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MATHEUS DE FRANÇA PERAZZO

AVALIAÇÃO DA QUALIDADE DE VIDA RELACIONADA À SAÚDE BUCAL E VISITA AO DENTISTA EM PRÉ-ESCOLARES

CAMPINA GRANDE - PB

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Dissertação apresentada ao Programa de Pós-Graduação em Odontologia da Universidade Estadual da Paraíba como parte dos requisitos para a obtenção do título de Mestre em Odontologia.

Orientadora: Profª Drª Ana Flávia Granville-Garcia

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“Hoje eu vou ganhar do dia, mas nunca vou deixar o dia ganhar de mim”

Autor Desconhecido

Avaliação da qualidade de vida relacionada à saúde bucal e visita ao dentista em pré-escolares

RESUMO

OBJETIVO: Avaliar a qualidade de vida relacionada à saúde bucal (QVRSB) e visita ao dentista em pré-escolares de cinco anos de idade. MÉTODO: Foi realizado um estudo transversal, de base escolar, com 769 pares de pais/responsáveis e crianças matriculadas em pré-escolas públicas e privadas de Campina Grande-PB, Brasil. As condições sociodemográficas da família e os dados sobre a procura de serviços odontológicos da criança foram obtidos por meio da aplicação de um questionário. Além disto, pais/responsáveis e crianças responderam as respectivas versões do *Scale of Oral Health Outcomes for Five-Year-Old Children* (SOHO-5), seguido da aplicação da versão reduzida do *Sense of Coherence scale* (SOC-13), apenas com os pais/responsáveis. O exame clínico foi realizado por dois examinadores previamente submetidos a um exercício de calibração (coeficiente Kappa inter-examinador: 0,80-1,00 e Kappa intra-examinador: 0,82-1,00). os quais avaliaram os seguintes agravos bucais: cárie dentária, trauma dentário, e má oclusão. O bruxismo do sono foi avaliado por meio do relato dos pais/responsáveis. Foi realizada análise descritiva, seguida de regressão de Poisson (α= 5%). RESULTADOS: As crianças apresentaram um maior escore total do SOHO-5 (2,37 ± 3,35) em comparação com os pais/responsáveis (1.08 ± 2,65). As seguintes variáveis causaram maior impacto na QVRSB das crianças, segundo o relato das pais/responsáveis: pré-escola pública (RP = 1,37; 95% IC: 1,01–1,86), histórico de dor de dente (RP = 4,26; 95% IC: 2,86-6,32), lesão cavitada em dente anterior (RP = 1,68; 95% IC: 1,02-2,75) e presença de consequências da cárie não tratada (RP = 2,25; 95% IC: 1,51-3,36). Para a autorrelato da criança, as variáveis que apresentaram associação significativa foram: pré-escola pública (RP = 1,68; 95% IC: 1,32-2,13), histórico de dor de dente (RP = 1,59; 95% IC: 1,26-2,00), presença de lesão cavitada em dente anterior (RP = 1,79; 95% IC: 1,26-2,54), presença de mancha branca em dente anterior (RP = 1,75 95% IC: 1,24-2,46), traumatismo dentário (RP = 1,27; 95% IC: 1,02-1,58) e mordida aberta anterior (RP = 1,39; 95% IC: 1,01-1,92). Em relação à visita ao dentista, um total de 43,5% pré-escolares foram ao dentista pelo menos uma vez na vida. As

seguintes variáveis foram significativamente associadas ao histórico de visita ao dentista dos pré-escolares: maior renda familiar (RP = 1,27; 95% IC: 1,07-1,51), histórico de dor de dente (RP = 1,59; 95% IC: 1,34-1,89), ausência de traumatismo dentário (RP = 1,18; 95% IC: 1,01-1,40) e um forte senso de coerência dos pais/responsáveis (RP = 1,19; 95% IC: 1,01-1,42). CONCLUSÃO: Pode-se observar uma maior diferença de média dos escores de QVRSB em crianças que estudavam em escolas públicas e apresentavam lesões de carie dentária e suas consequências, seja na versão dos pais/responsáveis ou das crianças. Além disso, na versão das crianças, o aspecto estético também mostrou maior impacto na QVRSB. Já a visita ao dentista, foi associada com uma melhor condição socioeconômica, histórico de dor de dente, ausência de traumatismo dentário e um senso de coerência dos pais/responsáveis forte.

Palavras-Chave: Autorrelato. Pré-escolar. Qualidade de vida. Saúde bucal. Senso de coerência. Serviços odontológicos.

Evaluation of oral health-related quality of life and visits to the dentist among preschool children

ABSTRACT

OBJECTIVE: Evaluate oral health-related quality of life (OHRQoL) and visits to the dentist among five-year-old preschool children. METHODS: A school-based cross-sectional study was conducted with 769 pairs of parents/caregivers and children enrolled at public and private schools in the city of Campina Grande in northeast Brazil. Socio-demographic characteristics of the families and information on seeking dental services for the children were determined using a questionnaire administered to parents/caregivers. The children and parents/caregivers answered the respective versions of the Scale of Oral Health Outcomes for Five-Year-Old Children (SOHO-5). Parents/caregivers then answered the short version of the Sense of Coherence scale (SOC-13). Clinical examinations were performed by two examiners who had previously undergone a training exercise (inter-examiner Kappa: 0.80-1.00; intra-examiner Kappa: 0.82-1.00) for the evaluation of dental caries, traumatic dental injury and malocclusion. Sleep bruxism was determined based on the reports of parents/caregivers. Descriptive analysis was performed, followed by Poisson regression analysis (α = 5%). RESULTS: The children had higher total SOHO-5 scores than their parents/caregivers (2.37 ± 3.35 and 1.08 ± 2.65, respectively). The following variables were significantly associated with impact on the children's OHRQoL in the parent/caregiver version: public preschool (PR = 1.68; 95% CI: 1.32-2.13), history of toothache (PR = 4.26; 95% CI: 2.86-6.32), cavitated lesions on anterior teeth (PR = 2.68; 95% CI: 1.02-2.75) and the consequences of untreated dental caries (PR = 2.25; 95% CI: 1.51-3.36). The following variables were significantly associated with impact on the child self-report version: public preschool (PR = 1.27; 95% CI: 1.01-1.86), history of toothache (PR = 1.59; 95% CI: 1.26-2.00), white spot on anterior teeth (PR = 1.75; 95% CI: 1.24-2.46), cavitated lesions on anterior teeth (PR = 1.68; 95% CI: 1.24-2.75), occurrence of traumatic dental injury (PR = 1.27; 95% CI: 1.02-1.58) and anterior open bite (PR = 1.39; 95% CI: 1.01-1.92). A total of 43.5% of the preschool children had visited a dentist at least once in their lifetimes. The following variables were significantly associated with a history of visits to the dentist: higher household income (PR = 1.27; 95% CI: 1.07-1.51), history

of toothache (PR = 1.59; 95% CI: 1.34-1.89), absence of traumatic dental injury (PR = 1.18; 95% CI: 1.01-1.40) and a strong sense of coherence on the part of parents/caregivers (PR = 1.19; 95% CI: 1.01-1.42). CONCLUSION: For both the child and parent/caregiver subscales of the SOHO-5, a greater difference in mean OHRQoL scores was found among children who attended public preschools as well as those with dental caries experience and experience with the consequences of dental caries. Moreover, the aesthetic component exerted a greater impact on OHRQoL in the children's self-reports. Visits to the dentist were associated with a higher socioeconomic status, a history of toothache, an absence of traumatic dental injury and a strong sense of coherence among parents/caregivers.

Keywords: Self report. Preschool child. Quality of life. Dental care. Sense of coherence. Oral health.

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LISTA DE ABREVIATURAS

AASM	*American Academy of Sleep Medicine*
CAPES	Coordenação de Aperfeiçoamento de Pessoal de Nível Superior
CI	*Confidence Interval*
CNPq	Conselho Nacional de Desenvolvimento Científico e Tecnológico
ECOHIS	*Early Childhood Oral health Impact Scale*
FAPEMIG	Fundação de Amparo à Pesquisa do Estado de Minas Gerais
IBGE	Instituto Brasileiro de Geografia e Estatística
IL	*Illinois*
INEP	Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira
ICDAS-II	*International Caries Detection and Assessment System*
Km^2	Quilômetros Quadrados
mm	Milímetros
n	Número
NY	*New York*
OHRQoL	Oral Health-Related Quality of Life
OMS	Organização Mundial da Saúde
PB	Paraíba
PR	Prevalence Ratio
QVRSB	Qualidade de vida relacionada à saúde bucal
SOC	*Sense of Coherence*/Senso de coerência
SOC-13	Short version of the Sense of Coherence Scale
SOHO-5	*Scale of oral health outcomes for 5-year-old children*
SP	São Paulo
SPSS	*Statistical Package for Social Sciences*
TDI	*Traumatic dental injury*
UEPB	Universidade Estadual da Paraíba
UFMG	Universidade Federal de Minas Gerais
USA	*United States of America*
UT	Utah
WHO	*World Health Organization*

SUMÁRIO

1. CONSIDERAÇÕES INICIAIS

Qualidade de Vida é definida como a percepção do indivíduo em relação à posição na vida, dentro do contexto de cultura e valores no qual está inserido e em relação aos objetivos, expectativas e preocupações (OMS, 1995). Os indicadores de qualidade de vida ainda são importantes para tomadas de decisões em saúde pública, como na alocação de recursos e no delineamento de programas de intervenção (FRANZI; SILVA, 2003; GOMES *et al.*, 2014; GRANVILLE-GARCIA *et al.* 2015). Portanto, estudar qualidade de vida relacionada à saúde bucal (QVRSB) pode auxiliar na avaliação das necessidades de intervenção, na priorização do atendimento e nas análises dos resultados dos tratamentos (KRAMER *et al.*, 2013; MCGRATH; BRODER; WILSON-GENDERSON, 2004; SHEIHAM; MAIZELS; CUSHING, 1982).

Na odontologia, o crescente modelo holístico de saúde vem estimulando os estudos voltados para a QVRSB (PAHEL; ROZIER; SLADE, 2007). A condição de saúde bucal pode ter impacto no bem-estar funcional, social e psicológico de crianças e familiares (GOMES *et al.*, 2014; SCARPELI *et al.*, 2013). Inicialmente, os estudos sobre QVRSB focavam-se em idosos (CHEN; HUNTER, 1996; YU *et al.*, 2008), adultos (BRENNAN *et al.*, 2006; TRAEBERT; PERES, 2005) e adolescentes (BIAZEVIC *et al.*, 2008; LOCKER; JOKOVIC; TOMPSON, 2005) e crianças maiores que seis anos (HUMPHRIS *et al.*, 2005; TESCH; OLIVEIRA; LEÃO, 2007).

Para os pré-escolares, o desenvolvimento de estudos sobre QVRSB representou um grande avanço para as políticas de públicas de saúde, pois os agravos bucais podem refletir no crescimento, socialização, aprendizagem e na procura pelo serviço odontológico (ALDRIGUI *et al.*, 2011; GOMES *et al.*, 2014; GRANVILLE-GARCIA *et al.* 2015; NEVES *et al.*, 2016). No entanto, muitas crianças ao redor do mundo ainda são afetadas por cárie dentária (NANAYAKKARA *et al.*, 2013; WONG *et al.*, 2011), traumatismo dentário (ALDRIGUI *et al.*, 2011; OLATOSI; SOTE, 2012), má oclusão (ABANTO *et al.*, 2011; BUGAIGHIS; KARANTH, 2013) e bruxismo do sono (GHAFOURNIA; HAJENOUROZALI TEHRANI, 2012; MANFREDINI *et al.*, 2013). No Brasil, estudos também mostram a alta prevalência dos agravos bucais, especialmente nas áreas menos favorecidas socialmente (GOMES *et al.*, 2014; WULAERHAN et al., 2014).

O primeiro instrumento desenvolvido para avaliar o impacto dos agravos bucais na QVRSB de pré-escolares (2 a 5 anos) foi o *Early Childhood Oral Health Impact Scale* (ECOHIS) (PAHEL; ROZIER; SLADE, 2007; TESCH; OLIVEIRA; LEÃO, 2008). O ECOHIS é uma medida proxy, portanto, não avalia a autopercepção da criança. Alguns pais/responsáveis possuem um conhecimento limitado sobre a QVRSB das crianças (JOKOVIC; LOCKER; GUYATT, 2004). Assim, considerar ambas as percepções, possibilita complementação de informações e permite a melhor compreensão do impacto dos agravos bucais sobre a QVRSB (ABANTO *et al.*, 2014a; BARBOSA; GAVIÃO, 2008).

Apenas com o desenvolvimento do *Scale of oral health outcomes for 5-year-old children* (SOHO-5) também foi possível a avaliação da autopercepção do pré-escolar. Por ser um instrumento recente, o SOHO-5 foi validado apenas no Brasil e Inglaterra (ABANTO *et al.*, 2013a; TSAKOS *et al.*, 2012). Até onde se sabe, as pesquisas realizadas com o SOHO-5 foram destinadas a validação do instrumento (ABANTO *et al.*, 2013a; TSAKOS *et al.*, 2012), avaliação da capacidade de resposta (ABANTO *et al.*, 2013b; GRANVILLE-GARCIA *et al.*, 2016) ou apresentaram amostras de conveniência (ABANTO *et al.*, 2014a; ABANTO *et al.*, 2014b; DANTAS *et al.*, 2015; FERNANDES *et al.*, 2015). Além disto, nenhum destes estudos analisou o bruxismo do sono ou as consequências da cárie não tratada. Portanto, o presente estudo é o primeiro de base escolar a avaliar o impacto da cárie dentária e suas consequências (envolvimento pulpar visível; ulceração causada por fragmentos dentários; fistula e abscesso), o traumatismo, a má oclusão e o bruxismo do sono na QVRSB do pré-escolar por meio do SOHO-5.

Outro importante problema observado nesta faixa etária é a baixa frequência da ida ao dentista (CAMARGO *et al.*, 2012; GRANVILLE-GARCIA et al, 2015; MACHRY *et al.*, 2013). Assim, além da QVRSB, os fatores psicossociais dos indivíduos vem sendo objeto de interesse em relação a utilização do serviço odontológico, visto que a associação destes fatores pode influenciar na capacidade do indivíduo se envolver com atividades de saúde (QIU *et al.*, 2013; SILVA; MENDONÇA; VETTORE, 2011). Visto que as crianças dependem dos pais/responsáveis para os cuidados de saúde, alguns fatores precisam ser considerados no esclarecimento do uso do serviço odontológico pelas crianças, como a autopercepção da QVRSB das crianças e o senso de coerência (SOC) dos

pais/responsáveis (ANTONOVSKY, 1987; GOETTEMS *et al.*, 2012; GRANVILLE-GARCIA *et al.*, 2015).

O SOC é um fator psicossocial que faz parte da teoria salutogênica (*saluto* = saúde, *genêsis* = origem) e reflete a visão que o indivíduo tem da vida e sua capacidade de adaptação em situações estressantes. O SOC é composto pelos seguintes elementos: cognitivo (capacidade de compreender um evento), instrumental (capacidade de manejo das situações) e emocional (capacidade de conferir sentido emocional às situações da vida) (ANTONOVSKY, 1987; ERIKSSON; LINDSTROM, 2007). Assim, o SOC dos pais/responsáveis pode influenciar em uma maior ou menor procura por atenção odontológica preventiva (QIU *et al.*, 2013; SILVA; MENDONÇA; VETTORE, 2011). Apenas um estudo representativo com pré-escolares avaliou o SOC dos responsáveis na utilização dos serviços pelos pré-escolares (QIU *et al.*, 2013). Porém, não foi realizado exame clínico das crianças como meio de reduzir as possíveis inconsistências nas respostas sobre a visita ao serviço odontológico.

Diante do exposto, o presente estudo de base escolar tem como objetivo avaliar a QVRSB em amostra representativa de pré-escolares matriculados em creches/pré-escolas, por meio do SOHO-5, no município de Campina Grande-PB. Além disto, também foram analisados o impacto da percepção dos pais/responsáveis e crianças sobre a qualidade de vida relacionada a saúde bucal (QVRSB) e do senso de coerência (SOC) dos pais/responsáveis sobre o uso do serviço odontológico de pré-escolares.

A dissertação está apresentada em forma de artigos científicos, por representar uma forma clara e objetiva de divulgação dos resultados do estudo.

2. OBJETIVOS

2.1 Objetivo Geral

Avaliar a qualidade de vida relacionada à saúde bucal e visita ao dentista em pré-escolares com cinco anos de idade.

2.2 Objetivos Específicos

Plano de Análise I

- Verificar o impacto das alterações bucais (cárie dentária, traumatismo dentário, má oclusão e bruxismo do sono) na QVRSB de pré-escolares, de acordo com o autorrelato da criança.
- Verificar o impacto das alterações bucais (cárie dentária, traumatismo dentário, má oclusão e bruxismo do sono) na QVRSB de pré-escolares, de acordo com o relato dos pais/responsáveis.
- Verificar o impacto dos fatores sociodemográficos na QVRSB de pré-escolares, de acordo com o autorrelato da criança e relato dos pais/responsáveis.

Plano de Análise II

- Avaliar a associação dos agravos bucais e a procura de serviços odontológicos.
- Avaliar a associação entre o relato dos pais/responsáveis sobre a QVRSB das crianças e a utilização de serviços odontológicos pelos pré-escolares.
- Verificar a associação do autorrelato sobre a QVRSB dos pré-escolares e a utilização de serviços odontológicos.
- Avaliar a associação entre o SOC dos pais/responsáveis com o uso de serviços odontológicos pelos pré-escolares.
- Identificar a associação das condições sociodemográficas e das condições de saúde bucal das crianças na utilização de serviços odontológicos pelas crianças.

3. MATERIAL E MÉTODOS

3.1 Área de Estudo

O município de Campina Grande está localizado no interior do estado da Paraíba, no agreste paraibano, na parte oriental do Planalto da Borborema (Figura 1). Campina Grande apresenta uma área total de 594,182 km^2, população estimada de 405.072 habitantes e é um dos principais polos de desenvolvimento econômico do interior do Nordeste, com um Índice de Desenvolvimento Humano de 0,720. A vigilância sanitária subdivide o município em seis Distritos Sanitários, visando facilitar a programação local dos serviços de saúde (IBGE, 2015; PREFEITURA MUNICIPAL DE CAMPINA GRANDE, 2016).

O município sedia a Federação das Indústrias do Estado além de possuir 16 instituições de ensino superior, sendo duas da rede pública. Por outro lado, Campina Grande tem graves problemas sociais e elevados índices de pobreza, apresentando um GINI da renda domiciliar *per capita* de 0,586 (MINISTÉRIO DA SAÚDE, 2010; IBGE, 2014; PREFEITURA MUNICIPAL DE CAMPINA GRANDE, 2016).

Figura 1 - Localização geográfica do estado da Paraíba e da cidade de Campina Grande.
Fonte: MAPA DA PARAÍBA, 2016

3.2 Desenho do Estudo

Foi realizado um estudo transversal, analítico, que avaliou o impacto das alterações bucais (cárie dentária, traumatismo dentário, má oclusão e bruxismo do sono) sobre a QVRSB de pré-escolares da cidade de Campina Grande-PB. Os estudos de corte do tipo transversal permitem analisar a distribuição de um agravo em determinada população, além de serem úteis como base para o planejamento e determinação de necessidades coletivas de tratamento. Também apresentam como vantagens a objetividade dos dados e o baixo custo (FRAZÃO, 2003; PEREIRA, 1995; PINTO, 2000).

3.3 População de Estudo

A população foi constituída por crianças de cinco anos, matriculadas em pré-escolas públicas e privadas da cidade de Campina Grande-PB. O município apresenta 137 creches/escolas privadas e 126 públicas (estaduais, municipal e federal), perfazendo um total de 14.360 crianças, de acordo com o Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira (INEP, 2014).

3.4 Cálculo Amostral

O cálculo amostral foi realizado por meio de uma amostragem probabilística por conglomerados para amostras complexas, estratificado em dois estágios (pré-escolas e crianças) proporcional ao número de estabelecimentos por Distritos Sanitários. Em cada estrato, foi selecionado um número determinado de pré-escolas, onde as crianças foram selecionadas a partir de uma amostra aleatória sistematizada.

A amostra foi obtida através do cálculo de estimativa de proporção, de acordo com Kirkwood (1996), considerando um nível de confiança de 95% e erro admissível de 5%. Foi utilizado a prevalência de agravo de 50% por fornecer a maior amostra possível, aumentando o poder do estudo (BROWNER; NEWMAN; HULLEY, 2007):

$$n = (Z_{1-\alpha})^2 \frac{p\,(1-p)}{d^2}$$

Onde:	Então:
α: nível de confiança	α: 95%
p: prevalência do agravo analisado	p: 50%
d: erro admissível	d: 5%

Deste modo, segundo o cálculo de estimativa de proporções, o tamanho amostral seria de 384 crianças.

O processo de amostragem por conglomerados (*cluster*) altera a precisão das estimativas, já que essas dependem do grau de homogeneidade interna dos conglomerados. Ao se proceder a essa técnica de amostragem, perde-se a homogeneidade e, portanto, um número mais elevado é requerido para compensar esse aspecto. Essa correção pode ser efetuada de forma simplificada e conservadora: multiplica-se o tamanho da amostra por 1,2 a 2,0. Esse procedimento é denominado efeito de delineamento ou efeito do desenho. Foi utilizado o fator 1,6, sendo a amostra agora estimada em 615 crianças (GOMES *et al.*, 2014). Além disto, foi prevista uma taxa de erro de 20% ao tamanho amostral. Assim, a amostra final foi de 769 pré-escolares de cinco anos.

3.5 Critérios de Inclusão

- Crianças de cinco anos matriculadas em pré-escolas públicas e privadas de Campina Grande-PB;
- Ser pai/responsável pelo cuidado diário da criança, passando mais de 12 horas por dia com a mesma e ter domínio fluente do idioma português brasileiro;
- Ausência de doenças sistêmicas e/ou deficiências físicas e de aprendizagem relatada pelos professores.

3.6 Critérios de Exclusão

- Presença de um ou mais dentes permanentes;
- Crianças previamente submetidas a tratamento ortodôntico.

3.7 Calibração

A calibração foi dividida em duas etapas, como propõem Peres, Traebert e Marcenes (2001):

Primeira Etapa: momento teórico onde foram apresentados o índice e os critérios de diagnóstico dos agravos bucais. Imagens das condições que poderiam ser observadas no exame clínico foram projetadas durante um minuto, e em seguida, foi solicitado aos examinadores que diagnosticassem as alterações. Posteriormente, foi realizado o estudo da ficha clínica e estabelecido a rotina a ser seguida durante o exame clínico. Esta etapa foi coordenada por especialistas, considerados padrão-ouro no treinamento dos dois cirurgiões-dentistas selecionados para o exercício de calibração.

Segunda Etapa: momento prático onde foi conduzido o exame clínico em 40 pré-escolares de cinco anos pertencentes a uma pré-escola pública selecionada por sorteio. Os participantes da calibração não foram incluídos na amostra do estudo principal. O grau de concordância inter-examinador foi testado comparando os diagnósticos de cada examinador com o padrão-ouro. Das 40 crianças, 30 foram reexaminadas após um intervalo de sete dias para determinação do grau de concordância intra-examinador.

A consistência dos diagnósticos foi medida através do coeficiente *Cohens´s kappa* para a obtenção dos valores de concordância a partir da seguinte fórmula:

$$K = \frac{Po - Pe}{100 - Pe}$$

Onde:

Po: porcentagem de dentes nos quais houve concordância diagnóstica;

Pe: porcentagem de concordância esperada.

Os resultados numericamente obtidos representam (BULMAN; OSBORN, 1989):

k igual a zero: baixíssima confiabilidade;

k maior que zero e menor que 0,40: baixa confiabilidade;

k entre 0,41 e 0,60: moderada confiabilidade;

k entre 0,61 e 0,80: substancial confiabilidade;

k acima de 0,81: boa confiabilidade.

Após a conclusão das etapas da calibração, foi observado no teste Kappa uma boa confiabilidade inter e intra-examinador (Quadro 1). Assim, os dois examinadores foram considerados aptos para a realização dos exames clínicos.

Quadro 1 - Coeficiente *Cohens´s kappa* inter e intra-examinador

Condição clínica	Inter-examinador	Intra-examinador
Cárie dentária	0.89-0.90	0.87-1.00
Atividade de cárie dentária	0.80-0.89	0.88-1.00
Índice pufa	0.90-1.00	1.00
Traumatismo dentário	0.88-0.90	0.82-0.87
Má oclusão	0.86-0.91	0.94-1.00

3.8 Estudo-Piloto

Previamente ao estudo principal foi realizado um estudo piloto para logística do estudo (realização dos exames clínicos, aplicabilidade do SOHO-5 e dos questionários sociodemográfico e sobre a saúde bucal da criança). O estudo piloto foi realizado em duas creches, uma pública e outra privada, selecionadas por conveniência, onde participaram um total de 45 pares de pais/responsáveis e

crianças. Não tendo sido observadas dificuldades, não foi necessário modificar a metodologia empregada.

3.9 Contato com as Creches/Pré-escolas

As pré-escolas/creches foram localizadas pelos dados fornecidos pelo INEP. No primeiro contato, foram esclarecidos junto ao responsável pelo estabelecimento, os objetivos da pesquisa, as atividades planejadas e a metodologia do trabalho proposto. Em cada pré-escola/creche foram apresentadas a aprovação do trabalho pelo Comitê de Ética em Pesquisa e a Autorização da Secretaria de Educação.

3.10 Coleta de Dados

A coleta dos dados foi realizada por dois examinadores previamente calibrados e os dados anotados por cinco assistentes devidamente treinados. A coleta dos dados foi dividida em três etapas:

1º. Aplicação do questionário relacionado a dados sociodemográficos e saúde bucal da criança, SOHO-5 e SOC-13 com os pais/responsáveis;
2º. Aplicação do SOHO-5 com a criança;
3º. Exame clínico da criança.

3.10.1 Instrumentos para Coleta dos Dados

Para coleta dos dados foram utilizados quatro instrumentos de pesquisa:

- Questionário dirigido aos pais/responsáveis contendo questões relacionadas às condições sociodemográficas e saúde bucal da criança (utilização do serviço odontológico e presença de dor de dente) (APÊNDICE A);
- Questionário SOHO-5, dirigido aos pais/responsáveis e pré-escolares (ANEXO A);

- Questionário SOC-13, adaptado para os pais/responsáveis de pré-escolares (ANEXO B);
- Ficha clínica para anotação dos dados clínicos (APÊNDICE B) e ficha do *International Caries Detection and Assessment System* (ICDAS-II) (ANEXO C).

3.10.1.1 Questionário Sociodemográfico, Dor de Dente e Visita ao Dentista

Foram pesquisadas as seguintes variáveis sociodemográficas: sexo da criança, tipo de escola, escolaridade dos pais/responsáveis, renda familiar mensal, idade dos pais/responsáveis, número de moradores no domicílio. Também foram analisadas a experiência de dor de dente e a utilização de serviços odontológicos pelas crianças.

3.10.1.2 SOHO-5

O SOHO-5 consiste em uma versão de autorrelato da criança e outra versão de relatos secundários dos pais/responsáveis em relação à QVRSB do pré-escolar. O instrumento é estruturalmente composto por 14 itens contidos nas duas versões, sete itens para cada versão, sendo que seis são comuns as duas versões em termos de conteúdo (ABANTO *et al.*, 2013a; TSAKOS *et al.*, 2012).

Na versão da criança os sete itens são: dificuldade para comer, dificuldade para falar, dificuldade para brincar, dificuldade para dormir, evitar sorrir devido a dor, evitar sorrir devido à aparência e dificuldade para beber. As respostas de cada item são dadas em uma escala de três pontos: não = 0; um pouco = 1; muito = 2. A explicação das respostas foi facilitada pelo uso de um cartão com o desenho de três faces (Figura 2).

Figura 2 - Faces para facilitar a obtenção de respostas na versão da criança.

Na versão dos pais/responsáveis os sete itens são: dificuldade para comer, dificuldade para falar, dificuldade para brincar, dificuldade para dormir, evitar sorrir

devido à dor, evitar sorrir devido à aparência e autoconfiança da criança afetada por causa dos dentes. As respostas de cada item desta versão seguem uma escala de Likert de cinco pontos: de forma nenhuma = 0; um pouco = 1; mais ou menos = 2; bastante = 3; muita = 4.

O escore total para cada uma das versões do SOHO-5 é calculado a partir da somatória dos pontos das opções das respostas. Portanto, o escore total da versão da criança pode variar de 0 a 14 e a versão dos pais/responsáveis de 0 a 28. Quanto maior o escore, pior qualidade de vida da criança. Na análise estatística do segundo plano de análise esse escore foi dicotomizado pela mediana em maior ou menor impacto na QVRSB.

3.10.1.3 Sense of Coherence Scale (SOC-13)

O senso de coerência (SOC) dos pais/responsáveis foi medido usando a versão curta do *Sense of Coherence Scale* (SOC-13), que consiste em 13 itens e opções de resposta em uma escala de Likert. A fim de exemplificar o instrumento, existem 3 itens que poderiam ser considerados representativos da SOC-13: (1) "Você tem interesse pelo que se passa ao seu redor?", (2) "Já lhe aconteceu ter ficado desapontada com pessoas em quem você confiava?", e (3) " Você tem ideias e sentimentos confusos?" (ANTNOWSY, 1987).

No Brasil, o SOC-13 foi validado para uso em mães de adolescentes (FREIRE; HARDY; SHEIHAM, 2002) e submetido à adaptação transcultural e de propriedades psicométricas para uso em mães de pré-escolares (BONANATO *et al.*, 2009). As modificações consistiram de uma simplificação no texto e uma mudança de escala de classificação a partir de uma escala de Likert de 7 pontos com extremos descritivos em uma escala de Likert de 5 pontos com todas as respostas descritas. Assim, a soma do escore final é de 13 a 65, com os valores mais elevados correspondentes a uma maior capacidade de adaptação ao estresse. Para fins estatísticos, o SOC foi dicotomizado de acordo com a mediana em senso de coerência forte ou fraco.

3.10.2 Exame Clínico

Antes do exame clínico, foram realizadas escovações supervisionadas com as crianças. Assim, cada criança recebeu um kit contendo escova de dente, dentifrício e fio dental para remover o biofilme das superfícies dentárias e facilitar o diagnóstico.

As crianças foram examinadas na própria pré-escola, permanecendo sentadas em frente ao examinador. Para o exame clínico, os examinadores utilizaram equipamentos de proteção individual, sendo as luvas trocadas a cada exame e o gorro e a máscara a cada turno de exame. Os examinadores também contaram com o auxílio de uma lâmpada portátil posicionada na cabeça (Petzl Zoom head lamp, Petzl America, Clearfield, UT, USA). Nos exames foram utilizados espelhos bucais estéreis (PRISMA®, São Paulo, SP, Brasil), sondas OMS estéreis (OMS-621, Trinity®, Campo Mourão, PR, Brasil) e gazes dentárias para secar os dentes. Os critérios de diagnósticos utilizados para o exame clínico serão descritos a seguir:

3.10.2.1 Cárie Dentária

Foi considerada a presença ou a ausência da cárie dentária, seguindo os critérios de diagnóstico do instrumento ICDAS-II (ISMAIL *et al.*, 2007):

0 = Sadio, imediatamente após secagem com ar (5 segundos); sem cárie dentária, manchamento, hipoplasia, desgaste, erosão e outros fenômenos não cariosos;
1 = Imediatamente após secagem com ar, primeira alteração visível no esmalte ou alterações na coloração limitada às áreas de fóssulas e fissuras;
2 = Observação sem secagem, alteração visual distinguível, branca ou colorida, numa extensão que vai além as fóssulas e fissuras;
3 = Ruptura localizada do esmalte, sem dentina visível, descontinuidade na superfície do esmalte. Confirmada com sonda OMS;
4 = Sombra escura subjacente desde a dentina, com ou sem ruptura localizada do esmalte;
5 = Cavidade com dentina exposta na base da cavidade;
6 = Cavidade extensa, visível, em dentina, na base e nas paredes.

Portanto, presença de cárie dentária foi considerada quando qualquer dente apresentasse código ≥ 2; ausência de cárie dentária quando todos os dentes recebessem o código “0”.

Em função da natureza epidemiológica desse estudo os códigos “1” e “2” foram unidos em uma mesma classificação diagnóstica (código “2”), em virtude da secagem ser feita com gaze e não com jato de ar no escore “1”. Foram considerados os dentes com lesões cavitadas aqueles que apresentassem escores iguais ou superiores a “3”, uma vez que é a partir deste ponto que se observa danos estruturais à superfície do esmalte. Foi considerada doença severa quando fosse verificado a presença dos escores “5” e “6”, pois a partir deste estágio é observado a lesão de cárie dentária com franca cavitação, estendendo-se até a dentina. Esse índice também foi utilizado para analisar a presença de restaurações dentárias nos pré-escolares.

Em relação a quantidade das lesões, a severidade da cárie dentária na cavidade bucal foi categorizada em três escores (ISMAIL *et al.*, 2007):

0 = Ausente/ Mancha branca;
1 = Baixa severidade (1 a 5 lesões cavitadas);
2 = Alta severidade (6 ou mais lesões cavitadas).

Além do ICDAS-II, foi utilizado o índice pufa para avaliar as consequências das lesões de cárie não tratadas (MONSE *et al.*, 2010). As lesões em tecidos circundantes que não estão relacionados ao envolvimento pulpar visível por cárie dentária, não são considerados no pufa. A avaliação é feita visualmente sem o uso de instrumento. Os códigos e os critérios do índice pufa são:

p: Envolvimento pulpar é registrado quando há abertura da câmara pulpar ou quando as estruturas dentárias coronárias foram destruídas pelo processo de cárie dentária e apenas raízes ou fragmentos de raízes estão presentes. Nenhuma sondagem é realizada para diagnosticar envolvimento pulpar.

u: Ulceração é registrada como presente quando há bordas afiadas de um dente com envolvimento pulpar ou fragmentos radiculares que causaram ulceração traumática nos tecidos moles adjacentes, por exemplo, na língua ou mucosa bucal.

f: Fístula é marcada na presença de pus sendo drenado e relacionado a um dente com envolvimento pulpar.

a: Abscesso é marcado na presença de um edema contendo pus e estando relacionado a um dente com envolvimento pulpar.

Apenas uma pontuação é atribuída por dente. Em caso de dúvida sobre a extensão da infecção odontogênica, a pontuação básica (p: envolvimento pulpar) é dada. A pontuação do pufa é cumulativa e representada pelo número de dentes acometidos em cada indivíduo. Portanto, na dentição decídua, a pontuação varia de 0 a 20. Para análise estatística foi considerada presença ou ausência de qualquer um dos índices avaliados.

3.10.2.2 Traumatismo Dentário

Para o diagnóstico de traumatismo dentário nos incisivos e caninos foi utilizada a classificação de Andreasen, Andreasen e Andersson (2007), indicada para estudos epidemiológicos pois os diagnósticos são realizados sem o auxílio do exame radiográfico. Foram considerados os seguintes tipos de traumatismo dentário: fratura de esmalte, fratura de esmalte e dentina, fratura coronária complicada, luxação extrusiva, luxação lateral, luxação intrusiva, avulsão e também alteração de cor.

3.10.2.3 Má Oclusão

Os critérios utilizados para avaliação da oclusão foram baseados no índice de Foster e Hamilton (1969) e Grabowski *et al.* (2007) descrito abaixo:

Overbite: trespasse vertical dos incisivos

- Normal: quando o trespasse vertical dos incisivos não ultrapassar 2mm;
- Overbite aumentado: quando o trespasse vertical ultrapassar 2mm;
- Mordida aberta anterior: ausência de contato dos incisivos anteriores estando os posteriores em oclusão.

Overjet: trespasse horizontal dos incisivos

- Normal: distância entre os incisivos superiores e os inferiores no sentido horizontal não ultrapassar 2 mm;
- Overjet aumentado: quando o trespasse horizontal ultrapassar os 2 mm;
- Mordida cruzada anterior: trespasse horizontal negativo.

Mordida Cruzada Posterior

- Os molares superiores ocluem numa relação lingual em relação aos inferiores em oclusão cêntrica.

O pré-escolar que apresentou pelo menos uma das condições de anormalidade indicadas acima foram diagnosticado com presença de má oclusão.

3.10.2.4 Bruxismo do Sono

O diagnóstico do bruxismo do sono foi registrado de acordo com a presença ou ausência do agravo a partir do questionamento dos pais/responsáveis pela seguinte pergunta: “Seu filho(a) range os dentes enquanto dorme?” (*American Academy of Sleep Medicine* - AASM) (BUYSSE *et al.*, 2003; SERRA-NEGRA *et al.*, 2013).

3.11 Elenco de Variáveis

O estudo apresenta dois planos de análise dos dados. No primeiro plano de análise foi avaliado o impacto dos agravos bucais e fatores associados na QVRSB dos pré-escolares segundo o relato dos pais/responsáveis e o autorrelato da criança (variável dependente). No segundo plano de análise, foi determinada a influência da QVRSB dos pré-escolares (segundo a percepção dos pais/responsáveis e autorrelato da criança) e do SOC dos pais/responsáveis (variáveis independentes) sobre a utilização dos serviços odontológicos pelos pré-escolares (variável dependente). O tipo, definição e categorização das variáveis, para cada plano de análise, é descrita a seguir:

3.11.1 Plano de Análise I (Artigo 1)

- **Variável Dependente**

O impacto na QVRSB das crianças é a variável dependente do primeiro plano de análise. Foi utilizada a versão brasileira adaptada transculturalmente do instrumento SOHO-5 para avaliar a QVRSB (ABANTO *et al.*, 2013a) (Quadro 2).

Quadro 2 - Variável dependente do plano de análise I.

VARIÁVEL DEPENDENTE	VERSÕES	ANÁLISE DOS DADOS
Impacto na qualidade de vida relacionada à saúde bucal através do SOHO-5	Pais/Responsáveis	Avaliação pela média
	Criança	Avaliação pela média

- **Variáveis Independentes**

No Quadro 3 são encontradas as variáveis independentes do primeiro plano de análise.

Quadro 3 - Definição e categorização das variáveis independentes do plano de análise I.

TIPO DE VARIÁVEL	DEFINIÇÃO DA VARIÁVEL	CATEGORIZAÇÃO
Sexo	Sexo da criança	0. Feminino 1. Masculino
Tipo de escola	Tipo de escola que a criança está vinculada	0. Pública 1. Privada
Nível de Escolaridade dos pais/responsáveis	Relato do pai/responsável sobre a escolaridade dos pais/responsáveis da criança	0. ≤ 8 anos de estudo 1. > 8 anos de estudo
Renda mensal familiar	Relato do pai/responsável sobre a renda mensal da família	0. Menor que a mediana 1. Maior que a mediana
Idade do pai/responsável	Idade em anos	0. ≤ 30 anos 1. > 30 anos

Número de moradores por domicílio	Relato do pai/responsável sobre o número de pessoas que moram com a criança (incluindo a criança)	0. Até 5 pessoas 1. 6 ou mais pessoas
Utilização dos serviços odontológicos	Visita da criança ao dentista alguma vez na vida	0. Não 1. Sim
Restauração	Presença de algum dente restaurado na criança	0. Não 1. Sim
Dor de dente	Experiência de dor de dente alguma vez na vida	0. Não 1. Sim
Cárie dentária	Presença de cárie dentária no exame clínico	0. Ausente 1. Presente
Atividade da cárie dentária	Atividade ou inatividade da cárie dentária	1. Inativa 2. Ativa
Cárie em dentes anteriores	Severidade da lesão cariosa	0. Ausente 1. Mancha branca 2. Lesão cavitada
Severidade da cárie dentária	Severidade da cárie dentária de acordo com a classificação do ICDAS-II (caráter quantitativo) (ISMAIL *et al*., 2007)	0. Ausente/ Mancha branca 1. Baixa severidade 2. Alta severidade
Índice pufa	Consequência da cárie dentária não tratada	0.Ausente 1.Presente
Traumatismo dentário	Presença de traumatismo dentário no exame clínico	0. Ausente 1. Presente
Tipo de traumatismo dentário	Categorização dos traumatismos dentários de acordo com a classificação inglesa (ANDREASEN; ANDREASEN; ANDERSSON, 2007)	0. Fratura de esmalte 1. Fratura de esmalte e dentina 2. Fratura coronária complicada 3. Luxação extrusiva 4. Luxação lateral 5. Luxação intrusiva 6. Avulsão 7. Alteração de cor
Má oclusão	Presença de má oclusão no exame clínico	0. Ausente 1. Presente
Tipo de má oclusão	Categorização da má oclusão de acordo com a classificação de Foster e Hamilton (1969) e Grabowski et al. (2007)	0. Overbite aumentado 1. Mordida aberta anterior 2. Overjet aumentado 3. Mordida cruzada anterior 4. Mordida cruzada posterior
Bruxismo do sono	Relato dos pais/responsáveis sobre a presença do bruxismo do sono	0. Ausente 1. Presente

3.11.1 Plano de Análise **II** (Artigo 2)

- **Variável Dependente**

A utilização dos serviços odontológicos pela criança é a variável dependente do segundo plano de análise (Quadro 4).

Quadro 4 - Categorização das variáveis dependentes do plano de análise **II**.

VARIÁVEL DEPENDENTE	DEFINIÇÃO DA VARIÁVEL	CATEGORIZAÇÃO
Utilização dos serviços odontológicos	Visita da criança ao dentista	0. Não 1. Sim

- **Variáveis Independentes**

No Quadro 5 são encontradas as variáveis independentes do segundo plano de análise.

Quadro 5 - Definição e categorização das variáveis independentes do plano de análise **II**.

TIPO DE VARIÁVEL	DEFINIÇAO DA VARIÁVEL	CATEGORIZAÇÃO
Sexo	Sexo da criança	0. Feminino 1. Masculino
Tipo de escola	Tipo de escola que a criança está vinculada	0. Pública 1. Privada
Nível de Escolaridade dos pais/responsáveis	Relato do pai/responsável sobre a escolaridade dos pais/responsáveis da criança	0. ≤ 8 anos de estudo 1. > 8 anos de estudo
Renda mensal familiar	Relato do pai/responsável sobre a renda mensal da família	0. Menor que a mediana 1. Maior que a mediana
Idade do pai/responsável	Idade em anos	0. ≤ 30 anos 1. > 30 anos
Número de moradores por domicílio	Relato do pai/responsável sobre o número de pessoas	0. Até 5 pessoas 1. 6 pessoas ou mais

	que moram com a criança (incluindo a criança)	
Dor de dente	Queixa de dor de dente em algum momento da vida	0.Não 1. Sim
Cárie dentária	Presença de cárie dentária no exame clínico	0. Ausente 1. Presente
Atividade da cárie dentária	Atividade ou inatividade da cárie dentária	1. Inativa 2. Ativa
Cárie em dentes anteriores	Severidade da lesão cariosa	0. Ausente 1. Mancha branca 2. Lesão cavitada
Severidade de cárie dentária	Severidade da cárie dentária de acordo com a classificação do ICDAS-II (caráter quantitativo) (ISMAIL *et al*., 2007)	0. Ausente/ Mancha branca 1. Baixa severidade 2. Alta severidade
Índice pufa	Consequência da cárie dentária não tratada	0. Ausente 1. Presente
Traumatismo dentário	Presença de traumatismo dentário no exame clínico	0. Ausente 1. Presente
Tipo de traumatismo dentário	Categorização dos traumatismos dentários de acordo com a classificação inglesa (ANDREASEN; ANDREASEN; ANDERSSON, 2007)	0. Fratura de esmalte 1. Fratura de esmalte e dentina 2. Fratura coronária complicada 3. Luxação extrusiva 4. Luxação lateral 5. Luxação intrusiva 6. Avulsão 7. Alteração de cor
Má oclusão	Presença de má oclusão no exame clínico	0. Ausente 1. Presente
Bruxismo do sono	Relato dos pais/ responsáveis sobre a presença do bruxismo do sono	0. Ausente 1. Presente
Impacto na qualidade de vida segundo relato dos pais/responsáveis	Impacto na qualidade de vida relacionada à saúde bucal através do SOHO-5 (versão dos pais/ responsáveis)	Dicotomizado pela mediana em: 0. Menor impacto na qualidade e vida 1. Maior impacto na qualidade de vida
Impacto na qualidade de vida segundo relato das crianças	Impacto na qualidade de vida relacionada à saúde bucal através do SOHO-5 (versão da criança)	Dicotomizado pela mediana em: 0.Menor impacto na qualidade e vida 1. Maior impacto na qualidade de vida
Senso de coerência	Senso de coerência dos pais/responsáveis	Dicotomizado pela mediana em: 0. Fraco 1. Forte

3.12 Processamento e Análise dos Resultados

A estatísticas descritivas foi primeiramente realizada para caracterizar a amostra. A regressão de Poisson com variância robusta foi usada para relacionar as variáveis dependente e independentes. Um procedimento *backward* foi usado para selecionar as variáveis que alcançaram um valor de $p < 0,20$ na análise bivariada, bem como variáveis consideradas determinantes epidemiológicos, de cada nível. As variáveis com valor de $p < 0,05$ na análise ajustada foram mantidas no modelo final de regressão. Interações entre cárie dentária, traumatismo dentário, má oclusão e bruxismo do sono foram testadas pelo teste de Wald para heterogeneidade. A organização dos dados e as análises estatísticas foram realizadas utilizando o programa Statistical Package for Social Sciences (SPSS for Windows, version 20.0, IBM Inc, Amonk, NY, USA).

3.13 Considerações Éticas

Este projeto foi submetido e aprovado pelo Comitê de Ética da Universidade Estadual da Paraíba, de acordo com a resolução CNS Nº 466/2012 (ANEXO D). Um documento oficial explicando a natureza da pesquisa foi encaminhado e aprovado pela Secretaria de Educação Estadual (APÊNDICE C) e Municipal (APÊNDICE D). Em seguida, foram destinadas cartas de autorização para a participação aos pais/responsáveis (APÊNDICE E) e às crianças (APÊNDICE F). Os pesquisadores envolvidos estavam cientes das obrigações cabidas (APÊNDICES G e H). O relatório da condição de saúde bucal do pré-escolar foi enviado aos pais/responsáveis por escrito.

3.14 Fluxograma

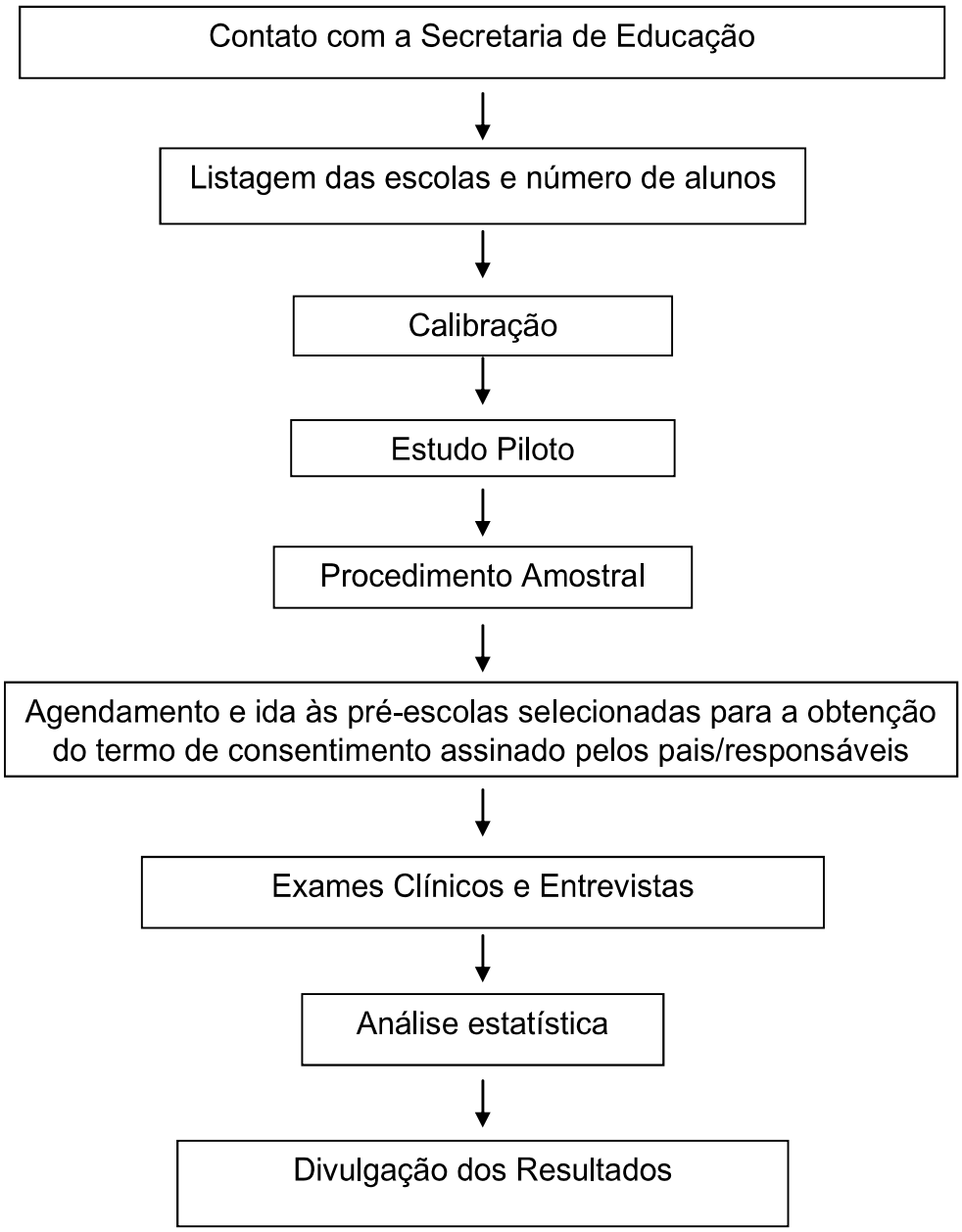

Figura 3 – Fluxograma do estudo.

4. RESULTADOS

O presente trabalho foi dividido em dois artigos apresentados a seguir.

Artigo 1

Periódico: Community Dentistry and Oral Epidemiology

Fator de impacto: Impact Factor: 2.025 / Qualis A1

Artigo formatado segundo as normas de publicação do periódico (ANEXO E)

Impact of oral problems on the quality of life of preschool children: Self-reports of children and perception of parents/caregivers

Running head: Children's OHRQoL and the SOHO-5

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Impact of oral problems on the quality of life of preschool children: Self-reports of children and perception of parents/caregivers

Abstract- *Objective*: To evaluate the impact of oral problems on the oral health-related quality of life (OHRQoL) of preschool children according to both self-reports and the reports of parents/caregivers. *Methods*: A school-based, cross-sectional study was conducted with 769 preschool children. Parents/caregivers answered a questionnaire addressing socio-demographic characteristics. The OHRQoL of the children was evaluated using the Scale of Oral Health Outcomes for Five-Year-Old Children (SOHO-5), which consists of a self-report by the child and a proxy report by the parent/caregiver. Clinical examinations were performed by two examiners who had undergone a training exercise (intra-examiner and inter-examiner agreement: K = 0.80 to 0.94). Descriptive analysis was conducted, followed by Poisson regression analysis (α = 5%). *Results*: Mean total SOHO-5 and item scores were higher on the child self-report version than the parent/caregiver version. The following variables were significantly associated with impact on the children's OHRQoL in the parent/caregiver version: public preschool (PR = 1.37; 95% CI: 1.01-1.86), toothache (PR = 4.26; 95% CI: 2.86-6.32), cavitated lesions on anterior teeth (PR = 1.68; 95% CI: 1.02-2.75) and the consequences of untreated dental caries evaluated using the pufa index (PR = 2.25 95% CI: 1.51–3.36). The following variables were significantly associated with impact on the child self-report version: public preschool (PR = 1.68; 95% CI: 1.32-2.13), toothache (PR = 1.59; 95% CI: 1.26-2.00), white spot on anterior teeth (PR = 1.75; 95% CI: 1.24–2.46), cavitated lesions on anterior teeth (PR = 1.79; 95% CI: 1.26-2.54), occurrence of traumatic dental injury (PR = 1.27; 95% CI: 1.02-1.58) and anterior open bite (PR = 1.39; 95% CI: 1.01-1.92). *Conclusions*: In the perception of the parents/caregivers, attending a public preschool, having a cavitated lesion on the anterior teeth and the consequences of untreated dental caries exerted an impact on the children's OHRQoL. Attending a public preschool, having a white spot, having a cavitated lesion on the anterior teeth, a history of tooth injury and having anterior open bite exerted an impact on OHRQoL in the perception of the children.

Introduction

Oral problems in early childhood can exert a negative impact on the oral health-related quality of life (OHRQoL) of children and their families.[1,2] A poor oral health status can affect the growth, socialisation and learning of children as well as make parents/caregivers feel guilty or upset.[1-3] Studies have shown that the perception of parents/caregivers regarding their children's oral health is influenced only by the occurrence of symptoms, such as a toothache.[2,4] Considering the dependence of young children, an inadequate perception on the part of parents/caregivers can hinder seeking dental treatment.[5]

The Early Childhood Oral Health Impact Scale (ECOHIS) was the first assessment tool developed to measure the impact of oral problems on the OHRQoL of preschool children (two to five years of age). This scale is based on proxy reports of parents/caregivers.[6] However, studies have demonstrated that five-year-old children have self-perceptions and offer consistent self-reports independently of the presence of parents/caregivers.[7-10] The development of the Scale of Oral Health Outcomes for 5-Year-Old Children (SOHO-5) initiated the evaluation of the self-perceptions of preschool children regarding their OHRQoL.[7,11] This measure enables the self-reports of children to be used as a complement to the proxy reports of parents/caregivers, which can assist in the planning of public health policies.[7,9]

As far as we know, studies conducted with the SOHO-5 have been directed at validating the scale[7,11] and evaluating the response capacity[10,12] or have employed convenience samples.[8,9,13-15] Therefore, the present investigation is the first school-based study with probabilistic cluster sampling for complex samples to use the SOHO-5 for the evaluation of the impact of traumatic dental injury (TDI), malocclusion, dental caries (severity and consequences) and sleep bruxism on the OHRQoL of preschool children.

The aim of the present study was to evaluate the impact of oral problems on OHRQoL in a representative sample of children aged five years using the Brazilian version of the SOHO-5.

Methods

Ethical issues

This study was conducted in accordance with the Declaration of Helsinki and was independently reviewed and approved by the Human Research Ethics Committee of the State University of Paraiba, Brazil, under protocol number 38937714.0.0000.5187. The parents/caregivers received clarifications regarding the objectives of the study and signed a statement of informed consent.

Sample characteristics and study design

A representative, school-based, cross-sectional study was conducted with a sample of 769 pairs of parents/caregivers and five-year-old children enrolled in private and public preschools in the city of Campina Grande, Brazil. The participants were selected from a total population of 14,360 children in this age group.

A two-stage sampling strategy was employed to ensure representativeness. In the first stage, preschools were randomly selected from each health district. In the second stage, pairs of parents/caregivers and children were randomly selected from each preschool. The sample size was calculated based on a 5% margin of error, a 95% confidence level and a correction factor of 1.6 to compensate for the design effect.[2] As the prevalence of impact on OHRQoL was unknown, a prevalence rate of 50% was considered to increase the power and because this value gives the largest sample regardless of the actual prevalence.[16] Twenty of the 129 public preschools and 28 of the 134 private preschools were randomly selected. The sample size was estimated at 615 preschool children, to which an additional 20% was added to compensate for possible dropouts, giving a total of 769 preschool children.

Eligibility criteria

Five-year-old children with no systematic diseases (based on the parents'/caregivers' reports) enrolled at public and private preschools were included in the sample. The parents/caregivers needed to be fluent in Brazilian Portuguese and spend at least 12 hours per day with the child. The exclusion criteria were the presence of one or more erupted permanent teeth and a history of orthodontic treatment.

Training and calibration exercise

A specialist in pediatric dentistry coordinated the theoretical step involving a discussion of the criteria for the diagnosis of the oral conditions. In the clinical step, two dentists examined 40 previously selected children at a preschool selected by convenience. This preschool was not part of the main study. Inter-examiner agreement was tested by comparing each examiner with the gold standard. A seven-day interval was respected between two clinical examinations for the determination of intra-examiner agreement. Inter-examiner and intra-examiner agreement was considered very good:[17] Kappa = 0.80 to 0.90 and 0.87 to 1.00, respectively, for dental caries; 0.90 to 1.00 and 1.00, respectively, for the pufa index[18] (consequences of untreated dental caries); 0.88 to 0.90 and 0.82 to 0.87, respectively, for traumatic dental injury (TDI); and 0.86 to 0.91 and 0.94 to 1.00, respectively, for malocclusion.

Pilot study

A pilot study was conducted to test the methodology. The participants in the pilot study (n = 45) were not included in the main sample. As there were no misunderstandings regarding the questionnaires or the methodology, no changes to the data collection process were deemed necessary.

Non-clinical data collection

Non-clinical were collected using the Brazilian version of the SOHO-5 as well as questionnaires addressing socio-demographic data. Parents/caregivers were previously contacted to attend a meeting at the preschools, during which they were informed regarding the objectives of the study.

The SOHO-5 addresses a child's lifetime experience with oral impacts and has two seven-item scales (parent/caregiver and child), six of which are common in content. The seven items on the parent/caregiver version are difficulty eating, difficulty speaking, difficulty playing, difficulty sleeping, avoiding smiling due to pain, avoiding smiling due to appearance and affected self-confidence of the child. The response options are offered on a five-point scale (no = 0, a little = 1, moderate = 2, a lot = 3, a great deal = 4). The seven items on the

child version are difficulty eating, difficulty drinking, difficulty speaking, difficulty playing, difficulty sleeping, avoiding smiling due to pain and avoiding smiling due to appearance. The response options are given on a three-point scale (no = 0, a little = 1, a lot = 2) aided by an explanation card with corresponding faces. The total score for each version is calculated as a simple sum of the response codes. The final score ranges from 0 to 28 on the parent/caregiver version and 0 to 14 on the child version, with higher scores denoting a greater degree of oral impact on the quality of life of the child.

The following socio-demographic characteristics were investigated: child's gender, type of preschool, parent's/caregiver's schooling, monthly household income (categorised based on the median, which was equal to US$ 280), parent's/caregiver's age and number of residents in the home. Dental pain experience and the use of dental services by the children were also investigated.

Clinical data collection

Prior to the examination, the children's teeth were brushed to remove plaque and facilitate the diagnosis. Oral examinations were performed in the knee-to-knee position with the aid of a portable lamp attached to the examiner's head (Petzl Zoom head lamp, Petzl America, Clearfield, UT, USA). The dentists used individual protection equipment, a sterilised mouth mirror (PRISMA®, São Paulo, SP, Brazil), sterilised Williams probe (WHO-621, Trinity®, Campo Mourão, Paraná, Brazil) and gauze to dry the teeth.

Dental caries was diagnosed using the International Caries Detection and Assessment System (ICDAS-II), which is a scoring system ranging from 0 (absence of dental caries) to 6 points. Due to the epidemiological nature of this study, code 1 was not used, as drying of the teeth was performed with gauze rather than compressed air. Code 2 was used for white spots and codes 3 to 6 were used for different degrees of cavitation. For statistical purposes, dental caries was dichotomised as absent (code 0) or present (code $\geq$ 2).[19] The severity of dental caries was also considered in the evaluation of the impact on OHRQoL. This variable was categorised as absent/white spot, low severity (up to 5 cavitated lesions) and high severity (6 or more cavitated lesions). Based on this index, the absence/presence of restorations was investigated. The pufa index was also employed to evaluate the severity of untreated dental caries, which addresses visible pulpal involvement (p), ulceration caused by dislocated tooth

fragments (u), fistulas (f) and abscesses (a).[18] For statistical purposes, the consequences of untreated dental caries were dichotomised as absent or present.

TDI was diagnosed as enamel fracture, enamel + dentine fracture, complicated crown fracture, extrusive luxation, lateral luxation, intrusive luxation and avulsion.[20] A visual inspection of tooth coloration was also performed. TDI was recorded in the presence of any type of TDI or tooth discoloration. Malocclusion was recorded in the presence of at least one of the following conditions: increased overbite (> 2 mm), increased overjet (> 2 mm), anterior open bite, anterior crossbite and posterior crossbite.[21,22] The diagnosis of sleep bruxism was based on the reports of the occurrence of tooth grinding during sleep, as proposed by the American Academy of Sleep Medicine for preschool children[23] and employed in a previous study.[24] Following the examinations, a fluoride varnish was applied to the teeth.

Statistical analysis

Data organisation and statistical analysis were performed using the Statistical Package for Social Sciences (SPSS for Windows, version 21.0, IBM Inc., Amonk, NY, USA). The chi-square test was used to test associations between oral conditions and socio-demographic data and the Bonferroni correction was used for variables with more than two categories. Frequency distribution was analysed for each of the SOHO-5 items. Poisson regression with robust variance was used to correlate the total SOHO-5 score and the independent variables. The backward stepwise procedure was used for the selection of variables with a p-value < 0.20 in the bivariate analysis as well as variables considered epidemiological determinants. Variables with a p-value < 0.05 in the adjusted analyses were maintained in the final regression model. All tests were carried out separately for the child and parent/caregiver subscales of the SOHO-5.

Results

A total of 769 pairs of preschool children and their parents/caregivers participated in the present study, which corresponds to a response rate of 100%. The frequencies of oral problems among the children were 91.3% for dental caries, 57.6% for malocclusion, 52.7% for TDI and 26.8% for sleep bruxism. Table 1 displays the distribution of oral problems according to socio-demographic characteristics. The chi-square test revealed that cavitated lesions, malocclusion and sleep bruxism were associated with socio-demographic

characteristics ($p < 0.05$). The majority of children with cavitated lesions studied at public schools (78.2%), had parents/caregivers with up to eight years of schooling (76.1%) and lived in families with a monthly household income ≤ US$ 280 (72.4%) in contrast to children with white spots or no dental caries. Malocclusion was significantly associated with the female sex (63.8%). Sleep bruxism among the children was associated with enrolment in private school (29.7%) and having parents/caregivers with more than eight years of schooling (29.9%).

Table 2 displays the mean total SOHO-5 and item scores for the parent/caregiver and child versions. Higher means were found for the child version. However, difficulty eating had the highest means on both versions.

Tables 3 and 4 display the results of the Poisson regression analysis for the total SOHO-5 scores (parent/caregiver and child versions) in relation to the independent variables. On the parent/caregiver version, the following variables were significantly associated with the mean total SOHO-5 score: public preschool (PR = 1.37; 95% CI: 1.01 to 1.86), history of toothache (PR = 4.26; 95% CI: 2.86 to 6.32), cavitated lesion on anterior tooth (PR = 1.68; 95% CI: 1.02 to 2.75) and consequences of untreated dental caries (PR = 2.25; 95% CI: 1.51 to 3.36). On the child version, the following variables were significantly associated with the total SOHO-5 score: public preschool (PR = 1.68; 95% CI: 1.32 to 2.13), history of toothache (PR = 1.59; 95% CI: 1.26 to 2.00), white spot on anterior tooth (PR = 1.75; 95% CI: 1.24 to 2.46), cavitated lesion on anterior tooth (PR = 1.79; 95% CI: 1.26 to 2.54), TDI (PR = 1.27; 95% CI: 1.02 to 1.58) and anterior open bite (PR = 1.39; 95% CI: 1.01 to 1.92).

Discussion

In the present study, the impact of oral problems on the OHRQoL of preschool children was evaluated using the Brazilian version of the SOHO-5. According to the parent/caregiver proxy reports, attending public preschool, clinical symptoms (toothache) and the progression of dental caries (cavitated lesions on anterior teeth and the consequences of untreated caries) exerted an impact on the OHRQoL of the children. On the children's self-reports, attending public preschool, toothache, dental caries on anterior teeth (white spot and/or cavitated lesion), TDI and anterior open bite exerted an impact on OHRQoL. To the best of our knowledge, this is the first study to use the SOHO-5 on a representative, school-based sample to evaluate the impact of oral problems on the OHRQoL of children using both self-reports and parent/caregiver proxy reports.

Some socioeconomic variables were significantly associated with cavitated lesions, malocclusion and sleep bruxism. Children attending a public preschool, those whose parents had a lower level of schooling and those from families with a lower monthly household income had a greater frequency of cavitated lesions. This demonstrates that unfavourable socioeconomic factors may be involved in the greater severity of dental caries, perhaps due to poorer living conditions, housing conditions and levels of education.[25] Malocclusion was more prevalent among female children. Previous studies have also reported a greater frequency of malocclusion among girls.[26,27] Sleep bruxism was associated with a better socioeconomic status. It is possible that children from families with a higher income perform various activities simultaneously, which may trigger this psychological disorder.[24,28] Attending a public preschool was a predictor of a poorer OHRQoL among the children analysed. Previous studies also report the impact of socioeconomic factors on the OHRQoL of children.[1,9] In Brazil, type of school is a faithful indicator of socioeconomic status in epidemiological studies, as children from families with a low income attend public schools and those from families with a higher income attend private schools.[29]

The mean total SOHO-5 score was greater on the child self-reports than parent/caregiver proxy reports, which is in disagreement with previous studies involving the use of the SOHO-5.[8,9] This divergence was likely due to the fact that previous studies involved participants who had sought dental treatment, which can result in a greater report of impact on OHRQoL on the part of parents/caregivers, since seeking treatment is associated with a poorer OHRQoL.[30] The item “difficulty eating” had the highest mean scores on both the child and parent/caregiver versions of the SOHO-5, which is in agreement with data described in previous studies.[1-3,9,10] This functional limitation is often associated with pain and can result in insufficient growth, weight loss, malnutrition, sleep disorders and truancy as well as affect the daily routine of the family.[31,32]

Studies involving parent/caregiver proxy reports have demonstrated that dental caries exerts an impact on the OHRQoL of children.[1-3] In the present investigation, the impact of cavitated lesions on anterior teeth, toothache and the consequences of untreated dental caries suggest that parents/caregivers only recognise dental caries when it is evident or symptomatic.[32] However, the consequences of untreated dental caries, as evaluated using the pufa index (visible pulpal involvement, ulceration caused by dislocated tooth fragments, fistula and abscess) did not exert an impact on OHRQoL in the children’s self-reports. This may be partially explained by the fact that young children do not remember all past pain experiences, considering the episodic profile of some conditions, such as abscesses.[33]

Therefore, the complementation of the perceptions of parents/caregivers with the perceptions of children allows a more complete evaluation of the impact on OHRQoL.[9,10] The present investigation is the first study to analyse and encounter the impact of the severity of dental caries (white spots and cavitated lesions) on anterior teeth through the reports of children. White spots are asymptomatic carious lesions that are often imperceptible to parents/caregivers.[2] It is likely that the impact of white spots on anterior teeth only in the children's self-reports stems from aesthetic discomfort, with a negative effect on social interactions and self-esteem.[10] It should be stressed that the number of cavitated lesions does not affect the OHROoL of preschoolers unless resulting in pain. This is evident by the association between toothache and OHRQoL in both the child and parent/caregiver versions of the SOHO-5.

The non-association between TDI and quality of life in both self-reports and parent/caregiver proxy reports in studies involving the SOHO-5 has been justified by the high prevalence of non-complicated TDIs or the fact that the majority of five-year-old children are in the transition phase to the permanent dentition and the roots of the primary maxillary incisors can be partially absorbed, thereby minimising pain during the performance of activities of daily living.[9,10] In studies involving the use of the ECOHIS, complicated TDIs often exert an impact on the OHRQoL of children.[1-3] In the present investigation, no association was found between the type of TDI and OHRQoL, but an association was found between the occurrence of TDI and OHRQoL in the children's self-reports. This may have occurred due to cases of complicated TDI that may have led to functional limitations[34] or due to aesthetic discomfort only perceived by the children.

Malocclusion did not exert a negative impact on OHRQoL in the perception of either the children or parents/caregivers. The majority of studies that have only evaluated parent/caregiver proxy reports have also found no significant association, likely because the development of malocclusion in preschool children often goes unperceived by parents/caregivers.[1,2,35] However, the analysis of the different types of malocclusion revealed that anterior open bite exerted an impact on OHRQoL in the children's self-reports, possibly due to the children's perception of aesthetics, as occurred with white spots.

Although sleep bruxism is common in childhood, this condition may be underestimated when parents/caregivers are unaware of the problem.[24,36] Due to its multifactor aetiology, sleep bruxism requires multidisciplinary care involving dentistry, medicine and psychology.[36] However, sleep bruxism exerted no impact on the OHRQoL of

the children in the present study, likely because tooth wear was not severe enough to cause aesthetic problems or because the habit did not cause pain in the stomatognathic system.

The present investigation has the limitations inherent to a cross-sectional study. Moreover, the data acquired through questionnaires may be subject to information bias. However, the execution of the pilot study and the use of a validated assessment tool were measures taken to diminish possible biases in the study.

Based on the present findings, children who studied at public schools as well as those with dental caries and its consequences experienced a greater impact on quality of life in the perceptions of both the children and their parents/caregivers. Moreover, the children's self-reports revealed that the aesthetic component also exerted an impact on OHRQoL. Thus, the results of this study can assist in the development of public health policies directed at preschool children based on the complementation of the perceptions of children and their parents/caregivers. Longitudinal studies should be conducted to allow a better understanding regarding the impact of oral problems on the quality of life of children and the evaluation of other components of OHRQoL, such as biopsychosocial aspects.

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Tables

Table 1. Frequency of clinical variables according to socio-demographic data of preschool children analysed

Variable	Dental caries			TDI		Malocclusion		Sleep Bruxism	
	Absent* n (%)	White spots* n (%)	Cavitations* n (%)	Absent n (%)	Present n (%)	Absent n (%)	Present n (%)	Absent n (%)	Present n (%)
Sex									
Female	39(10.7)^{A}	115(31.4)^{A}	212(57.9)^{A}	185(50.5)^{A}	181(49.5)^{A}	132(36.2)^{A}	233(63.8)^{B}	269(74.3)^{A}	93(25.7)^{A}
Male	28(6.9)^{A}	135(33.5)^{A}	240(59.6)^{A}	178(44.2)^{A}	225(55.8)^{A}	193(47.9)^{A}	210(52.1)^{B}	287(71.9)^{A}	112(28.1)^{A}
Type of preschool									
Public	10(3.4)^{A}	55(18.5)^{A}	233(78.2)^{B}	141(47.3)^{A}	157(52.7)^{A}	126(42.4)^{A}	171(57.6)^{A}	229(77.4)^{A}	67(22.6)^{B}
Private	57(12.1)^{A}	195(41.1)^{A}	219(46.5)^{B}	222(47.1)^{A}	249(52.9)^{A}	199(42.3)^{A}	272(57.7)^{A}	327(70.3)^{A}	138(29.7)^{B}
Parent's/caregiver's schooling									
≤ 8 years of study	10(4.3)^{A}	45(19.6)^{A}	175(76.1)^{B}	108(47.0)^{A}	122(53.0)^{A}	105(45.9)^{A}	124(54.1)^{A}	181(80.1)^{A}	45(19.9)^{B}
> 8 years of study	57(10.6)^{A}	205(38.2)^{A}	274(51.1)^{B}	254(47.4)^{A}	282(52.6)^{A}	219(40.9)^{A}	317(59.1)^{A}	373(70.1)^{A}	159(29.9)^{B}
Monthly household income									
≤ US$ 280	18(4.9)^{A}	84(22.7)^{A}	268(72.4)^{B}	171(46.2)^{A}	199(53.8)^{A}	156(42.2)^{A}	214(57.8)^{A}	276(75.0)^{A}	92(25.0)^{A}
> US$ 280	43(11.8)^{A}	151(41.4)^{A}	171(46.8)^{B}	177(48.5)^{A}	188(51.5)^{A}	205(56.2)^{A}	160(43.8)^{A}	257(71.6)^{A}	102(28.4)^{A}
TOTAL	67(8.7)	250(32.5)	452(58.8)	363(47.2)	406(52.8)	325(42.3)	443(57.6)	556(73.1)	205(26.9)

* Chi-square test with Bonferroni correction; Different uppercase letters denote significantly different results ($p < 0.05$).

Table 2. Mean total SOHO-5 and item scores in parent/caregiver-child pairs

	Parent/caregiver version Mean (SD)		**Child version Mean (SD)**
Total score	1.08(2.65)	Total score	2.37(3.35)
Difficulty eating	0.32(0.76)	Difficulty eating	0.49(0.72)
Difficulty speaking	0.10(0.41)	Difficulty speaking	0.32(0.63)
Difficulty playing	0.07(0.38)	Difficulty playing	0.32(0.64)
Difficulty sleeping	0.19(0.59)	Difficulty sleeping	0.33(0.64)
Avoid smiling due to pain	0.13(0.58)	Avoid smiling due to pain	0.38(0.66)
Avoid smiling due to appearance	0.12(0.58)	Avoid smiling due to appearance	0.24(0.55)
Affected self-confidence	0.13(0.59)	Difficulty drinking	0.30(0.61)

Table 3. Poisson regression for oral problems and socio-demographic factors in relation to total SOHO-5 score based on reports of parents/caregivers.

	Parent/caregiver version Mean total Score (SD)	Bivariate Unadjusted PR* (95% CI)	p-value	Multivariate Adjusted PR† (95% CI)	p-value
Child's sex					
Female	1.15(2.90)	1.15(0.81-1.62)	0.432	-	-
Male	1.05(2.74)	1.00		-	-
Type of preschool					
Public	1.80(3.70)	2.90(2.10-4.00)	<0.001	1.37(1.01-1.86)	0.038
Private	0.62(1.52)	1.00		1.00	
Parent's/caregiver's schooling					
≤ 8 years of study	1.94(3.86)	2.76(1.97-3.86)	<0.001	-	-
> 8 years of study	0.70(1.80)	1.00		-	-
Monthly household income					
< US$ 280	1.34(3.10)	1.74(1.21-2.52)	0.003	-	-
≥ US$ 280	0.84(2.45)	1.00		-	-
Parent's/caregiver's age					
≤ 30 years	1.27(3.01)	1.50(1.05-2.14)	0.026	-	-
> 30 years	0.94(2.63)	1.00		-	-
Number of residents in home					
< 6	1.00(2.60)	1.00		-	-
≥ 6	1.73(3.93)	1.64(1.03-2.63)	0.036	-	-
Use of dental services					
Yes	1.44(3.17)	1.53(1.08-2.16)	0.016	-	-
No	0.81(2.45)	1.00		-	-
Restoration					
Yes	2.00(3.50)	2.14(1.46-3.13)	<0.001	-	-
No	0.88(2.58)	1.00		-	-

Toothache					
Yes	3.23(4.61)	8.56(6.35-11.53)	<0.001	4.26(2.86-6.32)	<0.001
No	0.33(0.97)	1.00		1.00	
Dental caries					
Present	1.09(2.81)	2.45(1.21-4.97)	0.013	-	-
Absent	0.0(0.0)	1.00		-	-
Activity of dental caries					
Active	1.21(2.96)	2.74(1.54-4.86)	0.001	-	-
Inactive	0.29(1.08)	1.00		-	-
Caries on anterior teeth					
Absent	0.46(1.07)	1.00		1.00	
White spot	0.41(0.98)	0.77(0.51-1.16)	0.220	0.72(0.43-1.19)	0.202
Cavitated lesion	2.32(4.28)	4.07(2.75-6.04)	<0.001	1.68(1.02-2.75)	0.039
Severity of dental caries					
Absent/white spot	0.32(0.84)	1.00		-	-
Low severity	0.51(1.98)	1.35(0.80-2.27)	0.251	-	-
High severity	2.36(4.01)	5.65(4.02-7.95)	<0.001	-	-
pufa index					
Present	4.22(5.40)	6.50(4.75-8.88)	<0.001	2.25(1.51-3.36)	<0.001
Absent	0.56(1.53)	1.00		1.00	
TDI					
Present	0.97(2.58)	1.00		-	-
Absent	1.19(2.73)	1.22(0.86-1.73)	0.264	-	-
Type of TDI					
Discolouration	1.45(3.46)	1.32(0.78-2.22)	0.291	-	-
Luxation and/or avulsion	1.16(3.05)	1.28(0.68-2.41)	0.429	-	-
Enamel and dentine fracture and/or complicated crown fracture	1.62(4.70)	1.28(0.35-4.63)	0.699	-	-
Absent or enamel fracture	1.02(2.60)	1.00		-	-

Malocclusion					
Present	1.04(2.81)	1.09(0.76-1.56)	0.623	-	-
Absent	1.14(2.81)	1.00		-	-
Anterior open bite					
Present	1.98(4.64)	2.10(1.41-3.13)	<0.001	-	-
Absent	1.02(2.60)	1.00		-	-
Increased overbite					
Present	0.92(2.14)	1.00		-	-
Absent	1.14(2.98)	1.35(0.87-2.09)	0.169	-	-
Increased overjet					
Present	0.95(2.47)	1.00		-	-
Absent	1.14(2.92)	1.01(0.69-1.47)	0.943	-	-
Anterior crossbite					
Present	0.29(0.77)	1.00		-	-
Absent	1.12(2.84)	1.70(0.83-3.49)	0.145	-	-
Posterior crossbite					
Bilateral	0.57(1.51)	0.46(0.07-2.94)	0.416	-	-
Unilateral	1.06(2.81)	1.07(0.62-1.86)	0.796	-	-
Absent	1.10(2.82)	1.00		-	-
Sleep bruxism					
Present	1.14(2.71)	1.05(0.72-1.53)	0.771	-	-
Absent	1.07(2.85)	1.00		-	-

*Unadjusted Poisson regression for independent variables and impact on quality of life according to reports of parents/caregivers

†Variables incorporated into multivariate model ($p < 0.20$): type of preschool, parent's/caregiver's schooling, monthly household income, parent's/caregiver's age, number of residents in home, use of dental services, restoration, toothache, dental caries, caries on anterior teeth, severity of dental caries, pufa index, anterior open bite, increased overbite and anterior crossbite

Missing data (-): variables not selected for final adjusted model (p-value > 0.05)

Table 4. Poisson regression for oral problems and socio-demographic factors in relation to total SOHO-5 score based on children's self-reports

	Child's self-report	Bivariate		Multivariate	
	Mean total score (SD)	Unadjusted PR* (95% CI)	p-value	Adjusted PR† (95% CI)	p-value
Child's sex					
Female	2.21(3.11)	1.00		-	-
Male	2.58(3.54)	1.14(0.93-1.40)	0.181	-	-
Type of preschool					
Public	3.53(3.98)	2.16(1.78-2.62)	<0.001	1.68(1.32-2.13)	<0.001
Private	1.71(2.66)	1.00		1.00	
Parent's/caregiver's schooling					
≤ 8 years of study	3.61(4.05)	1.88(1.54-2.28)	<0.001	-	-
> 8 years of study	1.91(2.87)	1.00		-	-
Monthly household income					
< US$ 280	3.04(3.82)	1.58(1.29-1.94)	<0.001	-	-
≥ US$ 280	1.76(2.64)	1.00		-	-
Parent's/caregiver's age					
≤ 30 years	2.40(3.33)	1.02(0.83-1.25)	0.848	-	-
> 30 years	2.42(3.37)	1.00		-	-
Number of residents in home					
< 6	2.34(3.31)	1.00		-	-
≥ 6	2.90(3.61)	1.40(1.09-1.80)	0.007	-	-
Use of dental services					
Yes	2.27(3.15)	1.00		-	-
No	2.52(3.50)	1.09(0.89-1.34)	0.370	-	-
Restoration					

Yes	2.81(3.51)	1.21(0.94-1.56)	0.124	-	-
No	2.32(3.31)	1.00		-	-
Toothache					
Yes	3.81(3.90)	1.96(1.61-2.39)	<0.001	1.59(1.26-2.00)	<0.001
No	1.91(2.98)	1.00		1.00	
Dental caries					
Present	2.41(3.35)	2.03(1.34-3.05)	0.001	-	-
Absent	0.0(0.0)	1.00		-	-
Activity of dental caries					
Active	2.57(3.43)	2.27(1.50-3.45)	<0.001	-	-
Inactive	1.32(2.53)	1.00		-	-
Caries on anterior teeth					
Absent	1.24(2.10)	1.00		1.00	
White spot	2.29(3.20)	1.70(1.29-2.25)	<0.001	1.75(1.24-2.46)	0.001
Cavitated lesion	3.22(3.87)	2.26(1.72-2.98)	<0.001	1.79(1.26-2.54)	0.001
Severity of dental caries					
Absent/white spot	1.73(2.60)	1.00		-	-
Low severity	2.19(3.33)	1.30(0.99-1.69)	0.051	-	-
High severity	3.30(3.83)	1.96(1.56-2.46)	<0.001	-	-
pufa index					
Present	3.73(3.85)	1.76(1.41-2.20)	<0.001	-	-
Absent	2.19(3.21)	1.00		-	-
TDI					
Present	2.61(3.36)	1.30(1.06-1.60)	0.011	1.27(1.02-1.58)	0.029
Absent	2.18(3.34)	1.00		1.00	
Type of TDI					
Discolouration	2.50(3.31)	1.23(0.94-1.63)	0.129	-	-
Luxation and/or avulsion	3.03(3.81)	1.27(0.90-1.78)	0.159	-	-
Enamel and dentine	2.69(4.21)	1.33(0.73-2.43)	0.347	-	-

fracture and/or complicated crown fracture					
Absent or enamel fracture	2.34(3.30)	1.00		-	-
Malocclusion					
Present	2.39(3.33)	1.04(0.85-1.28)	0.646	-	-
Absent	2.44(3.38)	1.00		-	-
Anterior open bite					
Present	3.95(3.66)	1.66(1.33-2.08)	<0.001	1.39(1.01-1.92)	0.044
Absent	2.29(3.30)	1.00		1.00	
Increased overbite					
Present	1.96(2.99)	1.00		-	-
Absent	2.54(3.44)	1.31(1.01-1.71)	0.043	-	-
Increased overjet					
Present	2.51(3.26)	1.08(0.87-1.34)	0.461	-	-
Absent	2.38(3.39)	1.00		-	-
Anterior crossbite					
Present	1.59(3.50)	1.00		-	-
Absent	2.44(3.35)	1.81(0.80-4.09)	0.152	-	-
Posterior crossbite					
Bilateral	1.86(3.67)	1.00		-	-
Unilateral	1.84(2.74)	1.08(0.29-4.01)	0.907	-	-
Absent	2.48(3.40)	1.39(0.39-4.95)	0.608	-	-
Sleep bruxism					
Present	2.31(3.30)	1.00		-	-
Absent	2.45(3.37)	1.15(0.91-1.45)	0.237	-	-

*Unadjusted Poisson regression for independent variables and impact on quality of life according to children's reports

†Variables incorporated into multivariate model ($p < 0.20$): child's sex, type of preschool, parent's/caregiver's schooling, monthly household income, number of residents in home, restoration, toothache, dental caries, caries activity, caries on anterior teeth, severity of dental caries, pufa index, TDI, type of TDI, anterior open bite, increased overbite and anterior crossbite

Missing data (-): variables not selected for final adjusted model (p-value > 0.05)

Artigo 2

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Oral health-related quality of life and sense of coherence regarding the use of dental services by preschool children

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Oral health-related quality of life and sense of coherence regarding the use of dental services by preschool children

Summary

Background: There is a need for investigations into the biopsychosocial factors that influence the use of dental services by preschool children

Aim: Evaluate the influence of oral health-related quality of life (OHRQoL), parent's/caregiver's sense of coherence, oral health status and socio-demographic characteristics on the use of dental services by preschool children.

Design: A school-based, cross-sectional study was conducted with 768 preschool children. Parents/caregivers answered a questionnaire addressing socio-demographic characteristics. The OHRQoL of the children was measured using the Scale of Oral Health Outcomes for Five-Year-Old Children (SOHO-5). Sense of coherence among the parents/caregivers was evaluated using the short version of the Sense of Coherence scale (SOC-13). Clinical examinations were performed by two examiners who had undergone a training exercise (intra-examiner and inter-examiner Kappa: 0.80-0.94). Data analysis involved descriptive statistics and Poisson regression analysis ($\alpha = 5\%$).

Results: A total of 56.5% of the preschool children had never used dental services. The following variables exerted a significant influence on the use of services: monthly household income greater than US$ 280 (PR = 1.27; 95% CI: 1.07-1.51), toothache (PR = 1.59; 95% CI: 1.34-1.89), absence of traumatic dental injury (TDI) (PR = 1.18; 95% CI: 1.01-1.40) and a strong SOC on the part of parents/caregivers (PR = 1.19 95% CI: 1.01-1.42).

Conclusions: A higher monthly household income, history of toothache, absence of TDI and strong SOC on the part of parents/caregivers exerted an influence on the use of dental services by preschool children.

Introduction

Oral health problems can affect functional and social aspects, leading to a diminished quality of life.[1,2] Regular visits to the dentist is one of the main ways to ensure adequate oral health. Visits at a young age enable dentists to orientate oral hygiene practices, correct inappropriate eating habits and instruct parents/caregivers regarding health.[3] However, the use of dental services among preschool children is low (13.3 to 37.0%), despite the high prevalence of oral problems,[1,3] especially in developing nations.[4-7]

In the preschool phase, children are dependent upon parents/caregivers for the prevention of oral problems and the use of dental services. In this respect, certain factors contribute to the use of dental services by children, such as a higher level of schooling on the part of parents/caregivers, household income and dental caries severity.[3,7-9] The negative impact on oral health-related quality of life (OHRQoL) among preschool children is also associated with the use of dental services.[3,7] However, only parent/caregiver proxy reports on the OHRQoL of preschool children were evaluated in the studies cited, which are mainly influenced by clinical symptoms.[2,10] Parents/caregivers do not always perceive the OHRQoL of their children accurately. Thus, the self-perception of preschool children may be factor to consider when analysing the use of dental services.[1,11,12]

Sense of coherence (SOC) is another biopsychosocial factor that has been of interest with regard to the use of dental services.[6,8] SOC is part of salutogenic theory and reflects the view that individuals have regarding life and their capacity to adapt to stressful situations.[13]

Thus, SOC in parents/caregivers can exert an influence on seeking dental treatment.[8] To the best of our knowledge, only one study has evaluated the association between the SOC of parents/caregivers and the use of dental services by preschool children.[6] In the study cited, demographic and socioeconomic characteristics of the children, caregiver's oral health-related behaviours and oral health knowledge were evaluated. However, no oral examination of the children was performed to minimise possible inconsistencies regarding the veracity of visiting the dentist. In the present study, dental caries, traumatic dental injury (TDI) and malocclusion are evaluated. Moreover, this is the first study to determine the influence of the consequences of untreated dental caries, sleep bruxism and biopsychosocial aspects on the use of dental services by preschool children.

Evaluating the determinants that influence the use of dental services is important to the development and optimisation of public health policies aimed at reducing inequalities in the use of such services among preschool children. Thus, the aim of the present study was to evaluate the influence of the perceptions of parents/caregivers and children regarding OHRQoL as well as the SOC of parents/caregivers on the use of dental services among Brazilian preschool children.

Material and Methods

Sample characteristics and study design

A representative, school-based, cross-sectional study was conducted with a sample of 768 pairs of parents/caregivers and five-year-old children enrolled in private and public preschools in the city of Campina Grande, Brazil. The participants were selected from a total population of 14,360 children in this age group. Campina Grande (estimated population: 405,072) is an industrialised city in northeast Brazil and is divided into six administrative

districts. The city has significant cultural, social and economic disparities, an average per capita income of US$110, a Human Development Index of 0.72 and a poverty rate of 58.88%.[14]

A two-stage sampling strategy was employed to ensure representativeness. In the first stage, preschools were randomly selected from each health district. In the second stage, pairs of children and parents/caregivers were randomly selected from each preschool. The sample size was calculated based on a 5% margin of error, a 95% confidence level and 50% prevalence rate of perceived impact on child OHRQoL. A correction factor of 1.6 was applied to compensate for the design effect.[10] Twenty of the 129 public preschools and 28 of the 134 private preschools were randomly selected. The minimum sample size was estimated to be 615 preschool children, to which an additional 20% was added to compensate for possible dropouts, giving a total sample of 769 preschool children.

Eligibility criteria

Five-year-old children with no systematic diseases (based on the parents'/caregivers' reports) enrolled at public and private preschools were included in the sample. The parents/caregivers needed to be fluent in Brazilian Portuguese and spend at least 12 hours per day with the child. The exclusion criteria were the presence of one or more erupted permanent teeth and a history of orthodontic treatment.

Training exercise

A specialist in paediatric dentistry coordinated the theoretical step involving a discussion of the criteria for the diagnosis of the oral conditions. In the clinical step, two dentists examined 40 previously selected children at a preschool selected by convenience. This preschool was not part of the main study. Inter-examiner agreement was tested by

comparing each examiner with the gold standard. A seven-day interval was respected between two clinical examinations for the determination of intra-examiner agreement. Inter-examiner and intra-examiner agreement was considered very good:[15] Kappa = 0.80 to 0.90 and 0.87 to 1.00, respectively, for dental caries; 0.90 to 1.00 and 1.00, respectively, for the pufa index[18] (consequences of untreated dental caries); 0.88 to 0.90 and 0.82 to 0.87, respectively, for traumatic dental injury (TDI); and 0.86 to 0.91 and 0.94 to 1.00, respectively, for malocclusion.

Pilot study

A pilot study was conducted to test the methodology. The participants in the pilot study (n = 45) were not included in the main sample. As there were no misunderstandings regarding the questionnaires or the methodology, no changes to the data collection process were deemed necessary.

Non-clinical data collection

Non-clinical data were collected using the following measures: The Brazilian version of the Scale of Oral Health Outcomes for Five-Year-Old Children (SOHO-5) for the determination of the OHRQoL of the preschool children;[12] Short version of the Sense of Coherence Scale (SOC-13)[17] for the evaluation of the SOC of the parents/caregivers; and questionnaires addressing socio-demographic data. Parents/caregivers were previously contacted to attend a meeting at the preschools, during which they were informed regarding the objectives of the study.

The SOHO-5 addresses a child's lifetime experience with oral impacts and has two seven-item scales (parent/caregiver and child), six of which are common in content. The seven items on the child version are difficulty eating, difficulty drinking, difficulty speaking,

difficulty playing, difficulty sleeping, avoiding smiling due to pain and avoiding smiling due to appearance. The response options are given on a three-point scale (no = 0, a little = 1, a lot = 2) aided by an explanation card with corresponding faces. The seven items on the parent/caregiver version are difficulty eating, difficulty speaking, difficulty playing, difficulty sleeping, avoiding smiling due to pain, avoiding smiling due to appearance and affected self-confidence of the child. The response options are offered on a five-point scale (no = 0, a little = 1, moderate = 2, a lot = 3, a great deal = 4). The total score for each version is calculated as a simple sum of the response codes. The final score ranges from 0 to 28 on the parent/caregiver version and 0 to 14 on the child version, with higher scores denoting a greater degree of oral impact on the quality of life of the child.[12] For statistical purposes, quality of life was dichotomised based on the median and higher or lower impact on the OHRQoL of the preschool children for both the parent/caregiver and child subscales.

The Brazilian version of the SOC-13 consists of 13 items each with five response options. Three items can be considered representative of the SOC -13: 1) "Are you interested in what occurs around you?", 2) "Has it happened that people on whom you counted disappointed you?" and 3) "Do you have confusing notions and feelings?"[13]. The final score ranges from 13 to 65, with higher scores denoting a greater capacity of adaptation to stress.[17] For statistical purposes, SOC was dichotomised as strong or weak based on the median.

The following socio-demographic characteristics were investigated: child's sex, type of preschool (private or public), parent's/caregiver's schooling, parent's/caregiver's age, monthly household income (categorised based on the median, which was equal to US$ 280) and number of residents in the home. The use of dental services by the children, reasons for visiting the dentist, type of service used and toothache experience were also investigated.

Clinical data collection

The clinical examination was performed at the preschools after the return of the questionnaires and signed statement of informed consent. The examinations were conducted by two dentists who had undergone the training and calibration exercises. Prior to the exam, each child received a kit containing a toothbrush, toothpaste and dental floss to remove bacterial plaque from the teeth and facilitate the diagnosis. The oral examinations were performed in the knee-to-knee position with the aid of a portable lamp attached to the examiner's head (Petzl Zoom head lamp, Petzl America, Clearfield, UT, USA). The dentists used individual protection equipment, a sterilised mouth mirror (PRISMA®, São Paulo, SP, Brazil), sterilised Williams probe (WHO-621, Trinity®, Campo Mourão, PR, Brazil) and gauze to dry the teeth.

Dental caries was diagnosed using the International Caries Detection and Assessment System (ICDAS-II), which is a scoring system ranging from 0 (absence of dental caries) to 6 points. Due to the epidemiological nature of the study, code 1 was not considered, as drying of the teeth was performed with gauze rather than compressed air. Code 2 was used for white spots and codes 3 to 6 determined different degrees of cavitation. For statistical purposes, dental caries was dichotomised as absent (code 0) or present (code ≥ 2)[18]. The severity of dental caries was also considered in the evaluation of the impact on a history of visits to the dentist. This variable was categorised as absent/white spot, low caries severity (up to 5 cavitated lesions) and high caries severity (6 or more cavitated lesions). Moreover, the pufa index was used to evaluate the consequences of untreated caries, such as visible pulpal involvement (p), ulceration caused by dislocated tooth fragments (u), fistula (f) and abscess (a).[16] For statistical purposes, the consequences of untreated dental caries were recorded as absent or present.

Traumatic dental injury (TDI) was diagnosed as enamel fracture, enamel + dentine fracture, complicated crown fracture, extrusive luxation, lateral luxation, intrusive luxation and avulsion.[19] A visual inspection was also made of tooth colouration. TDI was recorded in the presence of any type of TDI or tooth discolouration. Malocclusion was recorded in the presence of at least one of the following conditions: increased overbite (> 2 mm), increased overjet (> 2 mm), anterior open bite, anterior crossbite and posterior crossbite.[20,21] The diagnosis of sleep bruxism was performed based on the reports of parents/caregivers of the occurrence of tooth grinding during sleep, as proposed by the American Academy of Sleep Medicine for preschool children[22] and employed in a previous study.[23] Following the exams, a fluoride varnish was applied to the children's teeth.

Statistical analysis

Data organisation and statistical analysis were performed using the Statistical Package for Social Sciences (SPSS for Windows, version 21.0, IBM Inc., Amonk, NY, USA). The frequency distribution of the data was determined to characterise the sample. Poisson regression analyses with robust variance were performed to determine the strength of associations between the independent variables (oral problems, socio-demographic characteristics and psychological factors) and the dependent variable (use of dental services). The backward stepwise procedure was used for the selection of variables with a p-value < 0.20 in the bivariate analysis as well as variables considered epidemiological determinants. Variables with a p-value < 0.05 in the adjusted analyses were maintained in the final regression model.

Ethical considerations

This study was conducted in accordance with the Declaration of Helsinki and was independently reviewed and approved by the Human Research Ethics Committee of the State University of Paraiba, Brazil, under protocol number 38937714.0.0000.5187. Parents/caregivers received clarifications regarding the objectives of the study and signed a statement of informed consent.

Results

A total of 768 pairs of preschool children and their parents/caregivers participated in the present study, corresponding to a response rate of 99.8% of the total determined by the sample size calculation. The loss (n = 1) was due to an incomplete questionnaire. Table 1 summarizes the clinical characteristics of the children as well as the demographic and socioeconomic characteristics of the sample. The male sex accounted for 52.5% of the sample. A total of 61.2% attended public preschools and 50.3% of the children were from families with a monthly household income of up to US$ 280. Most parents/caregivers had more than eight years of schooling (69.9%) and were older than 30 years of age (56.2%).

Table 2 displays the frequency of the use of dental services, oral health status and biopsychosocial factors. A total of 43.5% of the parents/caregivers reported that their children had visited the dentist at least once in their lifetimes, which was mainly motivated by a desire for treatment (54.2%). The prevalence of dental caries, malocclusion, TDI and sleep bruxism was 91.3%, 57.6%. 52.7% and 26.8%, respectively. According to the parents'/caregivers' reports, 23.8% of the children had some experience with toothache. The children's self-reports demonstrated a greater impact on OHRQOL (41.4%) than the parent/caregiver proxy reports (30.7%). A total of 58.2% of the parents/caregivers demonstrated a strong SOC.

Table 3 displays the unadjusted and adjusted associations between the use of dental services by the preschool children and socio-demographic characteristics, oral health status, the OHRQoL of the children based on self-reports and parent/caregiver proxy reports and the SOC of the parents/caregivers. However, the only variables to remain in the final Poisson regression model were monthly household income more than US$ 280 (PR: 1.27; 95% CI: 1.07 to 1.51), a history of toothache (PR: 1.59; 95% CI: 1.34 to 1.89), absence of TDI (PR: 1.18; 95% CI: 1.01 to 1.40) and a strong SOC on the part of parents/caregivers (PR: 1.19; 95% CI: 1.01 to 1.42).

Discussion

The present population-based study was conducted to evaluate the influence of socio-demographic characteristics, oral health status and biopsychosocial factors on the use of dental services by preschool children. Despite the highly prevalent oral problems in this population, only 43.5% had used dental services at least once in their lifetimes and the factors associated to this use were household income, toothache, the absence of TDI and a strong sense of SOC on the part of parents/caregivers.

Although the frequency of the use of dental services was higher in comparison to the findings of other national studies,[7,9] it still falls short of the frequencies reported in developed nations.[24,25] This inequality may be explained by the poorer socioeconomic status as well as the lack of incentive policies directed at dental care in early childhood.[9] In the present investigation, a higher income was associated with the use of dental services by preschool children, which is in agreement with data published in previous studies.[5,7] Indeed, families with a low socioeconomic status tend to have less information with regard to health issues,[7,9] which can lead to delays in seeking dental treatment. Moreover, there is no specific public

oral healthcare service for the paediatric population in Brazil.[7] Thus, the development of health policies that focus on the importance of early preventive dental visits could help reduce the incidence of oral problems and expenditures on treatments for the population. This measure is all the more urgent when one considers the greater prevalence of children who seek dental services for the purposes of treatment.

The association between toothache and the use of dental services is explained by the symptoms of tooth decay, which can affect sleep, nutrition and scholastic performance as well as affect the daily routine of the family.[10,26] Moreover, parents/caregivers commonly only recognise an oral health problem in their children when pain is involved.[10] The perception of a child's oral health status based merely on symptoms can lead to seeking treatment when the problem has reached a more advanced state, thereby submitting the child to invasive, traumatic interventions.

The non-association of cavitated lesions on anterior teeth and malocclusion underscores the low degree of importance parents/caregivers give to the primary teeth of their children. Unlike data reported in previous studies, no association was found between dental caries and the use of dental services. This may have occurred due to the greater prevalence of asymptomatic caries in the present study, as demonstrated by the lack of an influence of the quantity of cavitated lesions (dental caries severity). When dental caries progress to odontogenic infection, the chances of experiencing pain increase.[27,28] However, the consequence of caries (visible pulpal involvement, ulceration caused by dislocated tooth fragments, fistula or abscess) are more common in hospital-based paediatric dental emergency clinics. Therefore, the non-association with untreated dental caries may be related to the low prevalence of symptomatic conditions, as mentioned previously for cavitated lesions, or by the episodic nature of given odontogenic infections, such as abscesses.[27] The use of dental services could prevent the need for the early extraction of primary teeth and avoid the

consequences of extraction, such as chewing and speech problems as well as disturbances in the eruption of the permanent successors.[28,29]

An absence of TDI was associated with seeking dental services by the preschool children analyzed in the present investigation. This finding may have been due to a greater prevalence of enamel trauma, which does not cause discomfort and therefore often goes unperceived by laypersons.[26] Thus, parents/caregivers may not seek treatment following a tooth injury[30] unless the symptoms are evident.

In the preschool phase, parents/caregivers do not generally spend all their time with their children and may therefore not have full awareness of their OHRQoL.[1] This is evident by the fact that more children who never used dental services reported more impact on OHRQoL (58.2%) than their parents/caregivers (51.3%). However, no association was found in either the reports of the children or parents/caregivers. For the latter group, this may have occurred because of the belief that the primary dentition is not important due to its temporary nature.[7] As children depend on their parents/caregivers with regard to the use of health services,[8] it is possible that the perceptions of children regarding their own OHRQoL exert no influence on seeking dental services. Similar findings are reported in a previous study,[7] but the evaluation of OHRQoL was performed using a proxy measure rather than children's self-reports.

Individuals with a strong SOC are more likely to have a healthy lifestyle and follow advice related to healthy behaviours.[13,16] In the present study, an association was found between a strong SOC on the part of parents/caregivers and the use of dental services by the children. To the best of our knowledge, only one previous study, conducted by QIU *et al.*,[6] evaluated the relationship between the SOC of parents/caregivers and visits to the dentist by preschool children, but the authors found no association. It is likely that SOC is influenced by factors related to the culture and tradition of each population.[16] Another possible explanation

regards differences among dental care systems in different countries. Moreover, QIU *et al.*[6] did not perform clinical examinations, which impedes the evaluation of the oral health status of the children involved in the study as well as the inconsistencies in the answers regarding the use of dental services.

The present study has the limitations inherent to the cross-sectional design and possible information bias related to the answers on the questionnaires. However, measures were taken to diminish the risk of biases, such as the use of validated questionnaires and the execution of a pilot study.

In conclusion, the prevalence of children who had never been to a dentist was high. Moreover, a higher household income, a history of toothache, the absence of TDI and a strong sense of coherence on the part of parents/caregivers exerted an influence on the use of dental services by preschool children. The present findings can assist in the development of specific public health policies directed at the preschool population. For such, it is recommended that parents/caregivers be instructed on the importance of the primary dentition in early childhood as well as the need for regular visits to the dentist in the first years of life. Longitudinal studies are needed to determine the causality between biopsychosocial factors and the use of dental services by preschool children.

Bullet points

Why this paper is important to paediatric dentists

- Children's self-perceptions regarding their OHRQoL do not exert an influence on the use of dental services. However, a strong sense of coherence on the part of parents/caregivers may influence the use of dental services by preschool children.

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Tables

Table 1 - Demographic characteristics of sample

Variable	Frequency	
	n	%
Child's sex		
Male	403	52.5
Female	365	47.5
Type of preschool		
Private	298	38.8
Public	470	61.2
Monthly household income		
≤ US$ 280	369	50.3
> US$ 280	365	49.7
Parent's/caregiver's schooling		
≤ 8 years of study	230	30.1
> 8 years of study	535	69.9
Parent's/caregiver's age		
≤ 30 years	322	43.8
> 30 years	413	56.2

Table 2 – Frequency distribution of use of dental services, oral problems and biopsychossocial factors

Variable	Frequency	
	n	%
Use of dental services		
No	434	56.5
Yes	334	43.5
Reason for visit to dentist		
Treatment	180	54.2
Prevention	152	45.8
Type of service used		
Public	138	43.4
Private	163	51.3
Public and private	17	5.3
Toothache		
Yes	180	23.8
No	575	76.2
Dental caries		
Present	701	91.3
Absent	67	8.7
Severity of dental caries		
Absent	67	8.7
White spot	250	32.5
Low severity	141	18.3
High severity	311	40.4

Malocclusion		
Present	442	57.6
Absent	325	42.4
Traumatic dental injury		
Present	405	52.7
Absent	363	47.3
Sleep bruxism		
Present	204	26.8
Absent	556	73.2
Impact on OHRQOL (parent/caregiver proxy report)		
More impact	236	30.7
Less impact	532	69.3
Impact on OHRQOL (child's self-perception)		
More impact	318	41.4
Less impact	450	58.6
SOC		
Strong	447	58.2
Weak	321	41.8

Table 3 – Bivariate and multivariate Poisson regression models for use of dental services according to independent variables

Variable	Use of dental services		Bivariate		Multivariate	
	Yes	No	Unadjusted PR*		Adjusted PR †	
	n(%)	n(%)	p-value	(95% CI)	p-value	(95% CI)
Child's sex						
Female	168(46.0)	197(54.0)	0.177	1.11(0.95-1.31)	-	-
Male	166(41.2)	237(58.8)		1.00	-	-
Type of preschool						
Private	214(45.5)	256(54.5)	0.157	1.13(0.95-1.34)	-	-
Public	120(40.3)	178(59.7)		1.00	-	-
Parent's/caregiver's schooling						
≤ 8 years of study	91(39.6)	139(60.4)		1.00	-	-
> 8 years of study	243(45.4)	292(54.6)	0.143	1.14(0.95-1.38)	-	-
Parent's/caregiver's age						
≤ 30 years	129(40.1)	193(59.9)		1.00	-	-
> 30 years	195(47.2)	218(52.8)	0.055	1.17(0.99-1.39)	-	-
Monthly household income						
≤ US$ 280	146(39.6)	223(60.4)		1.00		1.00
> US$ 280	172(47.1)	193(52.9)	0.040	1.19(1.01-1.40)	0.005	1.27(1.07-1.51)
Number of residents						

in home						
< 6	295(44.8)	364(55.2)	0.199	1.19(0.91-1.55)	-	-
≥ 6	38(37.6)	63(62.4)		1.00	-	-
Toothache						
Yes	105(58.3)	75(41.7)	<0.001	1.49(1.27-1.75)	<0.001	1.59(1.34-1.89)
No	225(39.1)	350(60.9)		1.00		1.00
Dental caries						
Present	305(43.5)	396(56.5)	0.972	1.00(0.75-1.33)	-	-
Absent	29(43.3)	38(56.7)		1.00	-	-
Activity of dental caries						
Active	261(42.8)	349(57.2)		1.00	-	-
Inactive	44(48.4)	47(51.6)	0.300	1.13(0.89-1.42)	-	-
Caries on incisors and canines						
Absent	89(43.4)	116(56.6)		1.00	-	-
White spot	125(39.6)	191(60.4)	0.379	0.91(0.74-1.12)	-	-
Cavitated lesion	120(48.6)	127(51.4)	0.276	1.11(0.91-1.37)	-	-
Caries severity						
Absent/white spot	127(40.2)	189(59.8)		1.00	-	-
Low severity	89(41.6)	125(58.4)	0.747	1.03(0.84-1.27)	-	-
High severity	118(49.8)	119(50.2)	0.024	1.23(1.02-1.49)	-	-
pufa index						
Present	62(58.5)	44(41.5)	<0.001	1.42(1.18-1.71)	-	-
Absent	272(41.1)	390(58.9)		1.00	-	-

TDI						
Present	164(40.5)	241(59.5)		1.00		1.00
Absent	170(46.8)	193(53.2)	0.077	1.15(0.98-1.35)	0.042	1.18(1.01-1.40)
Type of TDI						
Discolouration	37(40.2)	55(59.8)		1.00	-	-
Luxation and/or avulsion	19(35.8)	34(64.2)	0.607	0.89(0.57-1.38)	-	-
Enamel and dentine fracture and/or complicated crown fracture	9(45.0)	11(55.0)	0.686	1.11(0.64-1.92)	-	-
Absent and enamel fracture	269(44.6)	334(55.4)	0.442	1.10(0.85-1.44)	-	-
Malocclusion						
Present	179(40.5)	263(59.5)		1.00	-	-
Absent	155(47.7)	170(52.3)	0.041	1.17(1.01-1.38)	-	-
Sleep bruxism						
Present	88(43.1)	116(56.9)		1.00	-	-
Absent	246(44.2)	310(55.8)	0.786	1.02(0.85-1.23)	-	-
Impact on quality of life according to parents/caregivers						
More impact	115(48.7)	121(51.3)	0.046	1.18(1.01-1.39)	-	-
Less impact	219(41.2)	313(58.8)		1.00	-	-
Impact on quality of						

life according to children's self-reports						
More impact	133(41.8)	185(58.2)		1.00	-	-
Less impact	201(44.7)	249(55.3)	0.436	1.06(0.90-1.26)	-	-
SOC of parents/caregivers						
Strong	208(46.5)	239(53.5)	0.048	1.18(1.01-1.40)	0.045	1.19(1.01-1.42)
Weak	126(39.3)	195(60.7)		1.00		1.00

*Unadjusted Poisson regression for independent variables and use of dental services

†Variables incorporated into multivariate model (p< 0.20): child's sex, type of preschool, parent's/caregiver's schooling, parent's/caregiver's age, monthly household income, number of residents in home, toothache, severity of dental caries, pufa index, TDI, type of TDI, malocclusion, impact on quality of life according to parents/caregivers and SOC of parents/caregivers

Missing data (-): variables not selected for final adjusted model (p-value > 0.05)

5. CONSIDERAÇÕES FINAIS

No primeiro artigo, divergências entre as percepções das crianças e dos pais/responsáveis mostram a importância do autorrelato no esclarecimento dos impactos dos agravos bucais nos estudos sobre QVRSB. Segundo o relato dos pais/responsáveis, as variáveis que apresentaram impacto na QVRSB das crianças foram as pré-escolas públicas, dor de dente, lesão cavitadas e as suas consequências. Já para as crianças, além das escolas públicas, dor e lesões cavitadas em dentes anteriores, a presença da mordida aberta anterior e traumatismo dentário também causaram impacto na QVRSB. Diante das divergências entre os relatos, é possível supor que a percepção dos pais/responsáveis sobre a QVRSB das crianças é influenciada apenas pelos sintomas, enquanto as crianças também levam em consideração o impacto estético. O caráter temporário da dentição pode levar a uma menor preocupação dos cuidados com a saúde bucal da criança. Consequentemente, impactos no bem-estar funcional, social e psicológico das crianças também podem passar despercebidos (GOMES *et al.*, 2014; SCARPELI *et al.*, 2013). Isto é corroborado pela média total dos escores encontrada na versão da criança do SOHO-5, a qual maior que a versão dos pais/responsáveis.

Para o segundo artigo, a renda mensal da família maior que R$ 1000,00, presença de dor de dente e traumatismo dentário influenciaram a utilização do serviço odontológico pelas crianças. As lesões cavitadas não apresentaram associação, assim como a má oclusão. Estes resultados reforçam que percepção dos pais/responsáveis sobre a saúde bucal da criança é voltada para os casos sintomáticos. A utilização do serviço odontológico de forma preventiva poderia evitar estágios avançados dos agravos bucais e assim prevenir experiências dolorosas durante a infância.

Quanto aos fatores biopsicossociais, um forte SOC significa que o indivíduo tem mais facilidade para lidar com uma situação estressante, levando a melhoria do bem-estar e manutenção da saúde (BONANATO *et al.*, 2009). Como foi observado no estudo, o forte SOC dos pais/responsáveis foi associado com a utilização dos serviços odontológicos. Portanto, o SOC dos pais/responsáveis pode ser aplicado como um recurso de promoção em saúde bucal na infância, visto a capacidade de influenciar as crianças na utilização do serviço odontológico (QIU *et al.*, 2013). Para

a QVRSB, não ser associada com a visita ao dentista pode representar um risco para as crianças, principalmente para as que apresentaram maiores impactos.

Os fatores biopsicossociais das crianças e da família são importantes para alocações de recursos e estratégias de saúde. Assim, políticas de saúde bucal voltadas para a faixa pré-escolar poderão reduzir a prevalência dos agravos na população, garantir uma melhor QVRSB e prevenir futuras necessidades de tratamento. Para isto, sugere-se o fortalecimento do SOC dos pais/responsáveis nos processos de saúde. Além disto, a instrução sobre a importância da dentição decídua e das visitas regulares ao cirurgião dentista podem estimular a busca pelo serviço. Embora a QVRSB não tenha influenciado a utilização do serviço odontológico, é necessário que os pais/responsáveis procurem observar a percepção da criança sobre a QVRSB, pois pode prevenir o desenvolvimento de agravos bucais que causam impacto na vida do pré-escolar.

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APÊNDICES

APÊNDICE A

QUESTIONÁRIO DIRECIONADO AOS PAIS/RESPONSÁVEIS

UEPB

IDENTIFICAÇÃO

01. Nome da criança: _____ Data de nascimento: ____/____/_____

02. Sexo: ( ) menina ( ) menino

03. Endereço:_____ **4.**Telefone:_____

05. Escola:_____( )Pública ( )Privada **06.** Turno: ( )Manhã ( )Tarde

DADOS SOBRE A FAMÍLIA DA CRIANÇA

07. Qual a idade do pai/responsável pela criança: _____

08. O pai/responsável da criança estudou até quando?

( ) não estudou

( ) 1ª a 4ª série incompleta ( ) 1ª a 4ª série completa

( ) 5ª a 8ª série incompleta ( ) 5ª a 8ª série completa

( ) 1º ao 3º ano científico incompleto ( ) 1º ao 3º ano científico completo

( ) ensino superior incompleto ( ) ensino superior completo

09. Somando a sua renda com as das pessoas que moram com você, quanto é aproximadamente, a RENDA MENSAL DA SUA FAMÍLIA? (incluir salários-mínimos, Bolsa família, Seguro desemprego, "bicos") Valor R$_____ ( ) Não tem renda

10. Quantas pessoas moram na casa da criança (contando com ela)? _____

DADOS SOBRE A CRIANÇA

11. A criança já foi ao dentista? ( ) Sim ( ) Não

12. Se a criança já foi ao dentista, qual foi o motivo? _____

13. A criança já sentiu dor de dente alguma vez na vida? ( ) Sim ( )Não

14. Seu filho(a) range os dentes enquanto dorme? ( ) Sim ( ) Não

APÊNDICE B

Ficha clínica

Universidade Estadual da Paraíba
Departamento de Odontologia
FICHA CLÍNICA

Nº _____ Examinador:_____
Pré-escola:_____
Pertencente ao distrito sanitário: _____

Dados Pessoais:
Sexo: ( ) menina ( ) menino
Dia, mês e ano em que a criança nasceu: _____/_____/____

Exame Clínico:

TRAUMATISMO

53	52	51	61	62	63
83	82	81	71	72	73

Tipo de trauma:
0. Sem trauma
1. Fratura de esmalte
2. Fratura de esmalte e dentina
3. Fratura coronária complicada
4.Luxação extrusiva
5. Luxação lateral
6. Luxação intrusiva
7. Avulsão
8. Alteração de cor

MÁ OCLUSÃO

01. *Overjet*:
( ) Ideal ( ) Aumentado ( ) Topo-a-topo ( ) Cruzado

02. *Overbite:*
( ) Ideal ( ) Reduzido ( ) Mordida aberta anterior ( ) Aumentado

03. Mordida Cruzada posterior:
( ) Ausente ( ) Unilateral, lado _____ ( ) Bilateral

ÍNDICE PUFA

55	**54**	**53**	**52**	**51**	**61**	**62**	**63**	**64**	**65**
85	**84**	**83**	**82**	**81**	**71**	**72**	**73**	**74**	**75**

p: envolvimento pulpar **f:** fístula
u: ulceração **a:** abscesso

APÊNDICE C

Consentimento da Secretaria Estadual de Educação

UNIVERSIDADE ESTADUAL DA PARAÍBA
CENTRO DE CIÊNCIAS BIOLÓGICAS E DA SAÚDE
PROGRAMA DE PÓS-GRADUAÇÃO EM ODONTOLOGIA

CARTA DE ANUÊNCIA

Ilma. Sra. Italagitânia Simplício Da Silva

Estamos realizando uma pesquisa que tem como título "Avaliação das alterações bucais e aspectos biopsicossociais em pré-escolares de Campina Grande-PB". Essa pesquisa tem o objetivo de avaliar a condição de saúde bucal, em relação à cárie dentária, má oclusão e traumatismo dentário, e as repercussões nos aspectos biopsicossociais em crianças de cinco anos de idade. Essa pesquisa será realizada por professores da Universidade Estadual da Paraíba, alunos de mestrado e doutorado, com finalidade acadêmica.

O estudo será realizado mediante exame clínico da criança, o qual apresenta baixo risco ou desconforto à criança e apenas será realizado se a mesma e o pai/responsável permitir. Também será realizada aplicação de questionário aos pais/responsáveis, sendo que este questionário não apresenta quaisquer tipos de risco ou desconforto, exceto o tempo gasto para responder as questões (cerca de 15 minutos).

Salienta-se que todas as informações obtidas serão guardadas e resguardadas, não sendo revelada sob qualquer pretexto a identificação das crianças e dos respondentes. Deixamos claro, desde já, que não haverá nenhuma forma de benefício financeiro ou pessoal para os pesquisadores, nem para as instituições.

Solicitamos então, por gentileza, sua autorização para examinar essas crianças e entrevistar os pais/responsáveis. Informamos, que na medida do possível, não iremos interferir na operacionalização e/ou nas atividades cotidianas das creches/pré-escolas, nem das crianças. Será feita aplicação de flúor nas crianças, como também serão fornecidos kits para escovação. Salientamos ainda, que em retorno, forneceremos os resultados dessa pesquisa para os pais/responsáveis e para a Secretaria da Educação.

Esclarecemos que tal autorização é uma pré-condição bioética para execução de qualquer estudo envolvendo seres humanos, sob qualquer forma ou dimensão, em consonância com a resolução Nº 466/2012 do Conselho Nacional de Saúde.

Atenciosamente,

Campina Grande, 12 de novembro de 2014.

Ana Flávia Granville-Garcia
Profª do Programa de Pós-Graduação em Odontologia da UEPB
Pesquisadora responsável

Autorização
Italagitânia Simplício da Silva
Mat. 173 801-1
Gerente Regional de Educação da 3ª Região

Italagitânia Simplício Da Silva
Gerente Regional da Educação - Campina Grande - PB

APÊNDICE D

Consentimento da Secretaria Municipal de Educação

uepb
Universidade Estadual da Paraíba

UNIVERSIDADE ESTADUAL DA PARAÍBA
CENTRO DE CIÊNCIAS BIOLÓGICAS E DA SAÚDE
PROGRAMA DE PÓS-GRADUAÇÃO EM ODONTOLOGIA

CARTA DE ANUÊNCIA

Ilma. Sra. Iolanda Barbosa Silva

Estamos realizando uma pesquisa que tem como título "Avaliação das alterações bucais e aspectos biopsicossociais em pré-escolares de Campina Grande-PB". Essa pesquisa tem o objetivo de avaliar a condição de saúde bucal, em relação à cárie dentária, má oclusão e traumatismo dentário, e as repercussões nos aspectos biopsicossociais em crianças de cinco anos de idade. Essa pesquisa será realizada por professores da Universidade Estadual da Paraíba, alunos de mestrado e doutorado, com finalidade acadêmica.

O estudo será realizado mediante exame clínico da criança, o qual apresenta baixo risco ou desconforto à criança e apenas será realizado se a mesma e o pai/responsável permitir. Também será realizada aplicação de questionário aos pais/responsáveis, sendo que este questionário não apresenta quaisquer tipos de risco ou desconforto, exceto o tempo gasto para responder as questões (cerca de 15 minutos).

Salienta-se que todas as informações obtidas serão guardadas e resguardadas, não sendo revelada sob qualquer pretexto a identificação das crianças e dos respondentes. Deixamos claro, desde já, que não haverá nenhuma forma de benefício financeiro ou pessoal para os pesquisadores, nem para as instituições.

Solicitamos então, por gentileza, sua autorização para examinar essas crianças e entrevistar os pais/responsáveis. Informamos, que na medida do possível, não iremos interferir na operacionalização e/ou nas atividades cotidianas das creches/pré-escolas, nem das crianças. Será feita aplicação de flúor nas crianças, como também serão fornecidos kits para escovação. Salientamos ainda, que em retorno, forneceremos os resultados dessa pesquisa para os pais/responsáveis e para a Secretaria da Educação.

Esclarecemos que tal autorização é uma pré-condição bioética para execução de qualquer estudo envolvendo seres humanos, sob qualquer forma ou dimensão, em consonância com a resolução Nº 466/2012 do Conselho Nacional de Saúde.

Atenciosamente,

Campina Grande, 12 de novembro de 2014.

Ana Flávia Granville-Garcia
Profª do Programa de Pós-Graduação em Odontologia da UEPB
Pesquisadora responsável

Autorização
Iolanda Barbosa da Silva

Iolanda Barbosa Silva
Secretária de Educação do município de Campina Grande - PB

APÊNDICE E

Termo de consentimento livre e esclarecido

Programa de Pós-Graduação em Odontologia

Termo de Consentimento Livre e Esclarecido

Prezado (a) Senhor (a), responsável, pedimos o favor de dedicar alguns minutos do seu tempo para ler este comunicado.

Estamos realizando uma pesquisa que tem como título: "Avaliação das alterações bucais e aspectos biopsicossociais em pré-escolares de Campina Grande-PB". Esta pesquisa tem finalidade acadêmica. Será realizada mediante aplicação de um questionário aos pais dos pré-escolares, sendo que este procedimento não apresenta quaisquer tipos de risco ou desconforto, exceto o tempo gasto para responder as questões (cerca de 20 minutos); e exame clínico da criança, o qual apresenta baixo risco ou desconforto a mesma e apenas será realizado se ela permitir. Salienta-se que todas as informações obtidas serão guardadas e resguardadas, não sendo revelada sob qualquer pretexto a identificação das crianças e dos respondentes. Deixamos claro, desde já, que não haverá nenhuma forma de benefício financeiro ou pessoal, e que esta declaração de concordância em participar do estudo poderá ser retirada a qualquer época, não acarretando em danos. A sua colaboração, autorizando no quadro abaixo a realização do exame e da entrevista, é importante para avaliar a necessidade de realização de programas de saúde bucal. Esclarecemos que sua participação é decorrente de sua livre decisão após receber todas as informações que julgarem necessárias. Você não será prejudicado de qualquer forma caso sua vontade seja de não colaborar, até mesmo onde haja submissão à autoridade. Se quiser informações sobre nosso trabalho, por favor, ligue para Ana Flávia Granville-Garcia, professora responsável pela pesquisa no telefone 33153300, ou então, fale com ela pessoalmente na Av. das Baraúnas, s/n Bodocongó, no horário comercial de 2ª a 6ª feiras. Esperamos contar com o seu apoio, desde já agradecemos.

Ana Flávia Granville-Garcia (Pesquisadora Responsável)

AUTORIZAÇÃO

Após ter sido informado sobre as características da pesquisa: "Avaliação das alterações bucais e aspectos biopsicossociais em pré-escolares de Campina Grande-PB", autorizo a realização do exame clínico na criança e entrevista em:

Campina Grande,___ de _____2015

Responsável_____RG_____

APÊNDICE F

Termo de assentimento

Programa de Pós-Graduação em Odontologia

Termo de Assentimento

Você está sendo convidado(a) a participar da pesquisa "Avaliação das alterações bucais e aspectos biopsicossociais em pré-escolares de Campina Grande-PB". Neste estudo pretendemos avaliar as alterações bucais e aspectos biopsicossociais em pré-escolares de Campina Grande-PB. Para este estudo adotaremos o(s) seguinte(s) procedimento(s): aplicação de questionários com os pais/responsáveis e exame clínico odontológico e aplicação de questionário com as crianças.

Para participar deste estudo, o responsável por você deverá autorizar e assinar um termo de consentimento. Você não terá nenhum custo, nem receberá qualquer vantagem financeira. Você será esclarecido(a) em qualquer aspecto que desejar e estará livre para participar ou recusar-se. O responsável por você poderá retirar o consentimento ou interromper a sua participação a qualquer momento. A sua participação é voluntária e a recusa em participar não acarretará qualquer penalidade ou modificação na forma em que é atendido(a) pelo pesquisador que irá tratar a sua identidade com padrões profissionais de sigilo. Você não será identificado em nenhuma publicação. Este estudo apresenta risco mínimo, isto é, o mesmo risco existente em atividades rotineiras como conversar, tomar banho, ler etc. Apesar disso, você tem assegurado o direito a ressarcimento ou indenização, no caso de quaisquer danos eventualmente produzidos pela pesquisa.

Os resultados estarão à sua disposição quando finalizada, sendo que seu nome ou o material que indique sua participação será mantido em sigilo. Os dados e instrumentos utilizados na pesquisa ficarão arquivados com o pesquisador responsável por um período de 5 anos, e após esse tempo serão destruídos. Este termo de consentimento encontra-se impresso em duas vias, sendo que uma cópia será arquivada pelo pesquisador responsável, e a outra será fornecida a você. Este termo foi elaborado em conformidade com o Art. 228 da Constituição Federal de 1988; Arts. 2º e 104 do Estatuto da Criança e do Adolescente; e Art. 27 do Código Penal Brasileiro; sem prejuízo dos Arts. 3º, 4º e 5º do Código Civil Brasileiro.

Eu, _____, portador(a) do documento de Identidade _____ (se já tiver documento), fui informado(a) dos objetivos do presente estudo de maneira clara. Sei que a qualquer momento poderei solicitar novas informações junto ao pesquisador responsável listado abaixo ou ainda com o Comitê de Ética em Pesquisa em Seres Humanos da Universidade Estadual da Paraíba, telefone (83) 3315-3373. Estou ciente que o meu responsável poderá modificar a decisão da minha participação na pesquisa, se assim desejar. Tendo o consentimento do meu responsável já assinado, declaro que concordo em participar desse estudo. Recebi uma cópia deste termo assentimento e me foi dada a oportunidade de ler e esclarecer as minhas dúvidas.

Ana Flávia Granville-Garcia (Pesquisadora Responsável)

Campina Grande, ___ de _____2015

Assinatura do(a) menor ou impressão dactiloscópica.

_____

APÊNDICE G

Termo de compromisso do pesquisador responsável

TERMO DE COMPROMISSO DO PESQUISADOR RESPONSÁVEL EM CUMPRIR OS TERMOS DA RESOLUÇÃO 466/12 DO CNS/MS

Pesquisa: Avaliação das alterações bucais e aspectos biopsicossociais em pré-escolares de Campina Grande-PB

Eu, Ana Flávia Granville-Garcia, Professor(a) do Curso de Odontologia, da Universidade Estadual da Paraíba, portador(a) do RG: 1326944 e CPF 646.880.704-20 comprometo-me em cumprir integralmente as diretrizes da Resolução Nº. 466/12 do Conselho Nacional de Saúde do Ministério da Saúde/Comissão Nacional de Ética em Pesquisa, que dispõe sobre Ética em Pesquisa que envolve Seres Humanos.

Estou ciente das penalidades que poderei sofrer caso infrinja qualquer um dos itens da referida resolução.

Por ser verdade, assino o presente compromisso.

Campinha Grande,18 de novembro de 2014

Ana Flávia Granville-Garcia (Pesquisador responsável)

APÊNDICE H

Declaração de concordância com projeto de pesquisa

uepb
UNIVERSIDADE ESTADUAL DA PARAÍBA

DECLARAÇÃO DE CONCORDÂNCIA COM PROJETO DE PESQUISA

Pesquisa: Avaliação das alterações bucais e aspectos biopsicossociais em pré-escolares de Campina Grande-PB

Eu, **Ana Flávia Granville-Garcia**, Pesquisadora responsável, Professora de Pós-graduação de Odontologia da Universidade Estadual da Paraíba, portador(a) do RG: 1326944, declaro que estou ciente do referido Projeto de Pesquisa e comprometo-me em acompanhar seu desenvolvimento no sentido de que se possam cumprir integralmente as diretrizes da Resolução Nº. 466/12 do Conselho Nacional de Saúde do Ministério da Saúde/Comissão Nacional de Ética em Pesquisa, que dispõe sobre Ética em Pesquisa que envolve Seres Humanos.

Campina Grande, 18 de novembro de 2014

Ana Flávia Granville-Garcia
Orientadora

Monalisa da Nóbrega Cesarino Gomes
Orientanda

Matheus de França Perazzo
Orientando

ANEXOS

ANEXO A

Questionário SOHO-5

VERSÃO DOS PAIS/RESPONSÁVEIS

Nome do responsável: _____

Relação com a criança: _____

Muito obrigado por concordar em participar deste estudo.

Será de muita ajuda se você puder responder algumas perguntas sobre os dentes do(a) seu(sua) filho(a) e sobre como os dentes afetam a capacidade dele(a) realizar as atividades do dia a dia. Observe que não existem respostas certas ou erradas.

Perguntas sobre a saúde bucal do(a) seu(sua) filho(a) e o efeito que os dentes dele(a) têm em seu dia a dia.

Gostaríamos de saber mais sobre os dentes e a boca de seu(sua) filho(a) e sobre como estes afetam o dia a dia dele(a). Por favor **assinale** a resposta mais apropriada na escala abaixo:

1. Alguma vez na vida o(a) seu(sua) filho(a) teve dificuldades para **comer** por causa dos dentes dele(a)?

□ De forma □ Um pouco □ Mais ou menos □ Bastante □ Muita □ não sei nenhuma

2. Alguma vez na vida o(a) seu(sua) filho(a) teve dificuldade para **falar** por causa dos dentes dele(a)?

□ De forma □ Um pouco □ Mais ou menos □ Bastante □ Muita □ não sei nenhuma

3. Alguma vez na vida o(a) seu(sua) filho(a) teve dificuldades para **brincar** por causa dos dentes dele(a)?

□ De forma □ Um pouco □ Mais ou menos □ Bastante □ Muita □ não sei nenhuma

4. Alguma vez na vida o(a) seu(sua) filho(a) teve dificuldades em **dormir** por causa dos dentes dele(a)?

□ De forma □ Um pouco □ Mais ou menos □ Bastante □ Muita □ não sei nenhuma

5. Alguma vez na vida o(a) seu(sua) filho(a) deixou de **sorrir** por causa da aparência/estética dos dentes dele(a)?

□ De forma □ Um pouco □ Mais ou menos □ Bastante □ Muita □ não sei nenhuma

6. Alguma vez na vida o(a) seu(sua) filho(a) deixou de **sorrir** por causa de **buracos nos dentes, cárie ou dor de dente** nele(a)?

□ De forma □ Um pouco □ Mais ou menos □ Bastante □ Muita □ não sei nenhuma

7. Alguma vez na vida a autoconfiança/autoestima do(a) seu(sua) filho(a) foi afetada por causa dos dentes dele(a)?

□ De forma □ Um pouco □ Mais ou menos □ Bastante □ Muita □ não sei nenhuma

Obrigado!

VERSÃO DA CRIANÇA

Nome da criança:_____

Idade:_____

ENTREVISTADOR: "**Agora, eu vou te perguntar sobre os seus dentes e as coisas que você faz todos os dias como brincar, comer, conversar".**

ENTREVISTADOR: Por favor, mostre o cartão (Figura 2) após as perguntas **1-7**, enquanto explica como assinalar e dá o exemplo:

"Para cada pergunta, eu vou te mostrar um cartão com três carinhas. Se você não teve nenhum problema, aí você escolhe a carinha feliz. Se você teve um pouco de problemas, aí você pode escolher a carinha do meio e se você teve muitos problemas aí você escolhe a carinha triste. Eu quero saber qual é a carinha que melhor mostra o que você sente sobre os seus dentes".

1. **Alguma vez** foi difícil para você **comer** por causa dos seus dentes/"dentinhos"?
   - ☐ **Não**
   - ☐ **Um pouco**
   - ☐ **Muito**

2. **Alguma vez** foi difícil para você **beber** por causa dos seus dentes/"dentinhos"?
   - ☐ **Não**
   - ☐ **Um pouco**
   - ☐ **Muito**

3. **Alguma vez** foi difícil para você **falar** por causa dos seus dentes /"dentinhos?
   - ☐ **Não**
   - ☐ **Um pouco**
   - ☐ **Muito**

4. **Alguma vez** foi difícil para você **brincar** por causa dos seus dentes/"dentinhos"?
   - ☐ **Não**
   - ☐ **Um pouco**

☐ **Muito**

5. Alguma vez foi difícil para você dormir por causa dos seus dentes/“dentinhos”?

☐ **Não**

☐ **Um pouco**

☐ **Muito**

6. Alguma vez você deixou de **sorrir** porque não gostou dos seus dentes (“dentinhos”)/porque achou seus dentes (“dentinhos”) feios?

☐ **Não**

☐ **Um pouco**

☐ **Muito**

7. Alguma vez você deixou de **sorrir** porque os seus dentes/“dentinhos” estavam doendo?

☐ **Não**

☐ **Um pouco**

☐ **Muito**

Obrigado!

ANEXO B

Questionário de senso de coerência

INSTRUÇÕES PARA AS PERGUNTAS:
Aqui estão 13 perguntas sobre vários aspectos da SUA vida. Cada pergunta tem cinco respostas possíveis.
Marque com um X a opção que melhor expresse a sua maneira de pensar e sentir em relação ao que está sendo falado.
Dê apenas **uma única resposta** em cada pergunta, por favor.

1. Aquilo que você faz diariamente é:
( ) Um enorme aborrecimento e sofrimento ( ) Um aborrecimento e sofrimento
( ) Nem aborrecimento nem satisfação ( ) Um prazer e satisfação ( ) Um prazer e satisfação

2. Até hoje a sua vida tem sido:
( )Sem nenhum objetivo ( )Com poucos objetivos ( )Com alguns objetivos ( )Com muitos objetivos ( )Repleta de objetivos

3. Você tem interesse pelo que se passa ao seu redor?
( )Nunca ( )Poucas vezes ( )Algumas vezes ( )Muitas vezes ( )Sempre

4. Você acha que é tratada com injustiça?
( )Nunca ( )Poucas vezes ( )Algumas vezes ( )Muitas vezes ( )Sempre

5. Você tem ideias e sentimentos confusos?
( )Nunca ( )Poucas vezes ( )Algumas vezes ( )Muitas vezes ( )Sempre

6. Você acha que as coisas que você faz na sua vida têm pouco sentido?
( )Nunca ( )Poucas vezes ( )Algumas vezes ( )Muitas vezes ( )Sempre

7. Já lhe aconteceu ter ficado desapontada com pessoas em quem você confiava?
( )Nunca ( )Poucas vezes ( )Algumas vezes ( )Muitas vezes ( )Sempre

8. Você tem sentimentos que gostaria de não ter?
( )Nunca ( )Poucas vezes ( )Algumas vezes ( )Muitas vezes ( )Sempre

9. Você tem dúvida se pode controlar seus sentimentos?
( )Nunca ( )Poucas vezes ( )Algumas vezes ( )Muitas vezes ( )Sempre

10. Já lhe aconteceu de ficar surpreendida com o comportamento de pessoas que você achava que conhecia bem?
( )Nunca ( )Poucas vezes ( )Algumas vezes ( )Muitas vezes ( )Sempre

11. Em algumas situações as pessoas sentem-se fracassadas. Você já se sentiu fracassada?
( )Nunca ( )Poucas vezes ( )Algumas vezes ( )Muitas vezes ( )Sempre

12. Você sente que está em uma situação pouco comum, e sem saber o que fazer?
( )Nunca ( )Poucas vezes ( )Algumas vezes ( )Muitas vezes ( )Sempre

13. Às vezes acontecem coisas na vida da gente que depois achamos que não demos a devida importância. Quando alguma coisa acontece na vida, você acaba achando que deu a importância:
( )Totalmente errada ( )Errada ( )Nem correta e nem errada ( )Correta ( )Totalmente correta

ANEXO C

Ficha ICDAS-II

Código Dental
S – Saudável
U - Não erupcionado
E – Exfoliado (>60 meses)
X – Perdido por cárie
Dentes anteriores – (6-59meses)
Posteriores (6-71meses)
T – Perdido por trauma
R – Resto radicular
N – Não aplicável
C – Cárie
P – Exposição pulpar
F – Fístula

I.D. Crc. _____ Escola _____ Examinador _____ Data _____

Idade _____ Gênero _____ Anotador _____ Peso _____ Taman _____

Código ICDAS -lesões

0- hígido
2- não cavitada (seca e úmida)
3- ruptura localizada no esmalte
4- sombra cinzenta de dentina
5- cavidade com dentina visível
6- cavidade extensa

Superior Direito

código dente	55			54			53			52			51		
	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res
Mesial															
Oclusal															
Distal															
Vestib															
Lingual															

Superior Esquerdo

código dente	61			62			63			64			65			código dente
	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res	
Mesial																Mesial
Oclusal																Oclusal
Distal																Distal
Vestib																Vestib
Lingual																Lingual

Código de Atividade

1- não ativa
2- ativa

Inferior Direito

código dente	85			84			83			82			81		
	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res
Mesial															
Oclusal															
Distal															
Vestib															
Lingual															

Inferior Esquerdo

código dente	71			72			73			74			75			código dente
	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res	Les	Ativ	Res	
Mesial																Mesial
Oclusal																Oclusal
Distal																Distal
Vestib																Vestib
Lingual																Lingual

Código Restauração

(0 – Nada)
1 - Selante parcial
2 - Selante completo
3 - Rest. dcor do dente
4 - Amálgama
5- Corona aço /policarb.
6 – Corona ouro/ porcelana
7 - Rest. perdida
8 - Rest. temporária
9 - Outra

*Resinas, compómeros, Ionómeros, etc

OBSERVACIONES: _____

ANEXO D

Parecer do Comitê de Ética em Pesquisa

UNIVERSIDADE ESTADUAL DA PARAÍBA
COMITÊ DE ÉTICA EM PESQUISA ENVOLVENDO SERES HUMANOS – CEP/UEPB
COMISSÃO NACIONAL DE ÉTICA EM PESQUISA.

PARECER DO RELATOR
Número do Protocolo: 38937714.0.0000.5187
Data da 1ª relatoria PARECER DO AVALIADOR:25/11/2014
Pesquisador Responsável: Ana Flávia Granville-Garcia
Situação do parecer: Aprovado

Apresentação do Projeto: O projeto é intitulado; AVALIAÇÃO DAS ALTERAÇÕES BUCAIS E ASPECTOS BIOPSICOSSOCIAIS EM PRÉ-ESCOLARES DE CAMPINA GRANDE-PB,*encaminhado ao Comitê de Ética em Pesquisa da Universidade Estadual da Paraíba para Análise e parecer com fins de pesquisa do Programa de Pós-Graduação em Odontologia da Universidade Estadual da Paraíba.*

Objetivo da Pesquisa:Avaliar as alterações bucais e aspectos biopsicossociais em pré-escolares de Campina Grande-PB.

Avaliação dos Riscos e Benefícios: Considerando a justificativa e os aportes teóricos e metodologia apresentados no presente projeto, e ainda considerando a relevância do estudo as quais são explicitas suas possíveis contribuições, percebe-se que a mesma não apresenta riscos aos participantes a serem pesquisados.

Comentários e Considerações sobre a Pesquisa: A presente proposta de pesquisa é de suma importância quanto papel e atribuições das Instituições de Ensino Superior (IES), mormente pesquisa a nível de mestrado, estando dentro do perfil das pesquisas de construção do ensino-aprendizagem significativa, perfilando a formação profissional baseada na tríade conhecimento-habilidade-competência, preconizada pelo MEC. Portanto, tem retorno social, caráter de pesquisa científica e, contribuição na formação de mestres em Odontologia.

Considerações sobre os Termos de apresentação obrigatória e Parecer do Avaliador: Encontram-se anexados os termos de autorização necessários para o estudo. Diante do exposto, somos pela aprovação do referido projeto. Salvo melhor juízo.

Recomendações: O estudo encontra-se com uma fundamentação teórica estruturada atendendo as exigências protocolares do CEP-UEPB mediante a Resolução 466/12 do Conselho Nacional de Saúde/Ministério da Saúde e RESOLUÇÃO/UEPB/CONSEPE/10/2001 que rege e disciplina este CEP. Portanto, não há recomendações.

Conclusões ou Pendências e Lista de Inadequações: O presente estudo encontra-se sem pendências, devendo o mesmo prosseguir com a execução na íntegra de seu cronograma de atividades.

ANEXO E

Normas de Publicação da Revista Community Dentistry and Oral Epidemiology

Author Guidelines

Content of Author Guidelines: 1. General, 2. Ethical Guidelines, 3. Submission of Manuscripts, 4. Manuscript Format and Structure, 5. After Acceptance

Relevant Documents: Colour Work Agreement Form

Useful Websites: Submission Site, Articles published in *Community Dentistry and Oral Epidemiology*, Author Services, Wiley Blackwell's Ethical Guidelines, Guidelines for Figures

1. GENERAL

The aim of *Community Dentistry and Oral Epidemiology* is to serve as a forum for scientifically based information in community dentistry, with the intention of continually expanding the knowledge base in the field. The scope is therefore broad, ranging from original studies in epidemiology, behavioural sciences related to dentistry, and health services research, through to methodological reports in program planning, implementation and evaluation. Reports dealing with people of any age group are welcome.

The journal encourages manuscripts which present methodologically detailed scientific research findings from original data collection or analysis of existing databases. Preference is given to new findings. Confirmation of previous findings can be of value, but the journal seeks to avoid needless repetition. It also encourages thoughtful, provocative commentaries on subjects ranging from research methods to public policies. Purely descriptive reports are not encouraged, and neither are behavioural science reports with only marginal application to dentistry.
Knowledge in any field advances only when research findings and policies are held up to critical scrutiny. To be consistent with that view, the journal encourages scientific debate on a wide range of subjects. Responses to research findings and views expressed in the journal are always welcome, whether in the form of a manuscript or a commentary. Prompt publication will be sought for these submissions. Book reviews and short reports from international conferences are also welcome, and publication of conference proceedings can be arranged with the publisher.
Please read the instructions below carefully for details on the submission of manuscripts, and the journal's requirements and standards, as well as information on the procedure after acceptance of a manuscript for publication in *Community Dentistry and Oral Epidemiology*. Authors are encouraged to visit Wiley Blackwell

Author Services for further information on the preparation and submission of articles and figures.

2. GUIDELINES FOR RESEARCH REPORTING

Community Dentistry and Oral Epidemiology adheres to the ethical guidelines below for publication and research.

2.1. Authorship and Acknowledgements

Authorship: Authors submitting a manuscript do so on the understanding that the manuscript has been read and approved by all authors, and that all authors agree to the submission of the manuscript to the Journal.

Community Dentistry and Oral Epidemiology adheres to the definition of authorship set up by the International Committee of Medical Journal Editors (ICMJE). According to the ICMJE criteria, authorship should be based on (1) substantial contributions to conception and design of, or acquisition of data or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content and (3) final approval of the version to be published. Authors should meet conditions 1, 2 and 3.

It is a requirement that all authors have been accredited as appropriate upon submission of the manuscript. Contributors who do not qualify as authors should be mentioned under Acknowledgments.

Acknowledgements: Under *acknowledgements*, please specify contributors to the article other than the authors accredited and all sources of financial support for the research.

2.2. Ethical Approvals

In all reports of original studies with humans, authors should specifically state the nature of the ethical review and clearance of the study protocol. Informed consent must be obtained from human participants in research studies. Some reports, such as those dealing with institutionalized children or mentally retarded persons, may need additional details of ethical clearance.
Research participants: research involving human participants will be published only if such research has been conducted in full accordance with ethical principles, including the World Medical Association Declaration of Helsinki (version 2008) and the additional requirements (if any) of the country where the research has been carried out.

Manuscripts must be accompanied by a statement that the experiments were undertaken with the understanding and written consent of each participant and according to the above mentioned principles.

All studies should include an explicit statement in the Methods section identifying the review and ethics committee approval for each study, if applicable. Editors reserve the right to reject papers if there is doubt as to whether appropriate procedures have been used.

Ethics of investigation: Manuscripts not in agreement with the guidelines of the Helsinki Declaration (as revised in 1975) will not be accepted for publication.
Animal Studies: When experimental animals are used, the methods section must clearly indicate that adequate measures were taken to minimize pain or discomfort. Experiments should be carried out in accordance with the Guidelines laid down by the National Institute of Health (NIH) in the USA in respect of the care and use of animals for experimental procedures or with the European Communities Council Directive of 24 November 1986 (86/609/EEC) and in accordance with local laws and regulations.

2.3. Clinical Trials

Clinical trials should be reported using the CONSORT guidelines available at **http://www.consort-statement.org**. A CONSORT checklist should also be included in the submission material.
Community Dentistry and Oral Epidemiology encourages authors submitting manuscripts reporting from a clinical trial to register the trials in any of the following free, public clinical trials registries: www.clinicaltrials.gov, http://clinicaltrials.ifpma.org/clinicaltrials, http://isrctn.org/. The clinical trial registration number and name of the trial register will then be published with the manuscript.

2.4. Observational and Other Studies

Reports on observational studies such as cohort, case-control and cross-sectional studies should be consistent with guidelines such as STROBE. Meta-analysis for systematic reviews should be reported consistent with guidelines such as QUOROM or MOOSE. These guidelines can be accessed at www.equator-network.org. Authors of analytical studies are strongly encouraged to submit a Directed Acyclic Graph as a supplementary file for the reviewers and editors. This serves to outline the rationale for their modelling approach and to ensure that authors consider carefully the analyses that they conduct.

2.5. Appeal of Decision

The decision on a manuscript is final and cannot be appealed.

2.6. Permissions

If all or parts of previously published illustrations are used, permission must be obtained from the copyright holder concerned. It is the primary author's responsibility to obtain these in writing and provide copies to the Publishers.

Photographs of People

Community Dentistry and Oral Epidemiology follows current HIPAA guidelines for the protection of patient/participant privacy. If an individual pictured in a digital image or photograph can be identified, his or her permission is required to publish the image. The corresponding author may submit a letter signed by the patient authorizing the *Community Dentistry and Oral Epidemiology*to publish the image/photo. Alternatively, a form provided by *Community Dentistry and Oral Epidemiology* (available by clicking the "Instructions and Forms" link in Manuscript central) may be downloaded for your use. You can also download the form here. This approval must be received by the Editorial Office prior to final acceptance of the manuscript for publication. Otherwise, the image/photo must be altered such that the individual cannot be identified (black bars over eyes, etc.).

2.7. Copyright Assignment

If your paper is accepted, the author identified as the formal corresponding author for the paper will receive an email prompting them to log into Author Services, where, via the Wiley Author Licensing Service (WALS), they will be able to complete the licence agreement on behalf of all authors on the paper.

For authors signing the copyright transfer agreement

If the OnlineOpen option is not selected, the corresponding author will be presented with the copyright transfer agreement (CTA) to sign. The terms and conditions of the CTA can be previewed in the samples associated with the Copyright FAQs below:
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To preview the terms and conditions of these open access agreements, please visit the Copyright FAQs hosted on Wiley Author Services http://authorservices.wiley.com/bauthor/faqs_copyright.aspand visit http://www.wileyopenaccess.com/details/content/12f25db4c87/Copyright--License.html.
If you select the OnlineOpen option and your research is funded by The Wellcome Trust and members of the Research Councils UK (RCUK) or the Austrian Science Fund (FWF), you will be given the opportunity to publish your article under a CC-BY license supporting you in complying with your Funder requirements. For more information on this policy and the Journal's compliant self-archiving policy, please visit: http://www.wiley.com/go/funderstatement.

3. SUBMISSION OF MANUSCRIPTS

Manuscripts should be submitted electronically via the online submission sitehttp://mc.manuscriptcentral.com/cdoe. The use of an online submission and peer review site enables immediate distribution of manuscripts and consequentially speeds up the review process. It also allows authors to track the status of their own manuscripts. Complete instructions for submitting a manuscript are available online and below. Further assistance can be obtained from the Editorial Assistant, Natalie Brown, n.brown@otago.ac.nz

Editorial Office:

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The Editorial Assistant is Natalie Brown: n.brown@otago.ac.nz

3.1. Getting Started

• Launch your web browser (supported browsers include Internet Explorer 6 or higher, Netscape 7.0, 7.1, or 7.2, Safari 1.2.4, or Firefox 1.0.4 or higher) and go to the journal's online Submission Site: http://mc.manuscriptcentral.com/cdoe
• Log-in or click the 'Create Account' option if you are a first-time user.
• If you are creating a new account:

- After clicking on 'Create Account', enter your name and e-mail information and click 'Next'. Your e-mail information is very important.
- Enter your institution and address information as appropriate, and then click 'Next.'
- Enter a user ID and password of your choice (we recommend using your e-mail address as your user ID), and then select your area of expertise. Click 'Finish'.
• If you have an account but have forgotten your log-in details, go to Password Help on the journals online submission system http://mc.manuscriptcentral.com/cdoe and enter your e-mail address. The system will send you an automatic user ID and a new temporary password.
• Log-in and select 'Corresponding Author Center.'

3.2. Submitting Your Manuscript

• After you have logged in, click the 'Submit a Manuscript' link in the menu bar.
• Enter data and answer questions as appropriate. You may copy and paste directly from your manuscript and you may upload your pre-prepared covering letter.
• Click the 'Next' button on each screen to save your work and advance to the next screen.
• You are required to upload your files.
- Click on the 'Browse' button and locate the file on your computer.
- Select the designation of each file in the drop down next to the Browse button.
- When you have selected all files you wish to upload, click the 'Upload Files' button.
• Review your submission (in HTML and PDF format) before sending to the Journal. Click the 'Submit' button when you are finished reviewing.

3.3. Manuscript Files Accepted

Manuscripts should be uploaded as Word (.doc or .docx) or Rich Text Format (.rtf) files (not write- protected), along with separate Figure files. For the latter, GIF, JPEG, PICT or Bitmap files are acceptable for submission, but only high- resolution TIF or EPS files are suitable for printing. Tables should be done in Word rather than in Excel. The files will be automatically converted to HTML and a PDF document on upload, and those will be used for the review process. The text file must contain the entire manuscript, including the title page, abstract, text, references, tables, and figure legends, but no embedded figures. Figure tags should be included in the file. Manuscripts should be formatted as described in the Author Guidelines below.

3.4. Suggest Two Reviewers

Community Dentistry and Oral Epidemiology attempts to keep the review process as short as possible to enable rapid publication of new scientific data. In order to facilitate this process, please suggest the names and current email addresses of two potential international reviewers whom you consider capable of reviewing your manuscript. Whether these are used is up to the Editor.

3.5. Suspension of Submission Mid-way in the Submission Process

You may suspend a submission at any phase before clicking the 'Submit' button and save it to submit later. The manuscript can then be located under 'Unsubmitted Manuscripts' and you can click on 'Continue Submission' to continue your submission when you choose to.

3.6. E-mail Confirmation of Submission

After submission, you will receive an email to confirm receipt of your manuscript. If you do not receive the confirmation email within 10 days, please check your email address carefully in the system. If the email address is correct, please contact your IT department. The error may be caused by some sort of spam filtering on your email server. Also, the emails should get through to you if your IT department adds our email server (uranus.scholarone.com) to their whitelist.

3.7. Review Procedures

All manuscripts (except invited reviews and some commentaries and conference proceedings) are submitted to an initial review by the Editor or Associate Editors. Manuscripts which are not considered relevant to oral epidemiology or the practice of community dentistry or are of interest to the readership of *Community Dentistry and Oral Epidemiology* will be rejected without review. Manuscripts presenting innovative, hypothesis-driven research with methodologically detailed scientific findings are favoured to move forward to peer review. All manuscripts accepted for peer review will be submitted to at least 2 reviewers for peer review, and comments from the reviewers and the editor will be returned to the corresponding author.

3.8. Manuscript Status

You can access ScholarOne Manuscripts (formerly known as Manuscript Central) any time to check your 'Author Centre' for the status of your manuscript. The Journal will inform you by e-mail once a decision has been made.

3.9. Submission of Revised Manuscripts

Revised manuscripts must be uploaded within two or three months of authors being notified of conditional acceptance pending satisfactory Minor or Major revision respectively. Locate your manuscript under 'Manuscripts with Decisions' and click on 'Submit a Revision' to submit your revised manuscript. Please remember to delete any previously-uploaded files when you upload your revised manuscript. Revised manuscripts must show changes to the text in either bold font, coloured font or highlighted text. Do NOT use track changes for this. Prepare and submit a separate

“Response to reviewers” document, in which you address EACH of the points raised by the reviewers.

3.10. Conflict of Interest

Community Dentistry & Oral Epidemiology requires that sources of institutional, private and corporate financial support for the work within the manuscript must be fully acknowledged, and any potential grant holders should be listed. Acknowledgements should be brief and should include information concerning conflict of interest and sources of funding. It should not include thanks to anonymous referees and editors.

3.11. Editorial Board Submissions

Manuscripts authored or co-authored by the Editor-in-Chief or by members of the Editorial Board are evaluated using the same criteria determined for all other submitted manuscripts. The process is handled confidentially and measures are taken to avoid real or reasonably perceived conflicts of interest.

4. MANUSCRIPT FORMAT AND STRUCTURE

4.1. Word Limit and Page Charges

Articles should be limited to 3,700 words (including references) and 6 Tables or Figures; alternatively, 4,000 words and 5 Tables or Figures may be used. This equates to seven published pages, **and authors are strongly encouraged to stay within those limits.** The Methods and Results sections are usually where the word count can “blow out”, and authors are encouraged to consider submitting heavily detailed material for inclusion in a separate online Appendix to their article (at no cost). **Articles exceeding seven published pages are subject to a charge of USD 300 per additional page. One published page amounts approximately to 5,500 characters (including spaces) of text but does not include Figures and Tables.**

4.2. Format

Language: All submissions must be in English; both British and American spelling conventions are acceptable. Authors for whom English is a second language must have their manuscript professionally edited by an English speaking person before submission to make sure the English is of high quality. It is preferred that manuscript is professionally edited. A list of independent suppliers of editing services can be found at http://wileyeditingservices.com/en/. All services must be paid for and arranged by the author, and use of one of these services does not guarantee acceptance or preference for publication.

Font: All submissions must be 1.5 spaced using a standard 12-point font size, and preferably in the Times Roman font.
Abbreviations, Symbols and Nomenclature: Authors can consult the following source: CBE Style Manual Committee. Scientific style and format: the CBE manual for authors, editors, and publishers. 6th ed. Cambridge: Cambridge University Press, 1994

4.3. Structure

All manuscripts submitted to *Community Dentistry and Oral Epidemiology* should follow the structure guidelines below.
Title Page: should include a title of no more than 50 words, a running head of no more than 50 characters, and the names and institutional affiliations of all authors of the manuscript should be included.
Abstract: All manuscripts submitted to *Community Dentistry and Oral Epidemiology* should use a structured abstract under the headings: Objectives – Methods – Results – Conclusions.
Main Text of Original Articles should include Introduction, Methods, Results and Discussion. Subheadings are not encouraged.
Introduction: should be focused, outlining the historical or logical origins of the study and not summarise the findings; exhaustive literature reviews are not appropriate. It should close with an explicit statement of the specific aims of the investigation.
Methods must contain sufficient detail such that, in combination with the references cited, all studies reported can be fully reproduced. As a condition of publication, authors are required to make materials and methods used freely available to other academic researchers for their own use.
Discussion: this may usually start with a brief summary of the major findings, but repetition of parts of the Abstract or of the Results sections should be avoided. The section should end with a brief conclusion and a comment on the potential clinical program or policy relevance of the findings. Statements and interpretation of the data should be appropriately supported by original references.

4.4. References

Authors are required to cite all necessary references for the research background, methods and issues discussed. Primary sources should be cited. Relevant references published in CDOE are expected to be among the cited literature.
The list of references begins on a fresh page in the manuscript, using the Vancouver format. References should be numbered consecutively in the order in which they are first mentioned in the text. Identified references in the text should be sequentially numbered by superscript Arabic numerals in the text; for example[12]. For correct style, authors are referred to: International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals: writing and editing for

biomedical publication. http://www.icmje.org October 2004. For abbreviations of journal names, consulthttp://www.ncbi.nlm.nih.gov/nlmcatalog/journals.
Avoid reference to 'unpublished observations', or to manuscripts not yet accepted for publication. References to abstracts should be avoided if possible; such references are appropriate only if they are recent enough that time has not permitted full publication. References to written personal communications (not oral) may be inserted in parentheses in the text.

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

Examples of the Vancouver reference style are given below:

Journals

Standard journal article
(List all authors when six or fewer. When there are seven or more, list first six and add *et al.*)
Widström E, Linna M, Niskanen T. Productive efficiency and its determinants in the Finnish Public Dental Service. Community Dent Oral Epidemiol 2004; 32: 31-40.
Corporate author
WHO Collaborating Centre for Oral Precancerous Lesions. Definition of leukoplakia and related lesions: an aid to studies on oral precancer. Oral Surg Oral Med Oral Pathol 1978; 46: 518-39.

Books and other monographs

Personal author(s)
Fejerskov O, Baelum V, Manji F, Møller IJ. Dental fluorosis; a handbook for health workers. Copenhagen: Munksgaard, 1988: 41-3.
Chapter in a book
Fomon SJ, Ekstrand J. Fluoride intake. In: Fejerskov O, Ekstrand J, Burt BA, editors: Fluoride in dentistry, 2nd edition. Copenhagen: Munksgaard, 1996; 40-52.

4.5. Tables, Figures and Figure Legends

Tables are part of the text and should be included, one per page, after the References. All graphs, drawings, and photographs are considered figures and should be sequentially numbered with Arabic numerals. Each figure must be on a separate page and each must have a caption. All captions, with necessary references, should be typed together on a separate page and numbered clearly (Fig.1, Fig. 2, etc.).

Preparation of Electronic Figures for Publication: Although low-quality images are adequate for review purposes, print publication requires high quality images to prevent the final product being blurred or fuzzy. Submit EPS (lineart) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Do not use pixel-oriented programmes. Scans (TIFF only) should have a resolution of 300 dpi (halftone) or 600 to 1200 dpi (line drawings) in relation to the reproduction size (see below). Please submit the data for figures in black and white or submit a colour work agreement form. EPS files should be saved with fonts embedded (and with a TIFF preview if possible). For scanned images, the scanning resolution (at final image size) should be as follows to ensure good reproduction: line art: >600 dpi; half-tones (including gel photographs): >300 dpi; figures containing both halftone and line images: >600 dpi.

Further information can be obtained at Wiley Blackwell's guidelines for figures:http://authorservices.wiley.com/bauthor/illustration.asp.

Check your electronic artwork before submitting it:http://authorservices.wiley.com/bauthor/eachecklist.asp

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Colour Charges: It is the policy of *Community Dentistry and Oral Epidemiology* for authors to pay the full cost for the reproduction of their colour artwork, if used. Therefore, please note that, if there is colour artwork in your manuscript when it is accepted for publication, Wiley Blackwell require you to complete and return a Colour Work Agreement Form before your manuscript can be published. Any article received by Wiley Blackwell with colour work will not be published until the form has been returned. If you are unable to access the internet, or are unable to download the form, please contact the Production Editor Rodolfo Adrada, cdoe@wiley.com. Please send the completed Colour Work Agreement to:
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In the event that an author is not able to cover the costs of reproducing colour figures in colour in the printed version of the journal, *Community Dentistry and Oral Epidemiology* offers authors the opportunity to reproduce those in colour for free in the online version of the article (but they will still appear in black and white in the print version). If an author wishes to take advantage of this free colour-on-the-web service,

he/she should liaise with the Editorial Office to ensure that the appropriate documentation is completed for the Publisher.

Figure Legends: All captions, with necessary references, should be typed together on a separate page and numbered clearly (Fig.1, Fig. 2, etc.).

Special issues: Larger papers, monographs, and conference proceedings may be published as special issues of the journal. The full cost of these extra issues must be paid by the authors. Further information can be obtained from the editor or publisher.

5. AFTER ACCEPTANCE

Upon acceptance of a manuscript for publication, the manuscript will be forwarded to the Production Editor, who is responsible for the production of the journal.

5.1. Proof Corrections

The corresponding author will receive an email alert containing a link to a web site. A working email address must therefore be provided for the corresponding author. The proof can be downloaded as a PDF (portable document format) file from this site. Acrobat Reader will be required in order to read this file. This software can be downloaded (free of charge) from the following Web site: www.adobe.com/products/acrobat/readstep2.html. This will enable the file to be opened, read on screen, and printed out in order for any corrections to be added. Further instructions will be sent with the proof. Hard copy proofs will be posted if no e-mail address is available; in your absence, please arrange for a colleague to access your e-mail to retrieve the proofs. Proofs must be returned within three days of receipt.
Since changes to proofs are costly, we ask that you only correct typesetting errors. Excessive changes made by the author in the proofs, excluding typesetting errors, will be charged separately. Other than in exceptional circumstances, all illustrations are retained by the publisher. Please note that the author is responsible for all statements made in the work, including changes made by the copy editor.

5.2. Early View (Publication Prior to Print)

Community Dentistry and Oral Epidemiology is covered by Wiley Blackwell's Early View service. Early View articles are complete full-text articles published online in advance of their publication in a printed issue. They have been fully reviewed, revised and edited for publication, and the authors' final corrections have been incorporated. Because they are in final form, no changes can be made after online publication. The nature of Early View articles means that they do not yet have volume, issue or page numbers, so Early View articles cannot be cited in the

traditional way. They are therefore given a Digital Object Identifier (DOI), which allows the article to be cited and tracked before it is allocated to an issue. After print publication, the DOI remains valid and can continue to be used to cite and access the article.

5.3. Author Services

Online production tracking is available for your article through Wiley Blackwell's Author Services. Please see: http://authorservices.wiley.com/bauthor/
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ANEXO F

Normas de Publicação da International Journal of Paediatric Dentistry

Author Guidelines

Content of Author Guidelines: 1. General, 2. Ethical Guidelines, 3. Manuscript Submission Procedure, 4. Manuscript Types Accepted, 5. Manuscript Format and Structure, 6. After Acceptance.

Relevant Documents: Sample Manuscript

Useful Websites: Submission Site, Articles published in *International Journal of Paediatric Dentistry*, Author Services, Wiley-Blackwell's Ethical Guidelines, Guidelines for Figures.

CrossCheck

The journal to which you are submitting your manuscript employs a plagiarism detection system. By submitting your manuscript to this journal you accept that your manuscript may be screened for plagiarism against previously published works.

1. GENERAL

International Journal of Paediatric Dentistry publishes papers on all aspects of paediatric dentistry including: growth and development, behaviour management, prevention, restorative treatment and issue relating to medically compromised children or those with disabilities. This peer-reviewed journal features scientific articles, reviews, clinical techniques, brief clinical reports, short communications and abstracts of current paediatric dental research. Analytical studies with a scientific novelty value are preferred to descriptive studies.

Please read the instructions below carefully for details on the submission of manuscripts, the journal's requirements and standards as well as information concerning the procedure after acceptance of a manuscript for publication in *International Journal of Paediatric Dentistry*. Authors are encouraged to visit Wiley-Blackwell Author Services for further information on the preparation and submission of articles and figures.

In June 2007, the Editors gave a presentation on How to write a successful paper for the*International Journal of Paediatric Dentistry.*

2. ETHICAL GUIDELINES

Submission is considered on the conditions that papers are previously unpublished, and are not offered simultaneously elsewhere; that authors have read and approved the content, and all authors have also declared all competing interests; and that the work complies with the Ethical Policies of the Journal and has been conducted under internationally accepted ethical standards after relevant ethical review.

3. CONFLICT OF INTEREST AND SOURCE FUNDING

Journal of Oral Rehabilitation requires that all authors (both the corresponding author and co-authors) disclose any potential sources of conflict of interest. Any interest or relationship, financial or otherwise that might be perceived as influencing an author's objectivity is considered a potential source of conflict of interest. These must be disclosed when directly relevant or indirectly related to the work that the authors describe in their manuscript. Potential sources of conflict of interest include but are not limited to patent or stock ownership, membership of a company board of directors, membership of an advisory board or committee for a company, and consultancy for or receipt of speaker's fees from a company. If authors are unsure whether a past or present affiliation or relationship should be disclosed in the manuscript, please contact the editorial office atIJPDedoffice@wiley.com. The existence of a conflict of interest does not preclude publication in this journal.

The above policies are in accordance with the Uniform Requirements for Manuscripts Submitted to Biomedical Journals produced by the International Committee of Medical Journal Editors (http://www.icmje.org/). It is the responsibility of the corresponding author to have all authors of a manuscript fill out a conflict of interest disclosure form, and to upload all forms together with the manuscript on submission. The disclosure statement should be included under Acknowledgements. Please find the form below:

Conflict of Interest Disclosure Form

4. MANUSCRIPT SUBMISSION PROCEDURE

Articles for the *International Journal of Paediatric Dentistry* should be submitted electronically via an online submission site. Full instructions and support are available on the site and a user ID and password can be obtained on the first visit. Support is available by phone (+1 434 817 2040 ext. 167) or here. If you cannot submit online, please contact Mirlyn Consador in the Editorial Office by e-

mail IJPDedoffice@wiley.com.

4.1. Getting Started

Launch your web browser (supported browsers include Internet Explorer 5.5 or higher, Safari 1.2.4, or Firefox 1.0.4 or higher) and go to the journal's online submission site:http://mc.manuscriptcentral.com/ijpd
*Log-in or, if you are a new user, click on 'register here'.
*If you are registering as a new user.
- After clicking on 'Create Account', enter your name and e-mail information and click 'Next'. Your e-mail information is very important.
- Enter your institution and address information as appropriate, and then click 'Next.'
- Enter a user ID and password of your choice (we recommend using your e-mail address as your user ID), and then select your area of expertise. Click 'Finish'.
*If you are already registered, but have forgotten your log in details, enter your e-mail address under 'Password Help'. The system will send you an automatic user ID and a new temporary password.
*Log-in and select 'Author Center'.

4.2. Submitting Your Manuscript

After you have logged into your 'Author Center', submit your manuscript by clicking on the submission link under 'Author Resources'.
* Enter data and answer questions as appropriate.
* You may copy and paste directly from your manuscript and you may upload your pre-prepared covering letter. **Please note** that a separate *Title Page* must be submitted as part of the submission process as ‘Title Page’ and should contain the following:
• Word count (excluding tables)
• Authors’ names, professional and academic qualifications, positions and places of work. They must all have actively contributed to the overall design and execution of the study/paper and should be listed in order of importance of their contribution
• Corresponding author address, and telephone and fax numbers and email address

*Click the 'Next' button on each screen to save your work and advance to the next screen.
*You are required to upload your files.
- Click on the 'Browse' button and locate the file on your computer.
- Select the designation of each file in the drop down next to the Browse button.
- When you have selected all files you wish to upload, click the 'Upload Files' button.
* Review your submission (in HTML and PDF format) before completing your submission by sending it to the Journal. Click the 'Submit' button when you are finished reviewing.

4.3. Manuscript Files Accepted

Manuscripts should be uploaded as Word (.doc) or Rich Text Format (.rtf) files (not write-protected) plus separate figure files. GIF, JPEG, PICT or Bitmap files are acceptable for submission, but only high-resolution TIF or EPS files are suitable for printing. The files will be automatically converted to HTML and a PDF document on upload and will be used for the review process. The text file must contain the entire manuscript including title page, abstract, text, references, tables, and figure legends, but no embedded figures. In the text, please reference figures as for instance 'Figure 1', 'Figure 2' to match the tag name you choose for the individual figure files uploaded. Manuscripts should be formatted as described in the Author Guidelines below. Please note that any manuscripts uploaded as Word 2007 (.docx) is now accepted by IPD. As such manuscripts can be submitted in both .doc and .docx file types.

4.4. Review Process

The review process is entirely electronic-based and therefore facilitates faster reviewing of manuscripts. Manuscripts will be reviewed by experts in the field (generally two reviewers), and the Editor-in-Chief makes a final decision. *The International Journal of Paediatric Dentistry* aims to forward reviewers´ comments and to inform the corresponding author of the result of the review process. Manuscripts will be considered for 'fast-track publication' under special circumstances after consultation with the Editor-in-Chief.

4.5. Suggest a Reviewer

International Journal of Paediatric Dentistry attempts to keep the review process as short as possible to enable rapid publication of new scientific data. In order to facilitate this process, please suggest the names and current email addresses of a potential international reviewer whom you consider capable of reviewing your manuscript and their area of expertise. In addition to your choice the journal editor will choose one or two reviewers as well.

4.6. Suspension of Submission Mid-way in the Submission Process

You may suspend a submission at any phase before clicking the 'Submit' button and save it to submit later. The manuscript can then be located under 'Unsubmitted Manuscripts' and you can click on 'Continue Submission' to continue your submission when you choose to.

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3. Al-Mughery AS, Attwood D, Blinkhorn A. Dental health of 5-year-old children in Abu Dhabi, United Arab Emirates. Community Dent Oral Epidemiol 1991; 19: 308-309.
4. Al-Hosani E, Rugg-Gunn A. Combination of low parental educational attainment and high parental income related to high caries experience in preschool children in Abu Dhabi. Community Dent Oral Epidemiol 1998; 26: 31-36.

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