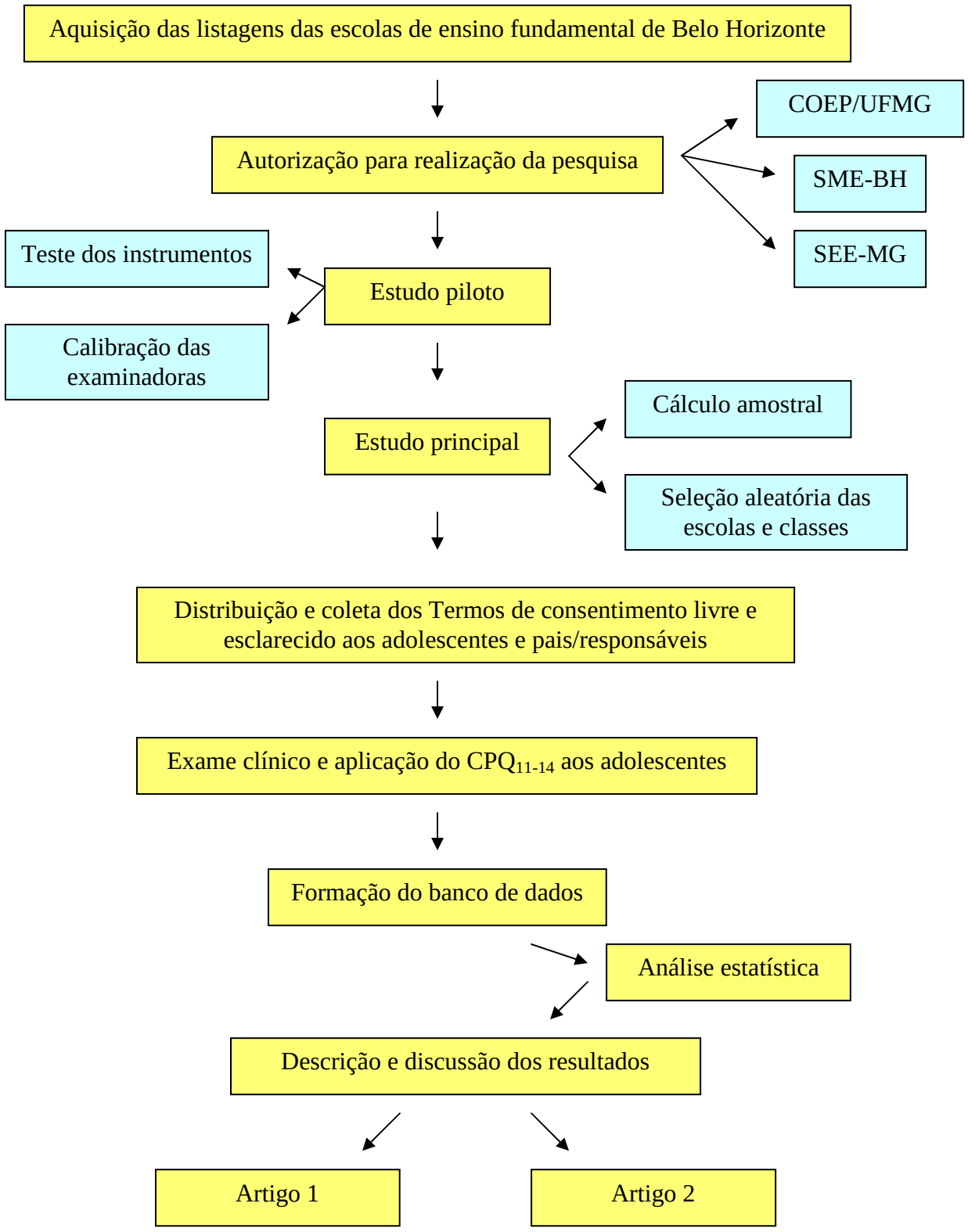

FIGURA 1: Fluxograma explicativo da metodologia

APÊNDICE B

QUADROS DE DISTRIBUIÇÃO DA POPULAÇÃO E DA AMOSTRA

QUADRO 1: Distribuição dos alunos matriculados de 5ª a 8ª séries nas escolas do município de Belo Horizonte, quanto às regionais e às redes de ensino, 2007.

Regional	**Alunos de 5ª a 8ª séries, n(%)**	**Rede**	**Alunos de 5ª a 8ª séries, n**	**Escolas de 5ª a 8ª séries, n**
Barreiro	22.129 (13,0%)	Estadual	8.979	18
		Municipal	11.370	26
		Particular	1.780	12
Centro-Sul	22.946 (13,5%)	Estadual	10.073	17
		Municipal	2.981	9
		Particular	9.892	35
Leste	19.972 (11,7%)	Estadual	9.680	21
		Municipal	6.563	15
		Particular	3.729	13
Nordeste	20.991 (12,3%)	Estadual	6.698	17
		Municipal	11.712	24
		Particular	2.581	8
Noroeste	18.988 (11,2%)	Estadual	10.014	25
		Municipal	4.170	17
		Particular	4.804	24
Norte	13.692 (8,1%)	Estadual	7.067	12
		Municipal	5.568	16
		Particular	1.057	5
Oeste	16.330 (9,6%)	Estadual	8.551	17
		Municipal	4.589	12
		Particular	3.190	16
Pampulha	13.441 (7,9%)	Estadual	3.653	8
		Federal	703	2
		Municipal	5.252	12
		Particular	3.833	21
Venda Nova	21.899 (12,9%)	Estadual	8.353	14
		Municipal	12.119	24
		Particular	1.427	10
Total	**170.388 (100%)**		**170.388**	**450**

QUADRO 2: Distribuição proporcional da amostra quanto a frequência relativa do total de adolescentes por regional e por rede de ensino de Belo Horizonte, 2008.

Regional	**Rede**	**Amostra, n(%)**
Barreiro	Pública	186 (92%)
	Particular	16 (8%)
	Total	**202 (100%)**
Centro-Sul	Pública	120 (57%)
	Particular	90 (43%)
	Total	**210 (100%)**
Leste	Pública	148 (81%)
	Particular	35 (19%)
	Total	**183 (100%)**
Nordeste	Pública	169 (88%)
	Particular	23 (12%)
	Total	**192 (100%)**
Noroeste	Pública	131 (75%)
	Particular	44 (25%)
	Total	**174 (100%)**
Norte	Pública	115 (92%)
	Particular	14 (11%)
	Total	**125 (100%)**
Oeste	Pública	119 (80%)
	Particular	30 (20%)
	Total	**149 (100%)**
Pampulha	Pública	87 (71%)
	Particular	36 (29%)
	Total	**123 (100%)**
Venda Nova	Pública	186 (93%)
	Particular	14 (7%)
	Total	**200 (100%)**
Total		**1558(100%)**

QUADRO 3: Escolas públicas e particulares do município de Belo Horizonte que participaram do estudo.

Regional	**Rede**	**Escola**
Barreiro	Pública	EE Margarida Brochado
	Pública	EE Desembargador Rodrigues Campos
	Particular	SESI Escola Hamleto Magnavacca
Centro-Sul	Pública	EE Prof. José Mesquita de Carvalho
	Particular	Colégio Pitágoras
	Particular	Instituto Metodista Izabela Hendrix
Leste	Pública	EM Prof. Lourenço de Oliveira
	Particular	Colégio Abgar Renault Unid. Boa Vista
Nordeste	Pública	EM Prof. Milton Lage
	Pública	EM Hugo Pinheiro Soares
	Particular	Colégio São Miguel Arcanjo
Noroeste	Pública	EE Melo Viana
	Particular	Colégio Pedro II
Norte	Pública	EE Pres. Tancredo Neves
	Particular	Instituto Educação Batista
Oeste	Pública	EM Mestre Ataíde
	Pública	EE Cândido Portinari
	Particular	Colégio Salesiano de Belo Horizonte
Pampulha	Pública	EM Carmelita Carvalho Garcia
	Particular	C. de Ens. Pedag. O Vagalume Unid. I
Venda Nova	Pública	EM Armando Ziller
	Particular	Instituto Pe. Angelico Lipani

APÊNDICE C

CARTA DE APRESENTAÇÃO DO ESTUDO E TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO PARA PAIS/RESPONSÁVEIS E ADOLESCENTES DE 11-12 ANOS

Prezados Senhores Pais/Responsáveis e Alunos,

Somos Cristiane Baccin Bendo (aluna de mestrado), Daniela Goursand de Oliveira (aluna de doutorado) e Cíntia Torres (aluna de doutorado) do Programa de Pós-graduação da Faculdade de Odontologia, área de Odontopediatria, da Universidade Federal de Minas Gerais (UFMG). Estamos desenvolvendo um trabalho sobre a repercussão que alguns problemas bucais causam na qualidade de vida dos adolescentes residentes em Belo Horizonte.

O nosso trabalho será realizado na escola que seu filho (a) está matriculado e constará de entrega de um questionário a ser respondido por ele e um que será enviado para os pais. Além disso, será feita uma avaliação da condição bucal que seu filho (a) apresenta, sendo essa avaliação feita uma única vez. Esse exame é indolor, não há desconforto nem custo para ser realizado. No momento do exame, estaremos usando luvas descartáveis e todo o material de proteção individual como avental, gorro, óculos e máscara descartável.

Caso seu(a) filho(a) apresente necessidade de tratamento, ele será encaminhado à Faculdade de Odontologia da UFMG para atendimento odontológico.

Gostaríamos de esclarecer que os senhores têm o direito de participar ou não, podendo desistir a qualquer momento. Não haverá nenhum custo financeiro para os participantes da pesquisa. Garantimos ainda a não identificação dos participantes.

Caso você esteja de acordo com a participação de seu(a) filho(a) na pesquisa, gostaria da sua autorização.

Colocamo-nos à disposição para maiores esclarecimentos pelos telefones 9196-5486 (Cristiane), 9406-3630 (Daniela), 8634-5031 (Cíntia), 93310080 (Miriam), 99673382 (Saul), e ainda pelos e-mails crysbendo@yahoo.com.br, goursand@yahoo.com.br ou cintiasilt@hotmail.com

Esta pesquisa foi aprovada pelo Comitê de Ética em Pesquisa da UFMG (Av. Presidente Antônio Carlos, 6627 – Unidade Administrativa II – 2ºandar – Sala 2005 – Cep 31270-901 – Belo Horizonte – MG - telefone 31-34094592 – e-mail: coep@prpq.ufmg.br).

Eu,_____, responsável por _____, de _____ anos de idade, declaro ter sido devidamente esclarecido(a) e autorizo a participação de meu filho(a) na pesquisa “Influência da maloclusão, cárie e traumatismo dentário na qualidade de vida auto-relatada por adolescentes: estudo representativo do município de Belo Horizonte/MG”.

Belo Horizonte, _____ de _____ de _____.

_____

Assinatura do responsável

_____

Assinatura do adolescente

CARTA DE APRESENTAÇÃO DO ESTUDO E

TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

PARA PAIS/RESPONSÁVEIS DE ADOLESCENTES DE 13-14 ANOS

Prezados Senhores Pais/Responsáveis,

Somos Cristiane Baccin Bendo (aluna de mestrado), Daniela Goursand de Oliveira (aluna de doutorado) e Cíntia Torres (aluna de doutorado) do Programa de Pós-graduação da Faculdade de Odontologia, área de Odontopediatria, da Universidade Federal de Minas Gerais (UFMG). Estamos desenvolvendo um trabalho sobre a repercussão que alguns problemas bucais causam na qualidade de vida dos adolescentes residentes em Belo Horizonte.

O nosso trabalho será realizado na escola que seu filho (a) está matriculado e constará de entrega de um questionário a ser respondido por ele e um que será enviado para os pais. Além disso, será feita uma avaliação da condição bucal que seu filho (a) apresenta, sendo essa avaliação feita uma única vez. Esse exame é indolor, não há desconforto nem custo para ser realizado. No momento do exame, estaremos usando luvas descartáveis e todo o material de proteção individual como avental, gorro, óculos e máscara descartável.

Caso seu(a) filho(a) apresente necessidade de tratamento, ele será encaminhado à Faculdade de Odontologia da UFMG para atendimento odontológico.

Gostaríamos de esclarecer que os senhores têm o direito de participar ou não, podendo desistir a qualquer momento. Não haverá nenhum custo financeiro para os participantes da pesquisa. Garantimos ainda a não identificação dos participantes.

Caso você esteja de acordo com a participação de seu(a) filho(a) na pesquisa, gostaria da sua autorização.

Colocamo-nos à disposição para maiores esclarecimentos pelos telefones 9196-5486 (Cristiane), 9406-3630 (Daniela), 8634-5031 (Cíntia), 93310080 (Miriam), 99673382 (Saul),

e ainda pelos e-mails crysbendo@yahoo.com.br, goursand@yahoo.com.br ou cintiasilt@hotmail.com

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Eu,_____, responsável por _____, de _____ anos de idade, declaro ter sido devidamente esclarecido(a) e autorizo a participação de meu filho(a) na pesquisa “Influência da maloclusão, cárie e traumatismo dentário na qualidade de vida auto-relatada por adolescentes: estudo representativo do município de Belo Horizonte/MG”.

Belo Horizonte, _____ de _____ de _____.

_____

Assinatura do responsável

CARTA DE APRESENTAÇÃO DO ESTUDO E

TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

PARA ADOLESCENTES DE 13-14 ANOS

Prezados Alunos,

Somos Cristiane Baccin Bendo (aluna de mestrado), Daniela Goursand de Oliveira (aluna de doutorado) e Cíntia Torres (aluna de doutorado) do Programa de Pós-graduação da Faculdade de Odontologia, área de Odontopediatria, da Universidade Federal de Minas Gerais (UFMG). Estamos desenvolvendo um trabalho sobre a repercussão que alguns problemas bucais causam na qualidade de vida dos adolescentes residentes em Belo Horizonte.

Para realizar esta pesquisa, visitaremos a sua escola, e após sua autorização e de seus pais/responsáveis, realizaremos a pesquisa com você. O nosso trabalho constará da entrega de um questionário a ser respondido por você e um que será enviado para seus pais. Além disso, será feita uma avaliação da condição bucal que você apresenta, sendo essa avaliação feita uma única vez. Esse exame é indolor, não há desconforto nem custo para ser realizado. No momento do exame, estaremos usando luvas descartáveis e todo o material de proteção individual como avental, gorro, óculos e máscara descartável.

Caso você apresente necessidade de tratamento, você será encaminhado à Faculdade de Odontologia da UFMG para atendimento odontológico.

Gostaríamos de esclarecer que você tem o direito de participar ou não, podendo desistir a qualquer momento. Não haverá nenhum custo financeiro para os participantes da pesquisa. Garantimos ainda que você não será identificado.

Caso você esteja de acordo com a sua participação na pesquisa, gostaria da sua autorização.

Colocamo-nos à disposição para maiores esclarecimentos pelos telefones 9196-5486 (Cristiane), 9406-3630 (Daniela), 8634-5031 (Cíntia), 93310080 (Miriam), 99673382 (Saul), e ainda pelos e-mails crysbendo@yahoo.com.br, goursand@yahoo.com.br ou cintiasilt@hotmail.com

Esta pesquisa foi aprovada pelo Comitê de Ética em Pesquisa da UFMG (Av. Presidente Antônio Carlos, 6627 – Unidade Administrativa II – 2ºandar – Sala 2005 – Cep 31270-901 – Belo Horizonte – MG - telefone 31-34094592 – e-mail: coep@prpq.ufmg.br).

Eu,_____, de _____ anos de idade, declaro ter sido devidamente esclarecido(a) e autorizo a minha participação na pesquisa "Influência da maloclusão, cárie e traumatismo dentário na qualidade de vida auto-relatada por adolescentes: estudo representativo do município de Belo Horizonte/MG".

Belo Horizonte, _____ de _____ de _____.

_____

Assinatura do adolescente

APÊNDICE D

CARTA À SECRETARIA MUNICIPAL DE EDUCAÇÃO

Faculdade de Odontologia

Ao Exmo.

Sr. Hugo Vocurca Teixeira

Secretário Municipal de Educação de Belo Horizonte

Somos Cristiane Baccin Bendo, Daniela Goursand de Oliveira e Cíntia Silva Torres, cirurgiãs-dentista formadas pela Faculdade de Odontologia da Universidade Federal de Minas Gerais. Atualmente somos alunas do programa de pós-graduação da mesma faculdade, curso de Mestrado e Doutorado em Odontologia, área Odontopediatria. Dentro das atividades do curso estamos desenvolvendo uma pesquisa intitulada provisoriamente "Influencia da maloclusão, cárie e traumatismo dentário na qualidade de vida auto-relatada por adolescentes: estudo representativo do município de Belo Horizonte/MG", cujo objetivo é mostrar através do exame clínico dos adolescentes e questionário direcionado a eles e seus pais/responsáveis a correlação entre o estado de saúde bucal dos adolescentes de 11-14 anos de Belo Horizonte e seu impacto na família. O estudo terá desenho transversal e será representativo da cidade.

Esta pesquisa poderá ajudar na melhoria do atendimento odontológico de nossa cidade e providenciar novo subsídio para o modelo de Promoção de Saúde.

Gostaria de sua autorização para realizar a pesquisa em escolas públicas da rede municipal de educação de Belo Horizonte, com os adolescentes na idade supracitada. A

participação dos adolescentes e de seus pais/responsáveis será voluntária. Ressalto que o estudo não acarretará ônus algum para o município ou para as instituições.

Gratas pela atenção,

Cristiane Baccin Bendo, Daniela Goursand de Oliveira e Cíntia Silva Torres.

Orientadores: Prof. Dr. Saul Martins de Paiva, Profa. Dra. Miriam Pimenta Parreira do Vale e Profa. Dra. Isabela Almeida Pordeus.

APÊNDICE E

CARTA À SECRETARIA ESTADUAL DE EDUCAÇÃO

Faculdade de Odontologia

À Exma.

Sra. Vanessa Guimarães Pinto

Secretária de Estado de Educação

Somos Cristiane Baccin Bendo, Daniela Goursand de Oliveira e Cíntia Silva Torres, cirurgiãs-dentista formadas pela Faculdade de Odontologia da Universidade Federal de Minas Gerais. Atualmente somos alunas do programa de pós-graduação da mesma faculdade, curso de Mestrado e Doutorado em Odontologia, área Odontopediatria. Dentro das atividades do curso estamos desenvolvendo uma pesquisa intitulada provisoriamente "Influencia da maloclusão, cárie e traumatismo dentário na qualidade de vida auto-relatada por adolescentes: estudo representativo do município de Belo Horizonte/MG", cujo objetivo é mostrar através do exame clínico dos adolescentes e questionário direcionado a eles e seus pais/responsáveis a correlação entre o estado de saúde bucal dos adolescentes de 11-14 anos de Belo Horizonte e seu impacto na família. O estudo terá desenho transversal e será representativo da cidade.

Esta pesquisa poderá ajudar na melhoria do atendimento odontológico de nossa cidade e providenciar novo subsídio para o modelo de Promoção de Saúde.

Gostaria de sua autorização para realizar a pesquisa em escolas públicas da rede estadual de educação de Belo Horizonte, com os adolescentes na idade supracitada. Ressalto que o estudo não acarretará ônus algum para o Estado ou para as instituições.

Gratas pela atenção,

Cristiane Baccin Bendo, Daniela Goursand de Oliveira e Cíntia Silva Torres.

Orientadores: Prof. Dr. Saul Martins de Paiva, Profa. Dra. Miriam Pimenta Parreira do Vale e Profa. Dra. Isabela Almeida Pordeus.

APÊNDICE F

PRONTUÁRIO PARA EXAME CLÍNICO DOS ADOLESCENTES

Nome do adolescente:_____

Data de nascimento:___/___/___ Sexo: 1-Masculino ( ) 2-Feminino ( )

Escola:_____

Data do exame:_____/_____/_____

Traumatismo Dentário

<table>
<tr><td rowspan="4">1-Fratura de esmalte (fratura coronária não complicada)
2-Fratura de esmalte e dentina (fratura coronária não complicada)
3-Fratura coronária complicada
4-Luxação extrusiva
5-Luxação lateral
6-Luxação intrusiva
7-Avulsão
(Andreasen et al., 2007)
8-Mudança de cor da coroa devido ao traumatismo
9-Tratamento reabilitador devido ao traumatismo</td><td>12</td><td>11</td><td>21</td><td>22</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>42</td><td>41</td><td>31</td><td>32</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table>

CPO-D

17	**16**	**15/55**	**14/54**	**13/53**	**12**	**11**	**21**	**22**	**23/63**	**24/64**	**25/65**	**26**	**27**
47	**46**	**45/85**	**44/84**	**43/83**	**42**	**41**	**31**	**32**	**33/73**	**34/74**	**35/75**	**36**	**37**

(0) hígido (1) lesão de cárie cavitada em esmalte (2) lesão de cárie cavitada em dentina (3) lesão de cárie cavitada em polpa (4) dente restaurado com cárie (5) dente restaurado sem cárie (6) dente perdido devido à cárie (7) dente não-erupcionado

Índice Estético Dental (IED)

Número de dentes ausentes na arcada superior e inferior	
Apinhamento anterior:	
(0-sem apinhamento, 1-um segmento apinhado, 2-dois segmentos apinhados)	
Espaçamento anterior:	
(0-sem espaçamento, 1-um segmento espaçado, 2-dois segmentos espaçados)	
Diastema em mm:	
Maior irregularidade anterior superior em mm:	
Maior irregularidade anterior inferior em mm:	
Sobressaliência superior anterior em mm:	
Sobressaliência inferior anterior em mm:	
Mordida aberta anterior vertical em mm:	
Relação molar ântero-posterior: (0-normal, 1-meia cúspide, 2-uma cúspide)	
Mordida cruzada posterior: (0-sem mordida cruzada, 1-com mordida cruzada)	

APÊNDICE G

VERSÃO BRASILEIRA DO CPQ $_{11-14}$ – ISF:16

QUESTIONÁRIO DE SAÚDE BUCAL

Oi. Obrigado (a) por nos ajudar em nosso estudo.

Este estudo está sendo realizado para compreender melhor os problemas infantis causados por seus dentes, boca, lábios e maxilares. Respondendo à estas questões, você nos ajudará a aprender mais sobre as experiências de pessoas jovens.

POR FAVOR, LEMBRE-SE:

- Não escreva seu nome no questionário;
- Isto não é uma prova e não existem respostas certas ou erradas;
- Responda sinceramente o que você puder. Não fale com ninguém sobre as perguntas enquanto você estiver respondendo-as. Suas respostas são sigilosas, ninguém irá vê-las;
- Leia cada questão cuidadosamente e pense em suas experiências nos últimos 3 meses quando você for respondê-las.
- Antes de você responder, pergunte a si mesmo: “Isto acontece comigo devido a problemas com meus dentes, lábios, boca ou maxilares?”
- Coloque um (X) no espaço da resposta que corresponde melhor à sua experiência.

Data: _____/_____/_____.

INICIALMENTE, ALGUMAS PERGUNTAS SOBRE VOCÊ

Sexo:

( ) Masculino ( ) Feminino

Data de nascimento: _____/_____/_____

Você diria que a saúde de seus dentes, lábios, maxilares e boca é:

( ) Excelente

( ) Muito boa

( ) Boa

( ) Regular

( ) Ruim

Até que ponto a condição dos seus dentes, lábios, maxilares e boca afetam sua vida em geral?

( ) De jeito nenhum

( ) Um pouco

( ) Moderadamente

( ) Bastante

( ) Muitíssimo

PERGUNTAS SOBRE PROBLEMAS BUCAIS

Nos últimos 3 meses, com que freqüência você teve?

1. Dor nos seus dentes, lábios, maxilares ou boca?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

2. Feridas na boca?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

3. Mau hálito?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

4. Restos de alimentos presos dentre ou entre os seus dentes?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

Para as perguntas seguintes...

Isso aconteceu por causa de seus dentes, lábios, maxilares e boca?

Nos últimos 3 meses, com que freqüência você:

5. Demorou mais que os outros para terminar sua refeição?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

Nos últimos 3 meses, por causa dos seus dentes, lábios, boca e maxilares, com que freqüência você teve:

6. Dificuldade para morder ou mastigar alimentos como maçãs, espiga de milho ou carne?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

7. Dificuldades para dizer algumas palavras?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

8. Dificuldades para beber ou comer alimentos quentes ou frios?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

PERGUNTAS SOBRE SENTIMENTOS E/OU SENSAÇÕES

Você já experimentou esse sentimento por causa de seus dentes, lábios, maxilares ou boca?

Se você se sentiu desta maneira por outro motivo, responda “nunca”.

9. Ficou irritado (a) ou frustrado (a)?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

10. Ficou tímido, constrangido ou com vergonha?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

11. Ficou chateado?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

12. Ficou preocupado com o que as outras pessoas pensam sobre seus dentes, lábios, boca ou maxilares?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

PERGUNTAS SOBRE SUAS ATIVIDADES EM SEU TEMPO LIVRE E NA COMPANHIA DE OUTRAS PESSOAS

Você já teve estas experiências por causa dos seus dentes, lábios, maxilares ou boca? Se for por outro motivo, responda “nunca”.

Nos últimos 3 meses, com que freqüência você:

13. Evitou sorrir ou dar risadas quando está com outras crianças?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

14. Discutiu com outras crianças ou pessoas de sua família?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

Nos últimos 3 meses, por causa de seus dentes, lábios, boca ou maxilares, com que freqüência:

15. Outras crianças lhe aborreceram ou lhe chamaram por apelidos?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

16. Outras crianças lhe fizeram perguntas sobre seus dentes, lábios, maxilares e boca?

( ) Nunca

( ) Uma ou duas vezes

( ) Algumas vezes

( ) Freqüentemente

( ) Todos os dias ou quase todos os dias

OBRIGADO POR NOS AJUDAR

ANEXOS

ANEXO A

PARECER SOBRE O PROJETO

UNISUL
UNIVERSIDADE DO SUL DE SANTA CATARINA

Prof. Dr. José Eustáquio da Costa
Coordenador do CPGO - UFMG

Em 28 de fevereiro de 2008.

Senhor Coordenador

Informo que, apos ler o Projeto de Mestrado da aluna Cristiane Bacin Bendo, minhas indicacoes e sugestoes foram devidamente incorporadas. Acredito que o referido projeto encontra-se em perfeitas condicoes de ser executado.

Aproveito a oportunidade para parabenizar a mestranda, assim como suas orientadoras e esse Programa de Pos-Graduacao, pelo excelente trabalho ate agora produzido.

Por fim, agradeco a confianca em mim depositada.

Atenciosamente.

Profª Dr. Jefferson Luiz Traebert
Programa de Pos-Graduacao em Ciencias da Saude

Campus Tubarão – Sede: Av. José Acácio Moreira, 787 – Cx. Postal 370 – 88704-900 Tubarão – SC – Fone: (48) 621-3000
Campus Araranguá: Rodovia Gov. Jorge Lacerda, 3201 – Jardim das Avenidas – 88900-000 Araranguá – SC – Fone: (48) 521-3000
Campus Grande Florianópolis: - Rua Prefeito Reinoldo Alves, 25 – Bairro Passa vinte – Fazenda Pedra Branca – 88132-000 Palhoça – SC – Fone: (48) 279-1000
- Rua João Pereira dos Santos, 303 – Bairro Ponte do Imaruim – 88130-475 Palhoça – SC – Fone: (48) 279-1500
Campus Imbituba: Rua Santana, 937 – Portal da Vila – Vila Nova – 88780-000 Imbituba – SC – Fone: (48) 255-0691
Campus Braço do Norte: Rodovia SC 482, Km 05 – 88750-000 Braço do Norte – SC – Fone: (48) 658-7249
Campus Içara: Rua Marcos Rovaris, 309 – Centro – 88820-000 Içara – SC – Fone: (48) 432-4595
Campus Norte da Ilha: Rodovia SC 401 – Km 19 – 88050-001 – Florianópolis – SC – Fone: (48) 261-0000
Home page: http://www.unisul.br

ANEXO B

PARECER DO COLEGIADO DE PÓS-GRADUAÇÃO SOBRE O PROJETO

UNIVERSIDADE FEDERAL DE MINAS GERAIS
Faculdade de Odontologia
Colegiado do Programa de Pós-Graduação em Odontologia
Av. Pres. Antônio Carlos, 6627 – Pampulha
Belo Horizonte – MG – 31.270-901 – Brasil
Tel. (31) 3499-2470 Fax: (31) 3499-2472

Ofício C-017/2008
CPGO

Em 1 de abril de 2008.

Prezada Orientadora,

Vimos por meio desta, informar a V. Sa. que o projeto de pesquisa intitulado "Repercusão do traumatismo dentário na qualidade de vida de escolares de 11-14 anos de Belo Horizonte-MG", apresentado pela Mestranda Cristiane Baccin Bendo, sob sua orientação, obteve parecer favorável e foi aprovado pelo CPGO, em reunião do dia 27/03/2008.

Colocamo-nos ao seu dispor para quaisquer informações adicionais.

Atenciosamente,

Prof. Dr. José Eustáquio da Costa
Coordenador do Colegiado do
Programa de Pós-Graduação em Odontologia

Sra. Profa.
Míriam Pimenta Parreira do Vale

ANEXO C

AUTORIZAÇÃO DA SECRETARIA MUNICIPAL DE EDUCAÇÃO

PREFEITURA MUNICIPAL
DE BELO HORIZONTE

SMED/EXTER/0360-2008.

Belo Horizonte, 19 de março de 2008.

Prezadas Senhoras,

Em atenção à solicitação de V. Sªs, autorizamos a realização de pesquisa nas escolas da Rede Municipal de Educação, intitulada "Aplicação da versão curta do Child Perceptions Questionnaire 11-14: estudo representativo com adolescentes com cárie dentária, maloclusão e traumatismo dentário do município de Belo Horizonte/MG", por meio de exame clínico dos adolescentes e questionário direcionado a eles e seus pais/responsáveis.

Entretanto, ressaltamos a necessidade de garantia dos seguintes itens:

1. fazer contatos prévios com as escolas, alunos e responsáveis que se mostrem interessados e disponíveis para colaborarem;
2. respeitar aqueles que optarem por não participar;
3. respeitar a confidencialidade dos dados, de modo a não expor nenhuma das escolas, profissionais, alunos e responsáveis.

Atenciosamente,

Luiz Henrique Borges de Oliveira
BM 39.239-5
Chefe de Gabinete da Secretaria
Municipal de Educação

HUGO VOCURCA TEIXEIRA
Secretário Municipal de Educação

Às Senhoras
Cristiane Baccin Bendo e
Daniela Goursand de Oliveira
Mestranda e Doutoranda, respectivamente,
em Odontopediatria pela Universidade Federal de Minas Gerais
CAPITAL

ANEXO D

AUTORIZAÇÃO DA SECRETARIA ESTADUAL DE EDUCAÇÃO

ESTADO DE MINAS GERAIS
GABINETE DO SECRETÁRIO DE ESTADO DE EDUCAÇÃO

CARTA GS 0565 /08

Belo Horizonte, 26 de março de 2008.

Prezadas Senhoras
Daniela Goursand de Oliveira e Cristiane Baccin Bendo

Em atenção a sua solicitação, ficam V.Sas. autorizadas a realizar, como parte das atividades de seu curso de pós-graduação, pesquisa junto a alunos da rede estadual de ensino e seus responsáveis, com o objetivo de mostrar a correlação entre o estado de saúde bucal dos adolescentes de 11-14 anos de Belo Horizonte e seu impacto na família.

Atenciosamente,

VANESSA GUIMARÃES PINTO
Secretária de Estado de Educação

SAG/Secretária/carta 02 – 2008 - slp
Avenida Amazonas, 5855 - Gameleira - Fax (031) 3379 8290 - Tel. (031) 3379 8300 CEP 30 510-000 - Belo Horizonte - MG

ANEXO E

AUTORIZAÇÃO DO COEP

UNIVERSIDADE FEDERAL DE MINAS GERAIS
COMITÊ DE ÉTICA EM PESQUISA - COEP

Parecer nº. ETIC 110/08

Interessado(a): Prof. Miriam Pimenta Parreira do Vale
Departamento de Odontopediatria e Ortodontia
Faculdade de Odontologia - UFMG

DECISÃO

O Comitê de Ética em Pesquisa da UFMG – COEP aprovou, no dia 16 de maio de 2008, após atendidas as solicitações de diligência, o projeto de pesquisa intitulado **"Influência da maloclusão, cárie e traumatismo dentário na qualidade de vida auto-relatada por adolescentes: estudo representativo do município de Belo Horizonte/MG"** bem como o Termo de Consentimento Livre e Esclarecido.

O relatório final ou parcial deverá ser encaminhado ao COEP um ano após o início do projeto.

Profa. Maria Teresa Marques Amaral
Coordenadora do COEP-UFMG

Av. Pres. Antonio Carlos, 6627 – Unidade Administrativa II - 2º andar – Sala 2005 – Cep:31270-901 – BH-MG
Telefax: (031) 3409-4592 - e-mail: coep@prpq.ufmg.br

ANEXO F

CLASSIFICAÇÃO DE TRAUMATISMO DENTÁRIO PARA EXAME CLÍNICO

Os critérios para avaliação do traumatismo dentário em dentes anteriores utilizados neste estudo estão descritos no QUADRO 1.

QUADRO 4: Códigos para a condição do elemento dentário em relação ao traumatismo dentário.

Codificação	**Condição/Estado**
1	Fratura de esmalte (fratura coronária não-complicada)
2	Fratura de esmalte-dentina (fratura coronária não complicada)
3	Fratura coronária complicada
4	Luxação extrusiva (deslocamento periférico, avulsão parcial)
5	Luxação lateral
6	Luxação intrusiva (deslocamento central)
7	Avulsão (exarticulação)
8	Alteração de cor da coroa devido ao traumatismo
9	Tratamento reabilitador devido ao traumatismo

Os critérios seguiram as normas preconizadas por Andreasen et al. (2007), com algumas modificações:

- **Fratura de esmalte (fratura coronária não-complicada):** Uma fratura com perda de substância dental restrita ao esmalte.
- **Fratura de esmalte-dentina (fratura coronária não complicada):** Uma fratura com perda de substância dental restrita ao esmalte e à dentina, mas sem envolver a polpa.
- **Fratura coronária complicada:** Uma fratura envolvendo esmalte e dentina, e expondo a polpa.
- **Luxação extrusiva (deslocamento periférico, avulsão parcial):** Deslocamento parcial do dente para fora do seu alvéolo.
- **Luxação lateral:** Deslocamento do dente em uma direção diferente da direção axial.
- **Luxação intrusiva (deslocamento central):** Deslocamento do dente para dentro do osso alveolar.
- **Avulsão (exarticulação):** Deslocamento completo do dente para fora do seu alvéolo.

Modificações na classificação de Andreasen:

- **Alteração de cor da coroa devido ao traumatismo:** Alteração de cor do dente pós-traumática pode variar de uma ausência de translucidez até uma descoloração rosa, azulada ou cinza.
- **Tratamento reabilitador devido ao traumatismo:** Restaurações dos dentes que sofreram traumatismo dentário com resina composta, próteses adesivas e próteses parciais na região anterior, com o objetivo de recuperação da anatomia e oclusão.

Estes itens não pertencem à classificação de Andreasen, entretanto foram inseridos na classificação de traumatismo deste estudo, uma vez que a alteração de cor da coroa pode ser um sinal de envolvimento pulpar causado pelo traumatismo dentário e o tratamento

reabilitador pós-traumatismo é um sinal de um dente ou região que sofreu traumatismo e foi recuperado proteticamente.

ANEXO G

CLASSIFICAÇÃO DE CÁRIE DENTÁRIA PARA EXAME CLÍNICO

Os critérios para avaliação de cárie dentária dos elementos dentários utilizados neste estudo estão descritos no QUADRO 2.

QUADRO 5: Códigos para a condição do elemento dentário em relação à cárie dentária.

Codificação	**Condição/Estado**
0	Hígido
1	Lesão de cárie cavitada em esmalte
2	Lesão de cárie cavitada em dentina
3	Lesão de cárie cavitada em polpa
4	Dente restaurado com cárie
5	Dente restaurado sem cárie
6	Dente perdido por cárie
7	Dente não erupcionado

Os critérios seguiram as normas preconizadas pela Organização Mundial de Saúde para cárie dentária (OMS, 1999).

- **Hígido:** dente que não apresente evidências clínicas de lesões de cárie tratadas ou não. Os estágios da cárie que precedem a cavitação são excluídos, pois não podem ser confiavelmente diagnosticados.
- **Lesão de cárie cavitada em esmalte:** dente que apresente uma lesão de cárie em fóssula ou fissura, ou em uma superfície dentária lisa, que tenha uma cavidade inconfundível em esmalte.
- **Lesão de cárie cavitada em dentina:** dente que apresente uma lesão de cárie em fóssula ou fissura, ou em uma superfície dentária lisa, que tenha uma cavidade inconfundível em dentina.
- **Lesão de cárie cavitada em polpa:** dente que apresente uma lesão de cárie em fóssula ou fissura, ou em uma superfície dentária lisa, que tenha uma cavidade inconfundível em polpa.
- **Dente restaurado com cárie:** dente que apresente uma ou mais restaurações permanentes e uma ou mais áreas que estão com lesões de cárie.
- **Dente restaurado sem cárie:** dente que apresente uma ou mais restaurações permanentes e que não exista cárie em nenhum ponto da coroa do dente. Um dente que tenha recebido uma coroa protética devido à lesão de cárie prévia, é classificado nesta categoria.
- **Dente perdido por cárie:** dentes que tenham sido extraídos devido a carie. Em alguns grupos etários, pode ser difícil a distinção entre dentes não erupcionados e dentes ausentes. O conhecimento básico dos padrões de erupção dentária, a aparência do rebordo alveolar na área do espaço dentário em questão e as condições de cárie dos

outros dentes na boca fornecem informações úteis para a realização de um diagnóstico diferencial entre os dentes não erupcionados e aqueles extraídos.

- **Dente não erupcionado:** espaço dentário com um dente permanente não erupcionado, mas sem um dente decíduo.

ANEXO H

CLASSIFICAÇÃO DE MALOCLUSÃO PARA EXAME CLÍNICO

Os critérios para avaliação das condições ortodônticas dos elementos dentários utilizados neste estudo seguiram as normas preconizadas pela Organização Mundial de Saúde (OMS, 1999), utilizando o Índice de Estética Dentária (IED):

- **Incisivos, caninos e pré-molares ausentes:** o número de incisivos, caninos e pré-molares permanentes ausentes nas arcadas superior e inferior deve ser contado. Isto deve ser feito contando-se os dentes atuais, iniciando-se no segundo pré-molar direito e movendo-se para a frente até o segundo pré-molar esquerdo. Deveria haver 10 dentes presentes em cada arcada. Caso existam menos de 10, a diferença é o número de dentes ausentes. Uma história clínica de todos os dentes anteriores ausentes deve ser obtida para determinarmos se foram realizadas exodontias por razões estéticas. Os dentes não devem ser considerados ausentes caso seus espaços estejam fechados. Caso um dente decíduo ainda esteja em posição, e seu sucessor ainda não tenha erupcionado, ou se um incisivo, canino ou pré-molar ausente tiver sido substituído por uma prótese fixa.
- **Apinhamento nos segmentos anteriores:** tanto os segmentos anteriores superiores quanto inferiores deveriam ser examinados para a detecção de apinhamento. O apinhamento no segmento anterior é a condição na qual o espaço disponível entre os caninos direito e esquerdo é insuficiente para acomodar todos os quatro incisivos em alinhamento normal. Os dentes podem estar girovertidos ou deslocados para fora do alinhamento da arcada. O apinhamento nos segmentos anteriores é registrado como se segue: 0 -sem apinhamento, 1 - um segmento com apinhamento e 2 -dois segmentos com apinhamento. Caso exista qualquer

dúvida, o índice mais baixo deve ser registrado. O apinhamento não deve ser registrado caso os quatro incisivos estivessem em um alinhamento adequado, mas um ou ambos os caninos estiverem deslocados.

• **Espaçamento nos segmentos anteriores:** tanto os segmentos anteriores superiores como inferiores devem ser examinados para detecção de espaçamento entre os dentes. Quando mensurados no segmento anterior, o espaçamento é a condição na qual a quantidade de espaço disponível entre os caninos direito e esquerdo excede aquela necessária para acomodar todos os quatro incisivos em alinhamento normal. Caso um ou mais incisivos tenham suas faces proximais sem quaisquer contatos interdentários, o segmento é considerado como tendo espaçamento. O espaço oriundo de um dente decíduo recentemente esfoliado não deve ser registrado caso pareça que o dente sucessor permanente irá erupcionar logo. O espaçamento nos segmentos anteriores é registrado como se segue: 0 -sem espaçamento, 1 -um segmento com espaçamento e 2 -dois segmentos com espaçamento. Caso exista qualquer dúvida, o valor mais inferior deveria ser considerado.

• **Diastema:** um diastema mediano é definido como um espaço, em milímetros, entre os dois incisivos centrais superiores permanentes na posição normal de pontos de contato. Esta mensuração pode ser feita em qualquer nível entre as superfícies mesiais dos incisivos centrais e deve ser registrada redondando-se os milímetros.

• **Maiores irregularidades superiores anteriores:** as irregularidades podem ser, ou rotações ou deslocamentos em relação ao alinhamento normal. Os quatro incisivos na arcada superior (maxilar) devem ser examinados a fim de localizarmos a maior irregularidade. O local da maior irregularidade entre os dentes adjacentes é mensurado utilizando-se as sondas IPC. A ponta da sonda é colocada em contato com a superfície vestibular do dente incisivo mais lingualmente deslocado ou girovertido enquanto a sonda é mantida paralela ao plano oclusal e em ângulo reto com a linha normal da arcada. A irregularidade, em milímetros, pode então ser

estimada a partir das marcações milimetradas da sonda. O valor deveria ser registrado arredondando-se os milímetros. As irregularidades podem ocorrer com ou sem apinhamento. Caso exista espaço suficiente para todos os quatro incisivos em alinhamento normal, mas alguns deles estejam girovertidos ou deslocados, a maior irregularidade é registrada como descrito acima. O segmento não deve ser considerado apinhado. As irregularidades na superfície distal dos incisivos laterais também devem ser levados em consideração, caso estivessem presentes.

• **Maior irregularidade inferior anterior:** a mensuração é a mesma que foi realizada na arcada superior, exceto que ela é feita na arcada inferior (mandibular). A maior irregularidade entre os dentes adjacentes na arcada mandibular é localizada e mensurada como descrita acima.

• **Sobressaliência maxilar anterior:** a mensuração do relacionamento horizontal dos incisivos é feita com os dentes em oclusão cêntrica. A distância a partir do bordo incisal vestibular do incisivo superior mais proeminente até a superfície vestibular do incisivo inferior correspondente é mensurada com a sonda IPC paralela ao plano oclusal (Figura 2). A maior sobressaliência do maxilar é registrada arredondando-se os milímetros. A sobressaliência maxilar não deveria ser registrada caso todos os incisivos superiores estivessem ausentes ou em mordida cruzada lingual. Caso os incisivos ocluam em topo-a-topo, o valor será zero.

• **Sobressaliência mandibular anterior:** a sobressaliência mandibular é registrada quando qualquer um dos incisivos inferiores estiver protruído anteriormente ou vestibularmente em relação ao incisivo superior antagonista, isto é, estiver em mordida cruzada. A maior sobressaliência mandibular (protrusão mandibular), ou mordida cruzada, é registrada arredondando-se os milímetros. A mensuração é a mesma que aquela realizada para a sobressaliência maxilar anterior. A sobressaliência mandibular não deve ser registrada caso o

incisivo inferior esteja girovertido de modo que uma porção do bordo incisal esteja em mordida cruzada (isto é, esteja vestibular ao incisivo superior), mas uma outra porção do bordo incisal não esteja.

• **Mordida aberta anterior vertical:** caso exista uma falta de sobreposição vertical entre quaisquer dos incisivos antagonistas (mordida aberta), a quantidade de mordida aberta é estimada utilizando-se uma sonda IPC. A maior mordida aberta é registrada arredondando-se os milímetros.

• **Relação molar ântero-posterior:** esta avaliação é mais freqüentemente baseada no relacionamento dos primeiros molares superiores e inferiores permanentes. Caso esta avaliação não possa ser baseada nos primeiros molares, pois um ou ambos estão ausentes, não totalmente erupcionados, ou com a anatomia alterada devido a cáries extensas ou a restaurações, os relacionamentos dos caninos e pré-molares permanentes serão avaliados. Os lados direito e esquerdo são avaliados com os dentes em oclusão e somente registraremos o maior desvio da relação molar normal. Os seguintes códigos são utilizados: 0 –normal, 1 - meia cúspide (o primeiro molar inferior está meia cúspide mesial ou distal a seu relacionamento normal) e 2 - uma cúspide (o primeiro molar inferior está uma cúspide ou mais mesial ou distal a seu relacionamento normal).

A forma de medição das características oclusais como preconizadas pela OMS é descrita na figura abaixo:

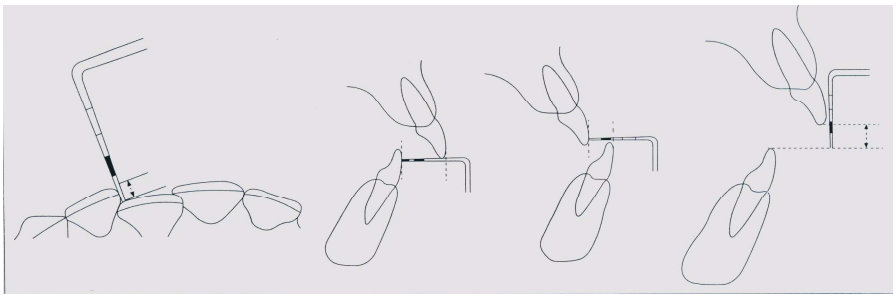

FIGURA 2: Mensuração das irregularidades no segmento anterior, da sobressaliência anterior superior e inferior, e da mordida aberta anterior vertical, utilizando-se uma sonda milimetrada.

Análise dos dados coletados sobre as anomalias dentofaciais:

A coleta de dados de acordo com os critérios do IED permite que seja feita uma análise de cada um dos componentes separados do índice, ou agrupados, sob as anomalias da dentição, espaço e oclusão. É também possível calcularmos os valores padrão do IED utilizando a equação de regressão do IED, na qual os componentes mensurados do IED são multiplicados por seus coeficientes de regressão, sendo seus produtos adicionados à constante da equação de regressão. A soma resultante é o valor IED padrão.

A equação de regressão utilizada para o cálculo dos valores de IED padrão é a seguinte:

(dentes visíveis ausentes x 6) + (apinhamento) + (espaçamento) + (diastema x 3) + (maior irregularidade maxilar anterior) + (maior irregularidade mandibular anterior) + (sobressaliência maxilar anterior x 2) + (sobressaliência mandibular anterior x 4) + (mordida aberta anterior x 4) + (relação molar ântero-posterior x 3) + 13.

A necessidade de tratamento, bem como a severidade da maloclusão na população são classificadas baseando-se nos resultados do IED como demonstrado no QUADRO 6, que se segue:

QUADRO 6: Definição da gravidade da maloclusão segundo o valor do IED.

Gravidade da maloclusão	**Indicação de tratamento**	**Valor do IED**
Sem anormalidade ou maloclusões leves	Sem necessidade, ou necessidade leve	< 25
Maloclusão definida	Eletivo	26-30
Maloclusão severa	Altamente desejável	31-35
Maloclusão muito severa ou incapacitante	Fundamental	≥ 36

ANEXO I

NORMAS DE PUBLICAÇÃO DO PERIÓDICO JOURNAL OF PUBLIC HEALTH DENTISTRY

Instructions for Contributors

The *Journal of Public Health Dentistry* (JPHD) is devoted to the advancement of public health dentistry through the publication of related research, practice, and policy developments. We publish, after peer review and/or editorial consideration, original research articles, brief reports, systematic reviews, articles addressing new research methods, community action reports, special issues, guest editorials and commentaries, letters to the editor, and book reviews.

Regular-length scientific articles should be between 2,500 and 3,500 words in length, with no more than six tables or figures and fewer than 30 references (estimated to be a total of 21 or fewer double-space pages).

Systematic reviews are similar in length but with different expectations regarding references and tables, based on the results of the review. Authors are strongly encouraged to discuss systematic reviews with the editor prior to initiating the review to ensure that they are carried out in accordance with best practices (e.g., QUORUM guidelines) and their length can be accommodated by the Journal.

Brief Communications are 1,000-1,500 words, no more than two tables or figures, an abstract of 150 words or less, and 10 or fewer references. Brief Communications, commentaries, and systematic reviews undergo peer review similar to regular scientific manuscripts. Community Action Reports, highlighting practice-based programs or policy initiatives,

commentaries, and guest editorials of widespread interest to the dental public health community are 1,000-1,500 words.

Special Issues and Supplements to regular issues may be published, the full cost being paid by the authors or sponsoring agency. Contact the editor for further information.

Preparation of Manuscripts

Submissions must be in English and conform to the Uniform Requirements for Manuscripts Submitted to Biomedical Journals. The complete document appears in Ann Intern Med 1997;126(1):36-47; or online at http://www.acponline.org/journals/resource/unifreqr.htm.

Authors for whom English is a second language may choose to have their manuscript professionally edited before submission to improve the English. A list of independent suppliers of editing services can be found at www.blackwellpublishing.com/bauthor/english_language.asp. All services are paid for and arranged by the author, and use of one of these services does not guarantee acceptance or preference for publication.

Submission of Manuscripts

Manuscripts should be submitted through the ScholarOne Manuscripts site at: http://mc.manuscriptcentral.com/jphd. Authors will be directed through the submission process at the Website.

Use double-spacing throughout, including title pages, abstract, text, acknowledgments, references. Begin each of the following sections on separate pages: title page, abstract and key words, text, acknowledgments, references, and individual tables and figures. Number pages consecutively in the upper right-hand corner of each page, beginning with the title page. Our

reference book is Merriam-Webster Collegiate Dictionary, 11th edition (Springfield, MA: Merriam-Webster, 2003).

Format and Style of Scientific Articles

Title Page. To facilitate the masked review process, include a title page giving only the title of the manuscript and not identifying authorship. Authors' names should not appear on any manuscript page.

Abstract. The second page should carry an abstract of no more than 250 words (150 for Brief Communications) consisting of four paragraphs, labeled ***Objectives, Methods, Results, and Conclusions.*** These sections should describe the problem being addressed in the study, how the study was performed, the salient results (without statistical tests), and what the authors conclude from the results.

Key Words. Below the abstract, provide, and identify as such, three to 10 key words or short phrases that will assist indexers in cross-indexing your article. At least three terms from the medical subject headings (MeSH) list of Index Medicus should be used. The use of MeSH headings greatly facilitates the identification of your article by online search engines and improves the likelihood that interested readers can retrieve your article. Assistance in locating MeSH headings is provided at: http://www.nlm.nih.gov/mesh/MBrowser.html

Text. Divide text of scientific articles into sections labeled Introduction, Methods, Results, and Discussion. For other types of articles, consult recent issues of the JPHD for further guidance. All acronyms must be spelled out when they first appear in the text. ***Introduction.*** Clearly state the purpose of the article and summarize the rationale for the study. Give only strictly pertinent references, and do not review the subject extensively.

Methods. Describe your methods clearly and in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods; provide references and brief descriptions for methods that have been published but are not well known; describe new or substantially modified methods, give reasons for using them, and evaluate their limitations. When reporting investigations involving human subjects, indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation.

Results. Present results in logical sequence in the text, tables, and illustrations. Do not repeat in the text all the data in the tables or figures; rather emphasize or summarize only important observations.

Discussion. Emphasize the new and important aspects of the study and conclusions that follow from them, particularly as these relate to public health. Do not repeat in detail data given in the Results section. Include in the Discussion the implications of the findings and their limitations, and relate the observations to other relevant studies. Avoid unqualified statements and conclusions not well supported by your data. State new hypotheses when warranted, but clearly label them as such. Include recommendations when appropriate.

Acknowledgments. Acknowledge only persons who have made substantive contributions to the study. Obtain written permission from persons acknowledged by name, because readers may infer their endorsement of the data and conclusions. A description of sources of funding, financial disclosure, and the role of sponsors must be included in this section.

Conflicts of Interest. Include this section as part of Acknowledgements, but only if the authors have personal financial interests related to the subject matters discussed in the manuscript.

Footnotes and Appendices. Except in tables and figures, footnotes should not be used. Appendices may be placed on the JPHD website by Blackwell after consultation with the editor.

References. References for research manuscripts are in general limited to no more than 30; for brief communications please limit to ten or fewer. The author(s) must verify cited references against the original documents. JPHD uses the "Vancouver" style and information can be found at the Uniform Requirements page and well as some examples at (http://www.nlm.nih.gov/bsd/uniform_requirements.html).

Identify references in text, tables, and legends by Arabic numerals in parentheses; number consecutively in the order in which they are first mentioned in the text. Avoid using abstracts as references. Abstracts not published in the periodical literature (e.g., printed only in an annual meeting program) may be cited only as written communications in parentheses in the text. "Unpublished observations" and "personal communications" may not be used as references, although references to written, not oral, communications may be inserted (in parentheses) in the text. For papers accepted but not yet published; designate the journal and add "in press." Information from manuscripts submitted but not yet accepted should be cited in the text as "unpublished observations" (in parentheses). Acceptable forms of references are based on an ANSI standard style adapted by the National Library of Medicine and authors are encouraged to refer to the examples of reference styles provided in the Uniform Requirements. Systematic reviews do not have a specific limitation on number of references.

Tables. Type each table on a separate page. Number tables with an Arabic numeral consecutively and supply a brief title for each. Explain in footnotes all nonstandard abbreviations used in each table. (Please refer to the JPHD, Volume 60, No. 4, page 347-8 to confirm these characters if you plan to use these symbols).

Illustrations and Legends. Submit the required number of complete sets of figures. Figures should be of a high standard and if necessary, professionally drawn. Label each figure indicating the number of the figure. Cite each figure in the text in consecutive order. Type or print out legends for illustrations using double spacing, starting on a separate page, with Arabic numerals corresponding to the illustrations. When symbols, arrows, numbers, or letters are used to identify parts of the illustrations, identify and explain each one clearly in the legend. Explain the internal scale and identify the method of staining in photomicrographs. The Journal cannot reproduce color images or figures.

Publication

Prior and Duplicate Publication. Manuscripts are not accepted for consideration if they are based on work that has been or will be published or submitted elsewhere before appearing in the JPHD. Exceptions are consistent with the policy on duplicate or redundant publication developed by the International Committee of Medical Journal Editors Ann Intern Med 1997;126(1):36-47; or online at http://www.acponline.org/journals/resource/unifreqr.htm. Copies of any closely related manuscripts should be submitted to the editor along with the manuscript that is to be considered by the JPHD.

Authorship

All persons designated as authors should qualify for authorship. Each author should have participated sufficiently in the work to take public responsibility for the content. Authorship credit should be based only on substantial contributions to: (1) conception and design, or analysis and interpretation of the data; and to (2) drafting the article or revising it critically for important intellectual content; and on (3) final approval of the version to be published. Conditions 1, 2, and 3 must all be met. The editor may ask for verification of these conditions for each author.

Copyright Issues

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Submission of Manuscripts and Correspondence

Manuscripts should be submitted through the ScholarOne Manuscripts site at: http://mc.manuscriptcentral.com/jphd. Follow the guidelines for submitting at the site. Questions on manuscript submission, cover letters, and copyright assignments should be directed to the journal administrator at: Dustin@Assn-Srvs.com. Questions regarding the appropriateness of articles for the journal or questions about the review and acceptance process should be directed to the editor at: rjw1@dental.pitt.edu.

A covering letter, signed by all authors, should be mailed or FAXED (217-529-9120) to be received at the same time as the manuscript. A scanned copy of a signed letter, sent electronically as a PDF, is also acceptable. It should include (1) information on prior or duplicate publication or submission elsewhere of any part of the work as defined in the Uniform Requirements; (2) a statement of financial or other relationships that might lead to a conflict of interest; (3) a statement that the manuscript has been read and approved by all the authors, that the requirements for authorship have been met, and that each author believes that the manuscript represents honest work; and (4) the name, address, and telephone number of the corresponding author who is responsible for communicating with the other authors about revisions and final approval of the proofs. A scanned copy of the signed letter may be sent electronically or mailed to the journal administrator at above address.

Manuscript Submitted Previously to Another Journal

If a manuscript recently underwent peer review by another journal, authors should disclose this information. They should include either the previous critique or a cover letter with the new submission that explains how the authors have modified the manuscript to address the previous (outside) critique.

Review and Action

Manuscripts are acknowledged upon receipt, reviewed by the editorial staff, and if they meet minimal publication criteria, are sent to at least two outside referees for a blind review. Accepted manuscripts are examined and editorial revisions likely will be made to add clarity and to conform to the JPHD style. Authors will be sent proofs prior to printing. Upon acceptance, papers become the permanent property of the JPHD and may not be reproduced by any means, in whole or in part, without the written consent of the editor.

Peer Reviewer Nominations

The editor selects the reviewers for each submission and encourages recommendations for reviewers from submitting authors. Thus, during the submission process, authors may nominate 2 to 4 external referees to review their manuscript (please provide at least their name and email address). The best reviewers are authors of publications on which your research builds and which you cite. Peer reviewers must have a publishing track in the area the manuscript deals with.

When suggesting peer reviewers, conflicts of interests should be avoided, that is, suggested referees should not: be from the same department or (ideally) the same university; have been a research supervisor or graduate student of one of the authors within the past five years; have collaborated with one of the authors within the past five years or have plans to collaborate in

the immediate future; be employees of non-academic organizations with which one of the authors has collaborated within the past five years; or be in any other kind of potential conflict of interest situation (eg, personal, financial). We ask applicants not to contact suggested referees in advance. The editor reserves the right to send the manuscript to other referees.

Reporting Guidelines for Specific Study Designs

Authors are encouraged to consult best practice guidelines relevant for their research design. Research reports frequently omit important information. Randomized Controlled Clinical Trials (RCTs) are highly encouraged and should be reported in accordance with the CONSORT statement (http://www.consort-statement.org/). A diagram illustrating the flow of participants through the trial is required (http://www.consort-statement.org/index.aspx?o=1077). Please complete and include the CONSORT checklist with the submission.

In accordance with recommendations from the ICMJE (Uniform Requirements) it is strongly recommended that RCTs be registered in a WHO accredited trial registry (this is mandatory for industry sponsored trials). Please mention the International Standard Randomized Controlled Trial Number (ISRCTN) (or a comparable trial identifier) at the end of the abstract (in brackets), as well as when you first mention the acronym of a RCT in the manuscript.

Reporting guidelines have also been developed for a number of other study designs and as JPHD encourages reviewers to use these guidelines during the peer review process, authors are well advised to use these checklists as well during research planning and manuscript preparation. Examples include: for observational epidemiology studies the STROBE guidelines (http://www.strobe-statement.org/) and for meta-analysis and systematic reviews the QUORUM statement, (Lancet. 1999 Nov 27;354(9193):1896-900).

Page Charges

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The articles are available as full text HTML or PDF and can be cited as references by using their Digital Object Identifier (DOI) numbers. For more information on DOIs, please see http://www.doi.org/faq.html.

To view all the articles currently available, please visit the journal homepage at http://www3.interscience.wiley.com/journal/120120846/issue. Upon print publication, the article will be removed from the Early View area and will appear instead in the relevant online issue, complete with page numbers and volume/issue details. No other changes will be made.

The implementation of Early View for JPHD represents our commitment to publishing articles as soon as possible for readers, reducing time to publication considerably without sacrificing quality or completeness.

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ANEXO J

NORMAS DE PUBLICAÇÃO DO PERIÓDICO DENTAL TRAUMATOLOGY

MANUSCRIPT FORMAT AND STRUCTURE

1 Format

Language: The language of publication is English. Authors for whom English is a second language must have their manuscript professionally edited by an English speaking person before submission to make sure the English is of high quality. It is preferred that manuscript is professionally edited. A list of independent suppliers of editing services can be found at www.blackwellpublishing.com/bauthor/english_language.asp. All services are paid for and arranged by the author, and use of one of these services does not guarantee acceptance or preference for publication.

Abbreviations, Symbols and Nomenclature: Abbreviations should be kept to a minimum, particularly those that are not standard. Non-standard abbreviations must be used three or more times and written out completely in the text when first used. Consult the following sources for additional abbreviations: 1) CBE Style Manual Committee. Scientific style and format: the CBE manual for authors, editors, and publishers. 6th ed. Cambridge: Cambridge University Press; 1994; and 2) O'Connor M, Woodford FP. Writing scientific papers in English: an ELSE-Ciba Foundation guide for authors. Amsterdam: Elsevier-Excerpta Medica; 1975.

Font: When preparing your file, please use only standard fonts such as Times, Times New Roman or Arial for text, and Symbol font for Greek letters, to avoid inadvertent character

substitutions. In particular, please do not use Japanese or other Asian fonts. Do not use automated or manual hyphenation. Use double spacing when writing.

2 Structure

All papers submitted to *Dental Traumatology* should include: Title Page, Abstract, Main text, References and Tables, Figures, Figure Legends, Conflict of Interest Statement and Acknowledgements where appropriate. Title page, Conflict of Interest Statement and any Acknowledgements must be submitted as separate files and uploaded under the file designation Title Page to allow blinded review. Manuscripts must conform to the journal style. Manuscripts not complying with the journal style will be returned to the author(s).

Title Page: should be uploaded as a separate document in the submission process under the file designation "Title Page" to allow blinded review. It should include: Full title of the manuscript, author(s)' full names and institutional affiliations including city, country, and the name and address of the corresponding author. If the author does not want the e-mail address to be published this must be clearly indicated. The title page should also include a running title of no more than 60 characters and 3-6 keywords.

Abstract is limited to 300 words in length and should contain no abbreviations. The abstract should be included in the manuscript document uploaded for review as well as inserted separately where specified in the submission process. The abstract should convey the essential purpose and message of the paper in an abbreviated form. For original articles the abstract should be structured with the following headings: Background/Aim, Material and Methods, Results and Conclusions. For other article types, please choose headings appropriate for the article.

Main Text of Original Articles should be divided into Introduction, Material and Methods, Results and Discussion. During the editorial process reviewers and editors frequently need to refer to specific portions of the manuscript, which is difficult unless the pages are numbered. Authors should number all of the pages consecutively.

Introduction should be focused, outlining the historical or logical origins of the study and not summarize the results; exhaustive literature reviews are inappropriate. Give only strict and pertinent references and do not include data or conclusions from the work being reported. The introduction should close with the explicit statement of the specific aims of the investigation or hypothesis tested.

Materials and Methods must contain sufficient detail such that, in combination with the references cited, all clinical trials and experiments reported can be fully reproduced. As a condition of publication, authors are required to make materials and methods used freely available to academic researchers for their own use. Describe your selection of observational or experimental participants clearly. Identify the method, apparatus and procedures in sufficient detail. Give references to established methods, including statistical methods, describe new or modify methods. Identify precisely all drugs used including generic names and route of administration.

(i) Clinical trials should be reported using the CONSORT guidelines available at www.consort-statement.org. A CONSORT checklist should also be included in the submission material. All manuscripts reporting results from a clinical trial must indicate that the trial was fully registered at a readily accessible website, e.g., www.clinicaltrials.gov.

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Results should present the observations with minimal reference to earlier literature or to possible interpretations. Present your results in logical sequence in the text, tables and illustrations giving the main or most important findings first. Do not duplicate data in graphs and tables.

Discussion may usually start with a brief summary of the major findings, but repetition of parts of the Introduction or of the Results sections should be avoided. The section should end with a brief conclusion and a comment on the potential clinical relevance of the findings. Link the conclusions to the aim of the study. Statements and interpretation of the data should be appropriately supported by original references.

Main Text of Review Articles comprises an introduction and a running text structured in a suitable way according to the subject treated. A final section with conclusions may be added.

Acknowledgements: Under acknowledgements please specify contributors to the article other than the authors accredited. Acknowledgements should be brief and should not include thanks to anonymous referees and editors.

Conflict of Interest Statement: All sources of institutional, private and corporate financial support for the work within the manuscript must be fully acknowledged, and any potential grant holders should be listed. The Conflict of Interest Statement should be included as a separate document uploaded under the file designation "Title Page" to allow blinded review.

3 References

As the Journal follows the Vancouver system for biomedical manuscripts, the author is referred to the publication of the International Committee of Medical Journal Editors: Uniform requirements for manuscripts submitted to biomedical journals. Ann Int Med 1997;126:36-47.

Number references consecutively in the order in which they are first mentioned in the text. Identify references in texts, tables, and legends by Arabic numerals (in parentheses). Use the style of the examples below, which are based on the format used by the US National Library of Medicine in Index Medicus. For abbreviations of journals, consult the "List of the Journals Indexed" printed annually in the January issue of Index Medicus.

We recommend the use of a tool such as EndNote or Reference Manager for reference management and formatting. EndNote reference styles can be searched for here: www.endnote.com/support/enstyles.asp. Reference Manager reference styles can be searched for here: www.refman.com/support/rmstyles.asp

Try to avoid using abstracts of articles as references. "Unpublished observations", "personal communications", and "unaccepted papers" may not be used as references, although references to written, not verbal, communications may be inserted (in parentheses) in the text. Examples of correct forms of references are given below.

Journals:

Standard journal article - list all authors when six or fewer; when seven or more, list first six authors and add et al.

Examples:

Andreasen JO, Hjørting-Hansen E. Replantation of teeth. I. Radiographic and clinical study of 100 human teeth. Acta Odontol Scand 1966;24:263-86.

Corporate author:

American Association of Endodontists. Recommended guidelines for treatment of the avulsed tooth. J Endod 1983;9:571.

Books and other monographs:

Examples:

Personal author(s):

Grossman LI. Endodontic practice. 10th ed. Philadelphia: Lea & Febiger; 1981. p. 176-9.
Chapter in book:

Sanders B, Brady FA, Johnson R. Injuries. In: Sanders B, editor. Pediatric oral and maxillofacial surgery. St. Louis: Mosby; 1979. p. 330-400.

4 Tables, Figures and Figure Legends

Tables should only be used to clarify important points. Tables must, as far as possible, be self-explanatory. The tables should be numbered consecutively with Arabic numerals.

Figures: All graphs, drawings and photographs are considered figures and should be numbered in sequence with Arabic numerals and abbreviated Fig(s). Each figure should have

a legend and all legends should be numbered correspondingly and included at the end of the manuscript. Text on the figures should be in capitals. Figures should be planned to fit the proportions of the printed page.

All figures and artwork must be provided in electronic format. Please save vector graphics (e.g. line artwork) in Encapsulated Postscript Format (EPS) and bitmap files (e.g. half-tones) or clinical or in vitro pictures in Tagged Image Format (TIFF). JPEG files are also acceptable. Detailed information on our digital illustration standards can be found at www.blackwellpublishing.com/bauthor/illustration.asp

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5 Supporting Material

Publication in electronic formats has created opportunities for adding details or whole sections in the electronic version only. Authors need to work closely with the editors in developing or using such new publication formats.

Supporting Material, such as data sets or additional figures or tables, that will not be published in the print edition of the journal, but which will be viewable via the online edition, can be submitted.

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RELAÇÃO DE TRABALHOS CIENTÍFICOS REALIZADOS DURANTE O PERÍODO DO CURSO DE MESTRADO

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Dent Traumatol 2009;25:420-5.
DOI: 10.1111/j.1600-9657.2009.00803.x

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