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CÁRIE DENTÁRIA, PERDA DENTÁRIA E QUALIDADE DE VIDA DE INDIVÍDUOS EXPOSTOS A FATORES DE RISCO SOCIAL NO NORDESTE DO BRASIL

LUÍSA SIMÕES DE ALBUQUERQUE

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Dissertação apresentada ao Programa de Pós-Graduação em Odontologia, da Universidade Federal da Paraíba, como parte dos requisitos para obtenção do título de Mestre em Odontologia – Área de Concentração em Ciências Odontológicas.

Orientador: Prof. Dr. Fábio Correia Sampaio

João Pessoa

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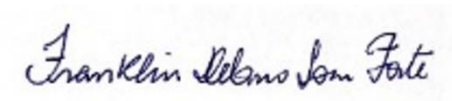
Banca Examinadora

Prof. Dr. Fábio Correia Sampaio

Examinador - UFPB



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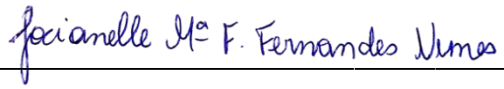

Profa. Dra. Jocianelle Maria Felix Fernandes Nunes

Examinadora - UFPB

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EPÍGRAFE

"Uma hora de estudo é uma hora de oração”

São José Maria Escrivá

RESUMO

Estimar a prevalência da cárie dentária (CPOD) e perda dentária em indivívuos expostos a fatores de risco social no Nordeste do Brasil, e avaliar a associação relativa desses parâmetros com a qualidade de vida relacionada à saúde bucal (QVRSB). Trata-se de um estudo transversal de base populacional, realizado em zona urbana de 28 municípios, com uma amostra final de 3.063 participantes. A condução e o relato deste estudo transversal de base populacional são consistentes com as diretrizes do STROBE. Os grupos etários selecionados foram: 12 anos (n = 194), 15-19 anos (n = 817), 35-44 anos (n = 1.302) e 65-74 anos (n = 750). Para tanto, foi utilizado um questionário contendo perguntas sobre condições socioeconômicas, comportamentais e autopercepção da saúde bucal (OHIP-14). Os exames dentários (CPOD) foram realizados por dentistas calibrados sob luz diurna indireta durante as visitas domiciliares e após uma escovação supervisionada. Os dados do estudo foram tabulados e analisados por meio do programa SPSS v.22, considerando o nível de significância de 5%. Realizou-se o teste de Kolmogorov–Smirnov para verificar a normalidade dos dados. Para avaliar as médias, desvios-padrão e intervalos foram realizadas análises descritivas dos escores individuais e totais dos domínios do OHIP-14. Os domínios individuais e os escores totais do OHIP-14 com a cárie dentária, perda dentária e fatores socioeconômicos/demográficos da amostra foram submetidos a uma análise de regressão de Poisson com variância robusta. Os valores médios de CPOD (DP) foram 2,68 (4,01), 4,84 (4,30), 15,35 (7,26) e 26,72 (8,03) para 12, 15-19, 35-44 e 65-74 anos de idade, respectivamente. Setenta por cento dos indivíduos eram parcialmente edêntulos e o edentulismo total afetou 13% desta população. A média do CPOD e perda dentária aumentaram significativamente com a idade e com impactos na QVRSB. Dor física (5,8%) e desconforto psicológico (5,8%) foram as dimensões do OHIP-14 que ocorreram com mais frequência. O modelo multivariado ajustado mostrou impacto negativo significativo na qualidade de vida relacionado à prevalência de cárie não tratada (RR = 1,54; IC 95% = 1,37-1,72), prevalência de edentulismo (RR = 1,29; IC 95% = 1,08-1,53) e necessidade de prótese (RR = 0,54; IC 95% = 0,90-0,97). Características socioeconômicas/demográficas como: renda, escolaridade, sexo, idade e hábitos de higiene bucal também resultaram em um impacto negativo na qualidade de vida. Há uma alta prevalência de cárie dentária e edentulismo nos indivíduos desse estudo, com exceção da faixa etária de 12 anos de idade. Concluiu-se que a condição dentária resulta em um impacto negativo na qualidade de vida dos indivíduos, especialmente, na faixa etária de idosos.

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Palavras-chave: Inquéritos de Saúde Bucal, Cárie Dentária, Perda de Dente, Arcada Desdentada, Fatores Socioeconômicos, Qualidade de Vida.

ABSTRACT

To estimate the prevalence of dental caries (DMFT) and tooth loss in individuals exposed to social risk factors in Northeastern Brazil and to evaluate the relative association of these parameters with oral health-related quality of life (OHRQoL). This is a population-based cross-sectional study carried out in an urban area of 28 municipalities, with a final sample of 3,063 participants. The conduct and reporting of this cross-sectional population-based study is consistent with STROBE guidelines. The target age groups were: 12 years (n = 194), 15-19 years (n = 817), 35-44 years (n = 1,302), and 65-74 years (n = 750). A questionnaire containing questions about socioeconomic and behavioral conditions and self-perception of oral health (OHIP-14) was used. Dental examinations (DMFT) were performed by calibrated dentists under indirect daylight during home visits and after supervised brushing. Study data were tabulated and analyzed using the SPSS v.22 program, considering a significance level of 5%. The Kolmogorov–Smirnov test was performed to verify the normality of the data. In order to evaluate the means, standard deviations and intervals, descriptive analyzes of the individual and total scores of the OHIP-14 domains were performed. Individual domains and total OHIP-14 scores with dental caries, tooth loss, and socioeconomic/demographic factors in the sample were subjected to a Poisson regression analysis with robust variance. Mean DMFT (SD) values were 2.68 (4.01), 4.84 (4.30), 15.35 (7.26) and 26.72 (8.03) for 12, 15-19 , 35-44 and 65-74 years of age, respectively. Seventy percent of individuals were partially edentulous and total edentulism affected 13% of this population. The average of the CPOD and tooth loss increased significantly with age and with impacts on HRQoL. Physical pain (5.8%) and psychological discomfort (5.8%) were the dimensions of the OHIP-14 that occurred most frequently. The adjusted multivariate model showed a significant negative impact on quality of life related to the prevalence of untreated caries (RR = 1.54; 95% CI = 1.37-1.72), edentulism prevalence (RR = 1.29; 95% = 1.08-1.53) and need for prosthesis (RR = 0.54; 95% CI = 0.90-0.97). Socioeconomic/demographic characteristics such as income, education, sex, age, oral hygiene habits also resulted in a negative impact on quality of life. With the exception of the age group of 12 years, there is a high prevalence of dental caries and edentulism in the individuals in this study. It was concluded that the dental condition results in a negative impact on the quality of life of individuals, especially in the elderly age group.

Keywords: Dental Health Surveys, Dental caries, Tooth Loss, Edentulous, Socioeconomic Factors, Quality of Life.

LISTA DE TABELAS

LISTA DE ABREVIATURAS E SIGLAS

CAAE	Certificado de Apresentação para Apreciação Ética
CCS	Centro de Ciências da Saúde
CEP-UFPB	Comitê de Ética e Pesquisa da UFPB
UFPB	Universidade Federal da Paraíba
QdVRSB	Qualidade de vida relacionada à saúde bucal
OHRQoL	Quality of life related to oral health
OMS	Organização Mundial de Saúde
OHIP	Oral Health Impact Profile
CPOD	Índice de Dentes Cariados, Perdidos e Obturados
IDH	Índice de Desenvolvimento Humano
PHC	Primary Health Care
STROBE	Strengthening the Reporting of Observational Studies in Epidemiology
DMFT	Decayed, Missing due to caries, and Filled Teeth in the permanent teeth

SUMÁRIO

1. INTRODUÇÃO

Na década de 1980, surgiu o conceito de qualidade de vida relacionada à saúde bucal (QVRSB) que, em termos simples, corresponde ao impacto que a saúde ou doenças bucais têm no funcionamento diário, no bem-estar ou na qualidade de vida geral do indivíduo (Sun et al. 2018).

Relatos recentes sustentam que problemas de saúde bucal podem afetar significativamente aspectos funcionais e sociais, com consequente redução na qualidade de vida (Chafee et al., 2017). As lesões cariosas não tratadas dos dentes permanentes foram a condição de saúde mais prevalente em 2010, afetando aproximadamente 35% da população total do mundo (mais de 2 bilhões de pessoas) (Marcenes et al., 2013).

Embora, na última década, as taxas de prevalência de cárie dentária não tratada tenham diminuído 4%, esta estimativa recente indica que um número significativo de indivíduos em todo o mundo é afetado pela cárie dentária o que, consequentemente, pode ter algum impacto em sua qualidade de vida (Bernabe et al., 2020; Peres et al., 2019) . O perfil epidemiológico da cárie na dentição decídua e permanente é caracterizado pelo início precoce da doença, alta prevalência de cárie não tratada, aumento da gravidade no ciclo de vida e padrão de distribuição heterogênea da cárie entre as diversas regiões do país (Ardenghi et al., 2013; Martins et al., 2021).

Existem evidências de que o alto número de dentes cariados nos países da América Latina e Caribe afetam significativamente a qualidade de vida dos indivíduos. No entanto, o elevado nível de heterogeneidade entre os estudos, bem como as diferenças nas questões metodológicas dificultam a comparação das evidências entre tais relatos. A falta de informações atualizadas sobre prevalência e gravidade da cárie dentária é particularmente observada em estudos longitudinais e de base populacional em países Latino Americanos. (Paiva et al., 2021; Sampaio, et al., 2021)

A utilização de instrumentos subjetivos, igualmente chamados de indicadores sócio-odontológicos, são de extrema valia para identificar as necessidades de saúde bucal autorreferidas, com o objetivo de avaliar seu impacto na qualidade de vida (Bulgareli et al., 2018).

A Paraíba, com uma população de 4 milhões de indivíduos, encontra-se entre os cinco estados do Brasil com os menores valores de Índice de Desenvolvimento Humano (IDH) em 2010 (PNUD IPEA FJP, 2013). Em 2020, a renda per capita na Paraíba era aproximadamente de 1.582,19 reais (R$) e estava entre as mais baixas do Brasil. No contexto de saúde, o estado paraibano tem a sétima menor proporção de pessoas que possuem um plano de saúde no Brasil (PNUD IPEA FJP, 2013).

Segundo a Pesquisa Nacional de Saúde, cerca de 12,2% da população paraibana tem acesso a serviços de saúde. Levando em consideração o Índice de Educação, Longevidade e Renda por indivíduo, o estado se classifica no IDH com pontuação de 0,658, considerado um local de desenvolvimento humano médio (PNUD IPEA FJP, 2013).

Além disso, a maioria dos estudos que relacionam a cárie dentária e a qualidade de vida dos residentes brasileiros se concentra em crianças, adolescentes ou outras faixas etárias específicas ou indivíduos com uma determinada necessidade ou condição (Cavalcanti et al., 2010; Abanto et al., 2012). A cárie dentária é uma doença de alta prevalência que muitas vezes não causa sintomas em estágios iniciais. Isso pode explicar porque alguns indicadores clínicos, como o número de dentes cariados, não estão fortemente associados ao comprometimento da QVRSB (Gerritsen et al., 2010). Por outro lado, há fortes evidências de que a perda dentária afeta a qualidade de vida (Gerritsen et al., 2010).

Por meio desta dissertação, apresentamos um estudo transversal advindo de uma política pública fortalecida por um apoio privado que atuou com o objetivo de estimar a prevalência da cárie dentária (CPOD), perda dentária e edentulismo e, suas relações frente a qualidade de vida relacionada à saúde bucal (QdVRSB) em indivíduos expostos a fatores de risco social localizados no Nordeste do Brasil.

2. FUNDAMENTAÇÃO TEÓRICA

2.1. Qualidade de vida relacionada a saúde bucal

Conceituada como o total bem-estar social, mental e físico, a saúde definida

pela Organização Mundial de Saúde (OMS) se encontra não meramente na ausência de doença, mas sim na qualidade de vida do indivíduo sobre a sociedade (Brasil, 2009). Logo, implica que para ser classificado como saudável, um ser humano ,além de não apresentar nenhum tipo de alteração fisiológica, ele também precisa viver com qualidade (Castro, Portela, Leão, 2007).

A saúde se apresenta como consequência das condições da classe social, de moradia, de alimentação, do acesso à educação, ao transporte e ao lazer (Oliveira, 2015). Classificar qualquer um destes âmbitos da saúde de vida diária de um indivíduo é também elencar o grau de qualidade de vida que ele possui (Bastos et al., 1996).

Entender os problemas bucais (cárie dentária, traumas dentários, perda de elementos dentários, dentre outros) e suas repercussões negativas na vida de uma pessoa é extrair que os mesmos influenciam com consequências depreciativas na qualidade de vida, como: dor bucal, dificuldade de mastigação, de fala, de deglutição e, até em ansiedade (Barbosa et al., 2013; Foster, et al., 2013; Schuch et al, 2015).

A qualidade de vida é definida como uma autopercepção dos indivíduos sob sua posição social, no contexto cultural e da sistemática de valores que regem sua vivência, e em relação aos seus objetivos, expectativas, padrões e preocupações enraizadas desde os primórdios de sua vida (Who, 1997).

Assim sendo, atuar com uma visão holística acerca do indivíduo deve ser o foco ao tentar metrificar o grau de qualidade de vida que ele se encontra (Oliveira, 2015). Uma vez que ao se relacionar às experiências, expectativas e adaptabilidade das pessoas, a saúde bucal reflete versões atualizadas e importantes dos aspectos fisiológicos, sociais e psicológicos para a qualidade de vida de uma população (Guerra MJC, 2014).

Na percepção de que a saúde bucal é uma fração da saúde geral e primordial para a manutenção da qualidade de vida (Yiengprugsawan; Somkotra, 2011), a expressão qualidade de vida relacionada à saúde bucal vem sendo utilizada quando o objetivo é expor como o impacto da saúde ou das patologias bucais atuam na rotina das pessoas (Al Shamrany, 2006; Oliveira, 2015).

Logo, surge a necessidade de metrificar uma situação de saúde como “boa, razoável ou ruim” de uma percepção tão subjetiva como a qualidade de vida (Abanto et al., 2013; Oliveira, 2015). O desenvolvimento de indicadores

apresenta-se como a solução e ponto de partida para compreender as características clínicas e sociais de um indivíduo que sofre de problemas dentários (Leão; Sheiam, 1995; Schuch et al., 2015).

Logo, usando a normativa que o real estado de saúde de um ser humano deve estar além dos aspectos clínicos, torna-se imprescindível que os indicadores clínicos levem em consideração os resultados da QdVRSB (Jokovic Et Al., 2002).

Em um contexto de Brasil, a Política Nacional de Saúde Bucal atuando na adaptação da situação epidemiológica da população, indica ações de saúde bucal direcionadas às variadas faixas etárias, tendo com base suas necessidades específicas, a fim de atender e coletar métricas nas quais o individuo é inserido holisticamente (fatores clínicos e fatores de qualidade de vida) (Brasil, 2004; Oliveira, 2015).

Nessa perspectiva, o SBBrasil 2010 se tornou o primeiro estudo nacional expressivo a inserir noções sobre qualidade de vida relacionada à saúde bucal (QdVRSB), juntamente com as mais diversas condições clínicas de saúde bucal (Peres, et al., 2013).

De maneira determinante, o uso de questionários atuou na procura de indicadores que possam mensurar a QdVRSB (Barbosa, 2010). Adaptados ao grupo alvo, os questionários avaliam o impacto da saúde bucal no bem-estar de um sujeito (Castro; Portela: Leão, 2007). Expandindo, dessa maneira, para além de critérios exclusivamente clínicos que não permitem uma real precisão no impacto dos problemas bucais na vida diária de um ser humano (Locker Et Al., 2002).

2.2. *Questionários de qualidade de vida sobre a saúde bucal*

Os questionários têm-se tornado importante ferramenta para medição de qualidade de vida no atendimento odontológico, abrindo portas para o desenvolvimento de uma série de instrumentos que tem como objetivo relacionar a qualidade de vida com a saúde bucal (Slade, 1997; Biazevic, 2011).

Dentro dos instrumentos são utilizados indicadores objetivos (normativos ou clínicos) e indicadores subjetivos em saúde bucal que avaliam o bem-estar, auto percepção da saúde bucal própria e a qualidade de vida, sendo mais uma

vertente no crescimento de criação de ferramentas para avaliar QdVRSB (Buczynski et al., 2008).

Respaldando este principio, Lacerda et al. (2008) avaliou a saúde bucal e sua relação com a qualidade de vida em adultos de 35 a 44 anos de idade. Verificou, então, que os hábitos, a visita ao consultório odontológico, a autoavaliação da saúde bucal e os fatores sociodemográficos não influenciaram com a captação de apenas critérios normativos em sua pesquisa. Considerados insuficientes para reportar com exatidão a real interferência da condição de saúde bucal na rotina dos seres humanos em estudo.

Demonstrando que para comprovação do impacto dos problemas bucais na qualidade de vida dos indivíduos, os estudos de cunho epidemiológico têm atuado, além dos critérios clínicos (normativos), como também dos que utilizam medidas relacionadas com a percepção própria (subjetivos) sobre sua saúde e sobre os impactos que se refletem na qualidade de vida individual (Adulyanon; Vourapukaru; Sheiham, 1996).

Assim, instrumentos específicos na captação de dados sobre a qualidade de vida, como questionários estruturados e com validação para as mais diversas populações, inclusive a população brasileira, proporcionam fundamentos que cooperam para tomada de decisões sobre as escolhas de prioridades no planejamento estratégico de recursos para promoção de saúde bucal, tratamento odontológico e no acompanhamento das necessidades de uma população (Leão; Sheiham, 1995; Oliveira, 2015).

Via de regra, para conferir precisão e aplicabilidade em uma população, um instrumento de avaliação da QVRSB deve possuir pontos essenciais, como exemplo: abordar fatores sociais (desempenho escolar e ocupacional), fatores de cunho de função física, ser confiável, simples, sucinto, de fácil administração, de fácil tabulação de dados para computadores e, acima de tudo, reprodutível (Mulhern, 1989; Koot, 2001).

Diversos questionários vêm sendo desenvolvidos, utilizados, adaptados, validados e aplicados em países com escala global (Oliveira, 2015). Com o intuito de comparar qualidade de vida em indivíduos desde sadios até doentes, vivendo em variados contextos sociais, culturais e exercendo as mais diferentes auto percepções sociodemográficas possíveis, os questionários têm a finalidade de demostrar em métricas a real relação entre a saúde bucal e a qualidade de

vida (Jokovic et al., 2002; Fayers; Machin, 2007).

Entretanto, deve-se salientar que como o processo de compreensão sobre qualidade de vida é algo dinâmico e volátil, encontram-se certas dificuldades na captação dos dados. No decorrer do ciclo de vida, um individuo pode sofrer alterações físicas ou psicológicas que atuam alterando o padrão esperado de resposta aos instrumentos aplicados (Zhang; Mcgrath; Hagg, 2007).

Dentre os instrumentos de grande relevância na literatura, para avaliação da QdVRSB, temos o OHIP – The Oral Health Impact Profile e a sua versão abreviada, o OHIP-14. Ambos foram inicialmente desenvolvidos e utilizados para ter sua aplicação em uma população adulta (Slade, 1997).

2.3. *OHIP-14 e seu histórico*

O Oral Health Impact Profile é um instrumento já validado no Brasil para a metrificação da qualidade de vida associada à saúde bucal, utilizado no projeto: Efetividade de ações de promoção à saúde bucal em populações de alto risco social – estudo de coorte prospectivo intervencional (Brasil, 2015).

Composto por 49 questões o OHIP é dividido em sete subescalas: limitação funcional, dor física, desconforto psicológico, incapacidade física, psicológica e social e deficiência das atividades do cotidiano (Slade, 1997). Para mensurar os níveis gerais é necessário utilizar as 49 perguntas a partir do escore total, com um valor máximo de 196. Já no caso de procurar uma classificação específica basta separar cada subescala para observar o impacto em cada âmbito do indivíduo (Slade; Spencer, 1994).

Apesar de ser considerado um excelente método de avaliação da qualidade de vida relacionada a saúde bucal, o OHIP é extenso para a aplicação em pesquisas de grande escala como as pesquisas epidemiológicas. A fim de sanar essa problemática o próprio autor decidiu conduzir um estudo que validasse uma forma simplificada do OHIP com apenas 14 itens com o intuito de verificar se os conceitos originais presentes na sua maior versão (OHIP-49) fossem mantidos (Slade, 1997).

Como resultados de sua procura Slade (1997) observou que o impacto social dos problemas bucais captados dos 14 itens correspondeu a um total de 94% da variação da pontuação do seu primeiro instrumento (OHIP-49) e

identificou um coeficiente de confiabilidade interna alfa de 0,88. Assim sendo, comprovou que ambos os questionários resultavam em modelos multivariados semelhantes relativos do estado bucal e das questões sociodemográficas para avaliar a QdVRSB.

O instrumento de pesquisa do OHIP-14 foi inicialmente construído no idioma inglês, ele foi traduzido e adaptado para o português, além de mais de 15 outros idiomas variados (Almeida; Loureiro; Araújo, 2004; Sanders et al., 2009).

Como definido por Sanders et al (2009) , um instrumento na literatura mundial mais utilizado para avaliar o impacto que as condições de saúde bucal geram para a qualidade de vida de uma pessoa. Como comprovação científica de seu extremo uso por diversos pesquisadores encontram-se versões validadas em países como: Espanha (Castrejon-Perez; Borges-Yanes, 2012), Alemanha (John et al., 2006), Itália (Segu et al., 2005), Grécia (Papagiannopoulou et al., 2012), Coréia (Bae et al., 2007), China (Xin & Ling, 2006), Brasil (Oliveira; Nadanosky, 2005) entre outros.

Assim sendo, é possível observar que o questionário do OHIP-14 abrange as mais variadas faixas etárias, expandindo seu conceito inicial de criação e desenvolvimento no qual visava apenas ao uso em adultos. Ng e Leung (2006) associaram o impacto periodontal e sua relação com os escores de QV (Qualidade de vida). López e Baelum (2007) avaliaram uma população chilena de grupos etários que variaram de 12 a 21 anos por meio do OHIP.

Já Lawrence et al. (2008) conduziram um estudo de coorte durante 32 anos na Nova Zelândia em usuários de serviços odontológicos sobre sua QV. Na coreia Choi et al. (2015) associaram a maloclusão com a qualidade de vida da saúde bucal em jovens adultos. Em solo brasileiro, o OHIP-14 foi validado por Oliveira; Nadanovshy (2005) para avaliar a qualidade de vida relacionada ao impacto da dor de dente em mulheres grávidas. Ainda no Brasil, Martins et al. (2014) realizaram um estudo transversal entre idosos na faixa de 65 a 74 anos para avaliar o impacto das desordens bucais e a qualidade de vida.

O instrumento do OHIP-14 no Brasil foi validado por Oliveira; Nadanosky (2005), com a execução de um teste-reteste que demonstrou reprodutibilidade do instrumento. Tal validação foi feita a partir de uma subamostra de 65 participantes selecionados dentre aqueles que informaram ter a experiência de dor de dente nos últimos 6 meses. O tempo intervalo entre as aplicações foi de

1 dia até 3 dias de variação.

Em um contexto de pesquisas que procuram, cada vez mais, compreender melhor as condições de saúde bucal associadas com os impactos na qualidade de vida é de extrema importância a correta validação, tradução e aplicação de instrumentos capazes de metrificar os conceitos subjetivos desta temática (Campos et al., 2003; Barbieri; Rapoport-*/b, 2009; Oliveira, 2015).

3. CAPÍTULO 1

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Dental caries, tooth loss and quality of life of individuals exposed to social risk factors in Northeast Brazil

Luísa Simões de Albuquerque[1]
https://orcid.org/0000-0001-7448-7868

Raiana Gurgel de Queiroz[1]
https://orcid.org/0000-0003-3972-2759

Jenny Abanto[2]
https://orcid.org/0000-0001-5088-878X

Marcelo Jose Strazzeri Bönecker[3]
https://orcid.org/0000-0001-9786-6473

Fábio Correia Sampaio[1]
https://orcid.org/0000-0003-2870-5742

[1]Federal University of Paraíba, Department of Clinical and Community Dentistry, João Pessoa, Paraíba, Brazil.
[2]Internacional University of Catalunya, Barcelona, Catalunya, Spain.
[3]University of São Paulo, Faculty of Dentistry, São Paulo, Brazil.

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Corresponding author:
Prof. Dr. Fábio Correia Sampaio
Programa de Pós-Graduação Stricto sensu em Odontologia, Universidade Federal da Paraíba (UFPB), PB, Brazil
Phone: + 55 83 3216 7795
Fax: + 55 83 3216 7409
E-mail: fcsampa@gmail.com

Abstract:

Objectives: (i) to estimate the prevalence of dental caries (DMFT) and tooth loss in individuals exposed to social risk factors for poor health outcomes in Northeastern Brazil; (ii) to evaluate the relative association of these parameters with the quality of life related to oral health (OHRQoL) among this population. ***Methods:*** A population-based cross-sectional survey was conducted in 28 cities classified as localities at social risk in Northeastern Brazil. All permanent residents (12, 15-19, 35-44 and 65-74 years-old) in urban areas were eligible. A total of 3,063 participants comprises the sample. A questionnaire containing questions about socioeconomic and behavioral conditions was applied. Dental exams (DMFT) were carried out by calibrated local dentists under indirect day light during home visits and after a supervised toothbrushing session. Oral health self-perception was surveyed with the OHIP-14. Descriptive analyzes were performed to assess measures of central tendency (means, standard deviations, medians) of individual and total domain scores of the OHIP-14. The Poisson regression analysis with robust variance was performed to correlate individual domains and total OHIP-14 scores with dental caries, tooth loss and socioeconomic/demographic characteristics of the sample. ***Results:*** Mean DMFT(SD) values were 2.68 (4.01), 4.84 (4.30), 15.35 (7.26) and 26.72 (8.03) for 12, 15-19, 35-44 and 65-74 years-old, respectively. Seventy percent of the individuals were partially edentulous and total edentulism affected 13% of this population. Caries experience (DMFT and its components) and tooth loss significantly increased with age and impacted OHRQoL. Physical pain (5.8%) and psychological discomfort (5.8%) were the most frequently occurring OHIP-14 dimensions. The multivariate adjusted model showed a significant negative impact on quality of life related to the prevalence of untreated caries (RR=1.54; 95% CI=1.37-1.72), prevalence of edentulism (RR=1.29; 95% CI=1.08-1.53) and need of prothesis (RR= 0.54; 95% CI=0.90-0.97). Socioeconomic/demographic characteristics such as income, scholarity, sex, age, oral hygiene habits were also related to quality of life. **Conclusions:** Except for the 12 years-old, there is a high prevalence of dental caries and edentulism in this population. Quality of life is negatively impacted by these oral conditions in all life cycle stages. However, there was a trend to find more negative scores in older adults.

Keywords: Dental Health Surveys, Dental caries, Tooth Loss, Edentulous, Socioeconomic Factors, Quality of Life.

Introduction

The concept of oral health-related quality of life (OHRQoL) emerged in the 1980s and in simple terms corresponds to the impact which oral health or diseases have on the individual's daily functioning, well-being, or overall quality of life. Recent reports support that oral health problems can significantly affect functional and social aspects, with a consequent reduction in quality of life (1-4).

Untreated carious lesions of permanent teeth were the most prevalent health condition in 2010, affecting approximately 35% of the total population of the world (more than 2 billion people) (5). Although the prevalence rates of untreated dental caries decreased by 4% in the last decade, this recent estimate clearly indicates that a significant number of individuals worldwide are affected by dental caries that consequently may have some impact in their quality of life (6,7).

There is evidence that the high burden of decayed teeth in Latin American and Caribbean countries significantly affects individual's quality of life. However, the high level of heterogeneity among the studies as well as differences in methodological issues hindered comparison of evidence between these reports. The lack of updated information on dental caries prevalence and severity is particularly observed for longitudinal and population-based studies in Latin America and Caribbean countries. (8, 9)

The prevalence of dental caries and tooth loss (edentulism) in the Northeastern region of Brazil are regarded as moderate to high for both oral health parameters (SB Brasil 2013). The epidemiological profile of caries in primary and permanent dentition is characterized by an early onset of the disease, high prevalence of untreated caries, increased severity in the cycle of life and a heterogeneous distribution pattern of caries between regions of the country (10-12). For instance, the average DMFT index in 12 years-old in the countryside of Northeastern region is significantly higher (DMFT = 3.84) when compared to the national average (DMFT =2.1) (10).

Estimates indicate that edentulism affects 3.3% of the population of the world and is highly prevalent among older adults. There are still considerable inequalities in its distribution indicating that affects more women and those in the lowest levels of income (13). The prevalence of caries is set to increase in the coming years because of a growing ageing population and a concomitant grown in levels of edentulousness (2, 14).

Edentulism is highly prevalent in Brazil and is still linked to social inequalities. Based on the last national epidemiological survey, total and partial edentulism affected

92.7% of the 65 to 74 years-old individuals with higher number of this population living in North and Northeastern countryside (10).

It is important to point out that epidemiological data on oral health conditions in the countryside of Brazil are few or outdated and there is scarce evidence concerning the potential impact of dental caries and edentulism on quality of life in populations exposed to social risk factors (15-17).

In addition, most of the studies relating dental caries and quality of life of Brazilian residents had focused on children, adolescents, or other specific age groups or individuals with a particular need or condition (18-20). Dental caries is a high prevalent disease that often do not cause symptoms in early stages. This might explain why some clinical indicators such as number of decayed teeth are not strongly associated with impairment OHRQoL (21). On the other hand, there is strong evidence that tooth loss impacts quality of life (21).

The aims of this cross-sectional population-based study are to estimate the prevalence of dental caries (DMFT) and tooth loss in individuals exposed to social risk factors for poor health outcomes in northeastern region of Brazil; and to evaluate the relative association of these parameters (caries and tooth loss) and potential social determinants with the quality of life related to oral health (OHRQoL) among this population.

Methods

The conduct and report of this study cross-sectional population-based study are consistent with STROBE guidelines. (22)

Ethical aspects

The study protocol was approved by the Ethics Committee for Research Involving Human Beings of the Federal University of Paraíba - UFPB (CAAE: 3087414.9.0000.5188) and followed the guidelines and regulated norms for research involving human beings and complied with resolution 466/2012, of the National Council Ministry of Health, Brasília – DF. All participants were informed and only included in the study after signing the Informed Consent Form.

Study design

This is a population based cross-sectional study (April of 2015 until April of 2017) in which subjects were clinically examined to calculate their dental caries experience. The participants were asked to complete the OHIP-14 questionnaire in order to quantify the OHRQoL profile.

Study area

The state of Paraíba is a low-to-middle-income state with a population of 4 million that was ranked among the last five states of Brazil with the lowest 2010 IDHM. In 2020, the per capita income in Paraiba was ~US$ 1,582.19 and was ranked among the lowest in Brazil (23). Paraíba has the seventh lowest proportion of people who have health insurance in Brazil. According to the National Health Survey, around 12.2% of the Paraíba population has access to health services. (23). The Human Development Index (HDI) score is 0.658 (23).

The 28 municipalities of this survey were classified as a locality of social vulnerability by the Ministry of Health. Basically, the following inclusion criteria was applied: a) cities (urban areas only) with less than 50,000 thousand inhabitants; b) lower human development indices according to indicators the Atlas of Human Development in Brazil 2013 (24); c) the cities needed be listed as a priority municipality by the Federal Government's "*Brasil Sem Miséria*" Plan which included localities for social interventions for human development (25). The HDI of the cities of this study ranged from 0.513 in Gado Bravo (8,365 habitants) up to 0.628 in Serra Branca (12,973 habitants).

Study population and data collection

For this population-based survey the sample was accessed following a census method. Hence, all individuals of the target ages living within the enumeration area (urban zone) were invited to participate in the survey. The approach was similar to the sampling plan used by the National Oral Health Survey (26). Basically, each of the selected municipality composed a domain. All enumeration areas within the domain (urban area) were included. Twenty cities (5,000 - 15,000 inhabitants) contributed with 2 or 3 enumeration areas covering the whole urban area. For eight cities (16,000-20,000 inhabitants), a simple random selection was carried out to investigate 4 out of 6 enumeration areas. The enumeration area is a map in digital format that corresponds to the smallest territorial portion used by The Brazilian Institute of Geography and Statistics

(IBGE) to plan and carry out data collection for the Census and Statistical Surveys. It depicts all residential houses as well as social facilities within a specific area of the city (27). Based on the Brazilian census, it was estimated a total target population of 19,500 inhabitants in the 77 enumeration areas of the study (28).

However, part of this group was from rural communities. As a result, considering the age groups in the urban areas, it was estimated a total target population of approximately 12,000 inhabitants. A list of all houses and permanent residents of the target ages living in the enumeration area were prepared. All examiners carried out the exams during health home visits. After three consecutive attempts to perform the examination-data collection visit, the house and consequently the participants were excluded. Finally, the sample size consisted of 4,076 individuals that were invited to participate. However, 498 individuals refused the dental exams and 515 refused to respond the OHIP-14 questionnaire. As a result, the final number of individuals in this survey was 3,063 distributed in 12-years-old (n = 194), 15 to 19 (n = 817), 35 to 44 (n = 1,302) and 65 to 74 (n = 750) years of age.

The training and calibration of field teams formed by dentists (n=42), dental auxiliaries (n=42), and community health agents (n=64) were carried out annually in presential mode through workshops for 8 or 10 field teams simultaneously formed by (examiner + note taker). Intra-examiner and inter-examiner reliability were calculated using the Kappa agreement test (for dental caries) weighted for each examiner, age group and condition studied, with a value of 0.65 as the minimum acceptable limit. Reproducibility intra-examiner was obtained by comparing the results of the examiners obtained on the first day of analysis and after one week of exams. All exams were performed after toothbrushing sessions under indirect daylight using WHO probe (26, 29). The Decayed, Missing, and Filled Teeth (DMFT) index was used for accessing caries experience and tooth loss (29).

All participants examined were invited to respond to a questionnaire containing questions related to the socioeconomic profile, use of dental services, health habits and oral health self-perception. Participants were also questioned about their social individual profile, such as family nucleus, education, household overcrowding, income, participation in social activities, self-perception as a religious individual, tobacco use and alcohol consumption. The questions were applied to the head of the household to obtain information relating to the family and the minors and to the individual examined when they have reached the Brazilian legal age (18 years-old).

Oral Health Self-perception

The OHRQoL (the outcome) was evaluated using the Portuguese OHIP-14 version (30). OHIP-14 was calculated by summing responses over all 14 items, ranging from 0 to 56, and was used as an indication for the severity of the impact on OHRQoL—the higher the score the more the negative impact. The maximum possible score was 56 points. Based on a previous study the total and final scores in each domain were dichotomized in two levels: "impact present" (for "often" or "all the time" answers) and "no impact" (for "never", "hardly ever" or "sometimes" answers) (31). The total scores were also classified in three levels based on quartiles: 0 up to 8 (P75, indicating the 75^{th} percentile), 8 (inclusive) up to 15 (P75-90, indicating the range of the 75^{th}-90^{th} percentile, and above 15 (>P90, for the scores above 90^{th} percentile) (31, 32).

Dental health indicators (predictors) were derived from individual tooth- and surface-level data allowing for calculating number of decayed surfaces (D), number of decayed missed filled surfaces (DMFT), and significant caries (SiC) indices.

Statistical analysis

Data were stored in Excel™ spreadsheets and descriptive analyzes were performed to assess measures of central tendency (means, standard deviations, medians, and ranges) of individual and total domain scores of the OHIP-14 and DMFT. Absolute and relative frequencies were used for descriptive analyses. OHIP-14´s seven domains, were adopted as dependent variable. DMFT and its components, number of caries-free individuals, variables related to caries experience as well as all individual and sociodemographic characteristics were treated as independent variables. An ordinal scale for tooth loss and the percentage of partial and total edentulousness individuals were calculated.

Statistical analyses were performed using SPSS 22 (IBM Corp, Armonk, NY) and STATA 8.0 (Stata Corp, College Station, USA). To evaluate the data, the sample was stratified in relation to gender, age, or age group. The Kolmogorov-Smirnov test was used to evaluate normality. Due to non-normal distribution, comparisons were carried out using nonparametric tests: Kruskal-Wallis test followed by Bonferroni-adjusted Mann-Whitney as post-hoc test. Bivariate analyses were performed with Chi-square and Fisher´s exact tests. Correlations between OHIP and DMFT and its components were analyzed by

Spearman correlation test. The Poisson regression analysis with robust variance was performed to correlate individual domains and total OHIP-14 scores with dental caries, tooth loss and socioeconomic/demographic characteristics of the sample (33). Significance level was previously set at $P<0.05$.

Results

Table 1 shows the relationship of the sociodemographic characteristics of the participants with the OHIP-14 classified in three percentiles (P75, P75-P90 and >P90). OHIP-14 was virtually related to all characteristics investigated except for household agglomeration, having their own toothbrush, smoking and alcohol consumption.

Considering the potential impact in quality of life indicated by the association of the most negative answers ("often" and "all the time"), it could be observed that physical pain (5.8%) and psychological discomfort (5.8%) were the most frequently occurring OHIP-14 dimensions (Table 2).

Mean DMFT(SD) values were 2.68 (4.01), 4.84 (4.30), 15.35 (7.26) and 26.72 (8.03) for 12, 15-19, 35-44 and 65-74 years-old, respectively. All DMFT mean values are higher than the national mean numbers. Moreover, except for 12 years old, all age groups presented higher values than the regional numbers from the last national survey (SB Brasil 2010).

Spearman correlation tests between OHIP-14 and its domains under the influence of caries experience (DMFT and its components) showed (*r*) values ranging from 0.040 up to 0.149, in which a statistically significant correlation was observed (data not shown). The only exceptions were the correlations for filled teeth and the physical disability, psychological disability, and social disability. The Spearman correlations between "caries-free" (DMFT=0) and OHIP-14 domains showed negative *r* values from -0.042 up to -0.105 for all domains. Finally, very high *r* values were found for correlations between all OHIP-14 domains and edentulism, particularly for functional limitation, physical pain, psychological discomfort, and psychological disability.

Seventy percent of the individuals were partially edentulous and total edentulism affected 13% of this population. Caries experience (DMFT and its components) and tooth loss significantly increased with age and impacted OHRQoL.

The univariate analysis considering each oral condition and sociodemographic factor shows that the recently topical fluoride application, need for prosthesis, prevalence of edentulism, teeth lost due to caries, prevalence of caries experience and prevalence of

untreated caries were all correlated with the outcome variable (OHRQoL) ($P < 0.05$) (Table 4). The covariate that represents whether the person has beliefs in their life had a positive impact on the individuals' QoL (RR = 1.02; 95% CI = 0.86, 1.21; P = 0.831).

The final multivariate-adjusted model (Table 5) comprised five covariates. The increase in prevalence of untreated caries severity showed an increased negative impact on the subjects' QoL (RR = 1.54; 95% CI = 1.37, 1.72; $P < 0.001$). Also, a family income greater than or equal to two BMW had a positive impact on the parents' QoL (RR = 1.06; 95% CI = 0.99, 1.20; P = 0.323) (Table 4). All analysis presented power values higher than 90%.

Discussion

This survey investigated the impact of dental caries experience and tooth loss (partial and total edentulism) on the quality of life related to oral health (OHRQoL) of Brazilians exposed to negative social determinants. To the best of our knowledge, this is the first population-based survey applying a census method that evaluated this relationship in more than 3,000 inhabitants living in the same challenging environment. Moreover, apart from being a transversal study which render some limitations in the statistics analyses, the survey evaluated caries experience, edentulism and quality of life in different age groups providing useful information about these relationships throughout the cycle of life.

A positive aspect of the study was that dental caries was accessed after a toothbrushing session. This procedure certainly helped to clean the teeth surfaces and contributed to caries detection. On the other hand, tooth drying was performed with cotton rolls and not with the aid of compressed air delivered by a dental compact compressor as indicated as ideally by previous epidemiological studies (34).

It is important to point out that even though Kappa inter examiner agreement scores were obtained in presential calibration workshops for groups of field teams, the *in lux* training calibration sessions used the same photographs of dental caries in different levels of severity in order to minimize any disagreement.

The cities included in this study share similar social risk factors that impact local economy, education, and many other aspects of the participants. For instance, these cities also share similar environmental risk factors such as long drying periods. In the

countryside of Paraiba state, especially in the semiarid region, there was a lack of rainfall during the time period of 1981–2019. Hence, this study was performed during severe environmental risk for many of the participants that were having difficulties to have potable water on a regular basis. In other words, for some participants, there was a problem of food insecurity (35).

Twenty years ago, at least 30% of the population in Paraíba was regarded as vulnerable, in other words, unable to afford the basic daily caloric intake. However, the quality of life, measured by an index encompassing 21 social indicators increased 37 percent in Paraíba, the largest improvement by a single state in Brazil during the 1990-2000 decade (36). However, this positive scenario might not be consistent due to the pandemic period in the region (2020-2021) that may increase the social vulnerability of small cities of Brazil (37). Thus, the data of our survey might be useful as a baseline material since it can be useful to monitor the impact of caries and edentulism on quality of life after the pandemic period.

This study clearly indicates that caries experience and edentulism has a substantial impact in the quality of life of this populations. All DMFT values as well as the results for its components are higher than national observations. Interestingly, the decayed teeth were higher for 12 years-old whereas for the 15-19 years-old the component with highest mean value was filled teeth. For 35-44 years-old and 65-74 years-old missing teeth was the most important component. This number gives the impact of dental caries throughout the cycle of life. As a result, edentulism is highly prevalent in this population.

Conversely to the DMFT with so few classified as “caries-free” (DMFT=0), the OHIP-14 scores were very much skewed to the left with median values with score zero, except for the 35-44 years-old group (Table 3).

Confirming Oliveira's study (2021), women in this survey had a higher rate to explain the impact of dental caries experience and untreated dental decay on OHRQoL with a mean of 3.43 in a confidence interval of 2.80 to 4.21 (Table 4).

The comparative relationship between OHIP-14 scores and some variables found in table 4 may result in confounding interpretations, such as: individuals with more than 10 years of education might have a greater experience of caries or, respondents with income greater than 3 minimum wages might have a greater negative impact in the OHRQoL. This type of observation has been also reported previously. (33, 38) In the study carried out by Foley (2019), several comparisons performed by complex regression analyzes end up as confounding factors. As a result, all interpretations from this type of

analyzes must be made with caution since the causes are not linear, and some approaches do not allow us to directly calculate the effects.

The interpretation must go beyond the expected answer. For instance, the with high education may be unemployed or still earning a large monthly salary but sharing with a large family and with no other means of providing income for the household (40). Causes and consequences relationships are questioned, people with higher education or a high income are still susceptible to caries disease, due to the categorical nature of many variables used in the model. (41)

Finally, it is important to point out that all participants of this survey have limited access to private oral health services. The access to oral health care in these cities is mainly provided by the Primary Health Care (PHC) from The Brazilian National Health System (SUS). The high number of untreated caries and low number of filled teeth indicate that Primary Health Care (PHC) services in this region faces some level of fragmentation of health actions. Notwithstanding that in this scenario, the evaluation of OHRQoL is a very complex issue since the psychosocial perception of the individual is also a non-normative evaluation of their own oral health condition. In other words, it cannot be ruled out that this population may have difficulties about the full knowledge of the problems they face. Thus, the dental examination at home with the careful supervised oral hygiene session during data collection can unfortunately reinforce the personal impression of being fully assisted on their treatment needs. This impression is certainly different for those who are edentulous. To support this view, in this survey that showed dental mutilation at an early age in this population, edentulism, a long-lasting psychological impression of missing teeth impacted more the psychological discomfort than the functional limitation domain. Future studies in this region must include the provision of access to appropriate dental care for effective public policies that are capable of controlling dental caries and consequently reducing edentulism.

Conclusion

Except for the 12 years-old, there is a high prevalence of dental caries and edentulism in this population. Quality of life is negatively impacted by these oral conditions in all life cycle stages. However, there was a trend to find more negative scores in older adults.

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Table1. Socioeconomic profile and studied variables according to Oral Health Impact Profile (OHIP-14) in individuals from Paraíba, Brazil.

Sociodemographic characteristics	Total	OHIP-14			
		[0-8.0)	[8.0–15.0)	> 15**	*p*
	n (%)	n (%)	n (%)	n (%)	
Sex					
Male	1,188 (38.8)	956 (80.5)	171 (14.4)	61 (5.1)	0.011
Female	1,875 (61.2)	1,424(75.9)	322 (17.2)	129 (6.9)	
Income					
≤ 2 minimum wages (BMW)	1,882 (61.4)	1,477(78.5)	283 (15.0)	122 (6.5)	
≥ 3 minimum wages (BMW)	922 (30.1)	691 (74.9)	177 (19.2)	54 (5.9)	0.031
No reply	259 (8.5)	212 (81.9)	33 (12.7)	14 (5.4)	
Household agglomeration					
Ideal (≤ 2 person per bedroom)	2,685 (87.7)	2,088 (77.8)	437 (16.3)	160 (6.0)	
Not ideal (>2 person per be	277 (9.0)	207 (74.7)	43 (15.5)	27 (9.7)	0.077
No reply	101 (3.30)	85 (84.2)	13 (12.9)	3 (3.0)	
Spiritual person					
Yes	2,270 (74.1)	1,780 (78.4)	345 (15.2)	145 (6.4)	
No	677 (22.1)	501 (74.0)	133 (19.6)	43 (6.4)	0.009
No reply	116 (3.8)	99 (85.3)	15 (12.9)	2 (1.7)	
Own toothbrush					
Yes	2,953 (96.4)	2,298 (77.8)	469 (15.9)	186 (6.3)	
No	45 (1.5)	29 (64.4)	13 (28.9)	3 (6.7)	0.088
No reply	65 (2.1)	53 (81.5)	11 (16.9)	1 (1.5)	
Use fluoride of toothpaste					
Yes	2,887 (94.3)	2,251 (78.0)	458 (15.9)	178 (6.2)	
No	112 (3.6)	73 (65.2)	30 (26.8)	9 (8.0)	0.007
No reply	64 (2.1)	56 (87.5)	5 (7.8)	3 (4.7)	
Brush teeth frequently					
Yes	2,791 (91.1)	2,187 (78.4)	432 (15.5)	172 (6.2)	
No	191 (6.3)	128 (67.0)	49 (25.7)	14 (7.3)	0.007
No reply	81 (2.6)	65 (80.2)	12 (14.8)	4 (4.9)	
Tobacco use					
Yes	317 (10.3)	233 (73.5)	53 (16.7)	31 (9.8)	
No	2,669 (87.2)	2,086 (78.2)	426 (16.0)	157 (5.9)	0.059
No reply	77 (2.5)	61 (79.2)	14 (18.2)	2 (2.6)	
Consume alcohol					
Yes	644 (21.0)	485 (75.3)	113 (17.5)	46 (7.1)	
No	2,370 (74.3)	1,852 (78.1)	374 (15.8)	144 (6.1)	0.143
No reply	144 (4.7)	43 (87.8)	6 (12.2)	0 (0.0)	
Need for prosthesis					
Yes	1,393 (45.4)	992 (71.2)	268 (19.2)	133 (9.5)	
No	1,425 (46.5)	1,176 (82.5)	199 (14.0)	50 (3.5)	<0.001
No reply	245 (8.1)	212 (86.5)	26 (10.6)	7 (2.9)	
Prevalence of caries experience					
Yes	2,859 (93.3)	2,196 (76.8)	477 (16,7)	186 (6.5)	<0.001
No	204 (6.7)	184 (90.2)	16 (7.8)	4 (2.0)	
Prevalence of untreated caries					
Yes	1,497 (48.9)	1,221 (81.6)	215 (14.4)	61 (4.1)	<0.001
No	1,566 (51.1)	1,159 (74.0)	278 (17.8)	129 (8.2)	
Prevalence of edentulism					
Yes	2,200 (71.8)	1,645 (74.8)	389 (17.7)	166 (7.5)	<0.001
No	863 (28.2)	735 (85.2)	104 (12.1)	24 (2.8)	

* *P* value calculated by chi-square test of Fisher´s exact test. ** Cut-off points selected according to quartiles. Scores [0-8) indicates the values below the75th percentile (P75), scores [8.0–15.0) = P75-P90 and scores >15 represents the >P90. BMW= Brazilian Minimum Wage.

Table 2. Distribution of individuals (n= 3,063) per frequency of answers classified as "no impact" (never, hardly ever and sometimes), and "impact present" (often and all the time), according to OHIP-14 dimensions.

OHIP-14 dimensions	No impact n (%)	Impact present n (%)
Functional Limitation	3,025 (98.8)	38 (1.2)
Physical Pain	2,886 (94.2)	177 (5.8)
Psychological Discomfort	2,885 (94.2)	178 (5.8)
Physical Disability	2,972 (97.0)	91 (3.0)
Psychological Disability	3,000 (97.9)	63 (2.1)
Social Disability	3,027 (98.8)	36 (1.2)
Handicap	3,028 (98.9)	35 (1.1)

Table 3. Distribution of mean (SD), confidence interval and median of DMFT and its components and OHIP-14 total scores, the frequency of answers of "impact present" given by OHIP-14 scores (P90), the number and percentage of "caries-free" and edentulism according to different age groups (n=3,063).

Categories	Age groups			
	12 years-old	**15-19 years-old**	**35-44 years-old**	**65-74 years-old**
Caries experience				
DMFT				
Mean (SD)	2.68 (4.01)[a]	4.84 (4.30)[b]	15.35 (7.26)[c]	26.72 (8.03)[d]
Confidence interval	2.11-3.25	4.55-5.14	14.96-15.75	26.14-27.30
Median	2.00	4.00	15.00	32.00
Decayed Teeth (DT)				
Mean (SD)	1.16 (1.17) [a]	1.84 (2.53) [a,b]	2.33 (3.39) [b]	1.11(2.66)[c]
Confidence interval	0.92-1.40	1.66-2.01	2.15-2.52	0.92-1.30
Median	0.50	1.00	1.00	0.00
Filled Teeth (FT)				
Mean (SD)	0.93 (1.70)[b]	2.16 (3.01) [c]	4.15 (4.46)[d]	0.40 (1.51)[a]
Confidence interval	0.69-1.18	1.95-2.36	3.91-4.39	0.29-0.51
Median	0.00	1.00	3.00	0.00
Missing teeth (MT)				
Mean (SD)	0.58 (3.30) [a]	0.84 (1.95)[b]	8.88 (7.72) [c]	25.21 (9.36)[d]
Confidence interval	0.11-1.05	0.70-0.97	8.46-9.30	24.53-25.88
Median	0.00	0.00	7.00	31.00
"Caries-free" n (%)	5 (29.90)	122 (14.90)	14 (1.10)	10 (1.30)
Partial edentulism n (%)	32 (16.50)	276 (33.80)	1,168 (89.70)	724 (96.50)
Total edentulism n (%)	2 (0.50)	3 (0.20)	34 (8.30)	372 (91.00)
OHIP-14				
Mean (SD)	2.29 (5.74)[a]	3.69 (6.34)[b]	5.91 (8.45)[c]	4.95 (7.61)[d]
Confidence interval	1.48-3.10	3.25-4.12	5.45-6.37	4.41-5.50
Median	0.00	0.00	2.00	0.00
Impact present n (%)	2 (1.00)	30 (3.70)	114 (8.80)	44 (5.90)

Different letters indicate statistically significant difference at $p < 0.05$ using Kruskal-Wallis test followed by Bonferroni-adjusted Mann-Whitney test as post-hoc test. SD, standard deviation.

Table 4. Univariate analysis for association between dental caries experience and untreated dental decay in relation to overall OHRQoL in subjects in Paraíba, Brazil.

Covariates	*n (%)*	Robust RR (95% IC)	*P*-value*
Age Group			
12 years-old	194 (6.3)	1.61 (1.11, 2.34)	0.036
15 - 19 years-old	817 (26.7)	2.58 (1.80, 3.70)	<0.001
35 - 44 years-old	1,302 (42.5)	2.16 (1.50, 3.13)	0.002
65 - 74 years-old	750 (24.5)	2.29 (1.61, 3.25)	0.001
Sex			
Male	1,188 (38.8)	1.24 (1.10, 1.39)	<0.001
Female	1,875 (61.2)	3.43 (2.80, 4.21)	<0.001
Scholarity			
Illiterate	386 (12.6)	0.91 (0.77, 1.08)	0.299
≤ 10 of study	2,064 (67.4)	0.94 (0.73, 1.20)	0.618
> 10 of study	218 (7.1)	5.37 (4.60, 6.27)	<0.001
Household agglomeration			
Ideal (≤ 2 person per bedroom)	2,685 (87.6)	1.19 (0.99, 1.43)	0.063
Not ideal (>2 person per bedroom)	277 (9.0)	4.03 (3.26, 4.98)	<0.001
Income			
≤ 2 minimum wage (BMW)	1,882 (61.4)	1.06 (0.94, 1.20)	0.323
≥ 3 minimum wage (BMW)	922 (30.1)	4.52 (3.79, 5.38)	<0.001
Own toothbrush			
Yes	2,953 (96.4)	1.25 (0.84, 1.87)	0.273
No	45 (1.5)	3.88 (2.57, 5.87)	<0.001
Use fluoride of toothpaste			
Yes	2,887 (94.2)	1.39 (1.09, 1.77)	0.008
No	112 (3.7)	3.47 (2.66, 4.51)	<0.001
Brush teeth frequently			
Yes	2,791 (91.1)	1.38 (1.15, 1.65)	0.001
No	191 (6.2)	3.45 (2.80, 4.26)	<0.001
Quantity of toothpaste for brushing teeth			
Rice grain	244 (7.9)	1.24 (0.99, 1.54)	0.060
Pea seed	1,112 (36.3)	1.22 (0.98, 1.52)	0.069
Full length of bristles	1,534 (50.1)	4.00 (3.27, 4.90)	<0.001
Recently topical fluoride application			
Yes	587 (19.2)	1.51 (1.30, 1.77)	<0.001
No	2,309 (75.4)	2.30 (1.72, 3.08)	<0.001
Need for prosthesis			
Yes	1,393 (45.5)	0.62 (0.55, 0.69)	<0.001
No	1,425 (46.5)	10.05 (8.47, 11.94)	<0.001
Consume alcohol			

Yes	644 (21.0)	0.92 (0.81, 1.05)	0.202
No	2,370 (77.4)	5.67 (4.50, 7.15)	<0.001
Alcohol consumption frequency			
Everyday	194 (6.3)	0.85 (0.67, 1.08)	0.190
Sometimes	443 (14.5)	0.82 (0.66, 1.02)	0.077
Never	1,963 (64.1)	5.82 (4.73, 7.15)	<0.001
Tobacco use			
Yes	317 (10.3)	0.78 (0.65, 0.93)	0.006
No	2,669 (87.1)	7.76 (5.54, 10.88)	<0.001
Pray			
Yes	2,454 (80.1)	0.98 (0.85, 1.15)	0.848
No	508 (16.5)	4.98 (4.14, 6.00)	<0.001
Religious person			
Yes	2,495 (81.4)	0.98 (0.85, 1.14)	0.807
No	462 (15.1)	5.02 (4.18, 6.02)	<0.001
Spiritual person			
Yes	2,270 (74.1)	1.11 (0.97, 1.26)	0.117
No	677 (22.1)	4.33 (3.65, 5.15)	<0.001
Have beliefs in life			
Yes	2,560 (83.5)	1.02 (0.86, 1.21)	0.831
No	388 (12.7)	4.82 (3.94, 5.91)	<0.001
Prevalence of edentulism			
Yes	2,200 (71.8)	3.23 (2.85, 5.22)	<0.001
No	863 (28.2)	1.70 (1.48, 1.96)	<0.001
Teeth lost due to caries			
0 teeth	863 (28.2)	1.72 (1.48, 2.01)	<0.001
1-10 teeth	1,074 (35.1)	2.00 (1.68, 2.38)	<0.001
11-20 teeth	466 (15.2)	1.45 (1.22, 1.73)	<0.001
21-32 teeth	660 (21.5)	3.23 (2.85, 3.66)	<0.001
Prevalence of caries experience			
Yes	2,859 (93.3)	2.07 (1.50, 2.86)	<0.001
No	204 (6.7)	2.44 (1.75, 3.38)	<0.001
Prevalence of untreated caries			
Yes	1,566 (51.1)	3.86 (3.54, 4.20)	<0.001
No	1,497 (48.9)	1.50 (1.34, 3.38)	<0.001
Participate in social activities			
Yes	825 (26.9)	0.98 (0.87, 1.11)	0.807
No	2,097 (68.4)	5.00 (4.01, 6.22)	<0.001

Table 5. Final multivariate-adjusted model for association between dental caries experience and untreated dental decay on OHRQoL in subjects in Paraíba, Brazil.

Independent variables	***n***	**RR (95% IC)**	***P*-value***
Prevalence of untreated caries	1,566	1.54 (1.37-1.72)	<0.001
Prevalence of edentulism	2,200	1.29 (1.08-1.53)	0.005
Need for prosthesis	1,393	0.94 (0.90-0.97)	<0.001
Age Groups			
12 years-old	194	1.48 (1.02-2.15)	0.036
15 - 19 years-old	817	1.95 (1.34-2.83)	<0.001
35 - 44 years-old	1,302	1.80 (1.23-2.64)	0.002
65 - 74 years-old	750	1.22 (1.09-1.37)	0.001
Sex	3,063	1.47 (0.98-2.21)	0.064

RR, rate ration; IC, confidence interval; P-value, probability of significance.
*Calculated by Qui-square test.

4. CONSIDERAÇÕES GERAIS

Ressalta-se que o estudo advém de uma Participação Público Privada (PPP) entre o Ministério da Saúde e a empresa Colgate-Palmolive a fim de auxiliar na execução e tornar a pesquisa possível. A pesquisa iniciou com o intuito de estimar a prevalência de cárie, necessidade de tratamento em populações de elevado risco social na Paraíba e o impacto dessas condições para a qualidade de vida. Além de contribuir para o controle da cárie dentária no estado da Paraíba.

A empresa Colgate Palmolive LTDA enviou para o projeto um total de 2.343.153 kits ao longo dos anos do projeto. Ressalta-se que toda população urbana dos municípios beneficiados recebeu os kits de higiene. Atualmente, o acordo da empresa com o Ministério da Saúde (PPP) já encerrou.

A idade índice e grupos etários estipulados foram devido a: 12 anos, devido a ser a idade de monitoramento global da cárie, para comparações internacionais e o acompanhamento das tendências da doença. Grupo de 15 a 19 anos, serem a real avaliação das condições de saúde bucal em adolescentes é um indicador importante, particularmente quando analisado a partir das tendências estabelecidas desde a infância. Grupo de 35 a 44 anos, por ser o padrão para avaliar condições de saúde bucal em adultos, como o efeito total da cárie dentária, o nível de gravidade do envolvimento periodontal ou os efeitos gerais dos tratamentos prestados.Por fim, o grupo de 65 a 74 anos, pois o dados deste grupo são cada vez mais importantes tanto para o planejamento em saúde como para o monitoramento dos efeitos gerais dos serviços odontológicos prestados à população.

Em cada um dos 28 municípios em estudo as equipes de saúde bucal presentes nas Unidades Básicas de Saúde foram convidadas para participar e auxiliar na coleta de dados a partir das visitas domiciliares. Uma equipe composta por cirurgião-dentista e agente comunitário de saúde tinham a função de a partir de seus conhecimentos da região realizar as visitas seguindo as regras estipuladas pela pesquisa.

Ressaltam-se as dificuldades encontradas frente à alta rotatividade das equipes de profissionais de saúde, a coerência e coesão de tempo de pesquisa que

muitas vezes deviaram dos prazos estipulados pelo cronograma oficial do projeto geral, a ausência de um grupo controle e, portanto, a dificuldade em criar um vínculo para permanência dos voluntários dentro da pesquisa. Apesar de todas as problemáticas encontradas, a pesquisa conseguiu cumprir seu propósito com benefícios, como: de ser construída a partir de um modelo censitário, possuir uma amostra populacional expressiva e ser um estudo que atingiu os mais diversos estágios do ciclo de vida de uma população.

Grandes desenvolvimentos na construção de políticas públicas de monitoramento da saúde bucal podem ser extraídos. A avaliação do impacto das ações de promoção à saúde bucal (entrega de kits de higiene bucal) no período de atuação da pesquisa na redução da cárie (CPOD e ceod) e melhoria de indicadores de qualidade de vida em populações com alto risco social na Paraíba necessita de um continuo acompanhamento.

5. CONCLUSÃO

De acordo com o estudo apresentado, pode-se concluir que:

- Há uma alta prevalência de cárie dentária e edentulismo nos indivíduos em estudo, com exceção da faixa etária de 12 anos de idade.
- Concluiu-se que a condição dentária resulta em impacto negativo na qualidade de vida dos invidíduos, especialmente, na faixa etária de idosos.

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*De acordo com as normas do PPGO/UFPB, baseadas na norma *Internacional Committee of Medical Jornal Editors* – Grupo de Vancouver. Abreviatura dos periódicos em conformidade com o Medline.

APÊNDICE I
FICHA DE EXAME

EFETIVIDADE DE AÇÕES DE PROMOÇÃO À SAÚDE BUCAL EM POPULAÇÕES DE ALTO RISCO SOCIAL – ESTUDO DE COORTE PROSPECTIVO INTERVENCIONAL

estudo epidemiológico

Colgate BRASIL

FICHA PARA EXAME

IDENTIFICAÇÃO DO DOMICÍLIO	CIDADE		EXAMINADOR	
IDENTIFICAÇÃO DO PACIENTE	**IDADE**	**SEXO**	**PERMITIU A REALIZAÇÃO DO EXAME**	
		M ☐ F ☐	☐ sim	☐ não

CONDIÇÕES SOCIOECONÔMICAS

Quadro 1. Condições e idades/grupos etários a serem pesquisados pelos cirurgiões-dentistas

Idade/grupo etário (anos)	Cárie dentária	
	Coroa	Raiz
5	x	
12	x	
15 a 19	x	
35 a 44	x	x
65 a 74	x	x

Quadro 2. Indicadores/fatores de risco mensurados por QVRSB (questionários de qualidade de vida relacionada à saúde bucal) e idades/grupos etários a serem entrevistados pelos ACS

Idade/grupo etário (anos)	QVRSB	
	SCHO-5	CHIP-14
5	x	
12		x
15 a 19		x
35 a 44		x
65 a 74		x

NÚCLEO FAMILIAR	NÚMERO DE IRMÃOS (5, 12, 15-19 ANOS)	GRAU DE ESCOLARIDADE
☐ mora sozinho	☐ nenhum	☐ analfabeto
☐ mãe e pai	☐ um	☐ ensino fundamental completo
☐ mãe solteira	☐ dois	☐ ensino fundamental incompleto
☐ pai solteiro	☐ três	☐ ensino médio completo
☐ divorciado (a)	☐ mais de três	☐ ensino médio incompleto
☐ viúvo (a)		☐ ensino superior completo
☐ outros		☐ ensino superior incompleto

NÚMERO DE PESSOAS QUE RESIDEM EM CASA	NÚMERO DE CÔMODOS	RENDA FAMILIAR MENSAL

CONDIÇÕES COMPORTAMENTAIS

ESCOVA DE DENTES PRÓPRIA		USO DE PASTA DE DENTES COM FLÚOR		FREQUÊNCIA DE ESCOVAÇÃO	
☐ sim	☐ não	☐ sim	☐ não	☐ sim	☐ não

QUANTIDADE CREME DENTAL UTILIZADA NA ESCOVAÇÃO	APLICAÇÃO DE FLÚOR NO ÚLTIMO ANO		NECESSIDADE DE PRÓTESE	
☐ grão de arroz	☐ sim	☐ não	☐ sim	☐ não
☐ grão de ervilha				
☐ todo o comprimento das cerdas				

CONSUMO DE BEBIDA ALCOÓLICA		USO DE TABACO		PRÁTICA DE ALGUMA RELIGIÃO	
☐ sim	☐ não	☐ sim	☐ não	☐ sim	☐ não
FREQUÊNCIA DO CONSUMO		FREQUÊNCIA DO CONSUMO		FREQUÊNCIA	
☐ diário		☐ diário		☐ nunca	
☐ semanal		☐ semanal		☐ anualmente	
☐ mensal		☐ mensal		☐ mensalmente	
☐ eventos sociais		☐ eventos sociais		☐ semanalmente	
☐ nunca		☐ nunca			

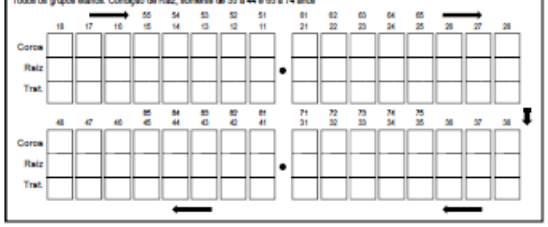
VOCÊ SE CONSIDERA UMA PESSOA RELIGIOSA?	
☐ sim	☐ não
VOCÊ SE CONSIDERA UMA PESSOA ESPIRITUAL?	
☐ sim	☐ não

SUAS CRENÇAS PESSOAIS DÃO SENTIDO A VIDA?	
☐ sim	☐ não
PARTICIPA DE ALGUM GRUPO DE ATIVIDADES SOCIAIS?	
☐ sim	☐ não

CÁRIE DENTÁRIA (ceod/CPOD) E NECESSIDADE DE TRATAMENTO (PARA TODAS AS IDADES)

CÁRIE DENTÁRIA E NECESSIDADE DE TRATAMENTO

Todos os grupos etários. Condição de Raiz, somente de 35 a 44 e 65 a 74 anos



Código			Condição
Dentes Decíduos	Dentes Permanentes		
Coroa	Coroa	Raiz	
A	0	0	Hígido
B	1	1	Cariado
C	2	2	Restaurado mas com cárie
D	3	3	Restaurado mas sem cárie
E	4	Não se aplica	Perdido devido à cárie
F	5	Não se aplica	Perdido por outra razão
G	6	Não se aplica	Apresenta selante
H	7	7	Apoio de ponta ou coroa
K	8	8	Não erupcionado - raiz não exposta
T	t	Não se aplica	Trauma (fratura)

ALTERAÇÕES DO TECIDO (PARA TODAS AS IDADES)

Código	Tratamento	Código	Tratamento
0	Nenhum	5	Tratamento pulpar e restauração
1	Restauração de 1 superfície	6	Extração
2	Restauração de 2 ou mais superfície	7	Remineração de mancha branca
3	Coroa por qualquer razão	8	Selante
4	Faceta estética	9	Sem informação

EFETIVIDADE DE AÇÕES DE PROMOÇÃO À SAÚDE BUCAL EM POPULAÇÕES DE ALTO RISCO SOCIAL – ESTUDO DE COORTE PROSPECTIVO INTERVENCIONAL

estudo epidemiológico

Colgate

OHIP-14 VERSÃO CURTA (de Oliveira BH, Nadanovsky P, 2005)

NOS ÚLTIMOS SEIS MESES, POR CAUSA DE PROBLEMAS COM SEUS DENTES, SUA BOCA OU DENTADURA:	NUNCA	RARAMENTE	AS VEZES	REPETIDAMENTE	SEMPRE
1. você teve problemas para falar alguma palavra?	□	□	□	□	□
2. você sentiu que o sabor dos alimentos tem piorado?	□	□	□	□	□
3. você sentiu dores em sua boca ou nos seus dentes?	□	□	□	□	□
4. você se sentiu incomodada(o) ao comer algum alimento?	□	□	□	□	□
5. você ficou preocupada(o)?	□	□	□	□	□
6. você se sentiu estressada(o)?	□	□	□	□	□
7. sua alimentação ficou prejudicada?	□	□	□	□	□
8. você teve que parar suas refeições?	□	□	□	□	□
9. você encontrou dificuldade para relaxar?	□	□	□	□	□
10. você se sentiu envergonhada(o)?	□	□	□	□	□
11. você ficou irritada(o) com outras pessoas?	□	□	□	□	□
12. você teve dificuldade para realizar suas atividades diárias?	□	□	□	□	□
13. você sentiu que a vida, em geral, ficou pior?	□	□	□	□	□
14. você ficou totalmente incapaz de fazer suas atividades diárias?	□	□	□	□	□

SOHO-5 VERSÃO DA CRIANÇA (Abanto et al. 2013)

ALGUMA VEZ FOI DIFÍCIL PARA VOCÊ.....	Não	Um pouco	Muito
1. ..comer por causa dos seus dentes/dentinhos?	□	□	□
2. .. beber por causa dos seus dentes/dentinhos?	□	□	□
3. ..falar por causa dos seus dentes/dentinhos?	□	□	□
4. ..brincar por causa dos seus dentes/dentinhos?	□	□	□
5. ..dormir por causa dos seus dentes/dentinhos?	□	□	□
6. Alguma vez você deixou de sorrir porque não gostou dos seus dentes (dentinhos)/ porque achou seus dentes (dentinhos) feios?	□	□	□
7. Alguma vez você deixou de sorrir porque os seus dentes (dentinhos) estavam doendo?	□	□	□

APÊNDICE II
Termo de Consentimento Livre e Esclarecido

UNIVERSIDADE FEDERAL DA PARAÍBA- CENTRO DE CIÊNCIAS DA SAÚDE
Núcleo de Estudos e Pesquisas Interdisciplinares em Biomateriais – NEPIBIO
TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

Título do projeto: EFETIVIDADE DE AÇÕES DE PROMOÇÃO À SAÚDE BUCAL EM POPULAÇÕES DE ALTO RISCO SOCIAL – ESTUDO DE COORTE PROSPECTIVO INTERVENCIONAL
Pesquisador responsável: Prof. Dr. Fábio Correia Sampaio

Prezado (a) Senhor (a),

Este é um convite para você e/ou seu filho participar da pesquisa promovida pelo Ministério da Saúde e a Colgate-Palmolive com coordenação da Universidade Federal da Paraíba e colaboração de instituições parceiras. Trata-se de um projeto que tem por objetivo avaliar o impacto de medidas de higiene bucal sobre a cárie dentária e outros índices relacionados à gengivite e uso de prótese de modo semelhante às pesquisas organizadas pelo Ministério da Saúde.

A sua participação é voluntária, o que significa que **você poderá desistir a qualquer momento, retirando seu consentimento, sem que isso lhe traga nenhum prejuízo ou penalidade**. Para realizar este estudo será necessário que você e/ou seu filho(a) respondam a dois questionários relacionados as suas condições socioeconômicas, ambientais, comportamentais e qualidade de vida relacionada à saúde bucal por meio de uma entrevista com o agente comunitário de saúde que o visitará no seu domicílio. Nessa investigação científica, serão examinados os dentes e as gengivas de crianças e adultos da população do seu município, escolhidos por sorteio. O exame é uma observação da boca, feita na própria escola ou na residência, com toda técnica, segurança e higiene, conforme normas da Organização Mundial da Saúde e do Ministério da Saúde. O exame será como se você estivesse em visita ao seu dentista e não representa riscos nem desconforto para quem é examinado. **Como este estudo se trata apenas de entrevistas, exames odontológicos e aplicação de flúor profissional existe um risco de desconforto mínimo previsto pela sua participação ou a do seu filho(a).** Os benefícios que você terá será a indicação para resolução das necessidades em saúde bucal. Também há benefícios indiretos e relacionados a um melhor conhecimento a respeito das doenças bucais na população da região do Cariri paraibano de modo a organizar os serviços de maneira mais racional e efetiva.

Os dados individuais não serão divulgados em nenhuma hipótese, mas os resultados da pesquisa ajudarão muito a prevenir doenças bucais e melhorar a saúde de todos. Todas as informações obtidas serão sigilosas e seu nome não será identificado em nenhuma publicação.

Os dados serão guardados em local seguro e a divulgação dos resultados será feita de forma a não identificar os voluntários.

Consentimento Livre e Esclarecido: Declaro que compreendi os objetivos desta pesquisa, como ela será realizada, os riscos e benefícios envolvidos e concordo em participar voluntariamente dessa pesquisa.

Caso necessite de maiores informações sobre o presente estudo, favor ligar para o pesquisador Fábio Correia Sampaio, telefone: (83) 32167795. End. NEPIBIO-CCS-UFPB, Castelo Branco, João Pessoa- PB
e-mail: ms_colgate_litoral@gmail.com

_____ _____
(Assinatura do pesquisador) (Assinatura do participante da pesquisa)

_____
(Nome do responsável no caso de participante menor de idade, e anexar termo de assentimento)

Em caso de dúvidas quanto aos seus direitos, você pode entrar em contato com:
Comitê de Ética em Pesquisa do Centro de Ciências da Saúde no endereço: Universidade Federal da Paraíba, Campus I - Cidade Universitária - Castelo Branco - CEP: 58.051-90 - João Pessoa-PB - Telefone: (083) 3216 7791.

APÊNDICE III
Termo de Assentimento

UNIVERSIDADE FEDERAL DA PARAÍBA- CENTRO DE CIÊNCIAS DA SAÚDE
Núcleo de Estudos e Pesquisas Interdisciplinares em Biomateriais – NEPIBIO
TERMO DE ASSENTIMENTO

Título do projeto: EFETIVIDADE DE AÇÕES DE PROMOÇÃO À SAÚDE BUCAL EM POPULAÇÕES DE ALTO RISCO SOCIAL – ESTUDO DE COORTE PROSPECTIVO INTERVENCIONAL
Pesquisador responsável: Prof. Dr. Fábio Correia Sampaio

Olá, você está sendo convidado(a) para participar da pesquisa "EFETIVIDADE DE AÇÕES DE PROMOÇÃO À SAÚDE BUCAL EM POPULAÇÕES DE ALTO RISCO SOCIAL – ESTUDO DE COORTE PROSPECTIVO INTERVENCIONAL" Seus pais permitiram que você participasse.

Queremos saber se você escova os dentes e cuida dos dentes. Se você já domina a escrita pode confirmar sua participação com este documento. **Se você não quiser participar da pesquisa não tem problema em desistir.**

A pesquisa vai ser realizada aqui na sua casa. Tudo o que você tem que fazer é permitir a realização de um exame da sua boca. Vamos usar um espelho e um instrumento chamado sonda para passar nos seus dentes e ver se tem cárie.

Caso aconteça algum incômodo ou algo de errado, você deve avisar aos seus pais para ligar para o telefone do pesquisador Fabio Correia Sampaio 3216 7795.

Ninguém saberá que você está participando da pesquisa, não falaremos a outras pessoas, nem daremos a estranhos as informações que você nos der.

Os resultados da pesquisa vão ser publicados, mas sem divulgar o nome ou qualquer informação que possa te identificar. Quando terminarmos a pesquisa explicaremos os resultados para os seus pais e para você.
Assim,

Eu _____ aceito participar da pesquisa apresentada no texto acima.

Entendi as coisas ruins e as coisas boas que podem acontecer. Entendi que posso dizer "sim" e participar, mas que, a qualquer momento, posso dizer "não" e desistir que ninguém vai ficar com raiva por isso. Os pesquisadores tiraram minhas dúvidas e conversaram com os meus responsáveis/pais. Recebi uma cópia deste termo de assentimento e li e concordo em participar da pesquisa marcando e/ou assinando este documento:

( ) **SIM** vou participar da pesquisa
( ) **NÃO** quero participar da pesquisa

_____, ____de _____de _____.

_____ _____
Assinatura do menor Assinatura do(a) pesquisador(a)

Comitê de Ética em Pesquisa do Centro de Ciências da Saúde da UFPB. Campus I – Cidade Universitária – 1º andar - CCS. Telefone: (83) 3216 7791

APÊNDICE IV

STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item Nº	Recommendation
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract "A cross-sectional study"
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found "A cross-sectional study among 28 municipalities defined a sample of 3.063 participants included as a census. The target age groups were: 12 years *(n*=194), 15-19 years (*n*=817), 35-44 years (*n*=1.302) and 65-74 years (*n*=750). A questionnaire based on the Brazilian National Survey 2010 was used. Questions about socioeconomic and behavioral conditions, and oral health self-perception (OHIP-14) were included. Clinical examinations (DMFT) were performed by calibrated dentists (Kappa > 0.75) The results demonstrated that 45.47% (*n*=1.393) of the individuals required the use of prosthesis, showing total or partial edentulism installed. The prevalence of caries experience and untreated caries were 93.33% (n=2.859) and 51.12% (n=1.566), respectively. OHIP-14 showed that physical pain category stood out with a mean of 1.31, followed by Physical disability with 1.06, Psychological discomfort with 0.68, Psychological disability with 0.65, Functional limitation with 0.45, Social disability with 0.39, Handicap with 0.30. There is a high prevalence of caries experience and edentulism that impacts the quality of life particularly in older inhabitants."
Introduction		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported "The World Health Organization (WHO) recognized OHQoL as a significant knowledge because is a multidimensional ensemble that builds and evaluates the impact of oral health problems on the Global Oral Health Program. The main interest of this set of data is to evidence people's daily life: how they feel when are eating, sleeping, and engaging on social interactions with others. Its important highlight the side of self-esteem and satisfaction too, because this multiple-item questionnaires are considered an outcome indicator in health services, dental research, and evidence-based practice. In 1988, Locker's theoretical model introduced the Oral Health Impact Profile (OHIP), since then this questionary is commonly used to quantify quality of life, it has 14 items assorted in 7 domains, for measuring oral health. Among the oral pathologies, dental caries is known to affect about billion people worldwide having a large representation on the effects of the quality of life in individuals. The proportion of caries-free children (DMFT = 0) increased from 31% in 2003 to 44% in 2010, indicating a significant reduction in the prevalence and severity of caries. Additionally, decreasing prevalence of caries was also observed among adolescents and adults."
Objectives	3	State specific objectives, including any prespecified hypotheses

		"This cross-sectional study tried to analyze the sociodemographic, educational, and economic factors that may influence the OHRQoL of in the cycle of life on citizens of counties localized in Paraíba, Brazil. This is an area with many socially at-risk populations, in other words, many individuals facing social risk factors for poor health outcomes such as low socioeconomic position."
Methods		
Study design	4	Present key elements of study design early in the paper "This is a cross-sectional study (April of 2015 until April of 2017) in which subjects were clinically examined to calculate their dental caries experience, and then subjects completed the OHIP-14 questionnaire, to quantify OHRQoL."
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection "This is a cross-sectional study (April of 2015 until April of 2017) in which subjects were clinically examined to calculate their dental caries experience, and then subjects completed the OHIP-14 questionnaire, to quantify OHRQoL. For this 2-year cross-sectional study, the sample consisted of a study sampling plan like that used in the National Oral Health Survey (SB Brasil 2010), with each of the selected municipality composed a domain. A list of all houses and residents living in the enumeration area were prepared considering the following age or age groups: 12-years-old (n = 194) and 15 to 19 (n = 817), 35 to 44 (n = 1.302) and 65 to 74 (n = 750) years of age. After the list of all residents a plan for examination and data collection were designed. The 28 municipalities were selected according to the following inclusion criteria: a) cities (urban areas only) with less than 50,000 thousand inhabitants; b) lower human development indices according to indicators the Atlas of Human Development in Brazil 2013 (PNUD IPEA FJP, 2013); c) listed as a priority municipality by the Federal Government's "Brasil Sem Miséria" Plan."
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants "This is a cross-sectional study (April of 2015 until April of 2017) in which subjects were clinically examined to calculate their dental caries experience, and then subjects completed the OHIP-14 questionnaire, to quantify OHRQoL." "The 28 municipalities were selected according to the following inclusion criteria: a) cities (urban areas only) with less than 50,000 thousand inhabitants; b) lower human development indices according to indicators the Atlas of Human Development in Brazil 2013 (PNUD IPEA FJP, 2013); c) listed as a priority municipality by the Federal Government's "Brasil Sem Miséria" Plan. Among the selected cities, a minimum Human Development Index (HDI) range of 0.513 in Gado Bravo (8.365 habitants) and a maximum of 0.628 in Serra Branca (12.973 habitants) can be found." "For this 2-year cross-sectional study, the sample consisted of a study sampling plan like that used in the National Oral Health Survey (SB Brasil 2010), with each of the selected municipality composed a domain. All enumeration areas within the domain (urban area) were included. The

		enumeration area is basically a map in digital format that corresponds to the smallest territorial portion used by The Brazilian Institute of Geography and Statistics (IBGE) to plan and carry out data collection for the Census and Statistical Surveys. It depicts all residential houses as well as social facilities within a specific area of the city. A list of all houses and residents living in the enumeration area were prepared considering the following age or age groups: 12-years-old (n = 194) and 15 to 19 (n = 817), 35 to 44 (n = 1.302) and 65 to 74 (n = 750) years of age. After the list of all residents a plan for examination and data collection were designed." "Households in which at least two family members within the index-age or age groups selected for the survey were not found were excluded from the study. After three consecutive attempts to perform the examination-data collection visit, the house was excluded. Finally, the sample size consisted of 4076 individuals. However, 498 individuals refused the dental exams and 515 refused to respond the OHIP-14 questionnaire. As a result, the final number of individuals in the study was 3063."
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable "In conducting a cross-sectional study, a solid methodological foundation is an important requirement when obtaining reliable data which is considered a component that leads to future oral health surveillance strategies. In addition to the traditional indices for measuring oral health problems, it was also applied to the participants examined a questionnaire containing questions related to the socioeconomic characterization, to the use of dental services, to the habits and of oral health self-perception. Research participants answered questions about characterization as a social individual, such as family nucleus, education, household overcrowding, income, participation in social activities, self-perception as a religious individual, tobacco use and alcohol consumption. The questions were applied to the head of the household to obtain information relating to the family and the minors and to the individual examined when they are of legal age. For the dental condition, the index recommended by the WHO was used, from which the average DMFT (permanent dentition) can be inferred. The DMFT index express the sum of decayed, missing and filled teeth. The OHRQoL (the outcome) was evaluated using the Portuguese OHIP-14 version. OHIP-14 was calculated by summing responses over all 14 items, ranging from 0 to 56, and was used as an indication for the severity of the impact on OHRQoL—the higher the score the more the negative impact. Dental health indicators (predictors) were derived from individual tooth- and surface-level data allowing for calculating number of decayed surfaces (D), number of decayed missed filled surfaces (DMFT), and significant caries (SiC) indices."
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group "For this 2-year cross-sectional study, the sample consisted of a study

		sampling plan like that used in the National Oral Health Survey (SB Brasil 2010), with each of the selected municipality composed a domain. All enumeration areas within the domain (urban area) were included. The enumeration area is basically a map in digital format that corresponds to the smallest territorial portion used by The Brazilian Institute of Geography and Statistics (IBGE) to plan and carry out data collection for the Census and Statistical Surveys. In conducting a cross-sectional study, a solid methodological foundation is an important requirement when obtaining reliable data which is considered a component that leads to future oral health surveillance strategies. In addition to the traditional indices for measuring oral health problems, it was also applied to the participants examined a questionnaire containing questions related to the socioeconomic characterization, to the use of dental services, to the habits and of oral health self-perception. Research participants answered questions about characterization as a social individual, such as family nucleus, education, household overcrowding, income, participation in social activities, self-perception as a religious individual, tobacco use and alcohol consumption. The questions were applied to the head of the household to obtain information relating to the family and the minors and to the individual examined when they are of legal age. For the dental condition, the index recommended by the WHO was used, from which the average DMFT (permanent dentition) can be inferred. The DMFT index express the sum of decayed, missing and filled teeth. The OHRQoL (the outcome) was evaluated using the Portuguese OHIP-14 version. OHIP-14 was calculated by summing responses over all 14 items, ranging from 0 to 56, and was used as an indication for the severity of the impact on OHRQoL—the higher the score the more the negative impact. Dental health indicators (predictors) were derived from individual tooth- and surface-level data allowing for calculating number of decayed surfaces (D), number of decayed missed filled surfaces (DMFT), and significant caries (SiC) indices."
Bias	9	Describe any efforts to address potential sources of bias "The training and calibration of field teams (dentists, dental auxiliaries and community health agents) were carried out annually in presential mode through workshops. Field teams were formed by an examiner and a note taker. Intra-examiner reproducibility and inter-examiner were calculated using the Kappa agreement test (for dental caries) weighted for each examiner, age group and condition studied, with a value of 0.65 as the minimum acceptable limit. Reproducibility intra-examiner was obtained by comparing the results of the examiners. obtained on the first day of analysis and after one week. Examiners were trained to assess the presence of visible dental biofilm, dental caries for cavitated and non-cavitated lesions; need for treatment. All exams were performed after toothbrushing sessions under indirect daylight using WHO probe."
Study size	10	Explain how the study size was arrived at "A list of all houses and residents living in the enumeration area were prepared considering the following age or age groups: 12-years-old (n = 194) and 15 to 19 (n = 817), 35 to 44 (n = 1.302) and 65 to 74 (n = 750)

years of age. After the list of all residents a plan for examination and data collection were designed.

Households in which at least two family members within the index-age or age groups selected for the survey were not found were excluded from the study. After three consecutive attempts to perform the examination-data collection visit, the house was excluded. Finally, the sample size consisted of 4076 individuals. However, 498 individuals refused the dental exams and 515 refused to respond the OHIP-14 questionnaire. As a result, the final number of individuals in the study was 3063. "

Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why

"Despite being a consistent study with an expressive sample and having a weight to address the current social situation of populations at high social risk in Paraíba, some weaknesses must be addressed, such as the limitations of cross-sectional studies in establishing causal relationships with a research time, in addiction of the study don't have a control group, difficulties in dealing with public sector health professionals and finally, to maintain a present and persevering performance by the participants to achieve all the necessary information collection without harming the data."

Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding

"Final multivariate-adjusted model for association between dental caries experience and untreated dental decay on OHRQoL in subjects demonstrate that the prevalence of edentulism with an *n* of 2.200 individuals among the 3.063 of the total sample it achieves an average of 1.29 on internal rate return in a confidence interval of 1.08 to 1.53. The p value is located with 0.005 in this independent variable. (Table 1)"

"The table 2 demonstrated the raw analysis of socio-demographic and clinical condition variables associated with the effect of dental caries experience and untreated dental decay on OHRQoL in subjects classified in the age groups in the study. It is observed that on the variable sex, that females (*n*=1.875) have a higher value when compared to male (*n*=1.188) with an average of 3.43 in a confidence interval of 2.80-4.21 compared to the 1.24 men average and its confidence interval of 1.10 to 1.39."

"The Mean score, standard desviations (Min-Max) for the 7 domains of the Oral Health Impact Profile (OHIP- 14) listed in descending order of impact can be obtained in table 3: Physical pain 1.31, 1.85 (0-8); Physical disability 1.06, 1.90 (0-8); Psychological discomfort 0.68, 1.47 (0-8); Psychological disability 0.65, 1.36 (0-8); Functional limitation 0.45, 1.14 (0-8); Social disability 0.39, 1.11 (0-8); Handicap 0.30, 1.03 (0-8). The participant's mean Ohip-14 (standard deviation) was 4.85 (7.65), with a minimum of 0 and a maximum of 56."

		(*b*) Describe any methods used to examine subgroups and interactions "Research participants answered questions about characterization as a social individual, such as family nucleus, education, household overcrowding, income, participation in social activities, self-perception as a religious individual, tobacco use and alcohol consumption. The questions were applied to the head of the household to obtain information relating to the family and the minors and to the individual examined when they are of legal age." "For the dental condition, the index recommended by the WHO was used, from which the average DMFT (permanent dentition) can be inferred. The DMFT index express the sum of decayed, missing and filled teeth. " "The OHRQoL (the outcome) was evaluated using the Portuguese OHIP-14 version. OHIP-14 was calculated by summing responses over all 14 items, ranging from 0 to 56, and was used as an indication for the severity of the impact on OHRQoL—the higher the score the more the negative impact. Dental health indicators (predictors) were derived from individual tooth- and surface-level data allowing for calculating number of decayed surfaces (D), number of decayed missed filled surfaces (DMFT), and significant caries (SiC) indices."
		(*c*) Explain how missing data were addressed "This study, with a total of 3.063 participants with 100% complete responses, evaluated the impact of caries and edentulism in socially at-risk individuals. To the best of our knowledge, this is the largest epidemiological study in Paraíba involving 28 municipalities in a Public Private Partnership (PPP) with the Ministry of Health and Colgate."
		(*d*) If applicable, describe analytical methods taking account of sampling strategy
		(*e*) Describe any sensitivity analyses "The Mean score, standard desviations (Min-Max) for the 7 domains of the Oral Health Impact Profile (OHIP- 14) listed in descending order of impact can be obtained in table 3: Physical pain 1.31, 1.85 (0-8); Physical disability 1.06, 1.90 (0-8); Psychological discomfort 0.68, 1.47 (0-8); Psychological disability 0.65, 1.36 (0-8); Functional limitation 0.45, 1.14 (0-8); Social disability 0.39, 1.11 (0-8); Handicap 0.30, 1.03 (0-8). The participant's mean Ohip-14 (standard deviation) was 4.85 (7.65), with a minimum of 0 and a maximum of 56."
Results		
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed "Finally, the sample size consisted of 4076 individuals. However, 498 individuals refused the dental exams and 515 refused to respond the OHIP-14 questionnaire. As a result, the final number of individuals in the study was 3063. "
		(b) Give reasons for non-participation at each stage

		"Households in which at least two family members within the index-age or age groups selected for the survey were not found were excluded from the study (13). After three consecutive attempts to perform the examination-data collection visit, the house was excluded. Finally, the sample size consisted of 4076 individuals. However, 498 individuals refused the dental exams and 515 refused to respond the OHIP-14 questionnaire. As a result, the final number of individuals in the study was 3063. "
		(c) Consider use of a flow diagram
		It was not applicable in the study.
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders
		"For this 2-year cross-sectional study, the sample consisted of a study sampling plan like that used in the National Oral Health Survey (SB Brasil 2010), with each of the selected municipality composed a domain. All enumeration areas within the domain (urban area) were included. The enumeration area is basically a map in digital format that corresponds to the smallest territorial portion used by The Brazilian Institute of Geography and Statistics (IBGE) to plan and carry out data collection for the Census and Statistical Surveys. It depicts all residential houses as well as social facilities within a specific area of the city (21). A list of all houses and residents living in the enumeration area were prepared considering the following age or age groups: 12-years-old (n = 194) and 15 to 19 (n = 817), 35 to 44 (n = 1.302) and 65 to 74 (n = 750) years of age. After the list of all residents a plan for examination and data collection were designed."
		"After three consecutive attempts to perform the examination-data collection visit, the house was excluded. Finally, the sample size consisted of 4076 individuals. However, 498 individuals refused the dental exams and 515 refused to respond the OHIP-14 questionnaire. As a result, the final number of individuals in the study was 3063."
		(b) Indicate number of participants with missing data for each variable of interest
		"After three consecutive attempts to perform the examination-data collection visit, the house was excluded. Finally, the sample size consisted of 4076 individuals. However, 498 individuals refused the dental exams and 515 refused to respond the OHIP-14 questionnaire. As a result, the final number of individuals in the study was 3063."
		"This study, with a total of 3.063 participants with 100% complete responses, evaluated the impact of caries and edentulism in socially at-risk individuals. To the best of our knowledge, this is the largest epidemiological study in Paraíba involving 28 municipalities in a Public Private Partnership (PPP) with the Ministry of Health and Colgate."
Outcome data	15*	Report numbers of outcome events or summary measures
		"Inequities in the state of Paraíba were observed in education with

12.60% (n=386) of the individuals classified as illiterate, 67.38% (n=2.064) as having up to 10 years of study and a small portion of 7.11% (n=218) reported having more than 10 years of study. Most respondents (61.44%) reported that they receive less than or equal to 2 minimum wages. The results demonstrated that 45.47% (n=1.393) of the individuals required the use of prosthesis, showing total or partial edentulism installed. The prevalence of caries experience and untreated caries were 93.33% (n=2.859) and 51.12% (n=1.566), respectively. OHIP-14 showed that physical pain category stood out with a mean of 1.31, followed by Physical disability with 1.06, Psychological discomfort with 0.68, Psychological disability with 0.65, Functional limitation with 0.45, Social disability with 0.39, Handicap with 0.30."

"Final multivariate-adjusted model for association between dental caries experience and untreated dental decay on OHRQoL in subjects demonstrate that the prevalence of edentulism with an *n* of 2.200 individuals among the 3.063 of the total sample it achieves an average of 1.29 on internal rate return in a confidence interval of 1.08 to 1.53. The p value is located with 0.005 in this independent variable."

Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included

"Final multivariate-adjusted model for association between dental caries experience and untreated dental decay on OHRQoL in subjects demonstrate that the prevalence of edentulism with an *n* of 2.200 individuals among the 3.063 of the total sample it achieves an average of 1.29 on internal rate return in a confidence interval of 1.08 to 1.53. The p value is located with 0.005 in this independent variable. (Table 1)"

"The table 2 demonstrated the raw analysis of socio-demographic and clinical condition variables associated with the effect of dental caries experience and untreated dental decay on OHRQoL in subjects classified in the age groups in the study. It is observed that on the variable sex, that females (*n*=1.875) have a higher value when compared to male (*n*=1.188) with an average of 3.43 in a confidence interval of 2.80-4.21 compared to the 1.24 men average and its confidence interval of 1.10 to 1.39."

"The Mean score, standard desviations (Min-Max) for the 7 domains of the Oral Health Impact Profile (OHIP- 14) listed in descending order of impact can be obtained in table 3: Physical pain 1.31, 1.85 (0-8); Physical disability 1.06, 1.90 (0-8); Psychological discomfort 0.68, 1.47 (0-8); Psychological disability 0.65, 1.36 (0-8); Functional limitation 0.45, 1.14 (0-8); Social disability 0.39, 1.11 (0-8); Handicap 0.30, 1.03 (0-8). The participant's mean Ohip-14 (standard deviation) was 4.85 (7.65), with a minimum of 0 and a maximum of 56."

		(*b*) Report category boundaries when continuous variables were categorized

		"Research participants answered questions about characterization as a social individual, such as family nucleus, education, household overcrowding, income, participation in social activities, self-perception as a religious individual, tobacco use and alcohol consumption. The questions were applied to the head of the household to obtain information relating to the family and the minors and to the individual examined when they are of legal age." "For the dental condition, the index recommended by the WHO (23) was used, from which the average DMFT (permanent dentition) can be inferred. The DMFT index express the sum of decayed, missing and filled teeth. " "The OHRQoL (the outcome) was evaluated using the Portuguese OHIP-14 version. OHIP-14 was calculated by summing responses over all 14 items, ranging from 0 to 56, and was used as an indication for the severity of the impact on OHRQoL—the higher the score the more the negative impact. Dental health indicators (predictors) were derived from individual tooth- and surface-level data allowing for calculating number of decayed surfaces (D), number of decayed missed filled surfaces (DMFT), and significant caries (SiC) indices."
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period "A questionnaire based on the Brazilian National Survey 2010 was used. Questions about socioeconomic and behavioral conditions, and oral health self-perception (OHIP-14) were included. Clinical examinations (DMFT) were performed by calibrated dentists (Kappa > 0.75)." "The sample size was calculated considering a 95% confidence interval"
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses "Final multivariate-adjusted model for association between dental caries experience and untreated dental decay on OHRQoL in subjects" "The raw analysis of socio-demographic and clinical condition variables associated with the effect of dental caries experience and untreated dental decay on OHRQoL in subjects classified in the age groups in the study." "The Mean score, standard desviations (Min-Max) for the 7 domains of the Oral Health Impact Profile (OHIP- 14) listed in descending order of impact."
Discussion		
Key results	18	Summarise key results with reference to study objectives "Based on the outcomes of this study, it can be concluded that the municipalities in Paraiba share similar levels of inequities and present low socioeconomic and educational profile. There is a high prevalence of caries experience and edentulism that impacts the quality of life particularly in older inhabitants. "
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias "Despite being a consistent study with an expressive sample and having a weight to address the current social situation of populations at high social risk in Paraíba, some weaknesses must be addressed, such as the

		limitations of cross-sectional studies in establishing causal relationships with a research time, in addiction of the study don't have a control group, difficulties in dealing with public sector health professionals and finally, to maintain a present and persevering performance by the participants to achieve all the necessary information collection without harming the data."
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence "Regarding the sex variable, corroborating the study Oliveira, 2021 reported that women in this study had a higher rate of raw analysis of socio-demographic and clinical condition variables associated with the effect of dental caries experience and untreated dental decay on OHRQoL with a mean of 3.43 in a confidence interval of 2.80 to 4.21." "As evidence which proves the findings in the actual study, the results of the three national oral health surveys in Brazil, which show an increase in edentulism among adults and the elderly in recent decades. Defined as a setback in the life of older people, edentulism can cause serious physical, emotional and social impacts. When even if related to the subjectivity of the OHIP-14, it is clear the presence of a very high population index with the need for the use of dental prosthesis, as predicted in previous studies. " "The research found edentulism and use of dental prosthesis as the most relevant factors among the participants. These indicators point to a negative impact on quality of life, even if recorded in a subjective concept such as that found in the IHOP, such problems related to oral health in the lives of individuals were not considered of great importance, only when the theme of pain and physical disability are brought into focus is that we can find a self-perception of depreciation in the quality of life. The findings demonstrated that populations at high social risk have a greater tendency to present problems in their quality of life due to consequences of education, income and access to health indicators that reflect on the individual's oral health, as in the case of edentulism resulting from the experience of caries."
Generalisability	21	Discuss the generalisability (external validity) of the study results "Research participants answered questions about characterization as a social individual, such as family nucleus, education, household overcrowding, income, participation in social activities, self-perception as a religious individual, tobacco use and alcohol consumption. The questions were applied to the head of the household to obtain information relating to the family and the minors and to the individual examined when they are of legal age." "For the dental condition, the index recommended by the WHO (23) was used, from which the average DMFT (permanent dentition) can be inferred. The DMFT index express the sum of decayed, missing and filled teeth. " "The OHRQoL (the outcome) was evaluated using the Portuguese OHIP-

		14 version. OHIP-14 was calculated by summing responses over all 14 items, ranging from 0 to 56, and was used as an indication for the severity of the impact on OHRQoL—the higher the score the more the negative impact. Dental health indicators (predictors) were derived from individual tooth- and surface-level data allowing for calculating number of decayed surfaces (D), number of decayed missed filled surfaces (DMFT), and significant caries (SiC) indices." "Inequities in the state of Paraíba were observed in education with 12.60% (*n*=386) of the individuals classified as illiterate, 67.38% (*n*=2.064) as having up to 10 years of study and a small portion of 7.11% (*n*=218) reported having more than 10 years of study. Most respondents (61.44%) reported that they receive less than or equal to 2 minimum wages. The results demonstrated that 45.47% (*n*=1.393) of the individuals required the use of prosthesis, showing total or partial edentulism installed. The prevalence of caries experience and untreated caries were 93.33% (n=2.859) and 51.12% (n=1.566), respectively. OHIP-14 showed that physical pain category stood out with a mean of 1.31, followed by Physical disability with 1.06, Psychological discomfort with 0.68, Psychological disability with 0.65, Functional limitation with 0.45, Social disability with 0.39, Handicap with 0.30."
Other information		
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based "The authors are grateful to the Coordination for the Improvement of Higher Education Personnel (CAPES - Coordenação de Aperfeiçoamento de Pessoal de Nível Superior), for granting the scholarship to DCC; as well as to the Post-Graduation Program in Dental Sciences of Federal University of Paraiba-PB, Colgate-Palmolive Company and Ministry of Health for all the support for this research."

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

ANEXO I
Aprovação Comitê de Ética

UNIVERSIDADE FEDERAL DA PARAÍBA - CENTRO DE CIÊNCIAS DA SAÚDE

Plataforma Brasil

PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: EFETIVIDADE DE AÇÕES DE PROMOÇÃO À SAÚDE BUCAL EM POPULAÇÕES DE ALTO RISCO SOCIAL : ESTUDO DE COORTE PROSPECTIVO INTERVENCIONAL

Pesquisador: Fabio Correia Sampaio

Área Temática:

Versão: 1

CAAE: 33087414.9.0000.5188

Instituição Proponente: Universidade Federal da Paraíba

Patrocinador Principal: COLGATE-PALMOLIVE COMERCIAL LTDA.

DADOS DO PARECER

Número do Parecer: 732.160

Data da Relatoria: 24/07/2014

Apresentação do Projeto:

O referido projeto justifica-se pela criação de novas práticas em saúde, de acordo com a Política Nacional de Saúde bucal, nas quais haja integração das ações clínicas e de saúde pública coletiva, com uma relação de trabalho baseada na atuação multiprofissional e interdisciplinar do conhecimento.

Objetivo da Pesquisa:

Objetivo Primário:

O objetivo geral desta pesquisa é implantar e avaliar a efetividade de uma frente da Política Nacional de Saúde Bucal do Brasil, que segue os princípios da intersetorialidade, equidade e universalização do acesso aos cuidados preventivos, restauradores e reabilitadores, em cidades de alto risco social, visando reduzir a incidência de cárie e de outros agravos a saúde bucal nesta população e levar à conscientização sobre hábitos saudáveis para a manutenção da saúde.

Objetivo Secundário:

Os objetivos específicos foram divididos em 4 fases:3.1.1 Fase I – Identificação da prevalência das condições de saúde bucal e seus indicadores de risco (Baseline – Estudo transversal). Avaliar a prevalência da cárie dentária e outras condições de saúde bucal no Estado da Paraíba em 5 grupos etários: crianças aos 5 anos, crianças aos 12 anos, adolescentes de 15 a 19 anos, adultos de 35 a

Endereço: UNIVERSITARIO S/N
Bairro: CASTELO BRANCO **CEP:** 58.051-900
UF: PB **Município:** JOAO PESSOA
Telefone: (83)3216-7791 **Fax:** (83)3216-7791 **E-mail:** eticaccs@ccs.ufpb.br

44 anos e idosos de 65 a 74 anos. Avaliar o perfil e grau de conhecimento dos Agentes Comunitários de Saúde (ACS) sobre saúde bucal. Avaliar a associação de variaveis socioeconômicas, ambientais e comportamentais na prevalência de carie dentaria. Avaliar o impacto da cárie dentária na qualidade de vida relacionada à saúde bucal (QVRSB).3.1.2 Fase II – Intervenção nos problemas por meio de atividades curativas, educativas e preventivas ao longo do estudo na amostra do baseline (Estudo de coorte). Oferecer o atendimento clínico odontológico e procedimentos de atenção básica em relação às necessidades de tratamento priorizando a eliminação de focos infecciosos. Implantar e promover o acesso universalizado à escova e ao creme dental fluoretado à população total dos municípios envolvidos. Aplicar flúor tópico profissional em verniz a cada 6 meses nos domicílios por meio de cirurgiões-dentistas quando nos indivíduos que apresentam lesões de mancha branca e/ou lesões de cárie cavitadas (Coorte de expostos). Orientar a higiene bucal domiciliar (quantidade e técnica de escovação com uso de dentifrício fluoretado), dieta em relação a alimentos cariogênicos e prevenção de câncer bucal a cada 6 meses, por meio de ACS. 3.1.3 Fase III – Acompanhamento e reavaliação das condições de saúde bucal e seus fatores de risco na amostra do baseline (Estudo de coorte). Reavaliar anualmente a incidência de cárie dentária e outras condições de saúde bucal dos indivíduos pelo período de cinco anos. Reavaliar anualmente o grau de conhecimento dos ACS sobre saúde bucal pelo período de cinco anos. Reavaliar a associação de variaveis socioeconômicas, ambientais e comportamentais na incidência de carie dentaria. Reavaliar anualmente o impacto das condições de saúde bucal na QVRSB pelo período de cinco anos. 3.1.4 Fase IV – Identificação da prevalência da cárie dentária e seus indicadores de risco (Final – Estudo transversal). Avaliar a prevalência da cárie dentária no estado da Paraíba em 5 novos grupos etários: crianças aos 5 anos, crianças aos 12 anos, adolescentes de 15 a 19 anos, adultos de 35 a 44 anos e idosos de 65 a 74 anos.

Avaliação dos Riscos e Benefícios:

Riscos:

Os riscos previsíveis são mínimos uma vez que serão adotados os mesmos critérios recomendados pelo Ministério da Saúde para estudos de base populacional. O desconforto para a realização do exame intra-bucal durante a visita domiciliar é esperado e pode ser relatados por indivíduos de 65-74 anos. O mesmo se aplica as medidas de intervenção (aplicação de flúor) que serão as mesmas medidas adotadas pelos CDs no PSF.

Benefícios:

O presente projeto representa uma oportunidade de avaliar o impacto de medidas simples em

saúde bucal em uma população de risco social. O grande benefício do projeto é mensurar o impacto social das medidas em saúde publica como acesso a kits de higiene, orientações em saúde e minima intervenção. É importante ressaltar que esse projeto representa uma das mais importantes iniciativas do Ministério da Saúde avaliar politicas públicas em saúde bucal que tenham impacto em populações de risco social. Ressaltamos que o projeto de de longo prazo (5 anos) para garantir uma avaliação consistente e sistemática desse processo.

Comentários e Considerações sobre a Pesquisa:
Pesquisa relevante para a avaliação e melhoria dos serviços de saúde pública no Brasil com metodologia bem atualizada e fundamentada.

Considerações sobre os Termos de apresentação obrigatória:
Os termos de apresentação obrigatória estão dentro dos padrões do CEP.

Recomendações:
Não há recomendações.

Conclusões ou Pendências e Lista de Inadequações:
Não há lista de inadequações ou pendências. Sou de parecer favorável para a execução do projeto salvo melhor juízo.

Situação do Parecer:
Aprovado

Necessita Apreciação da CONEP:
Não

Considerações Finais a critério do CEP:

JOAO PESSOA, 30 de Julho de 2014

Assinado por:
Eliane Marques Duarte de Sousa
(Coordenador)

Endereço: UNIVERSITARIO S/N
Bairro: CASTELO BRANCO **CEP:** 58.051-900
UF: PB **Município:** JOAO PESSOA
Telefone: (83)3216-7791 **Fax:** (83)3216-7791 **E-mail:** eticaccs@ccs.ufpb.br