Fatores Associados ao Acesso à Saúde Bucal no Brasil: Revisão Sistemática

Factors Associated with Access to Oral Health in Brazil: a Systematic Review

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Resumo

O acesso universal e igualitário à saúde bucal possui barreiras, que são construídas por fatores políticos, econômicos, sociais, organizacionais, técnicos e simbólicos. Este estudo tem como objetivo identificar os fatores associados ao acesso à saúde bucal no Brasil entre 2004 e 2014. Trata-se de um estudo do tipo revisão sistemática. Primeiro foi realizada a formulação da pergunta para subsidiar a revisão da literatura e busca eletrônica em bases de dados. Após a seleção das bases eletrônicas de dados foram selecionados os operadores boleanos e os descritores válidos. Foram selecionados 1236 documentos. Após a aplicação dos filtros: texto completo, idiomas (Inglês e Português), Ano, Assunto e tipo de documento (artigo completo) permaneceram na busca 148 artigos. Em seguida, foram lidos os títulos e resumos dos artigos encontrados nas buscas realizadas nas bases de dados entre 2000 e 2014 e permaneceram na busca 63 artigos. Foram analisados 32 artigos. Em 2008 foram publicados 6 (18,75%) artigos seguidos de 2012 e 2014 com 5 (15,65%) das publicações. Sendo que houve predominância do desenho metodológico do tipo transversal em 30 (93,75%) com cálculo amostral representativo para a população de estudo. O acesso à saúde bucal tem sido analisado com o foco na utilização dos serviços de saúde bucal por meio de estudos epidemiológicos transversais representativos para a população de estudo. Existe um conjunto de fatores sociais, econômicos, de organização da assistência e individuais que se relacionam de forma tensionada, desequilibrada e de dependência ao longo dos anos analisados.

Palavras-chave: Saúde Bucal. Acesso aos Serviços de Saúde. Sistema Único de Saúde. Serviços de Saúde Bucal.

Abstract

The universal access to oral health has barriers that are built by political, economic, social organizational, technical and individuals factors. The aim of this study was to identify the factors associated to the oral health access in Brazil. It is a systematic review study. First it the formulation was elaborated to the question to subsidize the literature revision and electronic data bases search. Then, the Boolean operators and key words were selected. After the application of the filters: complete text, languages (English and Portuguese), year, Subject and type of document (complete article) 148 articles remained in the search. Next the titles and summaries of the articles found in the searches carried out in the bases of data between 2000 and 2014 were read and 63 articles remained in the search. 32 articles were analyzed. In 2008 6 (18,75%) articles were published followed by 2012 and 2014 with 5 (15, 65 %) of the publications, being that there was predominance of the cross section type 30 (93,75 %) with representative sample for the population. The access to oral health has been analyzed with the focus on the use of the oral health services. There is a set of social, economic, organizational and individual factors that relate to each other in a tensioned unbalanced and dependent manner, throughout the analyzed years.

Keywords: *Oral Health. Health Services Accessibility. Unified Health System. Dental Health Services.*

1 Introduction

The analysis of the access level to oral health is important for the health policies and programs formulation[1,2]. In addition to providing subsides for the oral health planning in accordance with with the real services's users demands[3-5].

Towards the addressing of the access to oral health issue was the restructuring of the National Policy for Oral Health - PNSB with the expansion and decentralization of health care network by increasing the oral services supply[1]. However, according to the National Health Survey - PNS that examined the access and use of Brazilians, aged over 18 years old, to the health oral services[6], in 2013, the dental service in Brazil occurred predominantly in private clinics, totaling 74.3% of the visits[6]. The basic health units were responsible for 19.6% of dental care[6]. The survey estimated that people aged18 years old or older (11.0%) lost all their teeth, corresponding to 16 million teeth[6]. Approximately 41.5% of people aged 60 years old or older lost all their teeth, having the same occurred with 22.8% of people without educational instruction or with Incomplete basic educational level[6]. Thus, it is not clear whether the increase in the dental services supply and the National Oral Health Policy (NOHP) decentralization were able to reduce inequalities in oral health access in Brazil[5,7-12]. Evidences show the existence of political, economic, social, organizational, technical and individual factors influencing the access to oral health[13-17]. Thus 'measuring' access to oral health is a complex task because it involves both measurable

(objectives) and abstract (subjective) aspects.

The objective of this study was to identify the factors associated with oral health access in Brazil.

2 Development

2.1 Methodology

It is a systematic review study. For this study, a search protocol was constructed for the preparation of a systematic review[18]. First an inquiry was elaborated to subsidize the literature review for the electronic databases search. Thus, the question was: «What are the factors associated with oral health access in Brazil?". Then the PubMed/Medline, Lilacs, SciELO, Scopus and Bireme/BVS electronic databases were selected to construct the literature review[17]. It was used the Boolean operator "OR" and "AND" that allow to extend or specify the search for the best information about a particular subject, in addition to the quotation marks for composed words so that at the time of the search words are retrieved together. The following valid descriptors were selected "Access"; "Access to Health Services"; "Universal Access to Health Care Services"; "Use"; "Oral Health"; "Inequalities in Health"; "Public Health Policies"; " Oral Health Services "; "Assessing the Health Systems Performance "; " Health services Evaluation "; "Health Evaluation". In this phase 1.236 documents were selected. After the application of filters: full text, languages (English and Portuguese), Year (2000 to 2014), Subject and type of document (complete article) 148 articles remained in the search. Next, the titles and abstracts of the articles found were read and 63 articles remained.

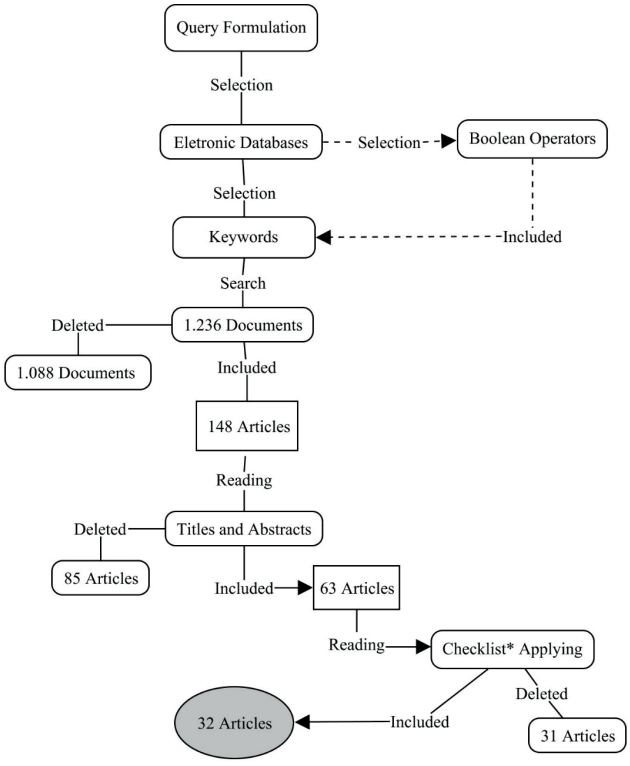
The articles were read throughout and disregarded those that were in duplicate, qualitative methodology, literature review, systematic review, non- epidemiological, experimental and descriptive and out of the defined limits as an object of study and published previously to2004. It was adopted as a criterion the year 2004 according to the PNSB[1]. Then the checklist proposed by Transparent Reporting of Systematic Reviews and Meta-Analyses (PRISMA) group was applied to enlarge the selection methodological rigor[18]. The PRISMA recommendation consists of a checklist with twenty-seven (27) items and a Flowchart[18]. The objective is to help the authors to improve the reporting of systematic reviews and meta-analyzes[18]. The information flow through the different phases of a systematic review was based on the proposal of the PRISMA group[18]. (Annex 1). A researcher PhD in public health was consulted in case of doubt about the articles' inclusion or exclusion.

This study includes a research that aimed to analyze oral health access in a Brazilian city and it was submitted to Piracicaba Dental School ethics committee in research with an approved protocol number 111/2015.

2.2 Discussion

32 articles about were analyzed the factors associated with oral health access. (Figure 1).

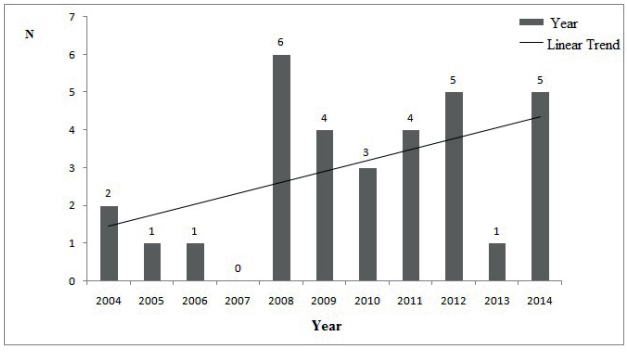
Figure 1: Flow chart of the articles included in the systematic review



Source: Research data.

Between 2004 and 2014 every year articles were published except in in 2007. In 2008 6 articles were published (18,75 %) followed by 2012 and 2014 with 5 (15,65%) publications. A growth of trend in the number of publications since 2004 on the subject have been observed with a mean of 2.90 and an average of 3 publications. (Figure 2).

Figure 2: Historical series of papers included in the systematic review



Source: Research data.

Secondary data were used in 12 (37,50%) of the papers. The National Survey of Sample per Household (PNAD)[19] was the most used population base study as a source data (Table1).

Table 1: Characteristics of systematic review articles of access to oral health, Brazil, 2015

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Authors (Year)*	Sample (local)	Sample calculation	Goal	Study type / statistical analysis	Associated factors
Bós e Bós (2004)[24]	7920 elderly from Rio Grande do Sul (CEI-RS)	Yes	Choice of dental treatment by the elderly	Cross section / Logistic Regression	Gender, age, education, income and family size
Matos *et al*. (2004)[20]	28.943 Brazil PNAD	Yes	Use of dental services by the elderly	Cross section / Multinomial Logistic Regression	Socioeconomic and demographic
Fernandes e Peres (2005)[27]	293 cities from Santa Catarina (SC)	-	Associate factors with primary care, socioeconomic and supply of dental services	Ecological / Spearman / X^2 / Kruskall-Wallis	Improving of the coverage is related to the dentists number increase
Pinheiro e Torres (2006)[29]	384.834 Brazil PNAD	Yes	Analysis of subjects and the context of use of dental services in Brazil	Cross section / X^2 / Hierarchical Logistic Regression	Use less: elderly, non white men,, less educated, without health insurance, residents in rural and poorer areas
Bousquat, Alves e Elias (2008)[33]	173 in 3 cities from São Paulo	Yes	Profile of health services use	Cross section / Methodological / Bonferroni	Man, educational level, employed and having healthcare plan
Freddo *et al.* (2008)[38]	1.170 students from Gravataí (RS)	Yes	Oral hygiene habits relating tothe use of dental services	Cross section / Cox Regression	Healthy lifestyle
Kramer *et al*. (2008)[48]	1.092 subjects from, Canela (RS)	Yes	Dental services analysis for children aged 0 to 5 years	Cross section / X^2 / Logistic Regression	Female and the Elderly
Manhães e Costa (2008)[22]	7.756 subjects from Rio de Janeiro PNAD	Yes	Access analysis and use of dental services	Cross section / Multiple Logistic Regression	Access limitation in individuals with low socioeconomic status and the young
Noro *et al*. (2008)[21]	3.425 subjects from Sobral (CE)	Yes	Dental services use analysis by the children's population	Cross section / Multiple Logistic Regression	socioeconomic
Rocha e Goes (2008)[45]	827 subjects fromCampina Grande (PB)	Yes	Compare the oral health service access in areas covered by ESF	Cross section / X^2 / Logistic Regression	Gender, age, income and education. Not associated with livingor not in an ESF covered area
Araújo *et al*. (2009)[49]	4.226 subjects fromPelotas (RS)	Yes	Dental services utilization according to age	Cross section / Poisson Regression	Education, self-reference, socioeconomic status and demand
Baldani, Almeida e Antunes (2009)[43]	399 cities from Paraná	All	Associate socioeconomic factors, financial resources and dental public services	Ecological / Friedman / Mann-Whitney / Spearman	Greater financial resources provision to municipalities with the worst socioeconomic indicators
Camargo, Dumith e Barros (2009)[28]	2.961 subjects from Pelotas (RS)	Yes	Evaluate the dental regular services use among adults	Cross section / Poisson Regression	Lower socioeconomic status
Fernandes, Bertoldi e Barros (2009)[34]	2.988 subjects from Porto Alegre (RS)	Yes	Pattern analysis of health services covered by ESF	Cross section / X^2/ Poisson Regression	Female, over 60 years, white, lower socioeconomic status, poor self-perception without healthcare insurance
Baldani *et al*. (2010)[50]	246 subjects from Ponta Grossa (PR)	Yes	Identify associated factors with dental services use for the adults and elderly	Cross section / X^2 / Multiple Logistic Regression	Individual factors. About 40% of adults and 67% of the elderly had not been to the dentist for more than three years
Souza e Chaves (2010)[40]	148 subjects fromBahia	Yes	Evaluating supply, use and dentistry specialized actions	Cross section / Utilization rate / X^2 / Fisher exact	Low utilization rate for endodontics and surgery. Integrality lower among adults who required dental prostheses

Continuação.

Authors (Year)*	Sample (local)	Sample calculation	Goal	Study type / statistical analysis	Associated factors
Gibilini *et al*. (2010)[51]	4.217 subjects From SB-SP/ 2002	Yes	Conditions analysis of dental services access	Cross section / X^2	Adolescents and adults access the service less than 1 year and elderly over 3 years
Baldani e Antunes (2011)[44]	747 subjects from Ponta Grossa (PR)	Yes	Access inequalities in dental services ESF areas	Cross section / Poisson Regression	Age, better social status and dentist regular use
Celeste *et al*. (2011)[39]	Brazil (regions)	-	Temporal pattern of dental procedures between 1994 and 2007	Ecological / Mounth rate / Moving Average	Procedures increase with the inclusion of dentistry in the ESF
Celeste, Nadanovisky e Fritzell (2011)[30]	108.921 Brazil SB/2003 and Sweden LNU	Yes	Compare the use of dental services between Brazil and Sweden	Cross section / Poisson Regression	Higher socioeconomic status attending more the dentist. Decline in utilization
Chaves *et al*. (2011)[31]	2.539 subjects in 2 cities fromBahia	Yes	Compare specialized services access	Cross section / X^2	Type and nature of the service, sex, education and income
Chaves *et al.* (2012)[41]	2.539 subjects in 2 cities fromBahia	Yes	Compare the use of dental service between primary and specialized care	Cross section / X^2	Primary care access barriers. Individual preventive actions little reported
Machado *et al*. (2012)[46]	3.391 adults and elderly from Porto Alegre (RS)	Yes	Estimate the prevalence of regular use of dental services for the adults and elderly	Cross section / X^2 / Wald / Poisson Regression	Sex, education, income, type of service used, self perception
Pavão *et al*. (2012)[35]	759 subjects from Rio de Janeiro	Yes	Analyze the use of health care for university workers	Cross section / X^2 / Kruskall-Wallis / Poisson Regression	Lower socioeconomic status
Peres *et al.* (2012)[32]	384.834 and 391.868 subjects from Brazil PNAD	Yes	Dental services access analysis in Brazil	Cross section / Prevalence Ratio / X^2 / Midspread	Increased use of dental services and inequalities between social groups
Peres *et al.* (2012)[47]	54.367 subjects from Brazil- capitals VIGITEL	Yes	Analyze the pattern of use and lack of access to dental care	Cross section / Poisson Regression	Women, younger, with inferior educational level and mixed race
Miquilin *et al*. (2013)[36]	152.233 subjects PNAD/2008	Yes	Associate employment relationship to health services access	Cross section / Prevalence Ratio / Poisson Regression	Unequal access of unemployed and informal workers
Fonseca *et al*. (2014)[42]	57.231 patient records fromPiracicaba (SP)	All	The service offered in primary care regarding theemergency service	Cross section / X^2 / Multiple Logistic Regression	Increased use in areas of greater social vulnerability
Gomes *et al*. (2014)[52]	2.273 children and adults from Maranhão (MA)	Yes	Oral health services use evaluation	Cross section / X^2 / Fisher exact / Wald	Low use by adults and children with low socioeconomic status
Haikal *et al*. (2014)[25]	780 subjects from Montes Claros (MG)	Yes	To associate tooth loss and access to oral health information	Cross section / Multiple Linear Regression (Stepwise)	Adults who have not received information about oral hygiene and lost more teeth due to decay
Martins *et al*. (2014)[26]	5.349 subjects from Brazil (SB /2003)	Yes	To identify factors with negative evaluation of dental services for the elderly	Cross section / X^2 Linear tendence / Logistic Regression	Public service / philanthropic, men, higher education without oral health information
Rodrigues *et al.* (2014)[37]	754 children from Montes Claros (MG)	Yes	To associate factors with low use of dental services	Cross section / X^2 / Logistic Regression	Age, social status and parental access to preventive information

(*) Citation and article reference

Source: Research data.

The methodological design predominance was the transversal type with 30 (93, 75 %) articles and sample size calculation. No longitudinal epidemiological studies were found. In the Southern region 11 articles (34,38 %) were performed, followed by the South East with 7 (31-40 %) and Northeast with 6 (18,75%). Studies in the North and Midwest regions were not performed. In addition to the 8 (25 %) of the studies being carried out with national data. (Table 1).

A lot of studies used multivariate statistical analysis. The predominant ones were logistic regression with 11 (33,33%) and Poisson regression with 9 (28,12%). The main associated factors were age, gender, education, socioeconomic status and coverage of dental care. However, a pattern in the variables, age and education was not identified, used in the studies. There was also a pattern in relation to the type of dental service studied: public or private/health care insurance studied. However, there was a trend for analysis of access to public services, oral health in relation to the service nature: Basic Care, Family Health Strategy (ESF), specialized or Emergency/Urgency. (Table 1).

The concept of access to oral health varied among the authors and it was used as a synonym for «use», «utilization" of oral health service[20,21]. To Manhães and Costa[22] the concept is unclear and is related to the customers' adequacy to the health system through a health care guarantee. However, the concept of oral health access has become more complex with the incorporation of aspects that are difficult to measure such as those related to health policy and self-perception[23-26]. Thus, the restructuring of PNSB[1] may have triggered the interest of research on oral health access focused on the assistential perspective. Therefore, there is a need to improve the concept of access to oral health with the incorporation of political, organizational, symbolic dimensions in further studies.

The methodological diversity, study design and variables used, make it difficult to compare the findings of the studies and provides a study limitation.

To Fernandes and Peres[27] and Camargo *et al*.[28], access to dental services in Brazil is limited and uneven and these conditions are the result of socioeconomic factors. The own social segments have different demands for health that are resulting from the exclusion processes and that are not always visible or become public policies[2,3,27]. Study showed an association of less frequent dental services uses among the poorer Brazilian states, with less structure, with lower supply of dental sand medical service and more complex health services [29]. Comparative studies between Brazil and Sweden pointed out that there are disparities in the use of dental services and those individuals with better economic conditions visit the dentist regularly[30]. In other words, individuals with better socioeconomic conditions have conditions to purchase dental service (health care insurance or payment for the oral services)[31,32]. On the other hand, individuals with lower socioeconomic level seek oral public service[33]. Previous studies indicate that access to oral health is also related to healthy lifestyle and access to actions of health prevention and promotion [34,35]. To Pavão *et al.*[36] and Miquilin *et al*.[37] it is necessary to expand the access strategies to traditionally excluded sectors as informal workers and the unemployed.

There was an increase in the number of dental procedures performed due to the increase in dental services supply in primary care, however the specialized care did not catch up with it at the same speedd[38,39]. A study points out that the main barrier is in primary care and that there is little interface of specialized care with primary care (counter-reference)[40]. This fact can be explained because many users of specialized services tend to use it as an alternative entrance door for oral health care[41]. Study suggests the expansion of oral health actions as an alternative to improve the redistribution of human and financial resources in favor of places with the worst socioeconomic indicators[42,43]. However, being a resident or not in a covered area by the Family Health strategy - ESF was not associated with the access to oral health services[41.44]. Moreover, in Brazil, the different regional realities produce different forms of organization and health systems management that jeopardize the access quality and oral health public care [3,11,41].

The existence of technical and geographical barriers factors such as limiting access to oral health provides an imbalance in the relationship between supply/demand and impact on the schedule, waiting time and waiting line[45,46]. So, the dependence of technology materials and organization of the services network for oral health can impose obstacles to the oral health access [46].

Studies indicate those inequalities in access to oral health, especially for children and the elderly[47,48]. Study conducted in Paraná has identified that 67% of the elderly respondents had not been the dentist for more than three years[49]. In São Paulo it was also identified that the elderly are the ones that had been longer without accessing oral health services[50]. The perception of oral health has been identified as a predictor of search for dental service with impacts on the services use. This is more evident in self-perception studies of oral health in the elderly concerning the history of exposure to risk factors, reasons for the use of oral health services, self-image, condition to pay for the service[24,26,50]. The age range of children aged less than 5 years old, only 13.3% had already been to the dentist, and only 4.3% had some type of dental consultation until the first year of life[51]. In a study conducted in Maranhão more than 91% of the children did not use the Oral Health Services - OHS in the six months before the interview[52]. The use of OHS was higher among children whose heads of a household had more than 11 years of study *and* bettersocioeconomic conditions[52].

The lower access of non-whites to dental services may be the result of the historical process of social exclusion[29,42,47]. However, the skin color variable showed no statistical significance in the crude and adjusted analysis in another

study and it can be explained the reasons why the differences in the use of ESF areless unequal when compared to other health services[34]. Regarding gender, it was observed that women use health services significantly higher than men and visits to the gynecologist/ obstetrician could be observed and better perception of health risks factors [31,34,45,47].

3 Conclusion

The oral health access has been discussed with the focus on the use of the oral health services by cross-section studies. There is a set of social and economic factors, as well as regarding the organization of assistance and individual factors which modulate theoral health access. The social context is a challenge for the oral health care and the construction of the Unified Health System - SUS as a social inclusion policy.

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