ELIANE DE PAULA REIS BARRÊTTO

Estudo de prevalência, gravidade e impacto da dor de dente na vida diária de crianças de 8 e 9 anos

BELO HORIZONTE
2010

Eliane de Paula Reis Barrêtto

Estudo de prevalência, gravidade e impacto da dor de dente na vida diária de crianças de 8 e 9 anos

Tese apresentada ao Colegiado do Programa de Pós-graduação da Faculdade de Odontologia da Universidade Federal de Minas Gerais, como requisito parcial para obtenção do grau de Doutora em Odontologia - área de concentração em Odontopediatria.

Orientadora: Profa. Dra.Isabela Almeida Pordeus
Co-orientadora: Profa. Dra. Efigênia Ferreira e Ferreira

Faculdade de Odontologia – UFMG
Belo Horizonte
2010

DEDICATÓRIA, AGRADECIMENTOS, REFLEXÕES...

Dedico esta conquista à minha filha, Letícia, que nasceu junto com o meu Doutorado; e aos meus pais, meus grandes exemplos, amigos e parceiros de todas as horas. Amo muito vocês!!

Agradeço a todos que contribuíram para a conclusão deste estudo, principalmente:

- ♥ à Deus, sempre e acima de tudo;
- ♥ ao meu marido, por todo amor e ao meu irmão pelo estímulo constante
- ♥ às minhas orientadoras, Isabela Almeida Pordeus e Efigênia Ferreira e Ferreira, pela confiança, carinho, amizade e ensinamentos profissionais e pessoais... Vocês me possibilitaram concretizar mais um sonho!
- ♥ às crianças participantes e suas famílias, que mesmo em momentos de dor dedicaram a mim sua atenção e seu tempo;
- ♥ às cidades de Curvelo e Montes Claros e às instituições escolares participantes, pela acolhida;
- ♥ à colega Tânia Rocha Caldeira, pela ajuda incondicional na coleta de dados;
- ♥ à Fabíola Cardoso Santos, grande amiga e parceira da estatística;
- ♥ ao prof. João Paulo Amaral Haddad, pela contribuição decisiva à análise, e pelo incentivo e amizade;
- ♥ às profas. Míriam Pimenta Parreira do Vale e Maria Letícia Ramos-Jorge, que tanto contribuíram com idéias e sugestões engrandecedoras;
- ♥ ao prof. Saul Martins Paiva pela orientação e condução dos artigos científicos;
- ♥ aos colegas de Doutorado, por todas as horas compartilhadas;
- ♥ à FAPEMIG pelo apoio financeiro ao projeto.

"É graça divina começar bem. Graça maior, persistir na caminhada. E graça das graças nunca disistir."
(D. Helder Câmara)

"O homem se torna, muitas vezes, o que ele próprio acredita que é. Se eu insisto em repetir para mim mesmo que não sou capaz de realizar alguma coisa, é possível que realmente seja incapaz de fazê-la. Ao contrário, se tenho a convicção de que posso fazê-la, certamente adquirirei capacidade de realizá-la, mesmo que não a tenha no começo!"
(Ghandhi)

RESUMO

Estudo de prevalência, gravidade e impacto da dor de dente na vida diária de crianças de 8 e 9 anos

RESUMO

O objetivo do presente estudo foi avaliar a prevalência, a gravidade e o impacto da dor de dente e seus fatores explicativos, em escolares de 3 cidades brasileiras. O estudo transversal foi conduzido em Belo Horizonte, Montes Claros e Curvelo – Minas Gerais, Brasil; 1740 crianças entre 8 e 9 anos de idade foram aleatoriamente sorteadas, entrevistadas e clinicamente examinadas nas escolas, por uma só dentista, após autorização dos responsáveis. Os dados clínicos foram avaliados usando os critérios da OMS e a dor de dente, suas características e fatores associados foram levantados usando dois instrumentos de medida (Child-DPQ e VASOF). As propriedades psicométricas destes instrumentos, tais como validade e confiabilidade, foram testadas com 174 crianças de 8 e 9 anos. Em relação ao Child-DPQ, a confiabilidade interna foi confirmada pelo coeficiente alfa de Cronbach de 0,93; a confiabilidade teste-reteste revelou excelente reprodutibilidade (CCI=0,99); a validade de constructo foi satisfatória, demonstrando correlações altamente significativas entre o indicador de bem-estar geral e os escores da escala total e das subescalas. Os escores do Child-DPQ foram capazes de discriminar entre diferentes condições bucais (cárie não-tratada e livres de cárie/cárie tratada). Quanto à VASOF, a confiabilidade teste-reteste revelou reprodutibilidade satisfatória (Kappa ponderado = 0,92); a validade de constructo também foi adequada ($p<0,001$), demonstrando sua capacidade de discriminar diferentes grupos de crianças; para a validade de critério, a VASOF foi comparada a uma outra escala da literatura (Wong-Baker Faces Scale), e a correlação encontrada foi estatisticamente significativa ($r=0,995/p<0,001$). A concordância entre pesquisadora e criança em relação a gênero e raça foi também verificada pelo teste Kappa e foi satisfatória. Após confirmar as adequadas propriedades psicométricas dos instrumentos de coleta de dados, o estudo principal foi conduzido. Na análise dos dados, a regressão logística

multinomial foi usada para avaliar os fatores associados aos resultados de dor de dente. As prevalências de dor de dente alguma vez na vida e no último mês foram 53,4% (n=929) e 24,4% (n=424), respectivamente. Os principais fatores associados à prevalência, gravidade e impacto da dor foram freqüência/razão para ir ao dentista e necessidade de tratamento odontológico. Crianças que foram ao dentista por problemas tiveram 5,03 vezes mais chance de relatar dor de dente do que aquelas que foram por prevenção; e aquelas com necessidade de tratamento odontológico em três ou mais dentes, tiveram 4,59 vezes mais chance de relatar dor recente do que aquelas sem necessidade de tratamento. Finalmente, prevalência, gravidade e impacto da dor de dente nesta população foram significativos e a dor foi mais expressiva em crianças com maior necessidade de tratamento odontológico e que não vão ao dentista regularmente para prevenção.

Descritores: criança, dor de dente, prevalência, impacto, fatores determinantes

Study of prevalence, severity and impact of the toothache on 8-and-9 years-old children's daily life

ABSTRACT

The aim of the present study was to access the prevalence, severity, impact of dental pain and explanatory factors in schoolchildren of 3 Brazilian cities. The study was a cross-sectional survey conducted in Belo Horizonte, Montes Claros and Curvelo – Minas Gerais, Brazil; 1740 children with 8-and-9-year-old were randomly selected from schools, interviewed and clinically examined by a single dentist, after formal authorisation from their parents. Clinical data were assessed using WHO criteria and dental pain, its characteristics and associated factors were recorded using two measures of pain (Child-DPQ and VASOF). The psychometric properties of this instruments, such as validity and reliability, were tested on 174 children from 8 to 9 years old. In relation to Child-DPQ, internal reliability was confirmed by a Cronbach´s alpha coefficient of 0.93. The test-retest reliability revealed excellent reproducibility (ICC = 0.99). The construct validity was satisfactory, demonstrating high significant correlations between global well-being indicator and total scale and subscales scores. Child-DPQ score was able to discriminate between different oral conditions (groups: untreated caries and caries free/treated caries). In regard to VASOF, test-retest reliability revealed satisfactory reproducibility (Weighted Kappa=0.92). Construct validity was satisfactory ($p<0.001$), showing that VASOF score was able to discriminate different groups of children. In reference to criterion validity, VASOF was compared to a gold standard test (the Wong-Baker Faces Scale), being the correlation found statistically significant ($r=0.995/p<0.001$). The agreement between researcher and children, relating to gender and race, was also verified by the Kappa test and was satisfactory. After to confirm the appropriate psychometric properties of the data collection instruments, the main study was realized. In the data analysis, multinomial logistic regression was used to assess associated factors to dental pain outcomes. The lifetime and the last month prevalence's of toothache were 53.4% (n=929) and 24.4% (n=424),

respectively. The main factors associated to prevalence, severity and impact of pain were frequency/reason for going to the dentist and need for dental treatment. Children that going to the dentist for problems, had 5.03 time more chance of report toothache than those that going for prevention; and those with need for dental treatment in three or more teeth, had 4.59 time more chance of report recent toothache than those without need for treatment. Finally, the prevalence, severity and impact of toothache in the population surveyed were higher among children with a greater need for dental treatment and those who do not regularly visit the dentist for prevention.

Key Words: child, toothache, prevalence, impact, determinant factors

LISTA DE ILUSTRAÇÕES

APÊNDICE E

ANEXO 5

LISTA DE TABELAS

LISTA DE ABREVIATURAS E SIGLAS

ABEP - Associação Nacional de Empresas de Pesquisa

BBEC - Critério de Classificação Econômica Brasil (inglês)

BH - Belo Horizonte

CCEB - Critério de Classificação Econômica Brasil (português)

Child-DPQ – Questionário de dor de dente de crianças

Child-OIDP- Questionário de Impacto da Saúde Bucal de Crianças na Rotina Diária

CI – Intervalo de confiança

CR - Curvelo

DDQ – Questionário de desconforto dental

DePaQ – Questionário de dor de dente

EPI - Equipamento de Proteção Individual

FAPEMIG – Fundação de Amparo à Pesquisa de Minas Gerais

FPS – escala de faces de dor

IBGE - Instituto Brasileiro de Geografia e Estatística

IDH - Índice de Desenvolvimento Humano

ICC – Coeficiente de correlação intraclasse

ITQOL – Questionário de qualidade de vida de crianças

MOC – Montes Claros

OMS - Organização Mundial de Saúde

SD – desvio padrão

SEE-MG - Secretaria Estadual de Educação de Minas Gerais

SPSS – Pacote estatístico para ciências sociais

UFMG - Universidade Federal de Minas Gerais

VASOF – Escala visual analógica de faces

WHO – Organização Mundial de saúde

SUMÁRIO

CONSIDERAÇÕES INICIAIS

CONSIDERAÇÕES INICIAIS

Dor de dente é a expressão primeira de um grave e crônico problema de saúde pública: a cárie dentária (Siqueira, 2008). Também é a principal razão de atendimento no serviço público de saúde, sendo responsável por boa parte das consultas médicas e em torno de 70 a 80% das visitas odontológicas (Traebert et al., 2005). Além de ser uma fonte de estresse físico e emocional nas esferas individual e familiar, acarretando efeitos importantes na qualidade de vida das pessoas, representa uma carga econômica substancial para a sociedade, tanto em relação ao custo dos cuidados odontológicos quanto aos associados ao absenteísmo no trabalho e à perda de produtividade (Mcfarlane et al., 2002; Siqueira, 2008).

A despeito disto, existem, surpreendentemente, poucos dados epidemiológicos sobre prevalência, gravidade e impacto da dor de dente ou sobre fatores a ela associados (Góes et al., 2007). Esta lacuna é maior em relação a população infantil, para a qual instrumentos específicos de mensuração têm sido testados há relativamente pouco tempo (Tesch et al., 2007). A grande maioria dos estudos sobre impacto da saúde bucal na qualidade de vida, incluindo os que abordam dor, tem sido realizada com adultos e idosos, certamente pela maior facilidade de obtenção de dados válidos e de comunicação, já que este é um assunto carregado de subjetividade.

Dor e outros sintomas como desconforto, tensão, ansiedade e medo são experiências comuns a todos, mas geralmente difíceis de serem definidos por sua subjetividade, tornando-se intrigantes, pelo fato de poderem ser expressos somente por seus portadores, os únicos capazes de quantificá-los. O que ocorre, na maioria das vezes, principalmente com crianças mais jovens, é um julgamento por parte dos adultos e profissionais da saúde, ao pressuporem a natureza e intensidade da sensação da criança, induzindo a erros. Deste modo, medidas de auto-relato da dor representam o padrão-ouro para avaliação da percepção infantil sobre a experiência dolorosa (Stinson et al., 2006).

No entanto, somente em 2002, foi publicado o primeiro estudo relatando o processo de construção e validação de um questionário para medir qualidade de vida relacionada à saúde bucal da criança (Jockovic et al., 2002), abordando sintomas como dor. Assim, o uso desses instrumentos direcionados para crianças foi introduzido na pesquisa recentemente e poucos foram desenvolvidos ou validados para a língua portuguesa, o que limita ainda mais sua aplicação no Brasil (Tesch et al., 2007).

A dor de dente e seu impacto psicossocial podem ser valiosos indicadores de saúde bucal, complementares aos clínicos, estendendo a compreensão da saúde por meio de uma visão subjetiva e comportamental (Shepherd et al., 1999).

De uma maneira geral, a capacidade de alimentação e a ocorrência de dor ou desconforto usualmente são os aspectos positivo e negativo mais relevantes para a qualidade de vida, respectivamente (McGrath et al., 2004). Qualquer prejuízo às atividades habituais é considerado como estado doentio, o qual é percebido por sensações desagradáveis, tais como cansaço, fraqueza, dor, mal-estar, ou seja, percebidos pelos sintomas (Ferreira, 1994).

A qualidade de vida pode ser definida como a percepção do indivíduo de sua posição na vida, no contexto da cultura e do sistema de valores nos quais ele vive e em relação aos seus objetivos, expectativas, padrões e preocupações (WHO, 1997).

Durante vários anos, a qualidade de vida dos indivíduos relacionada à saúde bucal foi avaliada exclusivamente em relação aos sinais da presença da doença, sem considerar seus reflexos ou suas conseqüências psicossociais (Scarpelli et al., 2008)

Na década de 90 consolidou-se a idéia de que uma abordagem mais adequada deveria considerar a perspectiva das pessoas e das populações e não se restringir à perspectiva de profissionais de saúde e pesquisadores (Tesch et al., 2007). Esta abordagem tornou-se urgente, uma vez que, o que o profissional de saúde considera normal ou patológico pode não coincidir, necessariamente, com a percepção dos usuários (Ferreira, 1994).

Há certos fatores com influência decisiva na percepção individual sobre a própria saúde. Para a população menos favorecida, dentro da qual se inclui grande parte da brasileira, a relação saúde e qualidade de vida, passa pela busca de atendimento a questões básicas, tais como a sobrevivência, o alívio da dor (Portillo e Paes, 2000) e a possibilidade de manutenção das relações sociais.

A profissão odontológica se omite em abordar a doença nos termos do que o público leigo deseja e pode entender. Um exemplo disto é que não se observam entre as metas de um serviço, por exemplo, quantas pessoas têm problemas a relatar sobre sua boca, ou quantas não tiveram dor em determinado período (Ferreira, 1994).

Embora tenha havido uma melhora substancial na saúde bucal em determinados locais, faixas etárias ou grupos sociais, muitas pessoas em todo o mundo, especialmente as mais pobres, ainda são afetadas por doenças bucais (Petersen, 2003). No Brasil, elas são comumente relatadas como causa de morbidade entre crianças (Brasil, 2003).

Por isso, a proposta deste estudo foi determinar a prevalência e a gravidade da dor de dente, e avaliar seu impacto na vida cotidiana de crianças entre 8 e 9 anos.

O conhecimento da dimensão e significado deste problema, e de informações quantitativas e sistemáticas sobre outros aspectos a ele relacionados, pode ser usado para avaliar e planejar esforços de prevenção e tratamento, sugerindo novas diretrizes para a política de saúde bucal vigente, especialmente para a tomada de decisão quanto à alocação de recursos em saúde pública (Watt, 2002).

Este estudo foi desenvolvido junto ao Programa de Pós-Graduação em Odontologia da Faculdade de Odontologia da Universidade Federal de Minas Gerais. Optou-se pela apresentação do trabalho em forma de artigos científicos posto que artigos publicados constituem uma forma clara e objetiva de divulgação de pesquisas junto à comunidade científica. Inclui três artigos, sendo o primeiro e o segundo relacionados aos resultados dos testes psicométricos dos instrumentos de coleta de dados utilizados, “Child Dental

Pain Questionnaire - Child-DPQ” e “Visual analogue faces scale - VASOF”, e o terceiro artigo relativo à aplicação destes instrumentos em um estudo epidemiológico sobre dor de dente infantil.

ARTIGO 1

Article title: Validation of a child dental-pain questionnaire instrument for the self-reporting of toothache in children

Eliane Reis Barrêtto[1] - BDS, MSc, School of Dentistry, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Saul Martins Paiva[1] - BDS, PhD, Associate Professor, School of Dentistry, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Efigênia Ferreira e Ferreira[2] - BDS, PhD, Associate Professor, School of Dentistry, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Isabela Almeida Pordeus[1] - BDS, PhD, Full Professor, School of Dentistry, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

[1]Department of Pediatric Dentistry and Orthodontics, School of Dentistry, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil;

[2]Department of Preventive Dentistry and Society, School of Dentistry, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Corresponding author: Eliane Reis Barrêtto

– Rua Hermílio Alves, n◦235/201, 31.010-070, Belo Horizonte, MG, Brazil

– Phone number: +55 31 3011 2708; e-mail: barrettoeliane@gmail.com

Running title: Validation of the Child-DPQ

Keywords: child, toothache, questionnaire, validity, reliability

ABSTRACT

Purpose: The aim of the present study was to test the reliability and validity of a novel child dental-pain questionnaire, the Child-DPQ.

Methods: The Child-DPQ is structured to measure toothache using three subscales: prevalence, severity and impact on daily life. It was tested on 174 eight- and nine-year-old children. The instrument's reliability was assessed by testing internal and test-retest consistency, and its validity was assessed by testing construct and discriminant validity. Specifically, discriminant validity was tested by comparing the mean scores of two clinical groups: absent or treated caries (n=110) and untreated caries (n=64).

Results: Internal consistency was confirmed by a Cronbach´s alpha coefficient of 0.93. Test-retest reliability was found to be highly reproducible (intraclass correlation coefficient = 0.99). The construct validity was satisfactory, demonstrating highly significant correlations among the global indicator, the total score, and subscale scores ($p<0.001$). The Child-DPQ score was able to discriminate between the two clinical groups ($p<0.001$).

Conclusion: The present study provides evidence for the reliability and validity of the Child-DPQ in assessing the impact of toothache on the daily life of children.

INTRODUCTION

Oral health is an essential component of general health with great impact on quality of life,[1] especially with regard to the ability to tolerate chewing and the occurrence of pain and discomfort.[2] Despite major improvements in oral healthcare in recent decades, many people around the world are still affected by oral diseases such as caries, especially the poorest segments of the global population.[1] In Brazil, oral disease in children is common.[3] There is a specific and direct relationship between pain and oral health. Of the many impacts of toothache, untreated decayed teeth have among the most serious repercussions on quality of life.[4-7]

Studies have suggested that evaluating the effect of oral disease on quality of life can be useful for planning oral healthcare service delivery.[8] However, the first study reporting the construction and validation of a questionnaire for measuring the impact of children's oral health on their quality of life was published as recently as 2002.[9] Most instruments related to oral health contain items that focus on dental pain, but they generally do not distinguish the impact of dental pain from the impact of other orofacial pain. Furthermore, they are longer than the instrument developed in the present investigation.

Health-related indicators of quality of life are generally assessed with questionnaires. The responses are organized in numerical scales to measure to what extent people's lives are affected by health conditions. Therefore, an important contribution of these instruments is the ability to determine the health-related quality of life of people and communities by statistical means.[10]

Adults and children have different perceptions about the impact of health problems on quality of life, as children have a singular vision related to their physical and emotional stages of development.[11] Pain is, by definition, a subjective phenomenon that must be measured by self-report.[12] There is a lack of instruments

specifically designed for the assessment of self-reported children's dental pain and its impact on daily life, and even fewer in the case of instruments that have been formally validated for use on children of the specific age group. Instruments designed specifically for children allow for the accurate measurement of the impact of oral health on their quality of life.[9]

The aim of the present study was to test the validity and reliability of a self-report questionnaire on dental pain with 8- and 9-year-old children.

METHODS

The Child Dental Pain Questionnaire (Child-DPQ)

The Child-DPQ was based on a questionnaire developed by Shepherd et al. in 1999.[13] The questionnaire is organized into three subscales: prevalence, severity and impact of toothache on children's quality of life (Table 1). It is composed of six questions, with two items in each subscale. The total score and scores for each subscale on the Child-DPQ can be calculated. The final score may either be zero or range from 6 to 15, with lower scores indicating better oral health status. If the child answers 'no' on the first item, all other items are considered 'not applicable' (score = 0). If the child answers 'yes' on the first item, the subsequent items are then answered, with a minimum score of 1 on each item. The questionnaire was administered in interview form to reduce the possible number of subjects lost to follow-up that might be expected in self-directed forms.

A question was included for the measurement of global well-being to test the relationship between oral health and general health, i.e., the extent to which toothache affects general well-being in comparison with other known types of debilitating pain.[14-15] Dental pain was compared to the most prevalent pain in other parts of the body (e.g., headache, abdominal pain, chest pain, back pain and pain from trauma/injury). The

child was asked if she or he had ever felt pain elsewhere in the body and to clarify the type. The question on global well-being was: "Was this pain less than, more than or equal to dental pain?" The values of the responses were recorded as 0 (not applicable), 1 (less painful), 2 (equally painful) and 3 (more painful).

Evaluation of reliability and validity of the Child-DPQ

The present study was carried out in the city of Belo Horizonte, which is the capital of the state of Minas Gerais, Brazil, (population 2,412,937). A total of 180 eight- and nine-year old children were included in the sample. All were asked to answer the questionnaires. The participants answered the Child-DPQ twice, with a 14-day interval between sessions to assess test-retest reliability. Efforts were made to reduce the number of questionnaires lost to follow-up. However, six children did not return for the second interview, yielding an overall response rate of 96.7%, or 174 of 180 boys and girls. Gender and type of school were equally represented (87 females and 87 males; 87 public schools and 87 private schools). Only children intellectually and physically capable of responding to the questionnaire were included in the study. Parents and guardians gave informed consent for their children to participate. This study received approval from the Ethics Committee of the Universidade Federal de Minas Gerais, Brazil.

All participants were submitted to dental examinations and interviews. These procedures were carried out by a single pediatric dentist who took part in a training and calibration exercise (intra-examiner agreement - mean Kappa value =0.90) for the diagnosis of dental caries using color transparencies. Twenty children took part in the calibration process and were excluded from the main sample. The criteria of the World Health Organization were used for diagnosing the different stages of dental caries (defined as carious lesions involving dentine or pulp and root remnants).[16] After the interview, the standardized clinical examination (using gauze, cotton rolls, mouth mirror and equipment for cross-infection control) was performed at the child's school under an

artificial head lamp (PELTZ®, Tikka XP, Crolles, FR), with the child's head laid on a cushion on the examiner's lap.[17]

Statistical Analysis

For the analysis, the children were divided into two clinical groups: 1) absent or treated caries (n = 110) and 2) untreated caries (n = 64). The SPSS software program (version 15.0. SPSS Inc., Chicago, IL, USA) was used to analyze data in a coded database.

Descriptive analyses (mean and standard deviation) were initially performed to generate the total and individual subscale scores on the Child-DPQ for each participant. Internal consistency was evaluated using Cronbach's alpha coefficient and inter-item and total-item correlation coefficients. Test-retest reliability was assessed using the intraclass correlation coefficient (ICC) with a two-way random effect model for the Child-DPQ score using the data from the 174 children.[18]

To test the construct validity of the Child-DPQ, associations among the scores of each subscale and the overall well-being indicator were performed using Spearman's correlation coefficient. This instrument focuses on the impact on capacity to perform daily physical and social activities.[8] Discriminant validity was tested by comparing the mean scores on the Child-DPQ of the two clinical groups. As the scores of the Child-DPQ did not exhibit a normal distribution, the nonparametric Mann-Whitney test was used to evaluate differences in the mean scores of both groups.

P-values less than or equal to 0.05 were considered significant.

RESULTS

Ninety 8-year-old and eighty-four 9-year-old children were interviewed. A total of 64 (36.7%) had untreated caries and 110 (63.3%) were either free of caries or had treated caries. The scores on the total scale may either be zero or range from 6 to 15, with a mean value of 4.43 (SD = 5.35). Among the 174 children, 42.5% (n = 74)

reported experience of toothache and 57.5% reported no past history of dental pain (score of 0); regarding severity, 9.8% (n = 17) reported minimal pain, 16.1% (n = 28) reported mild pain and 16.6% (n = 29) reported severe pain. Moreover, 9.8% (n = 17) reported a low impact, 22.24% (n = 39) reported a moderate impact and 10.3% (n = 18) reported a high impact of pain.

Reliability

The values of Cronbach's alpha coefficient and test-retest reliability for the total scale and subscales are displayed in Table 2. The results demonstrate excellent internal consistency.

Construct validity

The correlations between the assessment of overall well-being and total scale and subscale scores achieved high values and were statistically significant (Table 3).

Discriminant validity

There were significant differences in mean scores for the total scale, prevalence, severity and impact subscales between the children who were either free of caries or had caries treated (Group 1) and those with untreated caries (Group 2) (Table 4).

DISCUSSION

Data collection was carried out in both public and private schools to represent the perspectives of children from different economic classes.[19] The questionnaire was administered to children in the classroom in interview form. As a technique for data collection, an interview offers certain advantages for working with children, such as an opportunity to obtain more precise information and immediately detect discrepancies. It also allows the interviewer to assess whether the questionnaire is being understood. In population studies with a large sample size, it is more practical to use self-administered questionnaires.[18] A recent study involving 144 children from 9 to 16 years old

demonstrated that the self-administered Child Oral Impacts on Daily Performances obtained the same results as the original interviewer-administered mode, thereby reducing the administrative burden.[20]

Test-retest reliability for the total scale was confirmed with the ICC (0.99). Cronbach's alpha coefficient was 0.93 for the total scale, indicating satisfactory internal consistency (values of 0.5 or higher are considered acceptable). For the subscales, the values of this coefficient ranged from 0.81 for pain severity to 0.92 for pain impact. Results from validation studies of other instruments that assess oral-health-related quality of life in Brazil are noted for reference, but they have no direct comparative value, as they do not specifically address toothache. Goursand et al. (2008) reported an alpha value of 0.52 for the Oral Symptoms subscale of the Child Perceptions Questionnaire (in which toothache is included) among children aged 11 to 14 years.[18] In another study involving children 8 to 10 years of age, the alpha value was 0.63 (CI = 0.60 to 0.89) on the same subscale[21]. In a study carried out in the United States for the assessment of health-related quality of life among children aged two months to five years, the alpha value was 0.80 for items related to pain and discomfort.[22] The values found in the present study were more reliable and consistent than the aforementioned studies.

The present study demonstrates that the Child-DPQ discriminates between two clinical groups of children. Individuals with untreated caries had higher mean total and subscales scores than those who were free of caries or who had treated caries ($p < 0.05$). Other studies have demonstrated that the average number of decayed and filled tooth surfaces and number of missing primary teeth due to caries are higher in children who report that pain has kept them awake at night.[23] Children with decayed teeth clearly experience toothache more often than children without decayed teeth.[24]

The indicator of overall well-being was satisfactorily correlated with all subscale scores. Other authors who studied a similar age group reported that the Oral

Symptoms subscale was significantly correlated with a global indicator of children's well-being.[21]

It is not possible to directly compare these results with those from the few studies that specifically measure toothache, as those instruments are not standardized, test different populations and analyze different age groups.[22,24,25] The Toddler Child Quality of Life Questionnaire (ITQOL) is a parent-administered measure and was tested in a convenience sample involving children from two to six years of age in the state of Ohio, USA.[22] The internal consistency of the Dental Discomfort Questionnaire (DDQ) was assessed using a sample of children between 30 and 59 months of age in the Netherlands.[24] Validation of the Dental Pain Questionnaire (DePaQ) was performed with adults (18 years old or more) in London, England.[25] Jamieson et al. in 2004 examined the clinical validity and reliability of dental self-report items in a national child nutrition survey in New Zealand using a sample similar to the children in the present study, but only one item of their instrument was related to pain.[23] A number of authors have adapted questions from the 1999 questionnaire of Shepherd et al. or developed similar questions of their own, underscoring the importance of this instrument.[5,11,13,26-28] However, none of those studies make reference to validity. The present study represents a first step toward a valid toothache self-report reference measure, which may facilitate comparability with future studies.

Pain is necessarily a subjective experience. Therefore, self-reported pain measures are the gold standard for assessing children's perceptual or psychological experiences of pain.[24] To maximize results, self-report items should be brief, easy to interpret and easily incorporated into clinical routines. Moreover, they should not require complex training for their use and must demonstrate appropriate validity and reliability.[23] The Child-DPQ meets these requirements and offers the advantage of being shorter than the major child health and quality of life instruments containing items on pain.

Dental pain is a major consequence of oral conditions such as untreated dental caries, which is a common disease in countries such as Brazil.[29] It should be measured with specific instruments and highlighted in quality of life assessments. The Child-DPQ should be considered for use in future studies on pediatric dental caries, pain or treatment outcomes. Epidemiological studies on the effects of toothache on daily family, social, physical and psychological functioning in different age groups of children – including investigations addressing explanatory factors and involving larger samples – are needed to further establish dental pain as a major public health problem.

CONCLUSION

This study provides evidence that recommends the Child-DPQ as a reliable and valid instrument to assess the impact of toothache on the daily life of 8- and 9-year-old children. It should be further tested in other populations with known differences in their socio-cultural backgrounds.

ACKNOWLEDGMENTS

This study was supported by the State of Minas Gerais Research Foundation (FAPEMIG).

REFERENCES

1. Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century – the approach of the WHO Global Oral Health Programme. Community Dent Oral Epidemiol 2003; 31: 3-23.
2. Mcgrath C, Bedi R. A national study of the importance of oral health to life quality to inform scales of oral health related quality of life. Qual Life Res 2004; 13: 813-18.

3. Brazilian Ministry of Health. National Coordination of Oral Health. Oral Health Conditions of the Brazilian Population, SBBrazil2003 Project, Main Results. Available at: http://portal.saude.gov.br/saude/arquivos/relatorio_brasil_sorridente.pdf. Accessed: Apr 14, 2006 [in Portuguese].
4. Goes PS, Watt RG, Hardy R, Sheiham A. Impacts of dental pain on daily activities of adolescents aged 14-15 years and their families. Acta Odontol Scand. 2008; 66: 7-12.
5. Ratnayake N, Ekanayake L. Prevalence and impact of oral pain in 8-year-old children in Sri Lanka. Int J Paediatr Dent 2005; 15: 105–12.
6. Slade GD. Epidemiology of dental pain and dental caries among children and adolescents. Community Dent Health 2001; 18: 219–27.
7. Tickle M, Blinkhorn AS, Milsom KM. The Occurrence of Dental Pain and Extractions over a 3-Year Period in a Cohort of Children Aged 3-6 Years. J Public Health Dent 2008; 68: 63-9.
8. Tesch FC, Oliveira BH, Leão A. Measuring the impact of oral health problems on children's quality of life: conceptual and methodological issues. Cad Saúde Pública 2007; 23: 2555-564.
9. Jokovic A, Locker D, Stephens M, Kenny D, Tompson B, Guyatt G. Validity and reliability of a questionnaire for measuring child oral-health-related quality of life. J Dent Res 2002; 81: 459-63.
10. Sevenhuysen GP, Trumble-Waddell J. A new perspective on quality of life. J Clin Epidemiol 1997; 50: 231-42.
11. Barrêtto EPR, Ferreira EF, Pordeus IA. Evaluation of toothache severity in children using a visual analogical scale of faces. Pediatr Dent 2004; 26: 485-91.
12. Stinson JN, Kavanagh T, Yamada J, Gill N, Stevens B. Systematic review of the psychometric properties, interpretability and feasibility of self-report pain

intensity measures for use in clinical trials in children and adolescents. Pain 2006; 125: 143-57.

13. Shepherd MA, Nadanovsky P, Sheiham A. The prevalence and impact of dental pain in 8 year-old school children in Harrow, England. Br Dent J 1999; 187: 38-1.
14. Connelly M, Rapoff MA. Assessing Health-Related Quality of Life in Children with Recurrent Headache: Reliability and Validity of the PedsQL™ 4.0 in a Pediatric Headache Sample. J Pediatr Psychol 2006; 31: 698–02.
15. Roth-Isigkeita, Thyen U, Stöven H, Schwarzenberger J, Schmucker P. Pain among children and adolescents: restrictions in daily living and triggering factors. Pediatrics. 2005; 115: 152-62.
16. World Health Organization. Oral Health Surveys: basic methods. 4th ed. Geneva: World Health Organization; 1997: 31-52.
17. Brazilian Ministry of Health. Infections control and the dental practice in time of AIDS: procedures manual. Brasília: Brazilian Ministry of Health, 2000; 67-86 [in Portuguese].
18. Goursand D, Paiva SM, Zarzar PM et al. Cross-cultural adaptation of the Child Perceptions Questionnaire 11–14 (CPQ11–14) for the Brazilian Portuguese language. Health Qual Life Outcomes 2008; 6: 2.
19. Brazilian Association of Research Companies. Brazilian Criteria of Economical Classification. Available at: http://www.abep.org. Accessed: Jan 12, 2003 [in Portuguese].
20. Tsakos G, Bernabé E, O'Brien K, Sheiham A, Oliveira C. Comparison of the self-administered and interviewer-administered modes of the child-OIDP. Health Qual Life Outcomes 2008; 6: 40.

21. Martins M, Ferreira FM, Oliveira AC et al. Preliminary validation of the Brazilian version of the Child Perceptions Questionnaire 8-10 (CPQ8-10). Eur J Paediatr Dent 2009; 10: 135-40.
22. Easton JA, Landgraf JM, Casamassimo PS, Wilson S, Ganzberg S. Evaluation of a generic quality of life instrument for early childhood caries-related pain. Community Dent Oral Epidemiol 2008; 36: 434–40.
23. Jamieson LM, Thomson WM, Mcgee R. An assessment of the validity and reliability of dental self-report items used in a National Child Nutrition Survey. Community Dent Oral Epidemiol 2004; 32: 49-4.
24. Versloot J, Veerkamp JS, Hoogstraten J. Dental discomfort questionnaire: assessment of dental discomfort and/or pain in very young children. Community Dent Oral Epidemiol 2006; 34: 47–2.
25. Pau A, Croucher R, Marcenes W, Leung T. Development and validation of a dental pain-screening questionnaire. Pain 2005; 119: 75–1.
26. Moura-Leite FR, Ramos-Jorge ML, Bonanato K, Paiva SM, Vale MPP, Pordeus IA. The prevalence, intensity and impact of dental pain in 5-year-old preschool children. Oral Health Prev Dent 2008; 6: 295-01.
27. Pau A, Baxevanos KG, Croucher R. Family structure is associated with oral pain in 12-year-old Greek schoolchildren. Int J Paediatr Dent 2007; 17: 345–51.
28. Naidoo S, Chikte UME, Sheiham A. Prevalence and impact of dental pain in 8-10-year-olds in the Western Cape. SADJ 2001; 56: 521-23.
29. Traebert J, Lacerda JT, Fischerc TK, Jinboc Y. Dental caries and orofacial pain trends in 12-year-old school children between 1997 and 2003. Oral Health Prev Dent 2005; 3:243–48.

TABLE 1: Structure of Child-DPQ questions and responses

SUBSCALES	ITEMS	ANSWERS
Prevalence	1. Have you ever had a toothache?	0= no 1= yes
	2. When was your last toothache?	0= not applicable 1= more than a month 2= last month 3= today
Severity	3. Did you cry at the worst moment of a toothache?	0= not applicable 1= no 2= yes
	4. How was it when the pain was at its worst? (face scale)	0= not applicable 1= very mild pain 2= mild pain 3= moderate pain 4= severe pain 5= very severe pain
Impact	5. Were you awakened at night by the pain?	0= not applicable 1= no 2= yes
	6. Were you unable to carry out any normal tasks because of toothache?	0= not applicable 1= no 2= yes

TABLE 2: Reliability statistics for total scale and subscales (n=174)

Variable	Number of items	Cronbach's alpha	Intraclass correlation coefficient (95% CI)*
Total scale	6	0.93	0.99 (0.99-0.99)
Subscales			
Prevalence	2	0.82	0.99 (0.99-0.99)
Severity	2	0.81	0.99 (0.99-0.99)
Impact	2	0.92	0.99 (0.99-0.99)

***** Two-way random effects model: $p<0.001$ for all values

TABLE 3: Construct validity – rank correlations between total scale, subscale scores and overall well-being (n=174)

	Overall well-being question	
	r*	p-value
Total scale	0.403	<0.001
Prevalence subscale	0.458	<0.001
Severity subscale	0.376	<0.001
Impact subscale	0.414	<0.001

*Spearman's correlation coefficient

TABLE 4: Discriminant validity – Total and subscale scores for Group 1 (absent or treated caries) and Group 2 (untreated caries)

	Group 1 (n=110)		Group 2 (n=64)		p-value*
	Mean ± SD	Median	Mean ± SD	Median	
Total scale	1.56 ± 3.77	0.00	9.36 ± 3.89	10.00	<0.001
Prevalence subscale	0.40 ± 0.09	0.00	2.25 ± 0.13	2.00	<0.001
Severity subscale	0.70 ± 0.17	0.00	4.42 ± 0.26	4.00	<0.001
Impact subscale	0.46 ± 0.11	0.00	2.69 ± 0.15	3.00	<0.001

*Mann-Whitney U test

ARTIGO 2

Pediatric Dentistry

Determining toothache severity in pediatric dental patients: a validation study on the Visual Analogue Scale of Faces

Eliane Reis **Barrêtto**[1]

Karina **Bonanato**[1]

Saul Martins **Paiva**[2]

Efigênia Ferreira e **Ferreira**[2]

Isabela Almeida **Pordeus**[3]

ABSTRACT

Faces scales have become the most popular approach to eliciting children's self-reports of pain. The aim of the present study was to test the validity and reliability of a culturally and gender sensitive child faces scale to measure pain intensity: Visual Analogue Scale of Faces (VASOF). The VASOF was tested on 74 children aged eight and nine years. Test-retest reliability was assessed by Cohen's Weighted Kappa coefficient. Discriminant and concurrent construct validity were assessed. The VASOF was compared to the Wong-Baker Faces Scale and was tested in relation to its discriminant capacity between children who cried and who did not cry at their worst moment of pain. Agreement between researcher and child regarding gender and race was determined using the Kappa test. Test-retest reliability revealed satisfactory reproducibility (Weighted Kappa = 0.92). The correlation between the VASOF and Wong Baker Faces Scale was statistically significant ($r = 0.995$; $p < 0.001$). Discriminant validity was satisfactory ($p < 0.001$), demonstrating that the VASOF score was able to discriminate the groups of children studied. Agreement on gender and race was very high (Kappa = 0.97 and 1.00, respectively).The VASOF can be used to evaluate the severity of dental pain in children aged eight and nine years. This scale demonstrated good psychometric properties, such as validity and reliability.

DESCRIPTORS: toothache; child; validity; reliability; faces scale

[1] MSc in Paediatric Dentistry from Dental School, Federal University of Minas Gerais (FO-UFMG), Brazil

[2] PhD, Associate Professor at Dental School, Federal University of Minas Gerais (FO-UFMG), Brazil

[3] PhD, Head Professor at Dental School, Federal University of Minas Gerais (FO-UFMG), Brazil

INTRODUCTION

The assessment of pain is one of the most difficult challenges faced by health professionals who work with children.[1] Pain is an individual, subjective experience. Therefore, children's self-reports are considered the gold standard for this assessment.[2]

Currently, considerable attention has been given to "faces scales", which display a series of faces drawn by hand displaying increasing pain intensity from no pain to the worst possible pain.[3] Compared to other types of self-report instruments, faces scales are more easily understood by children and do not require them to translate their experience of pain into a numeric value.[1] Thus, these scales are becoming the preference of different age groups of children as well as parents and health care professionals in comparison to other assessment tools.[4;5]

The first faces scale was developed by Katz in 1979.[1] The number of similar instruments has since increased. However, different scales vary with regard to format, number of faces, expressions of pain (with or without tears; smiling or neutral face as the starting point), age group targeted and purposes for which they are intended. Moreover, little attention has been paid to how variations in scale format affect the rating of children's self-reported pain, as there is an apparent assumption that the different scales are equivalent.[1] For the choice of a pain assessment measure, it is necessary to determine its validity, ease of administration, usefulness in clinical and research contexts and its applicability among different types of children.[6] There is a lack of documentation on the validity and reliability of these instruments when used on non-Caucasian children.

The aim of the present study was to test the validity and reliability of a culturally and gender sensitive child faces scale for measuring pain intensity.

MATERIAL AND METHODS

The study was carried out in the city of Belo Horizonte, capital of the state of Minas Gerais, Brazil. Data were collected with a convenience sample of 174 students aged eight and nine years. The children were equally divided by

gender (87 females and 87 males) and type of school (87 from public and 87 from private schools). Only children physically and intellectually able to respond to the questionnaire were included in the study, according to the reports of parents/guardians, who read and signed a term of informed consent authorizing their child's participation.

All students were interviewed with regard to toothache experience ("Have you ever had a toothache?") at school, with a basis on the Shepherd et al. questionnaire.[7] The age group was chosen to comply with the method used by these authors, because such children are capable of adequately understanding and responding to an interview and providing a reliable self-report. Data collection was carried out by a single researcher who participated in a calibration exercise (intra-examiner Kappa agreement = 0.90). Twenty children took part in the calibration process and were excluded from the main sample.

Among the 174 children interviewed, 74 reported experience with dental pain. To evaluate the intensity of pain, two other questions were asked only of these 74 children: "Have you ever cried because of a toothache?" and "How was it when the pain was at its worst?". The latter question was measured by a Visual Analogue Scale of Faces (VASOF).

The scale was constructed with four drawings of boys and girls of both Caucasian and African descent.[8] Each sequence was composed of five drawings with different expressions, ranging from a child smiling to a child crying, corresponding to scores 0 to 4:

- very slight pain, without provoking a disagreeable sensation – score 0
- slight pain, slightly disagreeable sensation – score 1
- moderate pain, disagreeable sensation – score 2
- intense pain, very disagreeable sensation – score 3
- very intense pain, excruciating or unsupportable, the most disagreeable sensation – score 4

The score corresponding to the image chosen by the child was recorded, with lower scores denoting less pain and higher scores denoting worse pain.

Reliability

After a 14-day interval, all 74 children were interviewed a second time by the same researcher using the same face scale. This provided the data to evaluate the test-retest reliability using Cohen's weighted Kappa coefficient.

Construct validity

Discriminant validity was assessed using the Mann-Whitney test to determine whether the faces scale distinguished two groups of children: those who cried and those who did not cry at their worst moment of pain.

To test concurrent validity, the faces scale was compared to a measure recognized in the literature: the Wong-Baker Faces Scale (WBFS).[4] This scale was chosen from the many available faces scales because it has expressions similar to those of the VASOF and systematic literature reviews have confirmed that it is commonly cited in empirical research and is widely used in clinical practice.

Both scales (VASOF and WBFS) were administered simultaneously and the Spearman correlation coefficient was calculated. Agreement between the faces chosen by the researcher and those chosen by the children regarding gender and race was tested using Cohen's Kappa coefficient. The administration procedures of the instruments were as follows:

- The researcher chose one face among the first four smiling faces (starting points) of the sequences that, in her opinion, best represented the child in terms of gender and race, recording it without the child's knowledge;
- The child then chose one face among the first four smiling faces (starting points) of the sequences that best represented him/her in terms of gender and race;
- The child then chose from the five faces of the sequence that which best represented the intensity of pain experienced and the corresponding score was recorded;
- The WBFS sequence of faces was then shown to the child, who chose the image that best represented the intensity of pain experienced.

The WBFS is composed of six faces.[4] For the purposes of comparison, the first face ('no pain') was removed and the five subsequent faces corresponding to the VASOF were used.

The data were analyzed using the Statistical Package for the Social Sciences (SPSS for Windows, version 15.0, SPSS Inc, Chicago, IL, USA). The study received approval from the Ethics Committee of the Federal University of Minas Gerais.

RESULTS

A total of 42.5% (n = 74) of children reported having experienced toothaches: 45 children aged eight years and 29 aged nine years. Descriptive analysis was performed. For the pain scores, the minimal value was 0 and the maximal was 4 (mean = 3.45; median = 3.00; standard deviation = 1.15). Table 1 displays the distribution of scores among the children.

TABLE 1 - Distribution of scores in absolute and relative values among children interviewed

	Score Distribution	N	%
Valid	Very slight pain - 0	1	1.3
	Slight pain - 1	17	23.0
	Moderate pain - 2	23	31.1
	Intense pain - 3	14	18.9
	Very intense pain - 4	19	25.7
	Total	74	100.0
	Not applicable	100	---
Total		174	---

The pain scores were grouped as follows: 0 and 1 - low intensity; 2 – moderate intensity; 3 and 4 - high intensity. Among these 74 children, 24.3% reported low intensity, 31.1% reported moderate intensity and 44.6% reported high intensity.

Table 2 displays the test-retest results. Agreement was nearly perfect (Weighted Kappa = 0.92).

TABLE 2 - Comparison of children's responses on different occasions with a two-week interval (n = 74)

		Retest					
		Score 0	Score 1	Score 2	Score 3	Score 4	Total
Test	Score 0	1	0	0	0	0	1
	Score 1	0	17	2	0	0	19
	Score 2	0	0	21	1	0	22
	Score 3	0	0	0	12	1	13
	Score 4	0	0	0	1	18	19
	Total	1	17	23	14	19	74

[a] Weighted Kappa = 0.92

Discriminant validity was measured by the Mann-Whitney test ($p < 0.001$), which revealed that the test scale was also able to discriminate two distinct groups of children: those who cried at their worst moment of pain (n = 31) and those who did not cry (n = 43).

The Spearman correlation value in the comparison of scores between the VASOF and WBFS was statistically significant ($r = 0.995$, $p < 0.001$), demonstrating the adequate concurrent validity of the VASOF. Cohen's Kappa coefficients were also statistically significant for agreement between the children and researcher regarding gender and race (Tables 3 and 4).

TABLE 3 - Correlation between responses of researcher and child regarding race (n = 74)

		Race according to researcher		Total
		White	Black	
Race according child	White	30	0	30
	Black	0	44	44
Total		30	44	74

[a]Kappa = 1.00

TABLE 4 - Correlation between responses of researcher and child regarding gender (n = 74)

		Gender according to researcher		Total
		Girl	Boy	
Gender according child	Girl	34	0	34
	Boy	1	39	40
Total		35	39	74

[a]Kappa = 0.97

DISCUSSION

A preliminary study by Barrêtto et al.[8] demonstrated the usefulness and applicability of the VASOF for children aged eight and nine years. However, as it was not a classical validation study, there was minimal evidence on psychometric testing.[2]

The present study assessed the psychometric properties of the VASOF for measuring the intensity of toothache pain among children in this age group. The test-retest reliability indicates high stability over a 14-day interval. Studies testing the WBFS on children in this same age group found statistically

significant differences after re-testing at intervals of 15 minutes and 8 hours.[9;10] Internal consistency is not measurable with a one-item scale and not directly assessable for the faces scale.[9]

The VASOF also proved to be capable of distinguishing between children who cried and those who did not cry at their worst moment of pain, thereby confirming its discriminant validity. Two studies highlight the validity aspects of the WBFS. One compared six types of scales and, despite not finding significant differences regarding the validity of the scales tested, the study demonstrated that children in this age group preferred the WBFS, which was used as reference in the present study.[4] In a study by Stein, preschool children were able to discriminate between anxiety and pain using the WBFS, which did not occur with other methods.[11]

The VASOF has also been used on preschoolers.[12] It was found that the majority of children rated their pain as severe to very severe (higher scores on the scale). Moreover, the clinical examination showed that, for most, the main cause of pain was a tooth in an advanced stage of decay. The data suggest that the scale is capable of discriminating groups of children with treated and untreated caries, which could be verified in future studies with larger samples.[8]

In the assessment of concurrent validity, there was strong positive correlation between the VASOF and WBFS. The latter scale has well-established psychometric properties tested by several authors, such as concurrent validity, as evaluated through comparisons with other instruments (eg, Pieces of Hurt Tool, Faces Pain Scale and a visual analogue scale).[10;11;13] The WBFS has also demonstrated responsivity in terms of detecting changes in children's pain intensity following procedural and post-operative pain.[2] Thus, there is evidence that the VASOF has adequate sensitivity and interpretability.

The applicability of the VASOF is evident in its ease of administration (speed and simplicity of use, requiring minimal instructions), numerical simplicity and reproducibility, as with the WBFS.[9] Such features are important in both clinical settings and epidemiological studies.

Faces scales have frequently been used in recent studies to measure children's pain, distress and anxiety.[12;14-17] The advantage of using faces scales

over other types of instruments (i.e., verbal, numerical and graphic rating scales and color or visual analogue scales) on different age groups of children has been demonstrated.[4;9;18;19] The acceptance of these scales is also facilitated by the importance of facial expressions in the social communication of pain.[5] This preference may become even clearer and more important when the drawing depicted more closely resembles the individual. In order to successfully achieve the goal of accurately measuring an individual's pain, every projective test, such as a faces scale, must allow the individual to identify with the figure depicted. While the WBFS uses schematic faces, the strongest characteristic of the VASOF is the clarity of the drawings of the children to enable better identification, especially differentiation by gender and race, as proven by the statistical tests (Kappa = 0.97 and 1.00, respectively). As child projects himself as black or white, boy or girl, the choice of the intensity of pain experienced may become easier and more precise.

Seeking to improve this identification with the child, another scale in the literature was modified. To overcome the cultural limitations associated with the original version of the Oucher Scale, culturally sensitive photographic scales have been developed (i.e., Hispanic and African American). In a study carried out by Luffy and Groove, several African-American children commented, "that one looks just like me" in reference to images on the African-American Oucher.[19] However, the photos are of real children and are not gender neutral, which hinders their use.[2] Authors have emphasized the influence of race and gender differences on various aspects of the health/disease process, including pain and its impact as well as the need for further study in this direction.[22-25]

One limitation of the VASOF is that it only can be used on children with pain. It does not have a face "without pain", like the WBFS. Since the present study used a modified version of WBFS, research is needed to examine whether a biasing effect occurs when using the original faces scale.

The preliminary test found that preschool children had a tendency to select the highest VASOF scores.[12] However, this did not happen in the present study. Further studies are needed to assess whether this is with regard to the nature of pain or inherent to scale. Moreover, further tests are needed to assess

whether the scale has measurement properties of quality intervals and how it functions in population-based studies with different age groups. Finally, the rating of child pain seems to be influenced by a smiling face used as the initial score, as scores tend to be relatively higher when the first face is neutral.[1;18]

CONCLUSION

The findings of the present study demonstrate that the Visual Analogue Scale of Faces can safely be used to assess the severity of dental pain in children aged eight and nine years. This scale demonstrated good psychometric properties, such as validity and reliability.

ACKNOWLEDGMENT

This study was supported by the state of Minas Gerais Research Foundation (FAPEMIG).

REFERENCES

1. Chambers CT, Geisbrecht K, Craig KD, Bennet SM, Huntsman E. A comparison of faces scales for the measurement of pediatric pain: childrens and parent's ratings. Pain 1999;83(1):25-35.
2. Stinson JN, Kavanagh T, Yamada J, Gill N, Stevens B. Systematic review of the psychometric properties, interpretability and feasibility of self-report pain intensity measures for use in clinical trials in children and adolescents. Pain 2006;125(1):143-157.
3. Chambers CT, Craig KD. An intrusive impact of anchors in children's faces pain scales. Pain 1998(1);78:27-37.
4. Wong DL, Baker CM. Pain in children: comparison of assessment scales. Pediatr Nurs 1988;14(1):9-17.
5. Craig KD, Gilbert CA, Lilley CM. Social barriers to optimal pain management in infants and children. Clin J Pain 1996;12(3):232-242.
6. Buchanen H, Niven N. Validation of facial image scale to assess child anxiety. Int J Pediatr Dent 2002;12(1):47-52.

7. Shepherd MA, Nadanovsky P, Sheiham A. The prevalence and impact of dental pain in 8 year-old school children in Harrow, England. Br Dent J 1999;187(1):38-41.
8. Barretto EP, Ferreira EF, Pordeus IA. Evaluation of toothache severity in children using a visual analogue scale of faces. Pediatr Dent 2004;26(6):485-491.
9. Keck JF, Gerkensmeyer JE, Joyce BA, Schade JG. Reliability and validity of the faces and word descriptor scales to measure procedural pain. J Pediatr Nurs 1996;11(6):368-374.
10. Gharabeibh M, Abu-Saad H. Cultural validation of pediatric pain assessment tools: Jordanian perspective. J Transcult Nurs 2002;13(1) :12-18
11. Stein P. Indices of pain intensity: construct validity among preschoolers. Pediatr Nurs 1995;21(2):119-123
12. Moura-Leite, FR, Ramos-Jorge ML, Bonanato K, Paiva SM, Vale MPP, Pordeus IA. The prevalence, intensity and impact of dental pain in 5-year-old preschool children. Oral Health Prev Dent 2008;6(4):295-301.
13. Robertson J. Pediatric pain assessment: validation of a multidimensional tool. Pediatr Nurs 1993;19(3):209-213.
14. Gupta V, Chandrasekar T, Ramani P, Anuja. Determining toothache severity in pediatric patients: a study. J Indian Soc Pedod Prevent Dent 2006;24(3):140-143
15. Bailey B, Bergeron S, Gravel J, Daoust R. Comparison of four pain scales in children with acute abdominal pain in a pediatric emergency department. Ann Emerg Med 2007;50(4):379-383.
16. Howard KE, Freeman R. Reliability and validity of a faces version of the Modified Child Dental Anxiety Scale. Int J Pediatr Dent 2007:17(4):281-288.
17. Gazal G, Mackie IC. A comparison of paracetamol, ibuprofen or their combination for pain relief following extractions in children under general anaesthesia: a randomized controlled trial. Int J Pediatr Dent 2007;17(3):169-177.

18. Chambers CT, Herdial J, Craig KD, Court C, Montgomery C. Faces scales for the measurement of postoperative pain intensity in children following minor surgery. Clin J Pain 2005;21(4):277-285.
19. Luffy R, Grove S. Examining the validity, reliability and preference of three pediatric pain measurement tools in african-american children. Pediatr Nurs 2003;29(1):54-59.
20. Ratnayake N, Ekanayake L. Prevalence and impact of oral pain in 8-year-old children in Sri Lanka. Int J Pediatr Dent 2005;15(2):105–112.
21. Jamieson LM, Thomson WM, McGee R. An assessment of the validity and reliability of self-report items used in a National Child Nutrition Survey. Community Dent Oral Epidemiol 2004;32(1):49-54.
22. Jamieson LM, Koopu PI. Associations between ethnicity and child health factors in New Zealand. Ethn Dis 2007;17(1):84-91.
23. Broder HL, Wilson-Genderson M. Reliability and convergent and discriminant validity of the Child Oral Health Impact Profile (COHIP Child's version). Community Dent Oral Epidemiol 2007;35(1):20-31.
24. Unruh AM. Gender variations in clinical pain experience. Pain 1996; 65(2-3):123-167.
25. Goes PS, Watt RG, Hardy R, Sheiham A. Impacts of dental pain on daily activities of adolescents aged 14-15 years and their families. Acta Odontol Scand. 2008; 66(1):7-12.

ARTIGO 3

Prevalence, severity and impact of dental pain in Brazilian schoolchildren aged eight and nine years and its association with explanatory factors

Eliane R Barrêtto[1], Tânia C Caldeira[2], João Paulo A Haddad[3], Saul M Paiva[1], Efigênia F Ferreira[4], Isabela A Pordeus[1]

[1]Department of Paediatric Dentistry and Orthodontics, School of Dentistry, Federal University of Minas Gerais, Belo Horizonte, Brazil

[2]School of Dentistry, Montes Claros University (UNIMONTES), Montes Claros, Brazil;

[3]Department of Epidemiology, School of Veterinary, Federal University of Minas Gerais, Belo Horizonte, Brazil

[4]Department of Preventive Dentistry and Society, School of Dentistry, Federal University of Minas Gerais, Belo Horizonte, Brazil

Corresponding author: Eliane Reis Barrêtto

– Hermílio Alves, n◦235/201, 31.010-070, Belo Horizonte, MG, Brazil

– Phone number: +55 31 3011 2708; e-mail: barrettoeliane@gmail.com

Article Type: Original Manuscript

Key Words: children, toothache, prevalence, impact, determinant factors

ABSTRACT

BACKGROUND: The aim of the present study was to assess the prevalence, severity and impact of dental pain and explanatory factors in schoolchildren in three Brazilian cities.

METHODS: A cross-sectional survey was conducted in the cities of Belo Horizonte, Montes Claros and Curvelo in the state of Minas Gerais, Brazil. Children aged eight and nine years were randomly selected from schools, interviewed and clinically examined by a single dentist, following formal authorization from their parents. Dental pain, its characteristics and explanatory factors were recorded using two validated pain measures and clinical data were assessed using World Health Organization criteria. Multinomial logistic regression was used to assess factors associated to dental pain outcomes.

RESULTS: A total of 1740 children took part in the study. The prevalence of toothache throughout life and in the previous month was 53.4% (n=929) and 24.4% (n=424), respectively. The main factors associated to prevalence, severity and impact of pain were frequency/reason for going to the dentist and need for dental treatment. Children who went to the dentist due to problems had a 4.80-fold greater chance of reporting toothache than those who went for prevention. Those in need of dental treatment in three or more teeth had a 4.54-fold greater chance of reporting recent toothache than those with no need for treatment.

CONCLUSIONS: The prevalence, severity and impact of toothache in the population surveyed were higher among children with a greater need for dental treatment and those who do not regularly visit the dentist for prevention.

INTRODUCTION

Oral health is part of general health and essential to quality of life (Petersen, 2003). The ability to eat and the occurrence of pain and discomfort are the positive and negative oral aspects most related to quality of life (McGrath and Bedi, 2004). Despite achievements related to oral health in recent decades, many people around the world, especially the poorest, remain affected by oral diseases such as caries (Petersen, 2003). Oral diseases are commonly reported among children in Brazil (Brazil, 2003).

The correlation between pain and oral health has been described as specific and direct, with serious repercussions to quality of life (Slade, 2001; Ratnayake and Ekanayake, 2005; Góes et al, 2007; Tickle et al., 2008), since oral pain is a common consequence of untreated caries (Pau et al., 2007). The variable pattern of dental care also has been consistently associated with reported dental pain (Vargas et al., 2005; Góes et al., 2008). Not only is the prevalence of oral pain high, its severity and impact on daily functioning is reported to be substantial (Shepherd et al., 1999; Pau et al., 2007; Góes et al., 2008). There is consistent evidence to suggest that toothaches reported by children can be so severe as to make them cry, disrupt sleep and affect daily activities (Naidoo et al., 2001; Nomura et al., 2004; Ratnayake and Ekanayake, 2005).

Further studies are needed to establish reliable population estimates of dental pain, its association with explanatory factors and different causes. In Brazil, there is a lack of studies published on this subject, especially involving young age groups, such as eight-and-nine-year-olds. Thus, the aim of the

present study was to assess the prevalence, severity and impact of toothache and associated factors in a population of Brazilian schoolchildren.

METHODS

Study sample

A cross-sectional study was carried out in three different cities: Belo Horizonte, Montes Claros and Curvelo. Belo Horizonte is capital city of the state of Minas Gerais, Brazil, is located in the central region of the state and has 2,412,937 inhabitants. Montes Claros and Curvelo are located in two different regions of the state. The former is a medium-size city and the latter is a small city, with 306,730 and 67,512 inhabitants, respectively (IBGE, 2006).

The sample calculation for the Belo Horizonte was determined using an α-value of 0.05, detectable error of 4% and the prevalence data on toothache (47.5%) from Shepherd et al. (1999), on which the questionnaire used was based. The sample for Montes Claros and Curvelo was calculated by adjusting the Belo Horizonte sample size (n = 601) and using the same error (Levy and Lemeshow, 1980). The study population was increased to avoid a smaller sample than the minimum required. Thus, the final number of child/parent pairs invited to participate in the study was 2035.

Children aged eight and nine years were recruited from elementary schools in the three cities, with a proportional representation of school types (private and public, state and municipal). Twenty-four schools were randomly selected and took part. The eligibility criteria were: presence on the day of data collection, with authorization from parents and with adequate physical and

psychological conditions at the time of the examination (reported by parents/guardians).

Measures

Data were collected through questionnaires (self-administered by parents), interviews and oral examinations of the children. The data collection instruments were the Child Dental Pain Questionnaire/Child-DPQ, validated in Portuguese (Barrêtto et al., in press), and a visual analogue scale of faces (Barrêtto et al., 2004) to determine pain intensity. After the obtainment of signed terms of informed consent, parents provided information (ownership items and family income) for Brazilian Economic Classification Criteria (BECC, 2006) on questionnaires distributed and collected by the teaching staff or during meetings at schools.

Other procedures were carried out by a single paediatric dentist (*ERB*), who participated in a training and calibration exercise for each clinical alteration (intra-examiner agreement calculated on a tooth-by-tooth basis; maximal and minimal Kappa values were 1.00 and 0.76, respectively). Training for the clinical diagnosis entailed the use of slides. Twenty children in each city took part in the calibration process and were excluded from the main sample. The standardized oral clinical examination (using gauze, cotton rolls, mouth mirror and equipment for cross-infection control) was performed at school under artificial light (PELTZ® head lamp, Tikka XP, Crolles, FR), with the child's head on a cushion on the examiner's lap (Brazil, 2000).

World Health Organization criteria (WHO, 1997) were used to diagnose the possible causes of dental pain among children in the age group studied,

such as pain emanating from the teeth and supporting structures or as the result of disease or injury. Diagnostic criteria were adopted taking into consideration the nature, location and type of oral alterations. Notation was carried out on a tooth-by-tooth basis, with the condition recorded as either present or absent. The clinical condition of deciduous and permanent teeth was recorded in cases of both sources of pain.

The dependent variables were categorical and measured in scores based on prevalence (experience of pain during lifetime and in previous month), severity - manifestation of pain (crying and intensity of pain), and impact on the child (sleep disturbance and unable to carry out daily activities) (Table 1).

The severity and impact scores were grouped by terciles, as follows:

- sum scores equal 2 or 3 = low severity; sum scores equal 4 or 5 = moderate severity; sum scores equal 6 or 7 = high severity
- sum scores equal 2 = low impact; sum scores equal 3 = moderate impact; sum scores equal 4 = high impact

The independent variables (demographic, psychosocial, behavioural and clinical) were gender, mother's schooling (0 to 3 years, 4 to 7 years, 8 to 11 years, ≥ 12 years), economic class (upper classes, middle class; lower classes), oral health behaviour (frequency and reason for going to the dentist) and oral alterations.

Oral alterations were classified as follows:

1) Physiological processes - alterations in dentition, such as physiological mobility and tooth in process of eruption;

2) Pathological processes - alterations that included:

a) (in teeth) caries lesion involving dentin or pulp and root remnant with or without fistula or pathological mobility;

b) (in periodontium) spontaneous bleeding, changes in gingival morphology and tartar.

3) Trauma (fracture), inadequate restoration without caries (fracture) and disturbance in dental formation with loss of substance (recorded as present or absent). The aim was to separate toothaches caused by dental disease and other possible causes of pain.

The variable need for dental treatment was used to determine its association with the number of decayed teeth and inadequate restoration without caries (Table 2), revealing dental caries to be the more important component.

Data analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS version 15.0. SPSS Inc., Chicago, IL, USA). A multinomial logistic regression model was used to determine associations between the dependent variables and different explanatory factors. The chi-square test was used to determine associations between each pair of variables, using a p-value < 0.20 as the cut-off point. A model was constructed to relate the clinical variables with prevalence, severity and impact measures. Gender, economic class, mother's schooling and oral health behaviour were then included in the model. Variables with a p-value < 0.05 remained in the final model. The study received approval from the Ethics Committee of the Federal University of Minas Gerais.

RESULTS

Table 3 displays the number of questionnaires sent to parents, the response rate and final sample. Some children were excluded for not fulfilling the eligibility criteria.

A total of 1740 children participated in the study [844 (48.5%) males and 896 (51.5%) females]. Nine hundred eleven (52.4%) were eight years old and 829 (47.6%) were nine years old. A total of 47.1% of the children were in the lower economic classes. A total of 45.4% of the mothers had seven or fewer years of schooling.

Table 4 displays the frequencies in each city. Among the 601 children from Belo Horizonte, the lifetime prevalence of toothache was 45.9% and nearly 15.6% (n = 94) of the children had dental pain in the previous four-week period. A total of 28.1% of children rated the severity of the pain as moderate to high and 29.4% related moderate to high impact. In the three cities together, the lifetime prevalence of toothache was 53.4% (929) and 24.4% (424) of the children reported dental pain in the previous four-week period. Among those who experienced dental pain, 72.7% (676) reported moderate to high severity of pain and 69.2% (643) reported moderate to high impact (Table 5).

Economic class and mother's schooling demonstrated collinearity (Spearman's correlation test, $p < 0.001$). The latter variable was selected to remain in the multivariate analysis for its more significant value.

The bivariate analysis revealed that the need for dental treatment and frequency/reason for going to the dentist were associated to the prevalence, severity and impact of toothache. Among the children who had never had a

toothache (811), 82.9% had no need for dental treatment. Among those who had a toothache in the previous month (424), 56.6% had a need for dental treatment ($p < 0.001$). Likewise, among the children who had no pain, 48.2% went to the dentist for prevention, 16.5% for problems or 15.3% for both reasons; among those who had pain in the previous month, 43.6% went to the dentist for problems, 14.4% for prevention and 18.4% for both ($p < 0.001$). Similar significant results occurred regarding the severity and impact of dental pain.

In the modelling procedure, mother's schooling was determined to be a confounding factor regarding the frequency/reason for going to the dentist. Interactions were tested and the effect of mother's education was modified in the presence of the second variable, but remained significant on one level. This analysis was performed with 1738 individuals, as the mother of one of the children had died and the other child had never known its mother. Tables 6 to 8 display the results of the multinomial regression modelling procedure and final explanatory factors regarding the prevalence, severity and impact of dental pain.

Children who only went to the dentist due to problems had a 4.80-fold greater chance of reporting a recent toothache than those who went to the dentist for prevention. Moreover, children with need for dental treatment in two/three or more teeth had a 4.54-fold greater chance of reporting a recent toothache than those with no need for dental treatment. The fact of having a mother with a low education level also increased the chance of recent toothache; children whose mothers had 4 to 7 years of study, for example, had

a 1.99-fold greater chance of reporting a recent toothache than those whose mothers had ≥ 12 years of schooling. The presence of fistula and pathological mobility increased the chance of reporting a recent toothache, 4.75-fold and 3.76-fold, respectively.

With the exception of pathological mobility, the same variables were significant for high severity and impact of toothache. Physiological processes were only significant for moderate scores. Children with one or two problems had a 1.74-fold and 1.57-fold greater chance of reporting moderate severity and impact, respectively, in comparison to children with no problems.

DISCUSSION

Gender was not associated with any dependent variable, which confirms the findings of previous studies (Bassols et al., 1999; Nomura et al., 2004; Ratnayake and Ekanayake, 2005; Góes et al., 2007; Pau et al., 2007). Otherwise, it is difficult to compare the results of the present study directly with previous investigations addressing toothache (Jamieson et al., 2004; Versloot et al, 2006; Pau et al., 2008; Easton et al., 2008) due to the different measures employed, different populations tested and different age groups of the participants.

Considering studies published in Brazil, the prevalence rate found in the present study for the month prior to the survey is lower than that found in the city of Florianópolis involving a convenience sample of adolescents (Nomura et al., 2004). It was also lower than the prevalence reported for the city of Recife in the six months prior to an investigation also involving adolescents (Góes et al.,

2007). However, the prevalence was higher than that reported in a third study carried out in the city of Belo Horizonte, which was 10.7% among preschoolers in the two months prior to the investigation, according to parents' reports (Moura-Leite et al., 2008).

There are studies carried out in other countries involving the same age group. One found high prevalence (70.0% in the previous two months) in South Africa (Naidoo et al., 2001). Another study (Ratnayake and Ekanayake, 2005) revealed a prevalence of 25.0% in the previous two months in Sri Lanka, which is similar to that described in the present study. A study carried out in Greece involving 12-year-olds reports a prevalence of 37.4% in the previous four weeks (Pau et al., 2007). The first and last studies mentioned used the same questionnaire on which the Child-DPQ was based.

An important finding of the present survey was the strong association between the need for dental treatment (with dental caries as the most important component) and the frequency and severity of toothache. The interpretation of the variables fistula and pathological mobility (demonstrating greater disease severity) was difficult, as the prevalence was low (only 98 and 45 children, respectively). However, the results confirmed this relationship. Góes et al. (2007) report a similar finding.

Other important finding of the present study was the association between low economic class and the severity of toothache, which also confirms findings reported by Góes et al. (2007). In the present survey, the variables economic class/mother's schooling and frequency/reason for going to the dentist were linked, revealing the indirect influence of these factors over the prevalence,

severity and impact of dental pain. It is more common for individuals from the lower economic classes and with lower levels of education to have untreated oral diseases and worse dental care patterns, resulting in a higher prevalence of toothache. This may explain why the variable frequency/reason for going to the dentist reduced the size of the effect of mother's schooling on dental pain. These findings corroborate those reported in previous studies (Bailit, 1987; Slade et al., 2001; Ratnayake and Ekanayake, 2005). However, Nomura et al. (2004) found no association between restricted access to dental services and a higher prevalence of dental pain.

A number of authors stress the need for more specific investigations capable of isolating other possible causes of toothache (Honkala et al., 2001; Nomura et al., 2004). Dental pain is common in places with ample dental service coverage or among groups with good dental care patterns (Honkala et al., 2001). There are other causes of toothache, such as the eruption of permanent teeth or exfoliating deciduous teeth (Shepherd et al., 1999; Honkala et al., 2001; Agostini et al., 2001). However, there is little information on the functional, emotional and social consequences of this pain (Tesch et al., 2007), which emphasizes the findings of the present study, in which children with one or two of these physiological problems had a 1.74-fold and 1.57-fold greater more chance of experiencing moderate severity and impact of a toothache, respectively, than children without physiological problems. It was curious that physiological problems were linked to moderate severity and impact and pathological problems were more linked to high severity and impact, thereby reproducing the real expectation.

This study has limitations. As a cross-sectional study, causal interpretations cannot be made. We can only describe associations between some variables. There was also difficulty in interpreting some of the results. However, the high intra-examiner agreement and response rate, representativity of the sample in terms of the proportion of types of schools [private and public (state and municipal)] and the use of data from three different cities reinforce the internal validity of the study. Moreover, the methodology used was partially capable of separating the causes of dental pain.

In conclusion, the prevalence, severity and impact of toothache were high in the population surveyed. The need for dental treatment and frequency/reason for going to the dentist, linked to a low level of mother's schooling and low economic class, were the most important predictors of dental pain. The present study adds to the growing body of work demonstrating clear evidence of inequalities in health and indicating increased susceptibility among a given section of the population. Measures have demonstrated such inequalities, with the prevalence of many forms of self-reported conditions higher among more deprived groups (Brekkea et al., 2002; Armfield et al., 2009).

A largely ignored dimension of the issue of inequality in health is the degree to which disease severity is associated with socioeconomic position (Eachus et al., 1999). This association was clearly demonstrated in the present study. The data provide considerable evidence for the systematic association of increased severity and impact of toothache with a decreasing socioeconomic

level. It seems that inequalities in any oral health care system occur not simply due to different abilities to secure health care resources or because the poorest individuals experience a higher prevalence of illness, but also because, for a common disorder, such as oral disease, the pain and disability experienced by poorer individuals is more severe than that of their richer counterparts (Eachus et al., 1999).

There is considerable political value in understanding the extent to which disease experience is concentrated in a relatively small percentage of individuals and in quantifying the extent to which this occurs. Knowledge on inequality in the distribution of childhood dental caries and toothache must inevitably raise the question as to the causes of this phenomenon (Armfield et al., 2009). The challenge of how to direct oral health care resources to where they are most needed remains unmet (Brekkea et al., 2002).

The results of the present study have implications for health care provision if the National Oral Health Service lives up to its principle of equal treatment for equal personal need.

ACKNOWLEDGMENTS

This study was supported by the State of Minas Gerais Research Foundation (FAPEMIG).

REFERENCES

Agostini FG, Flaitz CM, Hicks MJ. Dental emergencies in a university-based pediatric dentistry postgraduated outpacient clinic: a retrospective study. *ASDC J Dent Child* 2001; 68:316-21

Armfield JM, Spencer JA, Slade GD. Changing Inequalities in the Distribution of Caries Associated with Improving Child Oral Health in Australia. *J Public Health Dent* 2009; 69:125-134.

Bailit HL. The prevalence of dental pain and anxiety: their relationship to quality of life. *N Y State Dent J* 1987; 53:27-30

Barrêtto ER, Ferreira E F, Pordeus IA. Evaluation of toothache severity in children using a visual analogical scale of faces. Pediatr Dent 2004; 26:485-91.

Barrêtto ER, Paiva SM, Ferreira E F, Pordeus IA Validation of a child dental pain questionnaire instrument for the self-reporting of toothache in children. Pediatr Dent, *in press*.

Bassols A, Bosch F, Campillo M, Canellas M, Banos JE. An epidemiological comparison of pain complaints in the general population of Catalonia (Spain). *Pain* 1999; 83:9-16.

Brazilian Ministry of Health. Infections control and the dental practice in time of AIDS: procedures manual. Brasília: Brazilian Ministry of Health, 2000; 67-86 [in Portuguese].

Brekkea M, Hjortdahla P, Kvienb TK. Severity of musculoskeletal pain: relations to socioeconomic inequality. *Soc Sci Med* 2002; 54:221–228.

Eachus J, Chan P, Pearson N, Propper C, Smith GD. An additional dimension to health inequalities:disease severity and socioeconomic position. *J Epidemiol Community Health* 1999; 53:603–611.

Easton JA, Landgraf JM, Casamassimo PS, Wilson S, Ganzberg S. Evaluation of a generic quality of life instrument for early childhood caries-related pain. Community Dent Oral Epidemiol 2008; 36: 434–440.

Goes PS, Watt RG, Hardy R, Sheiham A. Impacts of dental pain on daily activities of adolescents aged 14-15 years and their families. Acta Odontol Scand. 2008; 66: 7-12.

Goes PS, Watt RG, Hardy R, Sheiham A. The prevalence and severity of dental pain in 14-15 year old Brazilian schoolchildren. Community Dent Health. 2007; 24: 217-224.

Honkala E, Honkala S, Rimpela A, Rimpela M. The trend and risk factors of perceived toothache among finish adolescents from 1977 to 1997. J Dent Res. 2001; 80:1823-1827.

Jamieson LM, Thomson WM, Mcgee R. An assessment of the validity and reliability of dental self-report items used in a National Child Nutrition Survey. Community Dent Oral Epidemiol 2004; 32: 49-54.

Levy PS, Lemeshow S. Sampling for health professionals**.** Belmont, LLP, California: Lifetime Learning, 1980;120-145.

McGrath C, Bedi R. A national study of the importance of oral health to life quality to inform scales of oral health related quality of life. Qual Life Res 2004; 13: 813-818.

Moura-Leite FR, Ramos-Jorge ML, Bonanato K, Paiva SM, Vale MP, Pordeus IA. The prevalence, intensity and impact of dental pain in 5-year-old preschool children. Oral Health Prev Dent 2008; 6: 295-301.

Naidoo S, Chikte UME, Sheiham A. Prevalence and impact of dental pain in 8-10-year-olds in the Western Cape. SADJ 2001; 56: 521-523.

Nomura LH, Bastos JLD, Peres MA. Prevalência de dor de dente e associação com cárie e condições socioeconômicas em escolares, sul do Brasil, 2002. Braz Oral Res 2004; 18:134-140

Pau A, Baxevanos KG, Croucher R. Family structure is associated with oral pain in 12-year-old Greek schoolchildren. Int J Paediatr Dent 2007; 17: 345–351.

Pau A, Khan SS, Babar MG, Croucher R. Dental pain and care-seeking in 11–14-year-old adolescents in a low-income country. Eur J Oral Sci 2008;116: 451–457.

Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century – the approach of the WHO Global Oral Health Programme. Community Dent Oral Epidemiol 2003; 31: 3-23.

Ratnayake N, Ekanayake L. Prevalence and impact of oral pain in 8-year-old children in Sri Lanka. Int J Paediatr Dent 2005; 15: 105–112.

Shepherd MA, Nadanovsky P, Sheiham A. The prevalence and impact of dental pain in 8 year-old school children in Harrow, England. Br Dent J 1999; 187: 38-41.

Slade GD. Epidemiology of dental pain and dental caries among children and adolescents. Community Dent Health 2001; 18: 219–227.

Tesch FC, Oliveira BH, Leão A. Measuring the impact of oral health problems on children's quality of life: conceptual and methodological issues. Cad Saúde Pública 2007; 23:2555-2564.

Tickle M, Blinkhorn AS, Milsom KM. The occurrence of dental pain and extractions over a 3-year period in a cohort of children aged 3-6 years. J Public Health Dent 2008; 68: 63-69.

Vargas CM, Macek MD, Goodman HS, Wagner ML. Dental pain in Maryland school children. J Public Health Dent 2005; 65:3–6.

Versloot J, Veerkamp JS, Hoogstraten J. Dental discomfort questionnaire: assessment of dental discomfort and/or pain in very young children. Community Dent Oral Epidemiol 2006; 34: 47–52.

World Health Organization. Oral Health Surveys: basic methods. 4th ed. Geneva: World Health Organization, 1997; 31-52.

WEB REFERENCES

Brazilian Association of Research Companies. Brazilian Economic Classification Criteria. Accessed: Jan 12, 2006 [in Portuguese]. Available at: http://www.abep.org/codigosguias/ABEP_CCEB.pdf. .

Brazilian Ministry of Health. National Coordination of Oral Health. Oral Health Conditions of the Brazilian Population, SB_Brazil_2003 Project, Main Results. Accessed: Apr 14, 2006 [in Portuguese]. Available at: http://portal.saude.gov.br/saude/arquivos/relatorio_brasil_sorridente.pdf.

Research and Statistic Brazilian Institute - IBGE. Demographic Census 2000 – Preliminary synopsis, 2000. Accessed: Jul 6, 2006 [in Portuguese]. Available at: http://www.ibge.gov.br/cidadesat/defaut.php.

TABLE 1: Structure of the questionnaire used

SUBSCALES	**ITEMS**	**ANSWERS**
Prevalence	1. Have you ever had a toothache?	0= no 1= yes
	2. When was your last toothache?	0= does not apply 1= more than a month 2= last month 3= today
Severity	3. Have you ever cried because of a toothache?	0= does not apply 1= no 2= yes
	4. How was it when the pain was at its worst? (face scale)	0= does not apply 1= very mild pain 2= mild pain 3= moderate pain 4= severe pain 5= very severe pain
Impact	5. Have you even been awakened at night by the pain of a toothache?	0= does not apply 1= no 2= yes
	6. Have you ever been unable to carry out any normal tasks because of a toothache?	0= does not apply 1= no 2= yes

TABLE 2: Cross-tabulation between number of decayed teeth and inadequate restoration without caries, forming the variable *need for dental treatment*

Number of decayed teeth	**Inadequate restoration**		**Need for dental treatment**[a]		
	0	1	Number of teeth	Sum	Total (n)
0	1028	85	0	1028	1028
1	211	40	1	85+211	296
2	139	23	2	40+139	179
3 or more	190	24	3 or more	23+190+24	237
Total	1568	172	-	-	1740

[a] Zero teeth = children with no decayed teeth or inadequate restoration
One teeth = children with 1 inadequate restoration or children with 1 decayed teeth
Two teeth = children with 1 decayed teeth and 1 inadequate restoration or children with 2 decayed teeth
Tree or more teeth = children with 2 decayed teeth and 1 inadequate restoration or children with 3 or more decayed teeth or children with 3 or more inadequate restoration

TABLE 3: Response rate to Brazilian Economic Classification Criteria sent to parents and number of children in the study according to city

Cities	Questionnaire sent	Questionnaire returned	Children excluded[a]	Children interviewed
Belo Horizonte	751	662 (88.1%)	61	601 (80.0%)
Montes Claros	652	606 (92.6%)	14	592 (90.8%)
Curvelo	632	575 (91.0%)	28	547 (83.9%)
Total	2035	1843 (90.5%)	103	1740 (85.5%)

[a] Failure to fulfil eligibility criteria

TABLE 4: Main results from each city

VARIABLE		Belo Horizonte (N=601) n (%)	Montes Claros (N=592) n (%)	Curvelo (N=547) n (%)
Prevalence	Lifetime	276 (45.9)	357 (60.3)	295 (53.9)
	Recent	94 (15.6)	159 (26.9)	170 (31.0)
Severity	Low	107 (17.8)	72 (12.2)	73 (13.3)
	Moderate	104 (17.3)	136 (23.0)	110 (20.1)
	High	65 (10.8)	149 (25.1)	112 (20.5)
Impact	Low	99 (16.5)	128 (21.6)	58 (10.6)
	Moderate	82 (13.6)	132 (22.3)	152 (27.8)
	High	95 (15.8)	97 (16.4)	85 (15.5)

TABLE 5: Frequency distribution of schoolchildren in relation to dependent and main independent variables (n=1740)

VARIABLE		(n)	%
Global Prevalence	No pain[a]	811	46.6
	Pain in the last month	424	24.4
	Lifetime	505	29.0
Global Severity	Absent	811	46.6
	Low[a]	253	14.5
	Moderate	350	20.2
	High	326	18.7
Global Impact	Absent	811	46.6
	Low[a]	286	16.4
	Moderate	366	21.1
	High	277	15.9
Economic class	Upper[a]	396	22.8
	Middle	525	30.2
	Lower	819	47.0
Mother's schooling (n=1738)	≥ 12 years[a]	288	16.6
	8 to 11 years	660	37.9
	4 to 7 years	551	31.7
	0 to 3 years	239	13.8

Frequency and reason for going to the dentist	Prevention[a]	528	30.3
	Both	336	19.3
	Problems	532	30.6
	Never went or does not remember	344	19.8
Need for dental treatment	Without need[a]	1028	59.1
	Need in 1 tooth	296	17.0
	Need in 2 teeth	179	10.3
	Need in 3 or more teeth	237	13.6
Physiological processes	no problems[a]	514	29.5
	1 or 2 problems	593	34.1
	3 or more problems	633	36.4

[a]Comparison groups

TABLE 6: Results of multiple multinomial logistic regression of reported prevalence[a] of toothache among schoolchildren aged eight and nine years (n=1738)

Variable	Recent pain		Lifetime	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Mother's schooling				
≥ 12 years	1		1	
8 to 11 years	1.03 (0.68-1.56)	0.881	1.27 (0.87-1.84)	0.211
4 to 7 years	1.99 (1.29-3.06)	0.002	1.86 (1.24-2.79)	0.003
0 to 3 years	1.24 (0.74-2.08)	0.405	1.44 (0.89-2.33)	0.133
Frequency/reason for going to the dentist				
Prevention	1		1	
Both	3.17 (2.11-4.76)	0.000	4.55 (3.18-6.51)	0.000
Problems	4.80 (3.30-6.99)	0.000	4.89 (3.46-6.92)	0.000
Never went or does not remember	1.86 (1.23-2.80)	0.003	1.43 (0.96-2.12)	0.076
Need for dental treatment				
Without need	1		1	
Need in 1 tooth	1.78 (1.24-2.56)	0.002	1.93 (1.38-2.70)	0.000
Need in 2 teeth	4.54 (2.81-7.34)	0.000	3.87 (2.42-6.19)	0.000
Need in 3 or more teeth	4.54 (2.86-7.19)	0.000	3.51 (2.22-5.54)	0.000
Fistula - present	4.75 (1.93-11.71)	0.001	4.28(1.73-10.60)	0.002
Pathological mobility	3.76 (1.17-12.03)	0.025	2.75 (0.84-8.98)	0.094

[a]No pain as comparison group

TABLE 7: Results of multiple multinomial logistic regression for reported severity[a] of toothache (in lifetime) among schoolchildren aged eight and nine years (n=928)

Variable	Moderate Severity		High Severity	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Mother's schooling				
≥ 12 years	1		1	
8 to 11 years	1.25 (0.73-2.13)	0.398	1.86 (0.97-3.58)	0.060
4 to 7 years	1.88 (1.08-3.27)	0.024	2.56 (1.31-4.98)	0.006
0 to 3 years	1.47 (0.75-2.87)	0.259	2.71 (1.27-5.76)	0.009
Frequency/reason for going to the dentist				
Prevention	1		1	
Both	2.87 (1.70-4.86)	0.000	4.80 (2.54-9.05)	0.000
Problems	2.24 (1.38-3.65)	0.001	3.32 (1.83-6.02)	0.000
Never went or does not remember	2.09 (1.17-3.74)	0.013	2.85 (1.44-5.62)	0.003
Need for dental treatment				
Without need	1		1	
Need in 1 tooth	1.18 (0.74-1.88)	0.470	1.99 (1.22-3.25)	0.005
Need in 2 teeth	1.81 (1.06-3.10)	0.029	2.26 (1.27-4.03)	0.005
Need in 3 or more teeth	1.81 (1.02-3.21)	0.042	4.70 (2.65-8.32)	0.000
Fistula - present	1.57 (0.67-3.68)	0.292	3.01(1.34-6.76)	0.007
Physiological processes				
1 or 2 problems	1.74 (1.16-2.60)	0.007	1.48 (0.96-2.26)	0.069

3 or more problems	1.38 (0.90-2.11)	0.136	0.95 (0.60-1.51)	0.860

[a]Low severity as comparison group.

TABLE 8: Results of multiple multinomial logistic regression for reported impact[a] of toothache (in lifetime) among schoolchildren aged eight and nine years (n=928)

Variable	Moderate Impact		High Impact	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Mother's schooling				
≥ 12 years	1		1	
8 to 11 years	1.70 (1.00-2.87)	0.046	1.16 (0.62-2.15)	0.637
4 to 7 years	1.65 (0.96-2.84)	0.068	1.50 (0.80-2.80)	0.196
0 to 3 years	1.44 (0.75-2.75)	0.268	1.86 (0.92-3.76)	0.079
Frequency/reason for going to the dentist				
Prevention	1		1	
Both	2.00 (1.21-3.30)	0.007	2.48 (1.31-4.70)	0.005
Problems	1.09 (0.68-1.75)	0.693	2.10 (1.17-3.78)	0.013
Never went or does not remember	1.23 (0.70-2.13)	0.459	1.97 (1.01-3.83)	0.046
Need for dental treatment				
Without need	1		1	
Need in 1 tooth	1.04 (0.67-1.60)	0.860	1.23 (0.81-2.25)	0.407
Need in 2 teeth	0.93 (0.56-1.52)	0.780	1.39 (1.09-3.15)	0.219
Need in 3 or more teeth	0.94 (0.57-1.55)	0.823	2.08 (1.18-3.33)	0.005
Fistula - present	1.33 (0.68-2.60)	0.390	2.30 (1.23-4.30)	0.009
Physiological processes				
1 or 2 problems	1.57 (1.08-2.29)	0.018	1.25 (0.83-1.87)	0.279

3 or more problems	1.26 (0.85-1.88)	0.224	0.82 (0.53-1.27)	0.387

[a]Low impact as comparison group

CONSIDERAÇÕES FINAIS

Inicialmente, cabe ressaltar que os resultados do processo de validação dos instrumentos de medida usados neste estudo trouxeram evidências que recomendam o uso do Child-DPQ e da VASOF em pesquisa epidemiológica sobre dor de dente com crianças brasileiras entre 8 e 9 anos de idade. Tanto um como outro conseguem atender a questões relevantes à aplicabilidade de um instrumento, como conteúdo breve, facilidade de interpretação e de incorporação a rotinas clínicas e de não requererem treinamento complexo para aplicação (Stinson et al., 2006)

Levando-se em conta o intuito de retratar melhor a realidade do país, o fato do instrumento ter sido criado, bem como validado no Brasil, já são pontos positivos. Em relação à escala de faces, particularmente, observa-se uma aproximação da figura do desenho à imagem da criança, permitindo melhor identificação, especialmente por possibilitar a diferenciação por gênero e raça, superando possíveis limitações culturais associadas a outras escalas. Alguns autores têm enfatizado a influência das diferenças raciais em vários aspectos do processo saúde-deonça, incluindo a presence de dor, bem como a necessidade de aprofundamento dos estudos nesta direção (Ratnayake e Ekanayake, 2005; Jamieson et al., 2004; Jamieson e Koopu, 2007; Broder e Wilson-Genderson, 2007).

A prevalência, a gravidade e o impacto da dor de dente na população estudada foram altos. Os principais fatores associados à dor foram frequência e razão para ir ao dentista e necessidade de tratamento odontológico. As evidências sugerem que os serviços de saúde bucal, focando esta população, podem não estar sendo adequadamente aplicados, principalmente para crianças de pior condição econômica. Os resultados corroboram um número crescente de estudos que demonstram evidências de desigualdades em saúde, ou uma maior susceptibilidade às doenças em um dado setor da população.

O conhecimento gerado a partir de estudos desta natureza pode orientar mudanças nas pesquisas, na política e em questões não resolvidas dos serviços de saúde, como os efeitos das doenças e condições orofaciais na saúde geral e na qualidade de vida; o impacto dessas diferentes condições em cada faixa etária; se tratamentos para tais problemas podem resultar em

melhoria da saúde bucal e geral ou têm conseguido promover qualidade de vida (Gift,1996). Particularmente, deve inevitavelmente, convidar à busca pelas causas de desigualdades em saúde, bem como por soluções que poderiam minimizá-las ou eliminá-las.

Existem, ainda, outras questões a serem debatidas e respondidas.

A percepção do processo saúde-doença varia de acordo com a capacidade cognitiva da criança, que se modifica com a idade, em função dos estágios de desenvolvimento emocional, social e de linguagem. Também pode variar segundo a cultura e as condições sócio-econômica e de saúde (Pau, 1996; McGrath et al., 2004; Riley, 2004). Ao responder uma pergunta sobre sua qualidade de vida, a criança precisa entender o que está sendo questionado para saber formular uma resposta adequada. Ela também pode achar difícil situar-se temporalmente, para expressar sobre o que viveu e sentiu durante um período específico, como o de uma semana ou um mês (Wallander et al., 2001). Assim, um instrumento elaborado para uma criança de 12 anos não tem como ser aplicado a uma criança de sete. Os questionários voltados para a população pediátrica precisam ser idade-específicos (Eiser, 1997; Wallander et al., 2001; McGrath et al., 2004). São necessárias mais pesquisas que avaliem como a faixa etária, o nível cognitivo, as habilidades de leitura e interpretação, a condição sócio-econômica e o estado de saúde afetam os relatos das crianças (Riley, 2004).

O fato de haver um processo contínuo de mudanças nas crianças também repercute sobre as suas características bucais e aparência, dificultando a comparação entre crianças de diferentes idades e a avaliação, nas mesmas crianças, de alterações na qualidade de vida ao longo do tempo (McGrath et al., 2004).

Alguns grupos de crianças, como as muito jovens ou enfermas, apresentam dificuldade para fornecer informação acurada sobre a sua qualidade de vida (Wallander et al., 2001). Por essa razão, questionários orientados a pré-escolares, por exemplo, costumam ser preenchidos por respondentes secundários, geralmente os pais (Jockovic et al., 2004). Porém, não se pode ter certeza que eles consigam retratar bem a realidade das

crianças e nem que forneçam respostas verdadeiras, isentas de pressão social (McGrath et al., 2004). Dependendo do tipo de informação solicitada no questionário, os relatos dos pais tenderão a ser mais ou menos próximos das experiências vividas pelos filhos. Foi demonstrado que os pais são capazes de avaliar melhor os domínios relacionados às funções e sintomas físicos do que os relacionados às funções emocionais e sociais (Wallander et al., 2001). Em geral, os pais tendem a considerar que uma doença tem mais impactos negativos sobre a vida da criança do que a própria criança (Eiser e Morse, 2001). Entretanto, no estudo de Jockovic et al. (2003), observou-se que as crianças consideravam a sua qualidade de vida mais comprometida por problemas bucais do que suas mães.

Responsável e criança respondem a questionários sob diferentes perspectivas e ambas as informações podem ser relevantes 70. Portanto, em certas faixas etárias, seria importante utilizar os pais como um meio de obter informações complementares sobre a qualidade de vida da criança (Eiser, 1997; Jockovic et al., 2003; Jockovic et al., 2004). Porém, ainda é um grande desafio para pesquisadores encontrar a forma mais adequada de integrar os relatos dos responsáveis aos das crianças (Riley, 2004).

Outro ponto a ser considerado é que a família também é afetada pelos problemas de saúde da criança (Pau, 1996). Os responsáveis muitas vezes têm suas atividades diárias limitadas em função dos problemas de saúde da criança, os quais também trazem preocupação, ansiedade e podem produzir impactos financeiros que elevam o estresse familiar (Stein e Jessop, 2003). Portanto, instrumentos desenvolvidos para mensurar a qualidade de vida relacionada à saúde bucal de crianças também deveriam abordar o impacto desses problemas sobre a qualidade de vida da família (Locker et al., 2002). Esse tipo de recurso permite acessar informações importantes sobre as conseqüências psicológicas, materiais e sociais dos problemas de saúde infantis sobre a família e podem ser muito úteis para o planejamento de serviços públicos (Stein e Jessop, 2003).

Apesar dos progressos no desenvolvimento de instrumentos de medida que associam variáveis biológicas e psicossociais e procuram medir o impacto

da saúde bucal sobre a qualidade de vida de crianças, ainda há muito para ser esclarecido. Neste momento em que a odontologia baseada em evidências vem crescendo em importância, é fundamental que, tanto na clínica quanto na pesquisa, seja substancialmente ampliada a utilização destes instrumentos, a fim de que desfechos realmente importantes para a vida das crianças e de suas famílias passem a ser considerados (Tesch et al.,2007).

Se o compromisso é com a transformação das condições de vida, proposta da Promoção de Saúde, o objetivo é procurar integrar não apenas as necessidades que têm como base o perfil epidemiológico, mas também a diversidade cultural e as expectativas das pessoas e grupos em relação a sua saúde. Devem ser reconhecidos os diferentes estilos de vida, os sistemas de valores e crenças, que têm importantes implicações nos modos das pessoas compreenderem e se comportarem frente ao fenômeno saúde-doença (Watt e Sheiham, 1999; Slade, 2001).

REFERÊNCIAS
CONSIDERAÇÕES INICIAIS E FINAIS

REFERÊNCIAS

1. Brasil. Ministério da Saúde. Coordenação nacional de saúde bucal. Condições bucais de saúde da população brasileira. Projeto SBBrasil2003, Resultados Principais. Disponível em: http://portal.saude.gov.br/saúde/arquivos/relatório_brasil_sorridente.pdf. Acesso em:14 Abr 2005.

2. Broder HL, Wilson-Genderson M. Reliability and convergent and discriminant validity of the Child Oral Health Impact Profile (COHIP Child's version). Community Dent Oral Epidemiol 2007;35(1):20-31.

3. Eiser C, Morse R. Can parents rate their child's health-related quality of life? Results of a systematic review. Qual Life Res 2001;10(4):347-57.

4. Eiser C. Children's quality of life measures. Arch Dis Child 1997; 77(4):350-54.

5. Ferreira J. O corpo sígnico. In: Alves PC, Minayo MCS. Saúde e doença: um olhar antropológico. Rio de Janeiro: Fiocruz, 1994. cap. 8, p. 101-12.

6. Gift HC. Quality of life: an outcome of oral health care? J Public Health Dent, 1996;56(2):67-8.

7. Goes PS, Watt RG, Hardy R, Sheiham A. The prevalence and severity of dental pain in 14-15 year old Brazilian schoolchildren. Community Dental Health. 2007;24(4):217-24.

8. Jamieson LM, Koopu PI. Associations between ethnicity and child health factors in New Zealand. Ethn Dis 2007;17(1):84-1.

9. Jamieson LM, Thomson WM, McGee R. An assessment of the validity and reliability of self-report items used in a National Child Nutrition Survey. Community Dent Oral Epidemiol 2004;32(1):49-4.

10. Jokovic A, Locker D, Guyatt G. How well do parents know their children? Implications for proxy reporting of child health-related quality of life. Qual Life Res 2004;13(7):1297-307.

11. Jokovic A, Locker D, Stephens M, Guyatt G. Agreement between mothers and children aged 11-14 years in rating child oral health-related quality of life. Community Dent Oral Epidemiol 2003;31(5):335-43.

12. Jokovic A, Locker D, Stephens M, Kenny D, Tompson B, Guyatt G. Validity and reliability of a questionnaire for measuring child oral-health-related quality of life. J Dent Res 2002;81(7):459-63.

13. Locker D, Jokovic A, Stephens M, Kenny D, Tompson B, Guyatt G. Family impact of child oral and oro-facial conditions. Community Dent Oral Epidemiol 2002;30(6):438-48.

14. Mcfarlane TV, Blinkhorn AS, Davies RM, Kincey J, Worthungton HV. Orofacial pain in the community: prevalence and associated impact. Community Dent Oral Epidemiol 2002;30(1):52-0.

15. McGrath C, Bedi R. A national study of the importance of oral health to life quality to inform scales of oral health related quality of life. Qual Life Res 2004;13(4):813-8.

16. McGrath C, Broder H, Wilson-Genderson M. Assessing the impact of oral health on the life quality of children: implications for research and practice. Community Dent Oral Epidemiol 2004;32(2):81-5.

17. Pal DK. Quality of life assessment in children: a review of conceptual and methodological issues in multidimensional health status measures. J Epidemiol Community Health 1996;50(4):391-96.

18. Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century – the approach of the WHO Global Oral Health Programme. Community Dent Oral Epidemiol 2003;31(1):3-23.

19. Portillo JAC, Paes AMC. Auto-percepção de qualidade de vida relativa à saúde bucal. Rev Bras Odontol Saúde Coletiva, 2000;1(1):75-8.

20. Ratnayake N and Ekanayake L. Prevalence and impact of oral pain in 8-year-old children in Sri Lanka. Int J Pediatr Dent 2005;15(2):105–12.

21. Riley AW. Evidence that school-age children can self-report on their health. Ambul Pediatr 2004;4(4 Suppl):371-76.

22. Scarpelli AC, Paiva SM, Pordeus IA, Allison PJ, Varni JW. Measurement properties of the Brazilian version of the 'Pediatric Quality of Life™ (PedsQL™) Cancer Module Scale. Health Qual Life Outcomes. 2008;6:35.

23. Shepherd MA, Nadanovsky P, Sheiham A. The prevalence and impact of dental pain in 8 year-old school children in Harrow, England. Br Dent J 1999;187(1):38-1.

24. Siqueira JTT. Dores mudas: as estranhas dores da boca. Artes Médicas 2008. 270p.

25. Slade GD. Epidemiology of dental pain and dental caries among children and adolescents. Community Dent Health 2001;18(4):219-27.

26. Stein RE, Jessop DJ. The impact on family scale revisited: further psychometric data. J Dev Behav Pediatr 2003;24(1):9-16.

27. Stinson JN, Kavanagh T, Yamada J, Gill N, Stevens B. Systematic review of the psychometric properties, interpretability and feasibility of self-report pain intensity measures for use in clinical trials in children and adolescents. Pain 2006;125(1-2):143-57.

28. Tesch FC, Oliveira BH, Leão A. Mensuração do impacto dos problemas bucais sobre a qualidade de vida de crianças: aspectos conceituais e metodológicos. Cad Saúde Pública, 2007;23(11):2555-564.

29. Traebert J, Lacerda JT, Fischerc TK, Jinboc Y. Dental Caries and Orofacial Pain Trends in 12-Year-Old School Children between 1997 and 2003. Oral Health Prev Dent 2005;3( ):243–248.

30. Wallander JL, Schmitt M, Koot HM. Quality of life measurement in children and adolescents: issues, instruments, and applications. J Clin Psychol 2001;57(4):571-85.

31. Watt R, Sheiham A. Inequalities in oral health: a review of the evidence and recommendations for action. Brit Dent J, 1999;187(1):6-12.

32. Watt RG. Emerging theories into the social determinants of health: implications for oral health promotion. Community Dent Oral Epidemiol, 2002; 30(4):241-47.

33. World Health Organization. WHOQOL – measuring quality of life. The World Health Organization quality of life instruments. Geneva: World Health Organization; 1997.

APÊNDICES

APÊNDICE A
INSTRUMENTO "QUESTIONÁRIO DE DOR DE DENTE INFANTIL"
(Child-DPQ)

IDENTIFICAÇÃO

Nome da criança: _____ Sala/turma:_____

Escola: _____ Professora: _____

Data de nascimento: ___/___/___ Sexo: ( )M ( )F Data da entrevista: ___/___/___

1) Você já sentiu dor de dente?

( )sim ( )não ( )não lembro = NL

2) Quando foi sua última dor de dente?

( )NL ( )hoje

( )há pouco tempo/último mês

( )há muito tempo/mais de 1 mês

3) Você chorou no seu pior momento de dor?

( )sim ( )não ( )NL

4) Como você ficou quando teve sua pior dor ? (escala de faces)

Escores: 1( ) 2( ) 3( ) 4( ) 5( ) NL( )

5) Você acordou à noite por causa da dor?

( )sim ( )não ( )NL

6) Você deixou de fazer alguma tarefa habitual por causa da dor?

( ) sim ( )não ( ) NL

7) Você já sentiu dor em outra parte do corpo? ( ) sim ( )não ( ) NL

Qual? ( )barriga ( )cabeça ( )machucado ( )peito ( )garganta

( ) costas ( )outra. Qual? _____ ( )NL

Esta dor foi menor ( ), maior ( ) ou igual ( ) à dor de dente?

APÊNDICE B

EXAME CLÍNICO DA CRIANÇA

ODONTOGRAMAS

Periodonto:

		55	54	53	52	51	61	62	63	64	65		
17	16	15	14	13	12	11	21	22	23	24	25	26	27
47	46	45	44	43	42	41	31	32	33	34	35	36	37
		85	84	83	82	81	71	72	73	74	75		

0. Sem alteração
1. Sangramento
2. Tártaro
3. Mudança da morfologia gengival
4. Condições inflamatórias agudas
5. Fístula

Dentição:

		55	54	53	52	51	61	62	63	64	65		
17	16	15	14	13	12	11	21	22	23	24	25	26	27
47	46	45	44	43	42	41	31	32	33	34	35	36	37
		85	84	83	82	81	71	72	73	74	75		

6. Mobilidade fisiológica
7. Dente em processo de erupção

Dentes:

		55	54	53	52	51	61	62	63	64	65		
17	**16**	**15**	**14**	**13**	**12**	**11**	**21**	**22**	**23**	**24**	**25**	**26**	**27**
47	**46**	**45**	**44**	**43**	**42**	**41**	**31**	**32**	**33**	**34**	**35**	**36**	**37**
		85	**84**	**83**	**82**	**81**	**71**	**72**	**73**	**74**	**75**		

8. Lesão cariosa envolvendo dentina – aguda
9. Lesão cariosa envolvendo dentina – crônica
10. Lesão cariosa envolvendo polpa
11. Resto radicular
12. Traumatismo
13. Restauração inadequada
14. Distúrbio de formação dentária com perda de substância
15. Mobilidade patológica
16. Dente fora de posição na arcada
17. Ausência dentária

Usa aparelho ortodôntico: ( ) sim ( ) não
( ) fixo ( ) móvel

APÊNDICE C

QUESTIONÁRIO PARA OS PAIS/RESPONSÁVEIS

Srs. Pais ou responsáveis, o preenchimento dos dados da criança e dos 3 quadros abaixo é muito importante para esta pesquisa ! Não há respostas certas ou erradas. Além disto, não toma tempo e é de fácil preenchimento. Lembrem-se: VOCÊS NÃO PRECISAM SE IDENTIFICAR neste questionário, mas sem completá-lo todo não há como seu filho participar. Conto com sua colaboração !

Dados da criança

Nome: _____ Tel:_____

Escola: _____Data de nascimento: ___/___/___ Sexo:( )F ( )M

Quem é o principal responsável pelo sustento da família da criança (chefe da família)?

Pai ( ) Mãe ( ) Avô ou avó ( ) Outro ( ) - Quem?_____

Nos 3 quadros abaixo, marque com X:

Qual foi o último ano de estudo que o CHEFE DA FAMÍLIA da criança completou

( ) não estudou	
Primário	( ) 1ª série do 1º grau ( ) 3ª série do 1º grau ( ) 2ª série do 1º grau ( ) 4ª série do 1º grau
Ginasial	( ) 5ª série do 1º grau ( ) 7ª série do 1º grau ( ) 6ª série do 1º grau ( ) 8ª série do 1º grau
Colegial	( ) 1º ano do 2º grau ( ) 2º ano do 2º grau ( ) 3º ano do 2º grau
Superior	( ) incompleto ( ) completo

Qual foi o último ano de estudo que a MÃE da criança completou

( ) não estudou	
Primário	( ) 1ª série do 1º grau ( ) 3ª série do 1º grau ( ) 2ª série do 1º grau ( ) 4ª série do 1º grau
Ginasial	( ) 5ª série do 1º grau ( ) 7ª série do 1º grau ( ) 6ª série do 1º grau ( ) 8ª série do 1º grau
Colegial	( ) 1º ano do 2º grau ( ) 2º ano do 2º grau ( ) 3º ano do 2º grau
Superior	( ) incompleto ( ) completo

Quais itens abaixo existem na casa em que a criança mora

( ) automóvel. Quantos? ___	( ) banheiro. Quantos? ___
( ) rádio. Quantos? ___	( ) vídeo cassete. Quantos? ___
( ) geladeira. Quantas? ___	( ) TV a cores. Quantas? ___
( ) máquina de lavar roupas. Quantas? ___	( ) aspirador de pó. Quantos? ___
( ) empregada mensalista. Quantas? ___	( ) freezer. Quantos? ___

Muito obrigada por sua participação!!

APÊNDICE D

ORIENTAÇÕES AOS PAIS/RESPONSÁVEIS

APÓS O EXAME CLÍNICO DA CRIANÇA

Escola: _____ Data: ___/___/___

Nome da criança: _____

Srs. Pais ou responsáveis,

Recentemente, estivemos na escola de seu filho realizando uma pesquisa sobre impacto da dor de dente na vida das crianças. Você autorizou a entrevista e o exame em seu filho e estamos agora lhe informando o que observamos. Data do exame: ___/___/___

Problema de saúde bucal de seu filho: _____

_____.

Por este motivo ele:

( ) precisa melhorar os cuidados de higiene bucal em casa

( ) precisa realizar tratamento odontológico

Deste modo, se você já conhece um local onde possa levá-lo para fazer tratamento odontológico, leve. Se não conhece, procure o Centro de Saúde da Prefeitura de sua cidade, mais próximo de sua residência, cujo endereço é:

_____

Neste Centro serão efetuados os procedimentos habituais de cadastramento da criança para tratamento, segundo as normas do programa de saúde bucal da Prefeitura. Os casos de urgência poderão, também, ser solucionados nas Unidades de Pronto Atendimento listadas abaixo, como estabelece a regra da Secretaria Municipal de Saúde de sua cidade.

Obrigada pela participação !

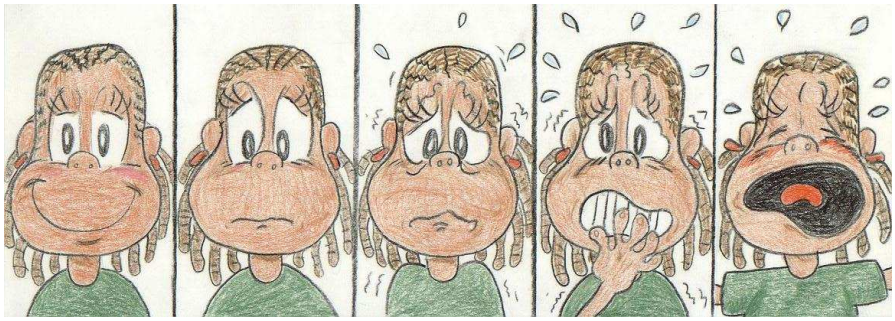
Eliane de Paula Reis Barrêtto

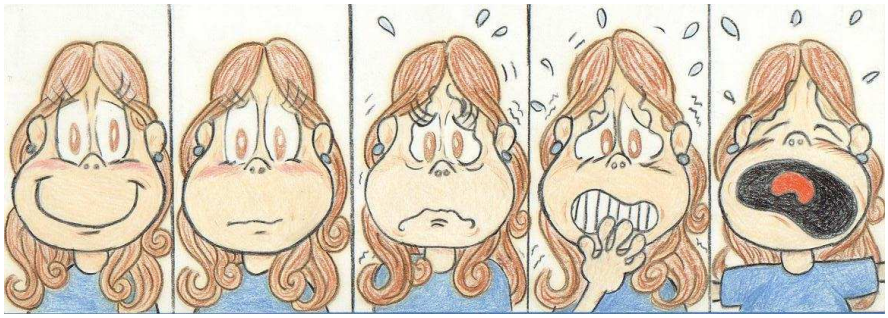
Lista das unidades de atendimento de urgência:

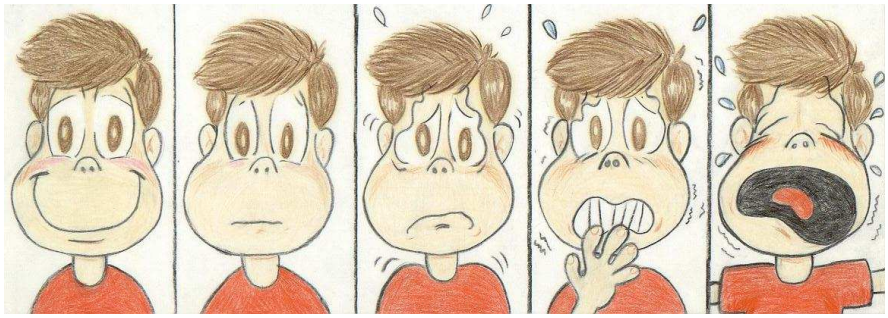
_____

_____

APÊNDICE E
ESCALA VISUAL ANALÓGICA DE FACES







APÊNDICE F
DISTRIBUIÇÃO DOS QUESTIONÁRIOS POR ESCOLA, EM CADA CIDADE, E TAXA DE RESPOSTA (%)

TABELA 1 – Distribuição dos questionários, por escola, na cidade de Curvelo

Escolas participantes em Curvelo	CCEB distribuídos	CCEB devolvidos	Crianças excluídas	Crianças entrevistadas
EE São Geraldo	58	50	4	46
EE Eurípedes Paula	73	61	6	55
EE Irmã Rai Marques	71	61	3	58
IPP	49	49	-	49
EM Dr. Viriato/CAIC	336	309	13	296
EM João Batista	40	40	2	38
EM João Caldeira	5	5	-	5
Total	632	575 (91%)	28	547 (86,5%)

EM= escola municipal / EE= escola estadual

TABELA 2 – Distribuição dos questionários, por escola, na cidade de Montes Claros

Escolas participantes em MOC	CCEB distribuídos	CCEB devolvidos	Crianças excluídas	Crianças entrevistadas
EM Cristiano Borém	149	141	2	139
EM Sebastião Mendes	44	43	1	42
EE Helena Prates	148	130	-	130
EE Francisco Lopes	157	145	6	139
EE Aristides Porto	47	46	2	44
Colégio Marista São José	72	66	1	65
EM Laudelina Fonseca	29	27	2	25
EE Santa Rosa Lima	6	6	-	6
Total	652	606(92,6%)	14	592(90,5%)

EM= escola municipal / EE= escola estadual

TABELA 3 – Distribuição dos questionários, por escola, na cidade de Belo Horizonte

Escolas participantes em BH	CCEB distribuídos	CCEB devolvidos	Crianças excluídas	Crianças entrevistadas
EM Pedro Nava	95	95	12	83
Izabela Hêndrix	88	69	3	66
EE Josè Bonifácio	96	96	14	82
EM Mª Modesta Cravo	77	63	6	57
EE Pe. Eustáquio	103	90	6	84
EE Profa. Inês Geralda	54	54	10	44
EE São Bento	72	59	4	55
Instituto Rouxinol	48	37	4	33
EM Moysés Kalil	118	99	2	97
TOTAL	751	662(88,14%)	61	601(80,0%)

EM= escola municipal / EE= escola estadual

APÊNDICE G
CARTA CONVITE

Prezados pais ou responsáveis,

Meu nome é Eliane de Paula Reis Barrêtto, sou cirurgiã-dentista formada há 12 anos pela Faculdade de Odontologia da Universidade Federal de Minas Gerais e especialista e Mestre em Odontologia infantil. Sabendo que muitas crianças em nosso país têm um alto índice de doenças da boca e que a dor de dente é o sintoma mais comum provocado por estas doenças, estou desenvolvendo uma pesquisa intitulada **"Estudo de prevalência, gravidade e impacto da dor de dente na vida diária de crianças das cidades de Montes Claros e Curvelo"**, cujo objetivo é verificar a presença de dor de dente em crianças e avaliar o mal e os prejuízos que esta dor pode causar a elas e às suas famílias.

Esta pesquisa tem uma grande preocupação social e poderá ajudar na melhoria do atendimento odontológico infantil nessa cidade! E mesmo aquelas crianças que nunca se queixaram ou tiveram dor de dente poderão participar.

Para isto, vou entrevistar e fazer o exame da boca de crianças de 8 e 9 anos, em escolas da cidade. Gostaria de poder contar com sua colaboração, esclarecendo que:

1) A direção da escola de seu filho autorizou a realização do estudo em suas dependências.
2) **Não haverá custos** para os pais ou para as escolas participantes.
3) A entrevista conterá perguntas referentes à presença, gravidade e tempo de duração da dor de dente nas crianças, bem como sobre o sofrimento e os prejuízos causados pela dor. Ela será realizada durante o período das aulas, nas próprias dependências da escola, com uma criança de cada vez, tendo duração média de alguns minutos, o que não atrapalhará o andamento das atividades escolares normais ou perturbará a ordem na escola.

4) Será realizado, também, um exame simples dos dentes da criança, logo após a entrevista, na própria escola, utilizando-se somente espelho, gaze e algodão, devidamente esterilizados. Estarei usando, também, os devidos equipamentos de proteção individual (avental, óculos, além de gorro, máscara, luvas descartáveis), conforme as normas vigentes de biossegurança. Este exame não oferece risco de nenhuma natureza para as crianças e é rápido e indolor.
5) Somente serão entrevistadas e examinadas as crianças cujos pais assinarem o consentimento e preencherem **todo** o formulário sobre itens de posse e grau de instrução, anexado a esta carta. Não há respostas certas ou erradas e vocês não precisam se identificar.
6) Os resultados desta pesquisa serão de grande valor para a odontologia voltada para crianças e adolescentes e só serão manipulados pela equipe de pesquisa. A identidade dos participantes não será, em nenhuma hipótese, revelada. Além disso, você pode desistir de participar a qualquer momento, sem nenhum prejuízo por isto.
7) Os pais das crianças que apresentarem problemas de saúde bucal, vistos no exame clínico, serão informados por meio de um impresso próprio que lhes será enviado através da escola, pelo qual serão orientados a procurar o tratamento odontológico necessário.

Qualquer dúvida a respeito desta pesquisa poderá ser esclarecida pelo COEP (Comitê de Ética em Pesquisa da UFMG), tel. 3499-4592. Estou também à disposição para maiores esclarecimentos pelo telefone 99721910.

Atenciosamente,

Eliane de Paula Reis Barrêtto
(pesquisadora)

APÊNDICE H

TERMO DE CONSENTIMENTO LIVRE E INFORMADO AOS PAIS

UNIVERSIDADE FEDERAL DE MINAS GERAIS

Colegiado do Programa de Pós-Graduação em Odontologia – TELEFAX: 34992470

Comitê de Ética em Pesquisa da UFMG – TEL: 3499-4592

Por este instrumento,eu,_____, responsável pelo(s) menor(res)_____ _____, nascido(s) em ____/____/_____ autorizo sua(s) participação(ões) na pesquisa intitulada, provisoriamente, **"Estudo de prevalência, gravidade e impacto da dor de dente na vida diária de crianças das cidades de Montes Claros e Curvelo"**. Declaro ter sido devidamente esclarecido(a), pela cirurgiã-dentista Eliane de Paula Reis Barrêtto, que o objetivo de tal pesquisa é saber o número de crianças que ainda sofrem com o mal da dor de dente e quais são os prejuízos que ele pode estar causando a elas e a suas famílias. Afirmo ter conhecimento de que as crianças participantes da pesquisa serão submetidas ao exame bucal e entrevistadas sobre o assunto, e que nós, pais, teremos que responder a um pequeno questionário sobre itens de posse e grau de instrução, mas que não pagaremos nada por isto. Fui esclarecido(a) também que, caso meu (minha) filho(a) apresente problema de saúde bucal, serei orientado, através de impresso próprio, a levá-lo(la) ao Centro de Saúde mais próximo de minha residência ou às unidades de atendimento de urgência da Prefeitura Municipal de minha cidade, para tratamento. Minha participação, assim como minha autorização para a participação de meu(s) filho(s) mostram meu interesse em colaborar para o desenvolvimento da pesquisa, tendo sido minha a escolha de participar ou não da mesma, podendo desistir em qualquer época, sem prejuízo por isto. Estou ciente de que os resultados poderão trazer benefícios para a população desta cidade, que a minha identidade e a de meu(s) filho(s) não serão reveladas e que as respostas ao questionário e à entrevista serão mantidas em sigilo.

Belo Horizonte, ____ de _____ de _____.

_____

Assinatura do pai ou responsável

APÊNDICE I

TERMO DE CONSENTIMENTO LIVRE INFORMADO PARA AS ESCOLAS

UNIVERSIDADE FEDERAL DE MINAS GERAIS

À Diretoria

Meu nome é Eliane de Paula Reis Barrêtto, sou cirurgiã-dentista formada há 12 anos pela Faculdade de Odontologia da Universidade Federal de Minas Gerais e Especialista e Mestre em Oodntologia infantil. Estou desenvovlendo, para Doutorado, uma pesquisa intitulada **"Estudo de prevalência, gravidade e impacto da dor de dente na vida diária de crianças das cidades de Montes Claros e Curvelo "**, cujo objetivo é verificar a presença de dor de dente em crianças e avaliar o mal e os prejuízos que esta dor pode causar a elas e às suas famílias.

Esta pesquisa já foi realizada em Belo Horizonte em 2003, com êxito, e também será realizada em Curvelo e Montes Claros. Tem uma grande preocupação social e poderá ajudar na melhoria do atendimento odontológico infantil nessa cidade! E mesmo aquelas crianças que nunca se queixaram ou tiveram dor de dente poderão participar.

Para tal, irei realizar uma entrevista com alunos de 8 e 9 anos, durante o período das aulas, nas próprias dependências da escola, com uma duração média de 10 a 15 minutos, com uma criança de cada vez, o que não atrapalhará o andamento das atividades escolares normais ou pertubará a ordem na escola. Serão feitas perguntas referentes à presença, gravidade e tempo de duração da dor de dente, bem como sobre o sofrimento e os prejuízos causados pela dor.

Também vou realizar um exame simples dos dentes da criança, logo após a entrevista, na própria escola, utilizando somente espelho descartável, gaze e algodão devidamente esterilizados. Para isto, estarei usando os devidos equipamentos de proteção individual (avental, óculos, além de gorro, máscara e luvas descartáveis), conforme as normas vigentes de biossegurança. Este exame não oferece risco de nehuma natureza para as crianças e é rápido e indolor. Durante o exame não será realizado tratamento, mas as crianças com esta necessidade terão os pais orientados sobre como proceder, através de um impresso próprio.

Os resultados das entrevistas serão confrontados com os resultados dos exames e ambos só serão realizados após autorização dos pais das crianças, que também deverão responder a um breve questionário sobre itens de posse e grau de instrução, o qual será encaminhado em breve.

Esclareço, ainda, que não tenho intenção de vender qualquer produto nas escolas, sendo a pesquisa de cunho estritamente científico, sem fins lucrativos. Não haverá qualquer ônus para as escolas ou para os alunos. A pesquisa já foi devidamente aprovada pelo Comitê de Ética em Pesquisa da UFMG (COEP). Em caso de dúvida, ligar para o Colegiado de Pós-Graduação em Odontologia da UFMG.

Colegiado do Programa de Pós-Graduação em Odontologia da UFMG - Telefax: 34992470

Eu,_____, declaro que compreendi o objetivo e como vai ser realizada esta pesquisa, e permito que a Escola_____ participe. Estou ciente de que os resultados poderão trazer benefícios para a população, que as identidades do(s) alunos(s) e de seus pais não serão reveladas, e que suas respectivas respostas à entrevista e ao questionário serão mantidas em sigilo.

Curvelo/Montes Claros,____de_____de 2005.

_____

Assinatura/carimbo do(a) Diretor(a) da Escola

ANEXOS

ANEXO 1

PARECER DA CÂMARA DEPARATAMENTAL

UNIVERSIDADE FEDERAL DE MINAS GERAIS
FACULDADE DE ODONTOLOGIA
DEPARTAMENTO DE ODONTOPEDIATRIA E ORTODONTIA

PARECER

Devido ao fato de ter sido designada como relatora do projeto de pesquisa intitulado: "ESTUDO DE PREVALÊNCIA, GRAVIDADE E IMPACTO DA DOR DE DENTE NA VIDA DIÁRIA DE CRIANÇAS DAS CIDADES DE MONTES CLAROS E CURVELO" cujas pesquisadoras responsáveis são: a Cirurgiã-dentista Eliane de Paula Reis Barreto e a Prof.a Dra. Isabela Almeida Pordeus, venho, por este instrumento, dar meu parecer sobre esta pesquisa.

O estudo em questão é relevante e o projeto está muito bem embasado na literatura. Tem como objetivos: determinar a prevalência, gravidade e impacto da dor de dente na vida cotidiana de crianças, na faixa etária de oito e nove anos e de suas famílias; verificar se há diferenças na prevalência e/ou gravidade e impacto da dor de dente em relação ao gênero, grau de escolaridade da mãe e condição econômica da família; avaliar o impacto da dor de dente na qualidade de vida das crianças; determinar, em relação à origem da dor, quando é decorrente de processos fisiológicos e quando é proveniente de processos patológicos; comparar prevalência, gravidade e impacto da dor de dente auto-relatada como o estado de saúde bucal ao exame clínico; comparar prevalência, gravidade e impacto da dor de dente entre crianças das cidades de Belo Horizonte, Montes Claros e Curvelo.

No item metodologia há descrição detalhada dos métodos e do cálculo da amostra (590 crianças em Montes Claros e 547 em Curvelo) fundamentada nos preceitos da bioestatística. As pesquisadoras demonstram, também, preocupação com as normas de biossegurança e com a ética. Entretanto, não fica claro o método a ser utilizado para avaliar a associação dos resultados de Belo Horizonte e as demais cidades, relatado nos objetivos. Se as pesquisadoras já possuem o levantamento de dados de Belo Horizonte e vão utilizá-los neste estudo, julgo prudente que este aspecto seja melhor elucidado na metodologia.

Diante do exposto, considero que o projeto *"Estudo de prevalência, gravidade e impacto da dor de dente na vida diária de crianças das cidades de Montes Claros e Curvelo"* deve ser desenvolvido, constatando-se que seus resultados trarão contribuições importantes para a comunidade leiga e científica. Sugiro às pesquisadoras que elucidem a inclusão dos dados de Belo Horizonte na análise deste estudo, na descrição da metodologia, o que, sem dúvida, enriquecerá ainda mais este trabalho.

Belo Horizonte, 26 de maio de 2004

Prof.a Júnia Maria Cheib Serra-Negra

APROVADO PELA CÂMARA DEPARTAMENTAL DE ODONTOPEDIATRIA E ORTODONTIA
VISTO: Em 07/07/2004

ANEXO 2

PARECER DO COMITÊ DE ÉTICA – COEP/UFMG

Universidade Federal de Minas Gerais
Comitê de Ética em Pesquisa da UFMG - COEP

Parecer nº. ETIC 481/04

Interessada: Profa. Isabela Almeida Pordeus
Faculdade de Odontologia/UFMG

DECISÃO

O Comitê de Ética em Pesquisa da UFMG – COEP, aprovou no dia 09 de março de 2005, após cumprimento das solicitações de diligência, o projeto de pesquisa intitulado **« Estudo de prevalência, gravidade e impacto da dor de dente na vida diária de crianças das cidades de Montes Claros e Curvelo »** bem como o Termo de Consentimento Livre e Esclarecido do referido projeto.

O COEP recomenda que após aprovação e liberação dos recursos pela FAPEMIG, o pesquisador envie a este comitê as autorizações das escolas e a aquiescência dos serviços de saúde.

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

Profa. Dra. Maria Elena de Lima Perez Garcia
Presidente do COEP/UFMG

Av. Presidente Antônio Carlos, 6627, Prédio da Reitoria – 7° andar sala: 7018 - 31.270-901– BH - MG
(31) 3499-4592 - FAX: (31) 3499-4027 - coep@prpq.ufmg.br

ANEXO 3

AUTORIZAÇÃO DA PREFEITURA MUNICIPAL DE CURVELO

PREFEITURA MUNICIPAL DE CURVELO
ESTADO DE MINAS GERAIS

OFÍCIO Nº 118/ADM/05/SMS Curvelo (MG), 02 de junho de 2005

Prezada Senhora,

Levamos ao seu conhecimento que a assistência à Saúde Bucal do Município de Curvelo presta atendimento básico, parâmetro SIA - SUS. As Ações Coletivas são realizadas junto ás escolas, creches, grupos específicos de gestantes, diabéticos, hipertensos e outros.

Quanto ao atendimento individual a porta de entrada é o Núcleo Odontológico Infantil, através de cadastramento realizado no Posto de Atendimento Médico (PAM). Todos pacientes acolhidos participam das palestras obrigatoriamente, e posteriormente submetem-se à escovação dentária e higienização bucal, e ao levantamento das necessidades odontológicas como prioridade, para seleção e encaminhamento aos procedimentos cirúrgicos e/ou curativos.

Existe uma clara consciência de que a demanda extrapola e muito a oferta dos serviços e recursos instalados, ocasionando expectativa irreal nos pacientes acolhidos.

Quanto às emergências, são atendidas rotineiramente, e nenhum paciente fica fora da assistência, e a demanda é livre.

A sua proposta de pesquisa intitulada "ESTUDO DE PREVALÊNCIA, GRAVIDADE DA DOR DE DENTE NA VIDA DIÁRIA DE CRIANÇAS NAS CIDADES DE MONTES CLAROS

PREFEITURA MUNICIPAL DE CURVELO
ESTADO DE MINAS GERAIS

E CURVELO", chega num momento oportuno, quando temos na prática notícias de que o nosso programa tem diminuído a prevalência de odontalgias. Porém, numa situação abstrata, carecendo de um estudo técnico e científico, que possa oferecer-nos subsídios que venha reorientar e implementar no nosso Programa de Saúde Bucal, ações mais justas e calibradas. Possibilitando ainda quantificar e qualificar impactos sócio-econômico, psicológico e outros produzidos pela desinformação da Saúde Bucal no meio populacional.

Compreendendo o seu empenho e o valor da sua pesquisa principalmente para o nosso Município, e que sirva de algum modo a tantos outros semelhantes ao nosso, não só autorizamos como apoiamos a sua iniciativa. Aproveitamos o momento e anexamos os endereços das 13 Unidades que oferecem atenção á Saúde Bucal.

Na expectativa de termos atendido ao solicitado, renovamos protestos de elevada estima e distinta consideração, e votos de pleno êxito.

Cordialmente,

Fábio Ernesto Martins
Secretário Municipal de Saúde
Gestor do SUS - Curvelo/MG

Otorino Bonifácio dos Santos
Coordenador Odontológico
Secretaria Saúde de Curvelo

ILMA SRA.
DRA. ELIANE DE PAULA REIS BARRETO
UFMG - MG

ANEXO 4

AUTORIZAÇÃO DA PREFEITURA MUNICIPAL DE MONTES CLAROS

Prefeitura de Montes Claros - MG
Secretaria Municipal de Saúde
Divisão de Odontologia Social - Fone: 3229-3327 / 3324

PREFEITURA MONTES CLAROS

Montes Claros, 11 de maio de 2005

Ilma. Sra.
Eliane de Paula Reis Barrêtto
Belo Horizonte - MG

Prezada Senhora,

Considerando a relevância da pesquisa "*Estudo de Prevalência, Severidade e Impacto da Dor de Dente na Vida Diária de Crianças*", concordamos com a realização da mesma e que a pesquisadora **Eliane de Paula Reis Barrêtto** oriente os pais das crianças com problemas de saúde bucal a procurarem a Unidade de Saúde da Prefeitura Municipal mais próxima e indicada (Centro de Saúde ou Escola).

Desejando êxito na realização do estudo, colocamo-nos à disposição para quaisquer esclarecimentos.

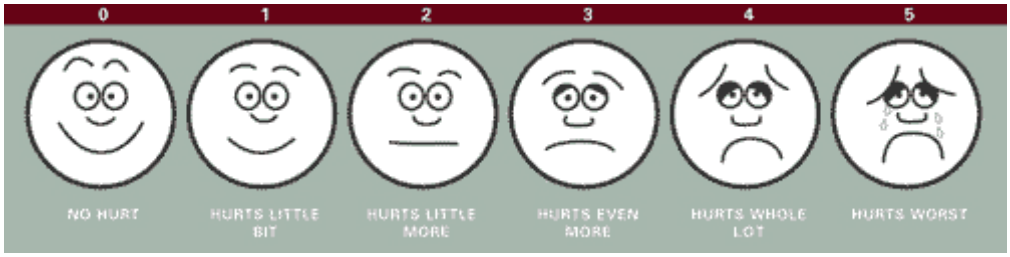
Atenciosamente,

Soraya Mameluque Mota
Equipe da Divisão de Odontologia Social

Dra. Soraya Mameluque
CIRURGIÃ DENTISTA
CRO-MG 16.441

ANEXO 5

ESCALA DE FACES WONG-BAKER



ANEXO 6

NORMAS PARA PUBLICAÇÃO – PEDIATRIC DENTISTRY

INTRODUCTION

Pediatric Dentistry [or Journal of Dentistry for Children], a journal of the American Academy of Pediatric Dentistry (AAPD), is published bimonthly [or 3 times per year] to promote practice, education, and research specifi cally related to the specialty of pediatric dentistry. Manuscripts are accepted for consideration if neither the article, nor any part of its essential substance, tables, or fi gures has been or will be published in another journal or is simultaneously submitted to another journal. Published papers do not necessarily represent the views of the editor, the AAPD Communications Department, or the American Academy of Pediatric Dentistry.

TYPES OF ARTICLES

The journal publishes full-length scientifi c articles not exceeding 8 printed pages (20 double-spaced 8 1/2x11-in document pages; font no smaller than 11-point Times New Roman or Arial); and clinical articles and case reports not exceeding 4 printed pages (10 double-spaced 8 1/2x11-in document pages).

Authors are encouraged to review these Instructions carefully prior to submitting their manuscripts.

SUBMISSION OF MANUSCRIPTS

Submission of manuscripts to *Pediatric Dentistry [Journal of Dentistry for Children]* occurs online through the ScholarOne Manuscript Central Web site at *http://mc.manuscriptcentral.com/pediadent,[http://mc.manuscriptcentral.com/jdentchild].* No hard copy submissions will be accepted. Submitting authors must set up an online account and provide all information requested during the online submission process, including: corresponding author's contact information; names, titles (such as "associate professor," "chairman,"), academic degrees (such as "DMD," "MS," "PhD,") , and affi liations of all authors; short (running) title; and 3 to 5 keywords. Honorary designations should not be included (eg, "FRCS,", "FICD", "Diplomate, ABPD," etc). Authors should ensure that the keywords appear in the U.S. National Library of Medicine Medical Subject Headings, or "MeSH" (found at "http://www.nlm.nih.gov/mesh/"). This information should also appear on the fi rst page of the UNBLINDED version of the manuscript but should be removed from BLINDED version along with any references to names, authors, or institutions. Both an UNBLINDED and BLINDED version of the manuscript must be uploaded. Tables should appear at the end of the main document, while photos, photomicrographs and graphs should be submitted as separate fi les (.jpg or .tif format).

Prior to submission, the corresponding author must guarantee that the article has not been published, and is not being considered for publication elsewhere. Submission of multi-authored manuscripts implies participation of each of the authors in the preparation of the paper. Only individuals who have made a signifi cant contribution to the study or manuscript should be listed as authors. The efforts of others should be noted in the *Acknowledgments* section at the end of the manuscript. The corresponding author should submit the following statement: "All authors have made substantive contribution to this study and/or manuscript, and all have reviewed the fi nal paper prior to its submission."

Authors (including authors of letters to the editor) are responsible for disclosing all fi nancial and personal relationships that might bias their work. If such confl icts exist, the authors must provide additional detail in the appropriate text box during

online submission. Funding sources for the work being submitted must be disclosed in the *Acknowledgments* section of the manuscript.

MANUSCRIPT ORGANIZATION

Scientific articles should be organized under the following headings: *Abstract, Introduction, Methods, Results, Discussion, Conclusions, Acknowledgments*, and *References*. Titles of all papers should not exceed 15 words. The *Introduction* section should include only pertinent references. When included for a study, the *Methods* section should be suffi ciently detailed to replicate the study. The *Results* section should include only results and not discussion of the data. The *Discussion* section should discuss the results, but not repeat them. The *Conclusions* section should consist of succinct, numbered statements that are supported by the results of the study. They should not repeat the *Results* section. Clinical articles and case reports should include: brief unstructured *Abstract,* brief *Introduction*, *Description of Case* or *Clinical Technique*, *Discussion* (if any), *Acknowledgments* (if any), and *References* (if any). Literature reviews should include a brief unstructured *Abstract*, *Introduction*, the *Review of the Literature* with appropriate subheadings, *Discussion, Conclusions, Acknowledgments*, and *References*.

Abstracts

All submissions must include an abstract. Abstracts should be brief providing the reader with a concise but complete summary of the paper. Generalizations such as "methods were described" should not be used. Scientific articles should have a structured abstract of approximately 200 words with the following sections: *Purpose, Methods, Results*, and *Conclusions*. Clinical articles, case reports, and literature reviews should have an unstructured abstract consisting of not more than 150 words.

Editorial style

Papers will be published in English, using American spelling. Manuscripts must be submitted with proper grammar, syntax, and spelling. Authors should express their own findings in the past tense and use the present tense where reference is made to existing knowledge, or where the author is stating what is known or concluded. Footnotes should be avoided and their content incorporated into the text. Numbers should be represented as digits; only numbers beginning a sentence should be spelled out. The editors reserve the right to revise the wording of papers in the interest of the journal's standards of clarity and conciseness.

Units of measure: Authors should express all quantitative values in the International System of Units (SI units) unless reporting English units from a cited reference. Figures and tables should use SI units, with any necessary conversion factors given in legends or footnotes. All numbers should be expressed as digits, and percent values should be expressed as whole numbers. Laboratory data values should be rounded to the number of digits that refl ects the precision of the results and the sensitivity of the measurement procedure.

Statistical tests: The results of all statistical comparisons should be reported to include the statistical test value and the associated *P* value and confifi dence interval, if appropriate. If *P*>.01, the actual value for *P* should be expressed to 2 digits, whether or not *P* is signififi cant, unless rounding a signifi cant *P* value expressed to 3 digits would make it nonsignifi cant (eg, *P*=.049, not *P*=.05). If *P*<.01, it should be expressed to 3 digits (eg, *P*=.003, not *P*<.05). Actual *P* values should be expressed unless *P*<.001, in which case they should be so designated. Nonsignifi cant values should not be expressed as "NS." For confi dence intervals, the number of digits should equal the

number of digits in the point estimate. For example, for an odds ratio of 3.56, the 95% confidence interval should be reported as “1.23, 5.67,” not as “1.234, 5.678.”

Tooth names: The complete names of individual teeth should be given in full in the text of articles using the following convention: [primary/permanent] [maxillary/ mandibular] [right/left] [central/lateral or fi rst/second/ third] [tooth type]. Examples: “primary maxillary right fi rst molar,” “permanent mandibular fi rst molars,” but “mandibular right second premolar.” In tables these names may be abbreviated by the Universal system (A-T for primary teeth, 1-32 for permanent teeth).

Commercially-produced Materials: Any mention of commercially produced materials, instruments, devices, software, etc, must be followed by the name of the manufacturer and the manufacturer’s location in parentheses. Example: “... in an Excel spreadsheet (Microsoft, Inc, Redmond, Wash).”

Abbreviations: Abbreviations should be used to make manuscripts more concise. The first time an abbreviation appears, it should be placed in parentheses following the full spelling of the term (eg, “…permanent fi rst molars (PFMs)…”). In manuscripts using more than three abbreviations, authors should use bold typeface for the first appearance of each abbreviation.

PERMISSIONS

For materials taken from other sources, a written statement from the authors and publisher giving permission to *Pediatric Dentistry* for reproduction must be provided. Waivers and statements of informed consent must accompany the manuscript when it is submitted for review. Waivers should accompany any photograph showing a human subject unless the subject’s features are blocked enough to prevent identification.

HUMAN AND ANIMAL SUBJECTS

Manuscripts of research involving human or animal subjects must state in the Methods section that the study was approved by an Institutional Review Board (IRB) or other institutional research ethics committee using language similar to “…this institutionally approved study… .” IRB approval for human subjects must also be obtained if the study involved the use of tissues from humans (eg, extracted teeth), or work produced by humans (eg, systematic analyses and meta-analyses).When human subjects have been used, the text should indicate that informed consent was obtained from all participating adult subjects, and parents or legal guardians of minors or incapacitated adults. If required by the authors’ institution, informed assent must be obtained from participating children at or above the age specifi Ed by the institution. The cover letter for the manuscript must contain a statement similar to the following: “The procedures, possible discomforts or risks, as well as possible benefi ts were explained fully to the human subjects involved, and their informed consent was obtained prior to the investigation.”

FIGURES

Graphics/photos should be provided at a minimum resolution of 600 dpi as a .tif or .jpg file. Photomicrographs must include a scale labeled with a convenient unit of length (eg, 50 μm). Figures should be numbered in Arabic numerals in the order of the fi rst citation in the text. Legends for each figure must be printed on a separate page. Include a key for symbols or letters used in the fi gures. Figures should be save as a seperate file.

Figure legends should be understandable without reference to the text. A key for any symbols or letters used in the figure should be included. Abbreviations should

be explained in a footnote to the fi gure. If illustrations, tables, or other excerpts are included from copyrighted works the author is responsible for obtaining written permission from the copyright holder prior to submitting the fi nal version of the paper. Full credit must be given to such sources with a superscript reference citation in the fi gure legend. Reference citations in fi gure legends or captions should follow numerically the reference number in the text immediately preceding mention of the fi gure. Figures take up additional page space and should be limited to those that add value to the text.

TABLES

Tables should be double-spaced, appear on separate pages, and should be titled and numbered in Arabic numerals in the order of the fi rst citation in the text. Short headings should appear at the top of each column. Explanatory matter should be placed in captions, not in the title. For footnotes, use the following symbols in this sequence: *, †, ‡, §. Tables should be understandable without alluding to the text. Due to space limitations, only tables adding value to the text should be included.

ACKNOWLEDGMENTS

Funding and other sources of support must be disclosed in the *Acknowledgements* section. Personal acknowledgments should be limited to appropriate professionals who have contributed intellectually to the paper but whose contribution does not justify authorship.

REFERENCES

References should be relevant to the material presented and identifi ed by superscript Arabic numerals in the text. A list of all references should appear at the end of the paper in numeric order as they are cited in the text. Journal abbreviations are those used by Index Medicus. Reference style is that used by the Journal of the American Dental Association (*http://www.ada.org/prof/resources/pubs/jada/ authors/auth_general .asp#style*). The following are sample references:

Journal: Bogert TR, García-Godoy F. Effect of prophylaxis agents on the shear bond strength of a fi ssure sealant. Pediatr Dent 1992;14:50-1.

For journals, list all authors when there are 6 or fewer; when there are 7 or more, list the fi rst 3, then “et al.” Page numbers should be elided where possible. For example: 12-8, 347-51, 191-5.

Book: Bixler D. Genetic aspects of dental anomalies. In: McDonald RE, Avery DR, eds. Dentistry for the Child and Adolescent. 5th ed. Philadelphia: CV Mosby Co;1987:90-116.

Article, report, or monograph issued by a committee, institution, society, or government agency: Medicine for the public: Women’s health research. Bethesda, Md.: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health; 2001. DHHS publication 02-4971.

World Wide Web: Centers for Disease Control and Prevention. Water Fluoridation. Available at: “http://www.cdc.gov/oralhealth/waterfl uoridation/index.htm”. Accessed June 18, 2006.

Authors citing material from the World Wide Web should use WebCite (*www.webcitation.org*), a free service for authors who wish to archive their Web references to ensure that cited Web material will remain available to readers in the future. Web citations archived on WebCite will not disappear in the future.

Authors should provide direct references to original sources whenever possible. Avoid using abstracts as references. Avoid references to papers accepted but not yet published, if possible. If such a citation is necessary, these papers should be cited as being “in press,” and verifi cátion that they have been accepted for publication must be

provided. Where possible, references of easily accessible material are preferable to dissertations, theses, and other unpublished documents. Authors should avoid citing “personal communication” unless it provides essential information not available from a public source. In those cases, the name of the individual providing the information and the date of communication should be provided in parentheses in the text and not as a numbered reference. Authors should obtain written permission and confi rmation of accuracy from the source of a personal communication; this permission should be submitted as a supplementary document at the time of manuscript submission.

Authors should verify the accuracy of all references and are responsible for ensuring that no cited reference contains material that was retracted or found to be in error subsequent to its publication.

COPYRIGHT

All authors must agree to the terms of copyright transfer as indicated during the online manuscript submission process. The American Academy of Pediatric Dentistry owns copyright of any contribution. The AAPD and its licensees have the right to use, reproduce, transmit, derivate, publish, and distribute the contribution, in the journal or otherwise, in any form or medium. Authors will not use or authorize the use of the contribution without the AAPD’s written consent, except as may be allowed by US fair use law.

ANEXO 7

NORMAS PARA PUBLICAÇÃO – BRAZILIAN ORAL RESEARCH

Objetivo e política editorial

1. Missão

1.1. A **Brazilian Oral Research** é um periódico de publicação trimestral que tem por objetivo disseminar e promover o intercâmbio de informações sobre as várias áreas às quais se dedica à pesquisa odontológica.

2. Requisitos para a aceitação de trabalhos

2.1. São aceitos trabalhos de pesquisa básica e aplicada.

2.2. Estudos clínicos deverão ter um número de identificação em um dos REGISTROS DE ENSAIOS CLÍNICOS validados pelos critérios estabelecidos pela Organização Mundial de Saúde (OMS) e pelo International Committee of Medical Journal Editors (ICMJE). O número de identificação deverá ser apresentado ao final do resumo.

2.3. Pesquisas envolvendo animais, seres humanos e/ou meio ambiente devem ter aprovação de um Comitê de Ética em pesquisa. Para tanto, os originais devem ser acompanhados de um certificado de aprovação do Comitê de Ética da instituição em que a pesquisa foi realizada.

2.4. Revisões de literatura, em caráter excepcional, poderão ser submetidos mediante convite do Corpo Editorial.

3. Idioma

3.1. Todo o material deve ser submetido em Inglês.

Responsabilidade pelo conteúdo

4. Responsabilidade pelo conteúdo

4.1. Os conceitos e as informações encontrados nos originais e publicados na BOR são de inteira responsabilidade do(s) autor(es), não refletindo, necessariamente, a opinião do Corpo Editorial ou da SBPqO (Sociedade Brasileira de Pesquisa Odontológica, Divisão Brasileira da IADR - International Association of

Dental Research).

5. Ineditismo e direitos autorais

5.1. Os trabalhos enviados para publicação devem ser inéditos, não sendo permitido o envio simultâneo a outro periódico.

5.2. A submissão dos originais à BOR implica a transferência integral e irrevogável de seus direitos autorais.

5.3. Os originais devem ser acompanhados de um "Termo de transferência e declaração de responsabilidade", firmado por todos os autores, como segue:

Eu (nós), [nome(s) do(s) autor(es)], autor(es) do trabalho intitulado [título do trabalho], o qual submeto(emos) à apreciação da Brazilian Oral Research para nela ser publicado, declaro(amos) concordar, por meio deste suficiente instrumento, que os direitos autorais referentes ao citado trabalho tornem-se propriedade exclusiva da Brazilian Oral Research desde a data de sua submissão, sendo vedada qualquer reprodução, total ou parcial, em qualquer outra parte ou meio de divulgação de qualquer natureza, sem que a prévia e necessária autorização seja solicitada e obtida junto à Brazilian Oral Research. No caso de a publicação não ser aceita, a transferência de direitos autorais será automaticamente revogada após a devolução definitiva do citado trabalho por parte da Brazilian Oral Research, mediante o recebimento, por parte do(s) autor(es), de ofício específico para esse fim. Declaro(amos) ainda que o citado trabalho não foi nem está sendo considerado para publicação em outra revista, quer seja no formato impresso ou eletrônico.

[Data/assinatura(s)]

Orientações para publicação

6. Suporte físico e entrega dos originais

6.1. Os arquivos de texto (incluindo tabelas) e ilustrações (fotografias, desenhos e gráficos) devem ser submetidos em mídia digital (CD-ROM), que deverá ser entregue pessoalmente ou pelo correio.

6.2. Os originais deverão ser enviados para:
Brazilian Oral Research

SBPqO - Sociedade Brasileira de Pesquisa Odontológica
Av. Prof. Lineu Prestes, 2.227
Cidade Universitária
05508-900 - São Paulo - SP - Brazil

6.3. Alternativamente, os arquivos de texto e de ilustrações podem ser submetidos via e-mail no endereço bor@sbpqo.org.br. Nesse caso, os documentos exigidos nos itens 2.3 e 5.3 acima, i.e., "Termo de transferência e declaração de responsabilidade" e certificado de aprovação do Comitê de Ética da instituição em que a pesquisa foi realizada poderão ser enviados por fax, no telefone +55 11 3091-7855.

7. Avaliação

7.1. Originais que deixarem de cumprir qualquer uma das normas aqui publicadas relativas à forma de apresentação, por incompletude ou inadequação, serão sumariamente devolvidos antes mesmo de serem submetidos à avaliação quanto ao mérito do trabalho e à conveniência de sua publicação.

7.2. Uma vez aprovados na avaliação quanto à forma de apresentação, os originais serão submetidos à apreciação do Corpo Editorial e de Assessores ad-hoc, que dispõem de plena autoridade para avaliar o mérito do trabalho e decidir sobre a conveniência de sua publicação com ou sem alterações.

7.3. Os trabalhos que não forem considerados aprovados para publicação na BOR terão seu processo encerrado em caráter definitivo.

7.4. O processo de avaliação será feito no sistema revisão por pares ("peer-review"), duplo-cego.

8. Ilustrações em cores

8.1. A publicação de ilustrações em cores será custeada pelo(s) autor(es) interessado(s), que deve(m), para tanto, expressar seu interesse por escrito ao submeter os originais.

8.2. Em caso de manifestação de interesse por parte do(s) autor(es), a BOR providenciará um orçamento dos custos envolvidos que poderão variar de acordo com o número de ilustrações, sua distribuição em páginas diferentes e a publicação concomitante de material em cores por parte de outro(s) autor(es).

8.3. Uma vez apresentado ao(s) autor(es) o orçamento dos custos correspondentes ao material de seu interesse, este(s) deverá(ão) assinar o orçamento e responsabilizar-se legalmente pela quitação dos referidos custos junto à empresa fornecedora dos serviços de reprodução em cores.

9. Autoria

9.1. A titulação do(s) autor(es) deverá ser apresentada na forma de nota(s) de rodapé.

9.2. Será aceita uma única titulação e uma única filiação, por extenso, por autor. O(s) autor(es) deverá(ão), portanto, escolher dentre suas titulações/filiações aquela que julgar(em) a mais adequada.

9.3. A inclusão como autor subentende substancial contribuição intelectual na elaboração do trabalho, que compreende a participação na concepção e no planejamento do estudo; na obtenção, análise e interpretação dos dados; na redação ou revisão crítica do manuscrito; e na aprovação de sua versão final. Demais participações não diretamente envolvidas no estudo, tais como obtenção de financiamento, simples coleta e catalogação de dados, auxílio técnico na execução de rotinas, encaminhamento de pacientes, interpretação de exames de rotina e chefia de serviço ou departamento não constituem co-autorias. Essas participações indiretas poderão ser citadas nos Agradecimentos, ao final do texto.

9.4. A Brazilian Oral Research considera aceitável o limite máximo de cinco autores por artigo. Entretanto, poderá admitir, em caráter excepcional, maior número de autores em trabalhos de maior complexidade, que deverão ser acompanhados, em folha separada, de justificativa convincente para a participação de cada um do(s) autor(es).

10. Formatação digital e limites quantitativos

10.1. O texto (incluindo tabelas, referências bibliográficas e legendas de ilustrações) deverá ser fornecido em arquivo digital gerado em programa compatível com "Microsoft Word for Windows".

10.2. O texto deverá ser formatado em fonte "Arial" tamanho 12, em folhas de tamanho A4, com espaço 1,5 e margem de 3 cm de cada um dos lados, perfazendo um total de, no máximo, 23.000 caracteres com espaços, incluindo referências bibliográficas, tabelas (e respectivas legendas), e as legendas de ilustrações (fotografias, gráficos e desenhos).

10.3. Fotografias digitais serão aceitas desde que sua captação primária tenha ocorrido já em tamanho (aproximadamente 10 cm x 15 cm) e resolução adequados (300 dpi).

10.4. Não serão aceitas fotografias digitais com resolução e/ou tamanho artificialmente aumentados em programas computacionais de edição de imagens.

10.5. Fotografias (incluindo radiografias, micrografias e resultados de exames por imagem) devem ser submetidas em arquivos em

formato TIFF.

10.6. Não serão aceitas montagens de fotografias. Eventuais sobreposições (setas, letras, asteriscos etc.) devem ser aplicadas em tamanho reduzido para não comprometer a visualização da área sobre a qual estão aplicadas (para letras, usar fonte "Arial" tamanho 10).

10.7. Gráficos e desenhos deverão ser submetidos em formato digital, na forma de arquivos EPS exportados a partir de arquivos gerados em programas de desenho vetorial ("Microsoft Excell", "CorelDraw", "Adobe Illustrator" etc.).

10.8. Os gráficos devem sempre ser acompanhados dos respectivos valores numéricos que lhes deram origem.

10.9. No máximo, 10 (dez) ilustrações (entre fotografias, gráficos e desenhos) poderão ser submetidas, desde que necessárias ao registro científico e à compreensão do assunto.

10.10. No máximo, 5 (cinco) descritores poderão ser submetidos.

10.11. No máximo, 30 (trinta) referências bibliográficas poderão ser submetidas.

10.12. No máximo, 5 (cinco) autores poderão ser incluídos no manuscrito, cada um deles com apenas uma titulação e uma filiação (ver os itens 9.1 a 9.4 acima).

10.13. O título do manuscrito poderá ter, no máximo, duas linhas de 60 (sessenta) caracteres cada.

10.14. O resumo poderá ter, no máximo, 250 (duzentos e cinqüenta) palavras.

11. Numeração, citação e posicionamento de tabelas.

11.1. As tabelas devem ser numeradas consecutivamente em algarismos arábicos.

11.2. As legendas de tabelas devem ser colocadas na parte superior dos mesmos.

11.3. Todas as tabelas, sem exceção, devem ser citadas no corpo do texto.

11.4. As tabelas devem ser posicionadas diretamente sob suas citações no corpo do texto. (ver itens 6.1 e 6.2 acima).

12. Numeração, citação e posicionamento de ilustrações (fotografias, gráficos e desenhos)

12.1. As ilustrações devem ser numeradas consecutivamente em algarismos arábicos.

12.2. As legendas das ilustrações devem ser posicionadas agrupadas ao final do texto, após as referências bibliográficas.

12.3. Todas as ilustrações, sem exceção, devem ser citadas no corpo do texto.

12.4. As ilustrações devem ser submetidas em arquivos separados e, portanto, não devem ser posicionadas no corpo do texto (ver itens 6.1 e 6.2 acima).

13. Notas de rodapé

13.1. As notas de rodapé devem ser indicadas com asteriscos e restritas ao mínimo indispensável.

14. Grafia de termos científicos, comerciais e unidades de medida

14.1. Os termos científicos devem ser grafados por extenso, em vez de seus correspondentes simbólicos abreviados. Incluem-se nessa classificação: nomes de compostos e elementos químicos e binômios da nomenclatura microbiológica, zoológica e botânica.

14.2. Os nomes genéricos de produtos devem ser preferidos às suas respectivas marcas comerciais, sempre seguidos, entre parênteses, do nome do fabricante, da cidade, do estado e do país em que foram fabricado, separados por vírgula.

14.3. Unidades de medida devem ser apresentadas rigorosamente de acordo com o Sistema Internacional de Medidas.

15. Disposição dos elementos constituintes do texto

a) Especialidade ou área enfocada na pesquisa
b) Título do manuscrito
c) Nome(s) do(s) autor(es)
d) Resumo
e) Descritores
f) Introdução
g) Material e métodos
h) Resultados
i) Discussão
j) Conclusão(ões)
k) Agradecimentos
l) Referências bibliográficas
m) Legendas de ilustrações

16. Conteúdo dos elementos constituintes do texto

a) Especialidade ou área enfocada na pesquisa: uma única palavra

ou expressão que permita ao leitor identificar de imediato a especialidade ou área à que pertence a pesquisa.

b) Título: o título deve ser conciso (limitado a duas linhas de no máximo 60 caracteres cada), contendo somente as informações necessárias para a identificação do conteúdo.

c) Nome do(s) autor(es): separados com quebra de linha. A cada autor deve corresponder uma nota no rodapé da primeira página contendo sua titulação e filiação (ver item 9 acima).

d) Resumo: consiste na apresentação concisa e seqüencial, em um único parágrafo, de problema tratado, proposição ou hipótese do trabalho, material e métodos, resultados e conclusões. Deve ter no máximo 250 palavras.

e) Descritores: correspondem às palavras ou expressões que identifiquem o conteúdo do artigo. Para a escolha dos descritores, deve-se consultar a lista de "Descritores em Ciências da Saúde - DeCS", elaborada pela BIREME, (disponível em http://decs.bvs.br/) ou a lista de "MeSh - Medical Subject Headings" (disponível em http://www.nlm.nih.gov/mesh/MBrowser.html). Devem ser apresentados um mínimo de 3 e um máximo de 5 descritores.

f) Introdução: deve apresentar com clareza o problema ou objeto tratado na pesquisa e sua relação com os outros trabalhos na mesma linha ou área. A hipótese do estudo deve ser concisamente apresentada no final desta seção. Extensas revisões de literatura devem ser evitadas e substituídas por referências aos trabalhos bibliográficos mais recentes, onde certos aspectos e revisões já tenham sido apresentados.

g) Material e métodos: identificar os métodos, equipamentos (entre parênteses dar o nome do fabricante, da cidade, do estado e do país de fabricação) e procedimentos em detalhes suficientes para permitir que outros pesquisadores reproduzam os resultados. Dar referências de métodos estabelecidos, incluindo métodos estatísticos; oferecer referências e descrições breves que tenham sido publicadas, mas ainda não sejam bem conhecidas; descrever métodos novos ou substancialmente modificados, dar as razões para usá-los e avaliar as suas limitações. Identificar com precisão todas as drogas e substâncias químicas utilizadas, incluindo nome(s) genérico(s), dose(s) e via(s) de administração. Eventuais tabelas e respectivas legendas devem ser apresentadas imediatamente após suas respectivas citações. Já fotografias, gráficos e desenhos devem ser apenas citados, e suas legendas devem ser apresentadas agrupadamente ao final do texto, após as referências bibliográficas.

h) Resultados: devem ser apresentados com o mínimo possível de discussão ou interpretação pessoal, acompanhados de tabelas e/ou material ilustrativo adequado, quando necessário. Não repetir no texto todos os dados já apresentados em ilustrações e tabelas. Dados estatísticos devem ser submetidos a análises apropriadas.

Eventuais tabelas e respectivas legendas devem ser apresentadas imediatamente após suas respectivas citações. Já fotografias, gráficos e desenhos devem ser apenas citados, e suas legendas devem ser apresentadas agrupadamente ao final do texto, após as referências bibliográficas.

i) Discussão: deve restringir-se ao significado dos dados obtidos, evitando-se hipóteses não fundamentadas nos resultados, e relacioná-los ao conhecimento já existente e aos obtidos em outros estudos relevantes. Enfatizar os aspectos novos e importantes do estudo e as conclusões derivadas. Não repetir em detalhes dados ou outros materiais já citados nas seções de Introdução ou Resultados. Incluir implicações para pesquisas futuras e limitações do estudo.

j) Conclusão(ões): deve(m) ser pertinente(s) aos objetivos propostos e justificados nos dados obtidos. A hipótese de trabalho deve ser respondida.

k) Agradecimentos: agradecimentos de apoio técnico, financeiro e material devem especificar a natureza da assistência prestada. Contribuições não autorais podem ser citadas aqui (veja os itens 9.1 a 9.4 acima). Relacionamentos que possam resultar em conflitos de interesse devem ser apresentados. É recomendável que o(s) autor(es) obtenha(m) autorização das pessoas às quais são dirigidos os agradecimentos.

16. Referências bibliográficas

16.1. As referências devem ser numeradas e normatizadas de acordo com o Estilo Vancouver, conforme orientações fornecidas pelo International Committee of Medical Journal Editors no "Uniform Requirements for Manuscripts Submitted to Biomedical Journals" (http://www.icmje.org). No máximo, 30 referências poderão ser submetidas.

16.2. Os títulos de periódicos devem ser abreviados de acordo com o "List of Journals Indexed in Index Medicus" (http://www.nlm.nih.gov/tsd/serials/lji.html) e impressos sem negrito, itálico ou grifo, devendo-se usar a mesma apresentação em todas as referências.

16.3. Os sobrenomes dos autores devem ser seguidos pelos seus prenomes abreviados sem ponto ou vírgula. Usar a vírgula somente entre os nomes dos diferentes autores.

16.4. Nas publicações com até seis autores, citam-se todos; nas publicações com sete ou mais autores, citam-se os seis primeiros e, em seguida, a expressão latina et al.

16.5. Para periódicos, incluir ano, volume, número (fascículo) e páginas do artigo logo após o título do periódico.

16.6. Deve-se evitar a citação de comunicações pessoais, trabalhos

em andamento e os não publicados; caso seja estritamente necessária sua citação, não devem ser incluídos na lista de referências, mas citados em notas de rodapé.

16.7. A exatidão das referências bibliográficas é de responsabilidade dos autores.

16.8. Para exemplos de referências bibliográficas corretamente apresentadas, acesse:
http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=citmed.part.1323

17. "Check-list" do material a ser enviado

• Termo de transferência e declaração de responsabilidade" assinado por todos os autores
• Cópia do certificado de aprovação pelo Comitê de Ética
• Mídia digital (CD-ROM) contendo todos os arquivos em formato eletrônico (um arquivo compatível com "Microsoft Word for Windows" para texto; um arquivo formato TIFF ou EPS para cada uma das ilustrações).
• Justificativa para a inclusão de mais de 5 autores, se houver.
• Folha anexa contendo endereço, telefone e e-mail de todos os autores.

ANEXO 8

NORMAS PARA PUBLICAÇÃO – EUROPEAN JOURNAL OF PAIN

Guide for Authors

The Journal of the European Federation of the International Association for the Study of Pain chapters (EFIC) ®

IMPORTANT MESSAGE
Articles can only be submitted online via the Elsevier Editorial System at http://ees.elsevier.com/eurjpain . Before you can upload your manuscript you will need to register to the program as an author. An individual username and a password will be sent to you. Please make sure that your manuscript is in accordance with the Guide for Authors given below.

Any queries or questions may be sent to ejp@meditos.de

Ethics
All experimental work should be in accordance with the ethical standards of a responsible committee, the Helsinki Declaration and IASP's guidelines for pain research in animals (Pain 1983;16:109-110) and humans (Pain 1995;63:277-278).

Author Agreement Form and Comments
The author must agree to the Conditions of Submission, on behalf of all co-authors, when submitting the manuscript on line. If an abstract of the work has been published, or if the content of it has been published in another language, then this fact should be made clear in the "comments" field while submitting the manuscript on line. There is also a field in which you can also give the names of potential reviewers.

Manuscript Preparation
The manuscript must be written in **English** and submitted online in an established word processor, not as a PDF file. Each section should begin on a new page and all the pages should be numbered serially.
Due to the space restriction in the printed version of the journal, the size of the published papers has to be restricted. The authors are, however, encouraged to publish additional material **online only.** In the printed version they are replaced by a reference note. Authors are encouraged to transfer in particular long tables to "online only", even if the space restriction is not exhausted (instructions how to submit material to be published online only see below).

Manuscript length:
The following limits should be regarded:
Abstract: 250 words
Introduction: 500 words
Methods, Results and Discussion (together): 6000 words. References are not included. Their number must not exceed 80 in Original Articles Papers / Research Papers. In reviews some more references may be allowed. If figures and tables are included, then the space covered should be reduced from the 6000 words allowed for the body of the paper. For example, a figure or table covering 1/2 of a printed page (including figure legend) requires an equivalent of 500 words.

Original Articles Papers
Manuscript Structure (each of the following sections should begin on a new page):

- Manuscript:

    - (i) Title page (see content below)
    - (ii) Abstract (should not exceed 250 words)
    - (iii) Text:
        - Introduction (should not exceed 500 words)
        - Methods
        - Results
        - Discussion and conclusions

      Methods, Results and Discussions including figures and tables should not exceed 6000 words

    - (iv) Acknowledgements
    - (v) References
    - (vi) Legends for illustrations
- Tables (to be uploaded as separate files)
- Figures (to be uploaded as separate files)
- Appendices (additional material that will be published online only)

Reviews
Short review articles on precisely defined and actual topics which have not been covered recently in other international journals are welcome. Any topic will be considered, but priority will be given to those addressing a major current problem and those with up-to-date literature reviews. Reviews will be subjected to the usual refereeing process.

Manuscript Structure (each of the following sections should begin on a new page):

- Manuscript:
    - (i) Title page (see content below)
    - (ii) Abstract (should not exceed 250 words)
    - (iii) Text:
        - Introduction (should not exceed 500 words)
        - Literature Search Methods
        - Results
        - Discussion and conclusions

      Methods, Results and Discussions including figures and tables should not exceed 6000 words

    - (iv) Acknowledgements
    - (v) References
    - (vi) Legends for illustrations
- Tables (to be uploaded as separate files)
- Figures (to be uploaded as separate files)
- Appendices (additional material that will be published online only)

Title Page

The title page should give:

(i) The title of the article, this should be short and is not allowed to contain any acronyms

(ii) The authors' names (first name, middle initial and last name of each author) and institutes of origin

(iii) The name, address, telephone and fax numbers, and e-mail address of the author responsible for correspondence

(iv) The category for which the manuscript is being submitted (original article, review, short communication)

(v) About five key words

Abstract

The abstract should not exceed 250 words and should describe the background, the aims, the methods, the results and the conclusions reached. It should contain only standard abbreviations and no references.

Reference Format

References should be typed with double spacing. In the text, references should be cited at the proper point (in parentheses) by author(s) and year in chronological order. References with two authors should include an "and" (e.g. Mustola and Baer, 1995). References with more than two names should be cited by the first author, the abbreviation "et al.," and year (e.g. Mustola et al., 1998). If two or more references with the same first author and year are cited, use lower-case letters a, b, etc., after the year both in the text and in the reference list. References to cited materials should be listed in alphabetical order at the end of the article.

The sequence for a journal article should be author(s), title of paper, journal name abbreviated as in Index Medicus (written in full if no abbreviation quoted), year of publicaiton, volume number, first and last pages. Include all authors. Do not use "et al." except in text. The sequence for a book is: chapter author(s), chapter title, editor(s) or compiler(s), book title, edition number, place of publication, publisher's name, year of publication, first and last pages (if relevant).

Example 1: Mustola ST, Baer T, Metsa-Ketela T, Laippala P. A District General Hospital pain management programme: first year experiences and outcomes. Anaesthesia 1995;50:114-117.

Example 2: Stubhaug A, Breivik H. Post-operative analgesic trials: some important issues. In: Breivik H, editor. Post-operative Pain Management. London: Balliere Tindall Ltd; 1995. p. 555-584.

Quotations of papers with two authors should include both names in full, e.g. Mustola ST and Baer T, A District General Hospital pain management programme: first year experiences and outcomes. Anaesthesia 1995;50:114-117. References with two authors should include an "and" (e.g. Mustola and Baer, 1995).

Personal communications, manuscripts in preparation and other unpublished data should not be cited in the reference list but may be mentioned in the text in parentheses.

Citing and listing of Web references: As a minimum, the full URL should be given. Any

further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references should be listed separately (e.g., after the reference list) under the heading "Web references".

Titles of publications in any European language should be provided in the original language of the article. Titles in extra-European languages should be complemented by an English translation. If the original title is not written in Latin characters, the title should be transcribed and complemented (or replaced) by an English translation in brackets.

Figures

All colour illustrations will be published **free of charge.** The *European Journal of Pain* does not charge authors for colour reproduction.

All illustrations must be cited in sequence and uploaded as separate files. Please follow the artwork instructions. The legends for illustrations should be listed on a separate page in numerical order and should contain brief but comprehensible explanations.

All authors wishing to use illustrations already published must first obtain the permission of the author, publisher and/or copyright holders and give precise reference to the original work. This permission must include the right to publish in electronic media.

Tables

Tables should be numbered in series and must be cited in the text in sequence. Each table, with an appropriate brief legend, comprehensible without reference to the text, should be typed on a separate page. For footnotes, use superscripts 'a', 'b', 'c', etc., not asterisks or other symbols.

Acknowledgements

The acknowledgements section should specify acknowledgement of technical help, sources of financial and material support. A 'Declaration of Interests' should be added in which support from commercial sources is specified.

Material to be published online only

To submit any material to be published online only please do the following:

- choose the item "table" or "figure" as usual when uploading the files of tables or figures
- choose the item "manuscript" if you want to publish certain parts of the manuscript online only and upload the related word file
- scroll down the page and enter in the "description"-box the kind of material you want to submit online only.

Please use the following terms:

- for tables: "tableS1", "tableS2" etc.

- for figures: "figureS1, "figureS2" etc. The figure legends should be included in the figure's file.
- for parts of the manuscript's text: "methodsS1", resultsS1" or "discussionS1" (please note that it is not possible to publish additional material for the introduction)
- please indicate and cite clearly in your manuscript the online only material using the terms given above

Units & Abbreviations

Abbreviations, numbers and SI lengths, measurements of length, height and volume should be reported in metric units (metre, kilogram, litre). Temperatures should be given in degrees Celsius and blood pressures in millimetres of mercury or kPa with the alternative units in parentheses. All other measurements including laboratory measurements should be reported in the metric system in terms of the International System of Units (SI).

Abbreviations should be limited and defined after the first use of the term.

Drug Names

Generic names of drugs should be used where possible. When quoting from specific materials on proprietary drugs, authors must state in parentheses the name and address of the manufacturer.

Clinical and Experimental Notes and Short Communications

The guidelines for the preparation of the manuscripts are the same as those for original articles, as far as applicable. The abstract is limited to 250 words, the body of the paper should not exceed three printed pages (3000 words including references as appropriate and tables or figures). However, full length articles are preferred and short communications or notes will only be accepted if they are of broad interest.

Clinical trials

All intervention and treatment studies need to be prepared following the CONSORT recommendations. In particular, a flow chart depicting patient flow needs to be included. In addition, authors should consider describing the outcome measures following the IMMPACT recommendations (Dworkin et al., Pain 2005:113;9-19).

Translations

Mere translations of questionnaires into another language will not be considered for publication except if the study provides information and insights that go beyond the issue of translation. Such data include for example comprehensive validity analyses including factorial validity, divergent and convergent validity or findings with regard to the clinical usefulness of a particular questionnaire.

Language Editing

International Science Editing and Asia Science Editing can provide English language and copyediting services to authors who want to publish in scientific, technical and medical journals and need assistance before they submit their article or, before it is accepted for publication. Authors can contact these services directly: International Science Editing and Asia Science Editing or, for more information about language editing services, please contact authorsupport@elsevier.com who will be happy to deal with any questions. Please note Elsevier neither endorses nor takes responsibility for any products, goods or services offered by outside vendors through our services or in any advertising. For more information please refer to our terms and conditions: Language Polishing.

Qualitative studies

While *European Journal of Pain* has a strong focus on quantitative research, qualitative studies are also published. However, qualitiative reports will only be considered for publication if they address research questions which are new or have not been extensively addressed in the empirical-quatitative literature. The findings should provide new insights.

Letters to the Editor

Letters containing critical assessment of papers recently published in the *European Journal of Pain* will be considered for publication in the correspondence section. Letters should not exceed one printed page (1000 words including references as necessary, one table or one figure). Letters should be typed in double spacing, should have a heading and no abbreviations. If related to a previously published article, the article should be identified by title, author(s), and volume/page numbers. All letters are subject to editorial review. At the Editor's discretion, a letter may be sent to authors of the original paper for comment, and both letter and reply may be published together.

Revisions

Revised manuscripts must follow the instructions for authors given above.

Proofs

The Publisher reserves the right to charge the authors the cost of changes made to the text or the figures at the proof stage when such changes are extensive. No charge will, of course, be made for correction of errors made during the editorial process or by the printer.

Offprints

The corresponding author, at no cost, will be provided with a PDF file of the article via e-mail, or alternatively, free paper offprints. The PDF file is a watermarked version of the published article and includes a cover sheet with the journal cover image and a disclaimer outlining the terms and conditions of use.