UNIVERSIDADE ESTADUAL DE MONTES CLAROS

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ASSOCIAÇÃO DA NECESSIDADE DE PRÓTESE E A AUTOPERCEPÇÃO NEGATIVA DA APARÊNCIA DOS DENTES E GENGIVAS ENTRE IDOSOS BRASILEIROS

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Associação da necessidade de prótese e a autopercepção negativa da aparência dos dentes e gengivas entre idosos brasileiros

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"Já ocorreram muitas mudanças no limiar deste terceiro milênio: muitas pessoas aspiram hoje a um estilo de vida diferente, a um sistema ecológico repensado, a uma medicina mais humana, a conhecimentos mais compartilhados, ao respeito pelas diferenças."

(Drout, 1999)

RESUMO

Investigou-se a associação entre a autopercepção negativa da aparência dos dentes e gengivas e a necessidade de prótese dentária entre idosos brasileiros. Dados de 5349 idosos, 65 a 74 anos, de 250 cidades de todas as regiões brasileiras foram analisados, utilizando a base de dados do inquérito nacional de saúde bucal, realizado em 2002-2003. Adotou-se a amostragem probabilística por conglomerados em três estágios e os indivíduos foram selecionados por sorteio. Entrevistas e exames foram realizados em domicílios por cirurgiões-dentistas treinados e calibrados. A variável resposta investigada foi a autopercepção da aparência dos dentes e gengivas. A principal variável independente foi o uso/necessidade de prótese superior e inferior. As outras variáveis foram características sociodemográficas, referentes ao cuidado odontológico, às condições normativas de saúde bucal e incapacidades percebidas pelos idosos decorrentes da saúde bucal. Realizaram-se análises bivariadas e regressão de Poisson robusta, com estimativa da razão de prevalência bruta e ajustada. A prevalência de autopercepção negativa da aparência foi de 20,6%, sendo maior entre os que usavam e necessitavam de substituição de prótese parcial superior e naqueles que não usavam e necessitavam de prótese parcial ou total superior ou inferior, independentemente das demais variáveis. A prevalência de autopercepção negativa da aparência foi também maior entre os que nunca usaram serviços odontológicos, os que não tiveram acesso a informações sobre como evitar problemas bucais, os que consultaram um dentista há mais de três anos, os que possuíam maior número de dentes cariados, aqueles com autopercepção negativa da dor e da mastigação, os que consideravam que a saúde bucal afeta o relacionamento e entre os que autoperceberam necessitar de tratamento odontológico. A autopercepção negativa da aparência foi menor entre aqueles com maior número de dentes presentes e na faixa etária de 70 a 74 anos. A melhoria no acesso aos serviços odontológicos e a reabilitação com próteses dentárias poderá contribuir para maior satisfação com a aparência dos dentes e gengivas entre idosos. A necessidade de prótese está associada com a autopercepção negativa da aparência dos dentes e gengivas entre idosos brasileiros.

Palavras-chave: Idoso. Estética Dentária. Auto-imagem. Prótese dentária. Saúde bucal.

ABSTRACT

The relationship between negative self-perception of the appearance of one's teeth and gums and the need for dental prostheses was investigated among Brazilian elderly. Data from 5,349 elderly individuals between the ages of 65 and 74 from 250 cities throughout Brazil were analyzed, using the database of the national oral health survey conducted in 2002-2003. Probability sampling by conglomerates in three stages was utilized and individuals were randomly selected. Interviews and examinations were carried out at the residence of participants by trained dentists with confirmed inter-rater reliability. The dependent variable was the self-rated oral appearance. The main independent variable was the use of and/or need for upper and lower prostheses. Confounding variables included socio-demographic characteristics, oral hygiene, oral health status and self-reported oral health conditions. Bivariate and multivariate Poisson regression analyses were performed to estimate the crude and adjusted prevalence ratios. A poor self-rated oral appearance was found among 20.6% of study participants, being greater among those who used and needed a replacement for an upper partial denture and those who did not use but needed a partial or complete upper or lower denture, independent of all other variables. The prevalence was also high in the following groups: those who had never used dental services, those without access to information about preventing oral problems, those who had not been to a dentist for more than three years, those with a greater number of teeth with cavities, those with dental or gingival pain within the last six months or problems with chewing, those who believe that oral heath affects their relationships and those who perceived that they needed dental treatment. The poor self-rated oral appearance was less prevalent among those with a greater number of teeth present and among people between the ages of 70 and 74. The need for dentures is associated with negative self-perception of teeth and gums among elderly Brazilians. Improved access to dental services and rehabilitation with dentures may contribute to greater satisfaction regarding appearance among these individuals.

Key-words: Aged. Esthetics, Dental. Self-concept. Dental Prosthesis. Oral health.

SUMÁRIO

1 INTRODUÇÃO

O envelhecimento da população brasileira vem ocorrendo de forma crescente, sendo um dos fenômenos demográficos mais importantes da atualidade, explicado pelos progressos tecnológicos e melhorias nos padrões de saúde da população, com aumento significativo da expectativa de vida, diminuição acentuada das taxas de fecundidade, mortalidade infantil e mortalidade por doenças infecciosas (1). A saúde bucal do idoso, historicamente no Brasil, não recebeu a atenção merecida (2), com esse estrato populacional enfrentando dificuldades no acesso aos serviços de saúde odontológicos (3). Adicionalmente, os idosos carregam a herança de um modelo assistencial centrado em práticas curativas e mutiladoras (4). Tais situações contribuíram para o quadro de saúde bucal precário evidenciado nos dois últimos levantamentos epidemiológicos brasileiros de saúde bucal que incluíram idosos de 65 a 74 anos de idade: SB Brasil 2002/2003 (5) e SB Brasil 2010 (6).

Em ambos os levantamentos, os idosos apresentaram um quadro de saúde bucal representado, principalmente, por elevada perda dentária e alta necessidade de próteses. De 2002/2003 para 2010, o Índice de Dentes Cariados, Perdidos e Obturados (CPO-D) praticamente não se alterou, ficando em 27,5 em 2010, enquanto que, em 2003, a média era de 27,8, com a maioria correspondendo ao componente "extraído". No levantamento de 2010, 23,9% dos idosos necessitavam de prótese total em pelo menos um maxilar e 15,4% necessitam de prótese total superior e inferior. Estes números foram muito próximos dos encontrados em 2003. Outros estudos isolados entre idosos brasileiros também evidenciaram condições de saúde bucal semelhantes (1, 3, 7).

Além do estudo das condições normativas de saúde bucal, a investigação de aspectos subjetivos tem sido valorizada (8, 9). Nesse contexto, estudos sobre a autopercepção em saúde bucal contribuem para orientar decisões políticas que tenham como meta a qualidade de vida e não meramente a saúde física (10). Adicionalmente, entender como a pessoa percebe sua condição bucal é importante, pois a principal razão dos idosos não procurarem os serviços odontológicos é a não percepção de sua necessidade (11).

A autopercepção em saúde é a interpretação que uma pessoa faz de seu estado de saúde e experiências no contexto de sua vida diária e baseia-se em geral, na informação e nos conhecimentos de saúde e doença mediados pela experiência prévia e pelo contexto social, cultural e histórico (12). A autopercepção da saúde bucal é uma medida multidimensional que reflete a experiência subjetiva dos indivíduos sobre seu bem-estar funcional, social e psicológico (10,13-16).

Dentre os fatores que podem influenciar a autopercepção da saúde bucal, estudos anteriores identificaram os relativos ao ambiente externo, ao indivíduo, às condições objetivas e subjetivas da saúde bucal (17,18). O ambiente externo refere-se ao local de residência do indivíduo e ao sistema de atenção à saúde disponível, que pode ou não ofertar serviços odontológicos gratuitos que facilitem o acesso aos cuidados odontológicos. No nível individual, a autopercepção foi influenciada por fatores direta ou indiretamente relacionados à saúde. Entre esses foram associadasas características demográficas, como idade, o sexo, a raça e fatores de predisposição, como escolaridade e acesso a informações sobre cuidados preventivos (17). Também fez parte do nível individual a disponibilidade de recursos, incluindo a renda pessoal e familiar, assim como a adesão a um plano de saúde que pode facilitar o acesso à atenção odontológica (14,18). As condições objetivas de saúde bucal associadas previamente à autopercepção da saúde bucal foram o número de dentes presentes, o número de dentes cariados e obturados presentes, o Índice Periodontal Comunitário (CPI), o Índice de Perda de Inserção (PIP), o edentulismo, o uso e a necessidade de próteses e a necessidade de tratamento odontológico (14, 17). No campo subjetivo, a autopercepção da saúde bucal foi associada a outros julgamentos pessoais como auto-avaliação da necessidade de tratamento odontológico (19), a sensibilidade dolorosa dos dentes e gengivas (19, 20), a auto-avaliação da aparência bucal (20), da mastigação, da fala e dos relacionamentos pessoais em função das condições bucais (9,14). Finalmente, a autopercepção da saúde bucal não foi dissociada da saúde geral, sofrendo a influência da presença de doenças sistêmicas e da saúde mental (19, 21).

No Levantamento Epidemiológico das Condições de Saúde Bucal da população brasileira, projeto SB Brasil 2002/2003, a autopercepção da saúde bucal, da fala, da aparência dos dentes e gengivas e da mastigação foi avaliada por meio de questões estruturadas com opções de respostas em escala de Likert: “Como classificaria sua saúde bucal?, Como classificaria a aparência de seus dentes e gengivas?, Como classificaria sua mastigação?, Como classificaria

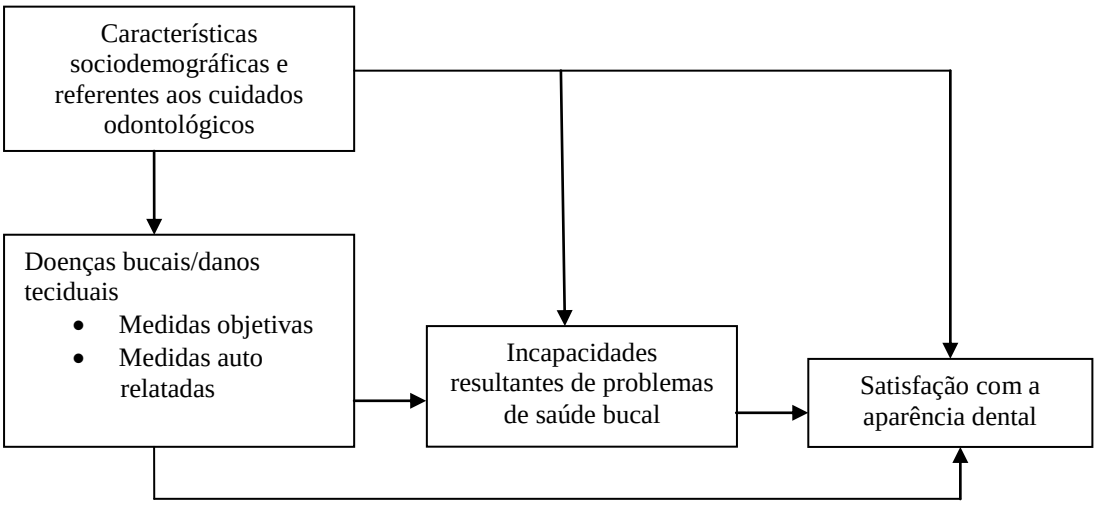
sua fala devido aos dentes e gengivas?" (1 - Péssima, 2 - Ruim, 3 - Regular, 4 - Boa, 5 – Ótima) (5). Outras duas questões avaliaram a percepção sobre o comprometimento do relacionamento com as pessoas devido a problemas na saúde bucal e sensação de dor: "De que forma a sua saúde bucal afeta o seu relacionamento com outras pessoas?" (Não sabe / Não informou, Não afeta, Afeta pouco, Afeta mais ou menos, Afeta muito) e "O quanto de dor seus dentes e gengivas causaram nos últimos 3 meses?" (Nenhuma dor, Pouca dor, Média dor, Muita dor). Alguns estudos foram identificados sobre a autopercepção da saúde bucal entre idosos utilizando o banco de dados do SB Brasil (10, 19, 21). Nos três estudos, a autopercepção da aparência dos dentes e gengivas dos idosos brasileiros foi o fator mais fortemente associado à autopercepção da saúde bucal (10, 19, 21).

A estética dental constitui uma importante dimensão da saúde bucal e tem sido associada com a qualidade de vida (22), influenciando a auto-estima, a auto-imagem e as relações interpessoais (23). Os dentes suportam fisicamente a parte inferior da face, exercendo um papel fundamental na manutenção da forma normal do rosto e na percepção da aparência dento-facial (22). Dentes perdidos, cariados e esteticamente comprometidos afetam a aparência e isto pode ter consequências negativas na auto-imagem, interação social e saúde psicológica (22), sendo que o grau de angústia sentida pelos indivíduos é subjetivo e não tem relação discernível com a real extensão da deficiência (24). Além disso, o processo de envelhecimento afeta a estética do sorriso através da alteração do tamanho, posição e cor dos dentes (22) e, adicionalmente, com o passar do tempo ocorre perda da tonicidade dos músculos orofaciais que, em associação com a perda dos dentes, podem causar prematuramente um sulco nasolabial que contribui para dar a face um aspecto cansado e envelhecido (22, 23). A perda da dimensão vertical acarretada pela ausência dos dentes e não utilização de próteses dentárias reabilitadoras e a falta da tonicidade muscular dos lábios são também apontadas na literatura como responsáveis pela insatisfação estética entre os idosos por refletir a imagem do "estar velho" e, consequentemente, mostrar as marcas do tempo (23).

Estudos têm mostrado que a preocupação com a aparência dental é maior nos indivíduos de meia idade e esta prioridade decresce com o avançar da idade (24, 25). Esse efeito pode ser atribuído ao fato dos mais jovens terem uma inserção social mais ativa e, desta forma, demonstrariam maior preocupação com seus problemas bucais em função de suas atividades na sociedade e de seus relacionamentos interpessoais (25). Contudo, estudos com abordagem qualitativa demonstraram que os idosos percebem um prejuízo na aparência como resultado

da ausência de dentes (22, 24). A mutilação dentária predispõe um estado de doença, pois assinala mudanças físicas, biológicas e emocionais além de reforçar as desigualdades sociais por estigmatizar a população pobre, pois as extrações são predominantes em pacientes de baixa renda e escolaridade (26). As extrações dentárias são aceitas como a solução mais prática e econômica, porque os problemas bucais acumulados desde a infância tornam-se cada vez mais complexos e dispendiosos, sendo que na maioria dos casos os dentes extraídos poderiam ser restaurados (11).

Não foram identificados estudos prévios sobre os fatores associados à autopercepção da aparência dos dentes e gengivas entre idosos brasileiros. Estudos anteriores investigaram a prevalência da insatisfação com a aparência e seu impacto na qualidade de vida das pessoas utilizando diferentes métodos (avaliação das características pessoais por meio de fotografias, revisão da literatura e entrevista semi-estruturada) (23, 24, 27). Meng *et al*. (22) propuseram um modelo teórico dos fatores associados à insatisfação com a aparência dental, a partir da revisão do modelo multidimensional da saúde bucal (28), agrupando-os em sociodemográficos, referentes aos cuidados odontológicos, medidas de doenças bucais e medidas de incapacidades resultantes de problemas bucais. (Figura1).



Fonte: Revisão adaptada do modelo teórico multidimensional de saúde oral (Gilbert et al, 1998).

Figura 1: Modelo teórico da relação entre variáveis explicativas e a satisfação com a aparência dental

Estudo anterior relatou que a estética determina mais a necessidade subjetiva dos pacientes em substituir a falta de dentes que os fatores funcionais (11). O tratamento reabilitador

protético dos indivíduos edêntulos restabelece somente 25% da capacidade mastigatória obtida com a dentição natural, entretanto, a importância estética deste tipo de tratamento é considerada o fator de maior impacto no seu sucesso ou insucesso, superando as limitações que as próteses proporcionam. Indivíduos que possuem próteses inadequadas, geralmente continuam a usá-las em função da aparência. As próteses quando mal adaptadas podem desencadear outras doenças, piorar a qualidade de vida, principalmente pela dificuldade de mastigação ou interferir negativamente nas relações do indivíduo em casa, no trabalho e no lazer (29).

Assim, considerando a alta prevalência de perda dentária entre idosos brasileiros (5, 6) e a possibilidade de reabilitação com próteses com melhoria na qualidade de vida, esse estudo investigou a associação entre a autopercepção negativa da aparência dos dentes e gengivas com o uso/necessidade de próteses entre idosos brasileiros.

2 OBJETIVO

2.1 Objetivo Geral

- Avaliar a associação entre a necessidade/uso de prótese dentária e a autopercepção da aparência dos dentes e gengivas entre idosos brasileiros.

2.2 Objetivos Específicos

- Avaliar a associação entre a autopercepção da aparência dos dentes e gengivas e fatores sociodemográficos (região geográfica, local de residência, idade, gênero, etnia, escolaridade e renda) entre idosos brasileiros.

- Avaliar a associação entre a autopercepção da aparência dos dentes e gengivas e medidas clínicas da saúde bucal (cárie, edentulismo, uso de prótese e necessidade de tratamento) entre idosos brasileiros.

- Avaliar a associação entre a autopercepção da aparência dos dentes e gengivas e medidas auto-relatadas da saúde bucal entre idosos brasileiros.

- Avaliar a associação entre a autopercepção da aparência dos dentes e gengivas e medidas do acesso ao cuidado odontológico.

3 PRODUTOS

3.1 Artigo 1: *The need for prostheses is associated with the poor self-rated oral appearance among elderly Brazilians* formatado segundo normas de publicação do periódico Gerodontology.

3.1 Artigo 1

The need for prostheses is associated with the poor self-rated oral appearance among elderly Brazilians

Abstract

Objectives: To investigate the association between poor self-rated oral appearance and the need to use dental prostheses among Brazilian elderly. Material and Methods: National data from a cross-sectional population-based study with a multistage random sample of older individuals (aged 65-74) in 250 towns were analyzed. Data collection included oral examinations and structured interviews at elderly households. The outcome was measured by a single five-point-response-scale question dichotomized into 'poor' (poor/very poor) and 'good' (fair/good/very good) self-rated oral appearance. Data analyses used Robust Poisson regression models. Results: The prevalence of poor self-rated oral appearance was 20.6%. Higher prevalence was found in elders who used and/or needed a replacement for an upper partial denture, who did not use and/or need a partial or complete upper or lower denture, independent of all the other variables. The prevalence was also associated with age, dental services use, access to information about preventing oral problems, time since the last dental visit, number of present and decayed teeth, self-perception of the need for treatment, dental/ gingival pain, ability chewing and perception that oral health affects their relationships with other people. Conclusions: Improved access to dental services and rehabilitation with dentures may contribute to greater appearance satisfaction among the elderly.

Introduction

Individuals rated as attractive tend to earn more, have more successful life outcomes and have a greater sense of self-worth than those who feel less-attractive (1). Facial

appearance influences the assessment of a variety of personal characteristics, including personality, integrity, social and intellectual competence and mental health (2). Dental appearance is an important part of facial attractiveness. The mouth is visible, used in social interactions, evaluated by other people in face-to-face situations and has been identified as one of the most important features in the assessment of facial attractiveness (2-4). Poor dental appearance produces negative perceptions of personal characteristics, which may vary according to cultural traditions and social backgrounds (3). Additionally, dental appearance has also been found to be correlated with quality of life (5).

An individuals' concern about dental appearance is greatest in middle age and decreases in priority in old age (6, 7). Thus, although the elderly express some dissatisfaction about their dental appearance, it is often assumed that they no longer have great expectations related to it, and this aspect of their health is often regarded as of no special importance (8).

However, a previous study has shown that, even in old age, the mouth remained important as a core feature of overall appearance, both personally and socially (9). The only quantitative study found on this topic among German elderly found that dental appearance remains an important item for the overall appearance rating (8).

Qualitative studies have shown that the elderly perceive that their appearance is damaged by the lack of teeth (9,10). Tooth loss was also associated with reduced self-esteem, a sense of rejection by others and changes in behavior (eating, smiling, drinking and establishing close relationships) (11). Three Brazilian studies have shown that self-rated oral appearance is strongly and directly related to self-rated oral health among the elderly (12-14).

It has been previously reported that, among the elderly, aesthetic rather than functional factors dictate a patient's subjective need to replace missing teeth (15). Thus, dentists frequently recommend removable or fixed prosthetic treatments for tooth loss (16). Self-rated oral appearance has gained increasing interest among researchers and dental clinicians

because patients and dentists often differ in their evaluations of dental aesthetics (17). No population-based study of the elderly has simultaneously investigated the relationships between self-rated oral appearance, sociodemographic factors and key clinical and self-reported oral health measures. Therefore, considering the high amount of teeth lost among Brazilian elderly (18) and the possibility of rehabilitation with dental prostheses, this study intends to investigate the association between a poor self-rated oral appearance and the use or need of dental prostheses in this population.

Materials and Methods

This was a cross-sectional study that used the database from an epidemiological survey on oral health in Brazil, conducted in 2002-2003 by the Ministry of Health (19). In total, 108,921 individuals from 250 municipalities participated, representing 85% of the total probable sample predicted by stratified clusters (127,939). Further information about the survey is presented elsewhere (19). In this study, individuals between the ages of 65 and 74 were considered representative of the elderly age group.

This study examined tooth decay, periodontal conditions (the Community Periodontal Index and the Clinical Attachment Loss), edentulism and the use of or the need of prostheses (20). The subjects' socioeconomic conditions were evaluated through interviews, as were the use of dental services and the self-rate oral health (19). Interviews and examinations were conducted by trained dental surgeons at the subjects' homes under natural lighting, using a periodontal probe, dental mirrors and wooden spatulas. Approximately 5% of the examinations were performed in duplicate, and acceptable levels of inter- and intraexaminer agreement were achieved (18).

The dependent variable was self-rated oral appearance, obtained by the following question: "*How would you classify the appearance of your teeth and gums? (very poor, poor,*

fair, good or very good)". The response options were categorized as good (fair/good/very good) or poor (*very poor/poor*) to allow bivariate and multivariate analyses.

The main independent variable was the use and/or the need of prosthesis for the upper or/and lower arches. The following response options applied to prosthesis use: 0-does not use a dental prosthesis, 1-uses a fixed bridge, 2-uses more than one fixed bridge, 3-uses a partial removable denture, 4-uses one or more fixed bridges and one or more partial removable dentures and 5-uses full dentures. The following options were available for the need for dentures: 0-does not need a dental prosthesis; 1-needs a prosthesis, fixed or removable, to replace one element; 2-needs a prosthesis, fixed or removable, to replace more than one element; 3-needs a combination of prostheses, fixed and/or removable, to replace one or more than one element; and 4-needs a complete dental prosthesis. To identify associations, these variables were combined to generate the two variables: use and need of upper prosthesis and the use and need of a lower prosthesis, each one with the following answering categories: uses complete or partial, does not need; does not use, does not need; partial use, needs a substitution; does not use, needs partial; does not use, needs complete.

The other independent variables were combined into four subgroups according to the theoretical model proposed by Meng*et al*. (7) to identify the factors associated with dental appearance satisfaction:

- *Sociodemographic characteristics*: Brazilian macroregion (southeast, south, midwest, northeast and north), place of residence (urban or rural), age, sex, self-declared skin color according to Brazilian census categories (white, lighter-skinned black, darker-skinned black, yellow-Asian descendents and indigenous), years of education and per capita income in *Reais* (R$ - Brazilian currency). Age was originally collected as a discrete numerical variable and was categorized into two age groups based on the median interval (65-69 and 70-74 years). Race responses were categorized into whites and nonwhites (lighter-skinned black, darker-

skinned black, yellow-Asian descendents and indigenous). The categories for years of education were defined as illiterate (0 years of study), primary education (1 to 4 years) and higher levels of education (≥ 5 years). Per capita income in *Reais* was obtained by dividing the family income (continuous variable) by the number of inhabitants per household and was then categorized into three groups according to the following tertiles of the distribution: R$0-R$99.00 (US$0-US$33.79), R$100.00-R$200.00 (US$ 34.13-US$68.26) and ≥ R$201.00 (> US$ 68.60).

- *Approach to dental care*: Variables included dental insurance status [Type of dental service used, categorized into SUS (Unified National Health System), private or never used; access to information about avoiding oral problems (yes, no); time since the last dental visit (≤2 years, ≥ 3 years or never used), reason for the last dental visit (routine/repairs/maintenance; pain/bleeding gums/dental cavities/injury/lumps or spots/ swollen face or never used].

- *Normative and self-reported oral health conditions*: The variables addressing oral health conditions included the following: the number of permanent teeth present, the number of decayed permanent teeth, the number of extracted superior-anterior teeth and the number of extracted inferior-anterior teeth. The elderly who needed restoration of one, two or more surfaces; a crown for any reason; veneer; pulp treatment and restoration; extraction; remineralization of white spots; and sealant were categorized as needing dental treatment. The perceived need for dental treatment was also considered. Periodontal conditions were investigated; however, they were not included in this investigation because it only matters to the elderly with teeth.

-*Self-reported oral disadvantages*: Dental and gingival pain within the last six months was categorized as absent (no pain) or present (slight pain, moderate pain or substantial pain).

Chewing ability (good or poor) and damage to relationships with other people as a result of tooth or gum conditions were included.

The survey was conducted according to the ethical principles of the Helsinki Declaration and was approved by CONEP (Process No. 581/2000).

Descriptive statistics were generated for each of the studied variables. Bivariate and multivariate analyses were conducted using a Robust Poisson regression model in order to produce direct estimates of all PRs, using 95% CI and Wald`s test for statistical significance. Variables showing a p-value <0.25 in the bivariate analysis were included in the multivariate analysis, in decreasing order of the significance level. The final model showed the association between the use of/need for prostheses and the self-rated oral appearance after adjusting for the confounding variables ($p<0.05$). All analyses were performed using PASW® (Predictive Analytics Software) version 18.0 for Windows ®.

Results

A sample of 5,349 people with an average age of 68.8 years (± 3.16) was interviewed and examined. A total of 510 individuals did not report their self-rated appearance and were, of this reason, excluded from the analysis, remaining 4,839 elderly participants.

Table 1 shows the sample distribution and the poor self-rated oral appearance prevalence according to the independent variables studied. The overall prevalence of poor self-rated appearance was 20.6% [very poor=268 (5.5%); poor=730 (15.1%); fair=1,431 (29.6%); good=2,253 (46.6%); very good=157 (3.2%)]. Regarding the use/need of dental prostheses, 15.7% % did not use but needed a partial upper prosthesis and 15.0% did not use but needed a complete upper prosthesis; 33.1% did not use but needed a partial lower prosthesis and 22.9% did not use but needed a complete lower prosthesis. Among those who used an upper or lower prosthesis, 89.2% used a complete upper prosthesis, and 82.6% used a

complete lower prosthesis; 53.2% of the elderly were edentulous. In the bivariate analysis, all independent variables were associated with poor self-rated oral appearance at the level of <0.25, except place of residence (Table 1).

Table 2 shows the final Poisson model of the association between the independent variables and self-rated oral appearance. The prevalence of poor self-rated oral appearance was higher among those who did not used and did not need upper prosthesis; those who used and needed partial upper prosthesis substitution and those who did not use but needed a partial or complete upper or lower prosthesis, independent of the other variables. The prevalence of poor self-rated oral appearance was also greater among those who had never used a dental service, those who had last consulted a dentist more than three years ago, those without access to information about avoiding oral health problems, those who had a greater number of decayed teeth, those with presence of dental and gingival pain in the last 6 months, those with a self-perceived need for dental treatment, with poor chewing ability and those who believed their oral health affected their relationships. The prevalence of poor self-rated oral appearance was lower among those with a greater number of teeth present and among the elderly in the 70- to 74-year age range (Table 2).

Discussion

This is the first study in Brazil to investigate the association between the use of and the need for dental prosthetics and poor self-rated oral appearance among the elderly. The prevalence of poor oral appearance was surprisingly low *vis a vis* the poor oral health condition of the Brazilian elderly (18). High satisfaction with their oral appearance has also been identified among English elderly (8), but their oral health condition is much better than that found among Brazilians. In another study in the United Kingdom, 80.3% of the 55+

population were satisfied with their tooth color (6), but, aesthetics were addressed with a particular objective and a preconceived standard of what is beautiful or acceptable.

In this study, the low prevalence of a poor self-rated oral appearance may be explained by the fact that, despite the high rate of tooth loss, the majority of the respondents used a dental prosthesis, most frequently an upper prostheses. The importance of dental prostheses for appearance was previously addressed in the observation that the elderly use these devices for a satisfactory appearance even when they do not fit well (21). Moreover, some authors have suggested that dental appearance in older people may be overshadowed by other health needs and concerns (6).

Among elderly who rated their oral appearance as poor, a large proportion did not use but needed dental prosthesis to replace missing teeth. This normative variable was the most strongly and independently associated with poor self-rated oral appearance. Dental prostheses offer substitutes for a part of the body that has been lost, restoring it to an accepted "normal" state (22). A previous study of university dental clinic patients aged 36 to 50 years showed that the appearance of the teeth was the most important characteristic for users of removable prostheses (20). A longitudinal study in Brazil showed that aesthetics, along with communication, was the main reason why participants wished to replace lost teeth with prostheses (23). Thus, concerns about replacing lost teeth are greater when aesthetics are involved (15, 24), so much so that prosthetic rehabilitation for the elderly should consider the psychological and social aspects of dental loss in addition to the functional implications. Denture use can help minimize the effects of tooth loss by improving self-esteem and interpersonal relationships (25, 26), thus contributing to improve the self-rated oral appearance, as the elderly associate good appearance with the ability to communicate and to make social contact (27).

In this study, the use/need of dental prostheses was associated with poor self-rated oral appearance independent of the number of teeth present. However, the elderly participants with more natural teeth evaluated their appearance more positively. The number of teeth present has previously been associated with satisfaction with their mouths in adults aged 45 to 54 years (23), reinforcing the importance of maintaining natural teeth. The loss of natural teeth has a negative impact on older adults' daily life and quality of life, as indicated by the results of various studies using different health indicators including pain, discomfort, functional limitations, dissatisfaction with appearance, difficulty with eating and speaking and difficulty in relationships (25, 28, 29). In general, individuals without teeth and those with dental prostheses feel that they are at a disadvantage relative to those who have their natural teeth (30).

The number of decayed teeth, another normative condition of oral health, was positively associated with a poor self-rated oral appearance. This association was not previously found. However, the number of untreated decayed teeth has been identified as one of the important predictors of self-rated oral health among elderly adults (13, 31-33). Cavities may alter the color and shape of teeth, which may compromise the perception of appearance among the elderly and damage their self-esteem.

Elderly adults who had never used dental services or who had only used dental services in the distant past displayed a greater prevalence of poor self-rated oral appearance. These variables were previously associated with a poor self-rated oral health among elderly Brazilians (12-14). The positive and negative aspects of regular dental visits have been described in the literature (34). Irregular or infrequent users of dental services have less restored teeth and higher numbers of carious teeth than regular dental service users (35). Additionally, study in Brazil showed that, in general, irregular users of dental services lost more teeth than regular users (36). Thus, routine visits can help the preservation of natural and

functional dentition, contributing to a better perception of appearance. Moreover, dental visits might reassure and inform people, boost people's confidence on their oral health condition and thus more likely to report positive aspects of oral health (37).

The prevalence for poor self-rated oral appearance was lower among the oldest age group. This finding is similar to studies that included subjects with a wider age range, which found lower prevalence of poor self-rated oral appearance among younger individuals (6, 38, 39). It could be argued that younger people are trying to look more beautiful and healthy, knowing that there is a strong link between appearance and social status that is measured in terms of better jobs and social acceptability (6). Thus, the older elderly may be more accepting of poorer dental appearance, incorporate it in their self-image and have a low desire to make changes (6).

The higher prevalence of poor self-rated oral appearance among those who felt that oral health affects relationships with other people shows the importance of dental appearance to interacting socially without inhibition or embarrassment (40). Poor self-rated oral appearance was also greater among those who had experienced pain in the last six months, those who perceived the need for dental treatment and those who were unsatisfied with their chewing ability. These individuals likely experienced a common oral health condition involving a lack of teeth or teeth that were in a precarious state, which negatively impacted various oral health aspects.

Some variables that had previously been associated with dental appearance or prostheses were not associated with the self-rated oral appearance in this study. A greater poor self-rated oral appearance was expected among women (6,8,38,41) and those with a higher level of education (6,42). Cultural differences, differences in age composition of the individuals studied and in methodological aspects of these studies may explain the variations in results.

The main methodological consideration of this study involved the sample design. The cluster sampling technique and the sample selection method ensured the study's internal validity. Although sample weights were not calculated (43), it was estimated that this procedure would not impact the magnitudes and direction of the associations found (44). One limitation which deserves comments is that self-rated oral appearance was not evaluated for teeth and gums separately, and this unabled us to consider the specific aspects of each of them. However, we believe that the overall perception of appearance is what empowers the individuals' relationships and shape their self-esteem. Questions such as the "appropriate" size, color and shape would only add detailed information to the more general feeling.

This study supports the present oral health policy in Brazil which aims to offer dental prostheses to all elderly as part of the Brazilian public dentistry health service. The elderly who need rehabilitation with prostheses perceive their oral appearance more negatively than those using dental prostheses. Improvements in the quality of preventative information, access to dental services, treatment of decayed teeth, maintenance of natural teeth and rehabilitation with dental prostheses may contribute to greater satisfaction with appearance, especially among the elderly at a more advanced age, who experience dental and gingival pain, those who perceive a need for dental treatment and those whose ability chewing is affected.

Conclusions

Improved access to dental services and rehabilitation with dentures may contribute to greater appearance satisfaction among the elderly.

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Table 1: Distribution of the sample and prevalence of a poor self-rated oral appearance among elderly Brazilians, based on the independent variables studied and the results of the bivariate analysis. Brazil, 2002-2003 (n=4,839).

	Sample distribution		Poor self-rated oral appearance Prevalence		PR	95% CI	p-value
	n	**%**	**n**	**%**			
Poor self-rated oral appearance	**998**	**20.6**	-	-	-	-	-
SOCIODEMOGRAPHIC CHARACTERISTICS							
Brazilian macroregion							
Southeast	958	19.8	144	15.0	1		
South	1,307	27.0	183	14.0	0.93	0.76-1.14	0.491
Midwest	648	13.4	133	20.5	1.37	1.10-1.69	0.004
Northeast	1,256	26.0	345	27.5	1.83	1.53-2.18	0.000
North	670	13.8	193	28.8	1.92	1.58-2.32	0.000
Residence location							
Urban area	4,222	87.3	873	20.7	1		
Rural area	615	12.7	123	20.0	0.97	0.82-1.15	0.699
Age range							
65 –69	2,929	60.5	644	22.0	1	1	
70 – 74	1,910	39.5	354	18.5	0.84	0.75-0.95	0.004
Sex							
Female	2,945	60.9	565	19.2	1		
Male	1,894	39.1	433	22.9	1.19	1.07-1.33	0.002
Self-declared skin color							
White	2,366	49.1	380	16.1	1		
Non-white	2,457	50.9	616	25.1	1.56	1.39-1.75	0.000
Years of education							
≥5 years	968	20.0	163	16.8	1		
1-4	2,203	45.5	434	19.7	1.17	0.99-1.38	0.060
0	1,668	34.5	401	24.0	1.43	1.21-1.68	0.000
Per capita income in reais							
R$201.00 or more	1,441	30.0	211	14.6	1		
R$100.00 to R$200.00	1,906	39.6	370	19.4	1.33	1.14-1.55	0.000
0 to R$99.00	1,461	30.4	409	28.0	1.91	1.65-2.22	0.000
APPROACH TO DENTAL CARE							
Type of dental service used							
Private	2,414	52.2	368	15.2	1		
SUS	2,026	43.8	474	23.4	1.54	1.36-1.74	0.000
Never used	188	4.1	90	47.9	3.14	2.63-3.75	0.000
Access to information about avoiding oral problems							
Yes	1,983	41.0	323	16.3	1		
No	2,853	59.0	675	23.7	1.45	1.29-1.64	0.000
Time since the last dental visit							
≤ 2 years	1,442	29.9	257	17.8	1		
≥ 3 years	3,195	66.2	647	20.3	1.14	0.99-1.30	0.055
Never used	188	3.9	90	47.4	2.69	2.23-3.24	0.000
Reason for last dental visit							
Routine/repairs/maintenance	882	18.2	98	11.1	1		
Pain/bleeding gums/dental cavities/ injury/swollen face	3,769	77.9	810	21.5	1.93	1.59-2.35	0.000
Never used	188	3.9	90	47.9	4.31	3.39-5.47	0.000
NORMATIVE ORAL HEALTH CONDITIONS							
Number of permanent teeth present	-	-	-	-	1.02	1.01-1.02	0.000
Number of decayed permanent teeth	-	-	-	-	1.09	1.08-1.10	0.000
Number of extracted superior-anterior teeth					0.96	0.95-0.98	0.000
Number of extracted inferior-anterior teeth					0.96	0.95-0.98	0.000
Need for dental treatment							
No	3,286	67.9	485	14.8	1		
Yes	1,553	32.1	513	33.0	2.24	2.01-2.49	0.000
The use of and need for an upper prosthesis							
Uses complete or partial, does not need	3,172	65.7	416	13.1	1		
Does not use, does not need	146	3.0	33	22.6	1.72	1.26-2.36	0.001
Partial use; needs a substitution	74	1.5	18	24.3	1.86	1.23-2.80	0.003
Does not use, needs partial	735	15.2	267	36.3	2.77	2.43-3.16	0.000
Does not use, needs complete	701	14.5	261	37.2	2.84	2.49-3.24	0.000

The use of and need for a lower prosthesis							
Uses complete or partial, does not need	1,998	41.4	211	10.6			
Does not use, does not need	136	2.8	26	19.1	1.81	1.25-2.62	0.002
Partial use; needs a substitution	60	1.3	7	11.7	1.11	0.54-2.24	0.783
Does not use, needs partial	1,553	33.1	453	29.2	2.76	2.38-3.21	0.000
Does not use, needs complete	1,074	22.9	295	27.5	2.60	2.22-3.05	0.000
Self-perception of the need for treatment							
No	2,161	44.7	210	9.7	1		
Yes	2,669	55.3	788	29.5	3.04	2.64-3.50	0.000
SELF-REPORTED ORAL DISADVANTAGE							
Dental and gingival pain within last 6 months							
Absent	3,700	76.5	619	16.7	1		
Present	1,138	23.5	378	33.2	1.99	1.78-2.22	0.000
Chewing ability							
Good	3,643	75.7	350	9.6	1		
Poor	1,170	24.3	641	54.8	5.70	5.10-6.38	0.000
Oral health affects relationships with other people							
Does not affect	3,163	71.8	401	12.7	1		
Affects	1,240	28.2	477	38.5	3.03	2.70-3.40	0.000

Table 2: Associations among the independent variables and the poor self-rated oral appearance – final Poisson regression model. Brazil, 2002-2003.

	Adjusted PR (95%CI)*	p-value
The use of and need for an upper prosthesis		
Uses complete or partial, does not need	1	
Does not use, does not need	1.52 (1.04-2.22)	0.030
Partial use; needs a substitution	1.99 (1.30-3.04)	0.002
Does not use, needs partial	1.52 (1.27-1.83)	0.000
Does not use, needs complete	1.23 (1.04-1.45)	0.015
The use of and need for a lower prosthesis		
Uses complete or partial, does not need	1	
Does not use, does not need	1.14 (0.76-1.71)	0.531
Partial use; needs a substitution	0.75 (0.39-1.42)	0.374
Does not use, needs partial	1.37 (1.11-1.69)	0.004
Does not use, needs complete	1.34 (1.10-1.63)	0.004
Type of dental service		
Private	1	
SUS	1.15 (1.00-1.30)	0.052
Never used	1.55 (1.24-1.94)	0.000
Age range		
65-69	1	
70-74	0.84 (0.75-0.95)	0.004
Time since the last dental visit		
Less than 2 years	1	
More than 3 years	1.14 (1.01-1.29)	0.038
Access to information about avoiding oral problems		
Yes	1	
No	1.15 (1.02-1.30)	0.021
Number of decayed teeth	1.03 (1.02-1.05)	0.000
Number of teeth present	0.98 (0.97-0.99)	0.005
Self-perception of the need for treatment		
No	1	
Yes	1.73 (1.49-2.02)	0.000
Dental and gingival pain within last 6 months		
Absent	1	
Present	1.24 (1.10-1.39)	0.000
Chewing ability		
Good	1	
Poor	3.67 (3.17-4.26)	0.000
Oral health affects relationships with other people		
Does not affect	1	
Affects	1.53 (1.36-1.73)	0.000

4 CONSIDERAÇÕES FINAIS

Esse estudo evidenciou que a autopercepção da aparência dos dentes e gengivas foi associada a múltiplos fatores, mas, de forma independente, houve menor prevalência de autopercepção negativa entre os idosos que usavam próteses dentárias. A reabilitação com próteses poderá ter impacto positivo na qualidade de vida dos idosos, contribuindo para a melhoria de aspectos funcionais, estéticos e sociais.

Portanto, esse estudo suporta as políticas públicas de saúde bucal brasileiras, que, a partir de 2004, passaram a ofertar próteses dentárias no âmbito do SUS nas propostas da Política Nacional de Saúde Bucal (PNSB), com o repasse dos recursos financeiros para incentivo de ações em saúde bucal de média complexidade com a implantação e custeio mensal dos Centros de Especialidades Odontológicos (CEO) e a remuneração de próteses dentárias confeccionadas nos laboratórios Regionais de Próteses Dentárias (LRPD) (30). Mais recentemente, novo avanço foi alcançado, pois o Ministério da Saúde passou a financiar, por meio da Portaria Ministerial nº 718/ Secretaria de Atenção à Saúde SAS de 20/12/2010, implante dentário osteointegrado (incluindo a prótese sobre o implante) (31). Os recentes avanços nas políticas públicas provavelmente aumentarão o acesso desses idosos ao tratamento odontológico, possibilitando o tratamento de suas necessidades, bem como a reabilitação com próteses, refletindo num quadro epidemiológico mais favorável.

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ANEXO

ANEXO A – Normas da Revista *Gerodontology*

Published on behalf of the Gerodontology Association

Edited by:
James P. Newton

Print ISSN: 0734-0664
Online ISSN: 1741-2358
Frequency: Quarterly
Current Volume: 28 / 2011
ISI Journal Citation Reports® Ranking: 2010: Geriatrics & Gerontology: 32 / 44; Dentistry, Oral Surgery & Medicine: 47 / 74
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1. GENERAL

The ultimate aim of the subject area of gerodontology is to improve the quality of life and oral health of older people. *Gerodontology* fills the particular place of serving this subject area. The boundaries of most conventional dental specialities must be repeatedly crossed to provide optimal dental care for older people. Furthermore, management of other health problems impacts on their dental care and clinicians need knowledge in these numerous overlapping areas. Bringing together these diverse topics within one journal serves clinicians who have not time to scan many journals and it serves authors whose papers would therefore fail to access their target readership. The juxtaposition of papers from different specialities but sharing this patient-centred interest provides a synergy that serves progress in the subject of gerodontology.

Please read the instructions below carefully for details on the submission of manuscripts, the journal's requirements and standards as well as information concerning the procedure after a manuscript has been accepted for publication in *Gerodontology*. Authors are encouraged to visit http://authorservices.wiley.com/bauthor/author.asp for further information on the preparation and submission of articles and figures.

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Original Articles submitted to *Gerodontology* should include: Title Page, Abstract, Introduction, Material and Methods, Results, Discussion, Conclusions, References, and Acknowledgements, Tables, Figures and Figure Legends were appropriate.

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The Royal Marsden Hospital Bone- Marrow Transplantation Team. Failure of syngeneic bone- marrow graft without preconditioning in post- hepatitis marrow aplasia. Lancet 1977; 2: 628-630.

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(6) Personal author(s)

Eisen HN. Immunology: an introduction to molecular and cellular principles of the immune response, 5th edn. New York: Harper Row, 1984:406-420.

(7) Editor, compiler, chairman as author

Dausset J, Colombani J, eds. Histocompatibility testing 1972. Copenhagen: Munksgaard, 1973: 12-18.

(8) Chapter in a book

Weinstein L, Swartz MN. Pathogenic properties of invading microorganisms. In: Sodeman

WA Jr, Sodeman WA, eds. Pathologic physiology: mechanisms of disease. Philadelphia: WB Saunders, 1974: 457-480.

(9) Published proceedings paper

DePont B. Bone marrow transplantation in severe combined immunodeficiency with an unrelated MLC compatible donor. In: White HJ, Smith R, eds. Proceedings of 3rd Annual Meeting of the International Society for Experimental Hematology. Houston: International Society for Experimental Hematology, 1974: 44-50.

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