Artigo Original

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Factors associated with the use of public dental services by older people in Brazil

Fatores associados ao uso de serviços públicos de saúde bucal por idosos no Brasil

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Resumo

A saúde bucal faz parte da saúde geral e contribui ao bem-estar físico, psicológico e social dos indivíduos idosos. Entretanto, com o aumento da idade e da debilidade, um número considerável de idosos deixa de procurar os serviços de saúde bucal. OBJETIVO: descrever e verificar quais características socioeconômicos e demográficos estão associados a utilização de serviços de saúde bucal público por idosos brasileiros. MÉTODOS: trata-se de um estudo transversal, com dados da linha de base do Estudo Longitudinal da Saúde dos Idosos Brasileiros (ELSI-Brasil), realizado entre 2015 e 2016. A amostra foi delineada para representar a população brasileira com idade igual ou superior a 50 anos. RESULTADOS: Ao todo foram avaliados 2.969 indivíduos, que relataram utilizar os serviços de saúde bucal público. Ao verificar a associação entre os anos de escolaridade e uso de serviços públicos, observou-se que aqueles com 12 anos ou mais de escolaridade possuem uma prevalência de 83% a mais de utilizar os serviços públicos de saúde bucal quando comparados a quem possuem até 3 anos de escolaridade. Ao analisar ao índice de riqueza, percebeu-se que quanto maior o quintil de riqueza, maior foi a prevalência de utilização dos serviços públicos de saúde bucal. CONCLUSÃO: os resultados encontrados neste estudo sugerem que idosos com melhores condições socioeconômicas e com maior grau de escolaridade são os que mais acessam os serviços públicos de saúde bucal. Sugere-se que políticas que busquem reduzir as iniquidades e melhorem o acesso aos serviços públicos a população idosa brasileira sejam propostas.

Palavras-chave: uso de serviços odontológicos; determinantes sociais; envelhecimento

Abstract

Oral health is part of general health and contributes to the physical, psychological and social well-being of older individuals. However, with increasing age and debility, a considerable number of older people stop seeking dental services. OBJECTIVE: to describe and verify the socioeconomic and demographic characteristics which are associated with the use of public dental services by older Brazilians. METHODS: this is a cross-sectional study with baseline data from the Longitudinal Study of the Health of the Elderly (ELSI-Brasil), carried out between 2015 and 2016. The sample was designed to represent the Brazilian population aged 50 years or older. RESULTS: data from 2,969 individuals who reported using public dental services were analyzed. When verifying the association between years of schooling and the use of public services, it was observed that those with 12 years or more of schooling have 83% higher prevalence of using public dental services when compared to those who have up to 3 years of schooling. When analyzing the wealth index, the higher the wealth quintile, the greater the prevalence of the use of public dental services. CONCLUSION: the findings suggest that older people with better socioeconomic conditions and with a higher level of education are the ones who the most access public dental services. Policies seeking to reduce inequalities and to improve access to public services for the Brazilian older population must be proposed.

Keywords: use of dental services; social determinants; aging

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Introduction

The drop in the birth rate and the increase in life expectancy have led to an increase in the older population worldwide.[1] Previous studies show that Brazil is a country with a high and rapid aging process, with large discrepancies related to health inequities that surround the older population.[2] Currently, the prevalence of caries, periodontal disease and tooth loss in the Brazilian older population is high.[3] In addition, the search for dental services by this population is lower than by other age groups.[4,5]

It is known that individual factors such as sex, skin color, age and residence zone may influence the health-disease process, in addition, socioeconomic factors such as low education and low income interfere with the quality of life and health conditions of the older Brazilians.[2,6] These factors lead to injustices in health access and are markers of social inequality in the distribution and occurrence of oral diseases. In 2004, the National Oral Health Policy "Brasil Sorridente" has emerged and was responsible for expanding oral health coverage in primary care and offering specialized services such as periodontics, minor oral surgeries, oral diagnoses, prostheses and special care to patients with special needs.[7] However, even with all the efforts involved to improve access to oral health services, there is a part of the Brazilian population that still cannot access dental services.[2] Moreover, it is suggested that innovations in prevention and health promotion programs favor socioeconomically privileged populations, consequently increasing health inequalities.[5,8]

Considering the importance of updated data with a representative sample of the Brazilian older population, and its relevance in guiding oral health actions related to improving access to health services,[9] this study aims to describe and verify the factors associated with the use of public dental services by older Brazilians. The hypothesis of this study is that Brazilian older people who have better socioeconomic status access more frequently public dental services, reinforcing the inverse equity theory.

Materials and methods

This is a cross-sectional study with data from the baseline of the Longitudinal Study of the Health of the Elderly Brazilians (ELSI-Brasil), carried out between 2015 and 2016. The ELSI-Brasil is a research project carried out by the Ministry of Health of Brazil in partnership with several academic institutions. Its aim is to understand the aging and health of the older adults in the country.

The data collected by ELSI-Brasil are publicly available to the scientific community and to anyone interested in accessing them. The sample was designed to represent the Brazilian population aged 50 years or older.[9] It was based on the following strata: the municipality, the census tract and the participant's home. For municipalities with up to 750,000 inhabitants, the selection was made in three gains (municipality, census tract and household). For larger municipalities, the selection was based on two gains (census tract and household). [9]

The measures assessed in the ELSI-Brasil that were used in this study were included in the following instruments: an individual questionnaire answered by the adult selected to provide information more fruitfully; a household questionnaire answered by everyone aged 50 years or older residing in the household.[9] All interviews were conducted in the participants' homes by previously trained interviewers.[9] More details about the methodology and descriptive results of the ELSI-Brasil can be found in the study by Lima-Costa et al. (2018).[9] In the present

study, only individuals who reported having used public dental services were included.

The ELSI-Brasil was approved by the ethics board of FIOCRUZ (Certificate of Presentation for Ethical Appreciation: 34649814.3.0000.5091) and also by the National Research Ethics Committee of Brazil (Certificate of Presentation for Ethical Appreciation:63725117.9.0000.5091).[9]

Variables

Outcome - Use of Dental Services

The use of public dental services in the year prior to the interview was verified by the questions: When did you last go to the dentist?' (less than one year; from 1 to 2 years; 3 years or more; never been to the dentist or does not know/did not answer). The variable was categorized into "regular use" for individuals who have answered less than a year; and "non-regular use" for the other response options. This categorization is commonly used in the literature.[10]

Contextual demographic variables

The 5 Brazilian macro-regions were used: North; North East; Midwest; Southeast; and South. This information corresponds to the divisions of the Brazilian State based on natural, social, cultural and psychological aspects. In addition, the urbanicity of the household was taken into account, being categorized into rural and urban areas.[11]

Demographic and socioeconomic variables

The age was collected in years and categorized into: 50 to 59 years old; 60 to 69 years old; 70 years or older. To assess the level of education, the following question was used: "What was the last year of school that you have completed?". The categorization of this variable was carried out based on years of study: 0 to 3 years (initial grade); 4 to 7 (elementary school); and 8 to 11 (High School) and 12 years or more (Complete or incomplete higher education). Self-reported skin color was collected through the following question: "Which of the following best describes your color: White, black, brown, yellow or indigenous?". These options are the Brazilian Institute of Geography and Statistics criteria for defining race/ethnicity, and the variable was categorized as white, black/brown and yellow/indigenous. The categorizations were carried out due to the low frequency of the categories.

The measurement of wealth was based on a principal component analysis.[12] Information on the ownership of durable goods and housing characteristics was used based on the following information: access to internet; ownership of television; VCR or DVD; cable television; refrigerator; washing machine; dishwasher; dryer; computer; landline; cell phone; microwave; air conditioning; motorcycle; car; presence of a maid at home; the presence of masonry wall; access to piped water; paved road access; presence of bathroom; and family agglomeration, measured by the number of rooms in the house divided by the number of residents.[12] Once the wealth index was calculated, the variable was categorized into quintiles, as used in previous studies.[12,13]

Data analysis

Data were analyzed using the STATA 14 statistical program (Stata Corporation, College Station, TX, USA). Due to the complex sample, it was expanded using the sample weight. The crude and adjusted prevalence ratios (PR) were calculated with their respective confidence intervals of 95% (95% CI) and the significance level was set at 5%, through multivariate Poisson regression, since there is reliability in the use of this model with robust variance to estimate prevalence ratio.[14]

Results

The final sample of this study consisted of 2,969 participants. Table 1

presents the sample characteristics and the unadjusted analysis according to the exposure variables. It was possible to observe that most participants were residents of the Southeast region (41.1%), women (53.9%), residents of urban areas (81.3%), black and brown (61.2%). It was observed that residents of the Southeast region (34.8%), people living in urban areas (32.7%), white individuals (32.8%), with level of schooling equal to or greater than 12 years (55.1%) and belonging to the 5th quintile of wealth (53.7%) used the public dental service regularly.

Table 1. Weighted sample characteristics, prevalence and crude prevalence ratio of older adults who used public dental services in Brazil. (N:2.969)

Variables	%	Prevalence of regular use of dental services (95%CI)	Crude prevalence ratio / regular use (95%CI)
Region			
North	06.1	34.3(28.5- 40.6)	1
Northeast	30.4	26.8(23.4 – 30.6)	0.78 (0.62-0.97)*
Southeast	41.4	34.8(32.1- 38.7)	1.01(0.82 -1.24)
South	15.8	33.9(27.6-40.9)	0.98 (0.75-1.29)
Midwest	06.1	23.7(17.9-30.6)	0.68(0.50-0.95)*
Zone			
Urban	81.3	32.7(30.3-35.1)	1
Rural	18.6	26.5(21.6-32.1)	0.81 (0.65-1.0)
Sex			
Female	53.9	10.3(09.1-11.7)	1
Male	46.0	10.0(08.6-11.6)	1.05 (0.94-1.16)
Skin Color			
White	35.1	32.8(29.0-36.7)	1
Black/Brown	61.2	30.8(28.0-33.8)	0.94 (0.80-1.10)
Yellow/Indigenous	03.5	32.5 (22.7-44.1)	0.99(0.69-1.41)
Age (years)			
50-59	51.5	35.0(31.7-38.5)	1
60-69	29.9	28.6(25.1-32.5)	0.81 (0.68-0.97)*
≥70	18.5	26.4(22.7-30.6)	0.75(0.63-0.89)*
Education (years)			
0-3	33.1	23.1(20.4-26.1)	1
4-7	40.4	30.2(27.5-33.2)	1.30(1.12-1.51)*
8-11	13.3	34.3(29.4-39.5)	1.48(1.24-1.76)*
≥12	12.9	55.1(48.4-61.7)	2.37(1.99-2.84)*
Wealth			
1st quintile (poor)	28.2	21.5(18.0-25.5)	1
2nd quintile	24.5	28.9(25.7-32.2)	1.33(1.10-1.62)*
3rd quintile	20.9	31.9(27.5-36.8)	1.48(1.16-1.88)*
4th quintile	18.7	39.5(34.9-44.4)	1.83(1.48-2.25)*
5th quintile (rich)	08.1	53.7(45.8-61.5)	2.49(1.95-3.16)*

Analysis performed considering the sample weight / CI = Confidence Interval / *=*p*-Value < 0.05

In table 2 is presented the multivariate analysis, expressed through prevalence ratios. It was possible to observe that individuals residing in the Midwest region had a 34% (PR:0.66 [CI:0.48-0.90]) lower prevalence of using public dental services when compared to residents of the North region. It was also possible to verify that individuals aged 70 years or older used 17% (PR: 0.85 [CI: 0.71-0.98]) less public dental services than those aged between 50 and 59 years. When verifying the association between years of schooling and the use of public services, it was observed that those with 12 years or more of schooling had 83% higher prevalence (PR:

1.83 [1.49-2.26]) of using public dental services when compared to those with up to 3 years of schooling. When analyzing the wealth index, the higher the wealth quintile, the greater the prevalence of using public dental services. Individuals belonging to the richest quintile (Q5) had a 95% higher prevalence of using dental services when compared to the poorest quintile (Q1).

Table 2. Prevalence ratios (PR) of the use of public dental services in brazil adjusted by socioeconomic and demographic factors.

Variables	Prevalence ratio (PR) of use of public dental services (95%CI)[a]	*p*-Value
Socioeconomic and Demographic		
Region		
North	1	
Northeast	0.82 (0.65-1.03)	0.098
Southeast	0.94 (0.74-1.20)	0.661
South	0.92 (0.70-1.22)	0.594
Midwest	**0.66 (0.48-0.90)***	0.010
Zone		
Urban	1	
Rural	1.07 (0.82-1.38)	0.592
Sex		
Female	1	
Male	1.02 (0.91-1.13)	0.719
Skin Color		
White	1	
Black/Brown	1.07 (0.92-1.25)	0.355
Yellow/Indigenous	1.13 (0.80-1.60)	0.461
Age (years)		
50-59	1	
60-69	0.85 (0.72-1.02)	0.090
≥70	**0.83 (0.71-0.98)***	0.032
Education (years)		
0-3	1	
4-7	1.14 (0.96-1.35)	0.114
8-11	1.19 (0.98-1.45)	0.078
≥12	**1.83 (1.49-2.26)***	0.000
Wealth		
1st quintile (poor)	1	
2nd quintile	**1.23(0.99-1.53)***	0.060
3rd quintile	**1.31(1.01-1.70)***	0.041
4th quintile	**1.51(1.18-1.94)***	0.001
5th quintile (rich)	**1.95(1.46-2.59)***	0.000

All results obtained took into account the sample weight. CI = Confidence Interval *p-Value < 0.05
[a] adjusted by socioeconomic and demographic factors.

Discussion

This study aimed to describe and verify the socioeconomic and demographic factors which are associated with the use of public dental services by older Brazilians. The findings are in line with previous literature reinforcing the hypothesis that, although there has been a considerable increase in the use and access of dental services in Brazil, inequalities among social groups are still significant.[5,10,15]

It was found that individuals living in the Midwest region use public dental services less frequently when compared to residents from the North region. This factor can be explained by the poor distribution of oral health teams and the presence of

inequalities in supply in both regions.[16] In addition, there is a low coverage of oral health teams, a factor that may reflect on the provision of services by macro-regions.[16,17]

Older people with 12 years or more of schooling have used dental services almost twice as often as those with lower schooling.[18,19] This factor can be explained by the fact that education is one of the main limiting factors in the use of health services, since it is considered that individuals with more years of study seek more frequently general and dental services.[20] In addition, previous studies highlight that the greater the level of empowerment of the older regarding their oral health, the greater the search for preventive services.[20,21]

Older age was an inverse factor in the search for public dental services. Previous studies have shown that the oral health self-perception of older adults is considerably better than that of people in younger age groups, which can be explained in part by the absence of teeth and the use of dentures by the older adults with the absence of painful symptoms.[18,22] However, in addition to the autonomous absence, it is important to highlight that the degree and the number of comorbidities in the older population can influence access to dental services.[23,24] This reinforces the importance of the oral health team in the family health strategy, as well as participating in home visits, assuming an important role as a facilitator for the physical and social well-being of individuals who are unable to go to a health care unit.[15,25]

Individuals with higher levels of wealth used public dental services more often. This finding is in line with the previous literature, which states that older Brazilians who have better oral health conditions also have a higher socioeconomic level.[18] This reinforces the reverse equity theory, which suggests that access to health services tends to vary inversely with the demand of the population served,[8,26] operating more completely where there is less need for health services, resulting in increased inequities in access to public dental services.[15,27]

This study presents as potentialities its representative sample of Brazilian older adults, which made it possible to draw a socioeconomic profile of this population in relation to the use of public dental services. However, there are some limitations such as the cross-sectional design, that makes it impossible to infer causal relationships (reverse temporality). Also, there is a lack of information about the neighborhood and municipalities, making it impossible to carry out a multilevel analysis.

Conclusion

The findings suggest that older Brazilians with better socioeconomic conditions and with a higher level of education are the ones who most seek and access public dental services. Policies seeking to reduce inequalities and to improve access to public services for the Brazilian older population must be proposed. In addition, the literature highlights that individual interventions can be ineffective, dispensing with limited resources and allowing an increase in inequalities in oral health. Thus, proposals approaching common risk factors, considering the action on a given factor that may be concurrently contributing to the development or worsening of different diseases or injuries are more effective; however, they must be articulated and directed by different sectors of society.

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