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Chapter 13

Factors Associated with the Presence of Teeth in the Adult and Elderly Xukuru Indigenous Population in Ororubá, 2010

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Additional information is available at the end of the chapter

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1. Introduction

Indigenous peoples in Brazil have particular configurations of customs, beliefs and language, forms of integration with the environment, history of interaction with the settlers and relationship with the Brazilian state. Thus insert the different ways in national society [1].

In Brazil, as in many other parts of the world, indigenous peoples are constitute as one of the most disadvantaged segments of the economic, housing, educational standpoint and health indicators, as revealed by the census and other surveys that measure conditions life of the population. In addition, for cultural or relationship with the environment reasons, require specific public policies [1].

The indigenous people Xukuru has the largest indigenous ethnic population group among the 10 ethnic groups of Pernambuco. Located in Pesqueira in the Sierra Ororubá, 216km from Recife (principal city of Pernambuco State) and has a population of approximately 10.000 indigenous [2].

The Xukuru suffered from the loss of traditional lands to allow their social and cultural reproduction and were the target of every source of discrimination, especially from the eighteenth century [3]. After the retaking of their lands the indigenous territory Xukuru now has 25 villages that are distributed in three environmentally bounded regions: the Ribeira, the Serra and the Agreste (Figure 1). The approval of the land in this population resulted in changes in the social context [4] that seems to have contributed in some way to changes in the mode of life of this population. These changes are called acculturation, which is perceived as a result

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of an exchange process in which two cultures mutually absorb their characteristics and customs generating a new reference.

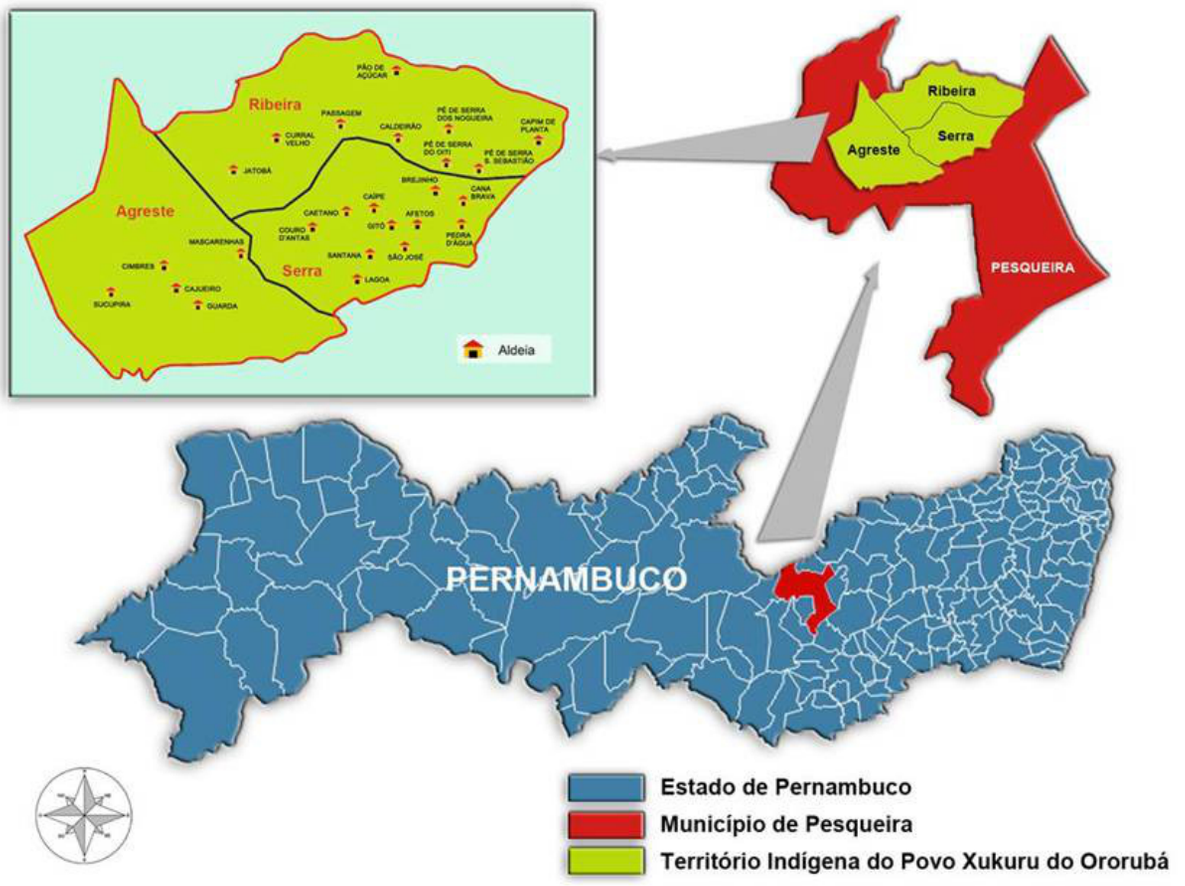


Figure 1. Geographical location of the Indian Territory Xukuru Ororubá and its division according to the socio-environmental regions and villages. Pesqueira, 2010 [5].

The health of indigenous peoples of Brazil presents complex and dynamic way. Is directly related to historical processes of social, economic and environmental changes, linked to the expansion and consolidation of demographic and economic fronts of society in various regions of the country [6].

The epidemiological profile of indigenous peoples is little known, which stems from the insufficiency of investigations, surveys and censuses, as well as the inaccessibility of information on morbidity and mortality systems. Any discussion of the health-disease process of indigenous peoples need to take into consideration, in addition to epidemiological and demographic dynamics, the enormous existing social diversity [7-11].

For proper understanding of the health-disease process on indigenous peoples it is necessary to appeal to the historical relations in which human societies are inserted [10]. Despite the fragmentation and lack of historical data on the history of contact between indigenous people

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and other population groups in Brazil records, it is known that the effects of this interaction on the profiles of illness and death were significant [12].

The epidemiology of oral health among indigenous peoples in Brazil is little known, which reflects a more general framework of ignorance about the health of these populations [7]. This perspective, intense socioeconomic and environmental changes that have been going these people, including subsistence and diet, are enablers of change in oral health status known aspects [10]. Main responsible for the deterioration in oral health are the changes in the traditional diet (especially intake of sugar and other processed products) and the economic system of this group, together with the lack of a preventive program [13].

From the 1960s, there was an increased incidence of caries, with the determining factor in changing dietary patterns and increased availability of fermentable carbohydrates in the diet. Although caries is a disease that has known and proven effective methods of prevention and control, precarious epidemiological profile found in indigenous populations illustrates the social exclusion of the latter from access to dental care groups and methods of oral health promotion [14].

Caries is the main cause of tooth loss. To a lesser degree are periodontal disease and dental injuries [15]. Tooth loss related to tooth extractions caused by preventable diseases, including, dental caries and periodontal diseases is very high and remains prevalent worldwide despite progress in prevention and early treatment of these diseases [16]. In addition to these diseases, tooth loss is due to attitudes of dental professionals and the public, accessibility and utilization of dental services, the type of financing of the health system and the way to provide dental care. Another primary cause or related of tooth extractions are the economic reasons [17-20].

Social conditions and dental practices hegemonic force the socioeconomically disadvantaged individuals to treat dental pain with extractions. Epidemiological data have shown significant increase of loss with age. In Brazil, the extraction mass begins at age 30 and is the most practical and economical solution for the accumulated oral health problems [16, 21].

The loss of teeth is the most common cause of impaired chewing, being related to the reduction of masticatory ability and perceptions of chewing ability. When associated with difficult access to prostheses result in functional and psychosocial disorders such as poor chewing, speech related problems, employment difficulties, dissatisfaction with appearance, among others. Little attention has been given to the impact that can cause tooth loss in chewing ability and changes in food thereon, which are determinants of nutritional status of these individuals as well as reduced self-esteem and social integration [21-25].

The variables related to tooth loss ranging from dental work (the increase in periodontal attachment loss, number of coronal and root surface caries, tooth mobility and fracture in restoration) to the individual level (the reporting dental pain, the need perceived dental treatment, frustration with dental care, preference for extraction instead of conservative treatment, older age group, black race and female) [26]. Early tooth loss should be considered a predictor of future tooth loss. There are significant correlations between early tooth loss and social variables, such as the human development index, ethnicity, education, income under

the minimum wage, lack of fluoridated tap water and people living in cities with fewer than 10,000 inhabitants, which already were reported in other studies [27].

In Australia less than 2% of adults aged 35-54 years have complete tooth loss, but this increases to 36% for people aged 75 years or more [28]. The age distribution of edentulism for indigenous peoples is noticeably different from that of the total population. The level of edentulism is almost five times higher among people aged 35-54 years indigenous than among non-indigenous counterparts (7.6% compared with 1.6%). There is also a noticeable difference for those aged 55-74 years, 21% of indigenous peoples suffer from edentulism compared with 14% of non-Indians [29].

In general, lacking qualitative and quantitative information on the oral health status of indigenous peoples in Brazil, especially longitudinal studies to support an evolution of oral epidemiology. Particularly, in the northeast state of Pernambuco and the paucity of studies on the oral health status of indigenous peoples has become even more alarming which reflects the lack of information on the reality of these peoples and the consequent social exclusion which are submitted. This study aims to contribute to a better understanding of tooth loss in adults and elderly of this indigenous population, studying the factors associated with permanent teeth factors.

2. Methods

2.1. Location and study population

This study consists of a deepening of two studies entitled "Analysis of Living, Health and Vulnerability of Indigenous People Xukuru Ororubá as the tool for the Shares of Primary Health Care" [30] and "Health and Living Conditions of the Indigenous People Xukuru Ororubá of Pesqueira - PE "[31] that were developed in Pesqueira, Northeast Region of Brazil. The field work was developed with the participation of indigenous population only in the period January to March 2010.

2.2. Sampling plan

Due to the larger study have sought to analyze various health situations, the sample size was based on the condition of lower prevalence being studied which was equivalent to a third of the universe. This sampling strategy ensured the representativeness of the smaller study group, with the lowest prevalence being estimated. Consequently allowed the representation of the other study groups. It was found that the population of the ethnic group Xukuru is formed by 7,225 people, 1,896 households dwelling and socio-environmental distributed in 3 regions and 25 villages. From these census data, the sample consisted of 632 households (equivalent to a third of the universe).

The selection of households for the sample is given in a systematic random manner, ensuring all members of the population the same chance of being chosen. To systematize the sample, the following calculation was used: k = N (population) / n (sample). Then, the initial sampling

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unit was selected by lottery between 1 and k, ie, between the numbers one, two and three. With number three drawn, broke for the selection of households starting at home in 1001, ie, the first home of the village of number one. From there followed the systematization where every three households, the third was selected. This sampling was continued until the last possible home the last village. At the end, 632 households were randomly selected and all the inhabitants of these households who are aged 35-44 years and 60 years and older were included in the sample.

Those who were excluded during the visit had some temporary impossibility (as being hospitalized or sick) or a disability that prevented the completion of the oral clinical examination.

2.3. Instrument for data collection

The instruments for data collection were based on records proposed for the Project SB Brasil 2003 [32] and SB Brasil 2010[33]. The codes and criteria adopted are those proposed by the World Health Organization (WHO) publication *Oral health surveys: basic methods*, fourth edition [34].

Data collection was made up of eight teams formed by a dentist (examiner) and a annotator. Standardization was done as the criteria and approaches used to test intra-examiner and inter-examiner before and during the process of data collection. And were reexamined 5% of the sample that aimed to estimate the agreement of the main study findings.

The local and the organization of the examination areas were defined according to the availability of the site, with natural lighting, ventilation and proximity to a water source needed. The examiner, the annotator and the examined person sat for the exam. The tests were conducted using a combination of a dental mirror with handle, and a specific probe, developed by WHO, known as "CPI probe."

2.4. Description of variables

The dependent variable is being studied to tooth loss that represents the count of missing teeth (varying 0-32 teeth), is due to decay or other reasons.

The independent variables were collected through the questionnaire administered by a health survey and also by the census Xukuru be classified into three categories: Characterization of sociodemographic and socioeconomic profile (place of residence, income, age, sex, attends school, can read and write), Characterization of access to oral health care (dental visits, time of last dental appointment, place of last dental visit, reason for last dental visit) and characterization of self-perception and impact on oral health (dental appointment last assessment services, satisfaction with teeth / mouth, OIDP).

2.5. Processing of data

The data collected were criticized to correct fill failures and processed at the National School of Public Health - ENSP / FIOCRUZ, a partner institution of the Center Aggeu Magalhães - CPqAM / FIOCRUZ this health survey.

Before to the analysis, the database went through a cleansing process in which the entered data were compared with the information provided in the questionnaires. In case they found differences, the database was corrected.

2.6. Data analysis

The data were tabulated in EpiData (version 3.1). Data analysis was initially performed using the statistical package SPSS 13.0® with the distribution of frequencies and description of the measures of central tendency and dispersion. The analyzes were presented in tables.

Association analyzes/dependence were performed by means of parametric or non-parametric tests, depending on the type of distribution and the nature of the variables under study. Effect measures were calculated, emphasizing reason means (RM) and odds ratio (OR) simple and adjusted for confounding variables. For both, negative binomial regression models with inflated zero were adopted in order to check the direction and strength of the effect of independent variables on the outcome analyzed. This model is used when the variable is discrete with quantitative absence of normal distribution and when there is overdispersion of the data distribution [35]. Due to the large number of zeros present in the dependent variable (many adults and especially seniors had missing teeth, or teeth zero), it was recommended the use of this regression model. This model presents two regression coefficients, one for the non inflated zeros (whose measure of effect is the RM and is associated with increased number of teeth) and other coefficients for the part inflated zeros (whose measure is the OR and will be associated with the presence of teeth zero, ie the edentulous). The influence of the factors under study on tooth loss followed the hierarchical model proposed by Victora et al. [36] showed in the Figure 2.

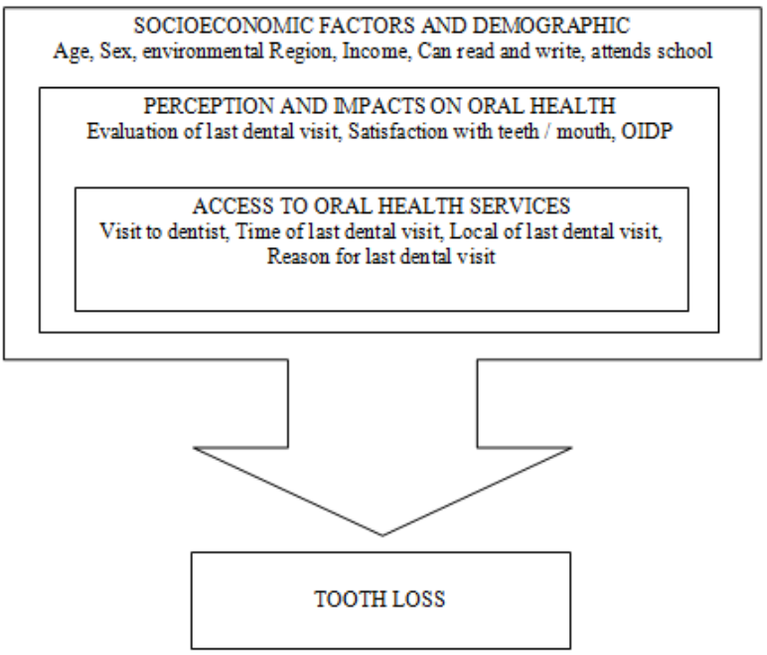


Figure 2. Theoretical Hierarchial Model of variables associated with the presence of permanent teeth. Pesqueira, 2010.

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2.7. Ethical aspects

This study was based on "Health and Living Conditions of the Indigenous People Xukuru Ororubá the Pesqueira-PE" which was approved by the Ethics in Research-CEP (CPqAM / Fiocruz) and the National Committee for Research Ethics - CONEP / National Board of Health / Ministry of Health, through Opinion nº 34/2011. The study "Analysis of Living, Health and Vulnerability of Indigenous People Xukuru Ororubá as the tool for the Shares of Primary Health Care" that contains the census Xukuru also obtained approval of the CEP by Opinion nº 604/2009.

The project also received permission from FUNASA for this work, as well as the letter of consent from the ethnic Xukuru Ororubá signed by Cacique Marcos de Araújo Luidson after approval of the Local Council of Indigenous Health Xukuru was obtained and the Consent and Informed (IC) of the political leaders of each village existing in Indian Territory.

3. Results

A sample of the Survey of Health Xukuru the Ororubá constituted 632 selected households. Among these, 27 households were considered lost due to the absence of its residents in the three visits by field staff. Thus, the final sample consisted of 605 households.

The average of the presence of permanent teeth tooth was 10.43 (± 9.79). Table 1 shows the composition of the sample and the average of permanent teeth according to the independent variables. It was observed that 39.0% of individuals residing in the Agreste region of the Indigenous Territory and about 50.7% had an income between R$ 216,00 - 465,00.

The socio-demographic structure of the population studied was 45.6% of adults and 54.4% of elderly, composed mostly of males (50.7%). Among adults with an average age of 39.2 years and among older average age was 70.3 years. It was observed that 58.2% can not read and write and 56.1% have attended school.

Variable		N (%)	Average	±DP	CI 95%	Median	p-value *
Age group	Adults	195 (45,6%)	17,91	7,90	16,80-19,03	19,00	<0,001
	Elderly	233 (54,4%)	4,16	6,15	3,37-4,96	1,00	<0,001
Sex	Male	217 (50,7%)	11,49	9,97	10,15-12,82	10,00	0,010
	Female	211 (49,3%)	9,34	9,50	8,05-10,63	7,00	0,010
Enviromental region	Ribeira	131 (30,6%)	9,90	9,30	8,29-11,52	9,00	0,531
	Serra	130 (30,4%)	10,24	10,13	8,48-12,0	7,50	0,531
	Agreste	167 (39,0%)	11,16	9,95	9,61-12,72	11,00	0,531

Variable		N (%)	Average	±DP	CI 95%	Median	p-value *
Income	Tertile 1 (R$ 0 - 215,00 reais)	140 (32,7%)	16,68	7,96	15,35-18,01	18,00	<0,001
	Tertile 2 (R$ 216,00 - 465,00)	217 (50,7%)	6,58	8,52	5,44-7,73	3,00	<0,001
	Tertile 3 (R$ 466,00 -1500,00)	62 (14,5%)	8,77	9,76	6,29-11,25	4,00	<0,001
	Missing	9 (2,1%)					
Can read and write	Yes	173 (40,4%)	13,47	9,89	11,98-14,95	13,00	<0,001
	No	249 (58,2%)	8,39	9,19	7,23-9,54	5,00	<0,001
	Missing	6 (1,4%)					
Attends school	Yes	25 (5,8%)	17,56	9,18	13,76-21,35	19,00	<0,001
	No, already attended	240 (56,1%)	11,76	9,74	10,52-13,0	11,00	<0,001
	No, never attended	154 (36,0%)	7,36	8,97	5,93-8,79	4,00	<0,001
	Missing	9 (2,1%)					
Satisfaction with teeth/mouth	Satisfied	235 (54,9%)	7,42	8,70	6,18-8,67	4,0	<0,001
	Neither satisfied nor dissatisfied	31 (7,2%)	12,28	8,35	9,04-15-52	11,50	<0,001
	Dissatisfied	158 (36,9%)	15,48	9,08	13,92-17,03	17,00	<0,001
	Missing	4 (0,9%)					
Review of last visit	Good	345 (80,6%)	10,58	9,66	9,51-11,65	9,00	0,424
	Regular	22 (5,1%)	12,94	8,82	8,69-17,19	14,00	0,424
	Bad	24 (5,6%)	10,81	9,60	6,55-15,07	9,00	0,424
	Missing	37 (8,6%)					
OIDP	No impact	155 (36,2%)	7,85	9,48	6,34-9,35	4,00	<0,001
	One or more impact	233 (54,4%)	13,07	9,40	11,85-14,28	13,00	<0,001
	Missing	40 (9,3%)					
Visit to dentist	Yes	397 (92,8%)	10,11	9,61	9,16-11,06	8,00	0,004
	No	28 (6,5%)	15,92	10,93	11,68-20,16	17,00	0,004
	Missing	3 (0,7%)					
Time of last visit	Less than 1 year	81 (18,9%)	15,37	8,40	13,51-17,22	17,00	<0,001
	1 to 2 years	84 (19,6%)	15,17	8,04	13,43-16,92	16,50	<0,001
	3 years and more	228 (53,3%)	6,62	8,90	5,44-7,79	2,00	<0,001
	Missing	35 (8,2%)					

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Variable		N (%)	Average	±DP	CI 95%	Median	p-value *
Local of last visit	Public	241 (56,3%)	12,30	9,54	11,09-13,51	12,00	<0,001
	Particular, health plan, covenants	151 (35,3%)	7,02	8,79	5,58-8,45	3,00	<0,001
	Missing	36 (8,4%)					
Reason for last visit	Review, prevention, treatment and other	71 (16,6%)	13,91	10,42	11,44-16,38	16,00	<0,001
	Pain	47 (11,0%)	12,82	9,25	10,11-15,54	14,00	<0,001
	Extraction	278 (65,0%)	8,71	9,12	7,64-9,79	6,00	<0,001
	Missing	32 (7,5%)					
Total		**428 (100%)**	**10,43**	**9,79**		**9,0**	

*P-value from Mann-Whitney e Kruskall Wallis test.

Table 1. Description of average indigenous Xukuru permanent teeth in adults and the elderly. Pesqueira, 2010.

Regarding the perception and impact on oral health, 235 individuals (54.9%) say they are satisfied with their teeth / mouth, 80.6% rated the last query as good and 54.4% reported one or more impacts on oral health in daily life. Regarding access to dental services, 28 individuals (6.5%) had never been to the dentist, 53.3% had a dental appointment last three years and over and 56.3% held in the public service. The main reason for consultation to 65.0% of the subjects was to perform extraction.

Table 2 shows the results of a single regression model. The average ratio (RM) presented considers the variance present in each level and shown as a measure of effect corrected to factors associated presence of teeth.

Individuals of adult age group showed less tooth loss and RM 2.29. But women showed greater chance of tooth loss (OR = 1.99). Regarding environmental region and income were not significant for tooth loss. Reading and writing (RM = 1.27) is negatively associated to tooth loss as well as those attending (RM = 1.55) or have attended school at some time in life (RM = 1.26).

With regard to the variables of block 2, who says satisfied with teeth / mouth has greater tooth loss (RM = 0.74) and those with a greater number of teeth present in the mouth has more impact on oral health (RM = 1.23). Regarding the last consultation, evaluation dictates how fair and poor is related to having more teeth.

Among the variables in block 3 is important to note that anyone who has ever been to the dentist in life has more chance of not having teeth, or going to the dentist increases by 160% tooth loss than those who have never been. For people who performed the last visit for more than three years average of teeth present was lower (RM = 0.68). Having performed consulting in public service decreased the chance of tooth loss (OR = 0.36) and who was motivated to consultation with the purpose of extracting has fewer teeth (RM = 0.67).

Demographic variables Block 1		Not inflated			Inflated		
		RM	CI 95%	p-value	OR	CI 95%	p-value
Age group	Adults	2,29	2,02-2,59	<0,001	0,05	0,02-0,11	<0,001
	Elderly	1,00			1,00		
Sex	Male	1,00			1,00		
	Female	0,99	0,85-1,15	0.902	1,99	1,29-3,06	0,002
Can read and write	Yes	1,27	1,09-1,47	0,001	0,40	0,25-0,65	<0,001
	No	1,00			1,00		
Attends school	Yes	1,55	1,16-2,07	0,003	0,27	0,02-0,58	0,008
	No, already attended.	1,26	1,08-1,49	0,004	0,48	0,31-0,75	0.001
	No, never attended.	1,00			1,00		
Perception variables Block 2		**Not inflated**			**Inflated**		
		RM	**CI 95%**	**p-value**	**OR**	**CI 95%**	**p-value**
Satisfaction with teeth/mouth	Satisfied	0,74	0,63-0,86	<0,001	5,73	3,25-10,09	<0,001
	Neither satisfied nor dissatisfied	0,84	0,64-1,11	0,24	2,28	0,84-6,17	0,103
	Dissatisfied	1,00			1,00		
Review of last visit	Good	1,00			1,00		
	Regular	1,02	0,75-1,39	0,878	0,48	0,15-1,49	0,207
	Bad	0,86	0,64-1,17	0,348	0,42	0,13-1,33	0,143
OIDP	No impact	1,00			1,00		
	One or more impact	1,23	1,05-1,44	0,009	0,33	0,21-0,54	<0,001
Acess variables Block 3		**Not inflated**			**Inflated**		
		RM	**CI 95%**	**p-value**	**OR**	**CI 95%**	**p-value**
Visit to dentist	Yes	0,77	0,59-1,01	0,066	2,60	0,86-7,84	0,088
	No	1,00			1,00		
Time of last visit	Less than 1 year	1,00			1,00		
	1 to 2 years	0,92	0,75-1,12	0,421	0,37	0,10-1,39	0.143
	3 years and more	0,68	0,56-0,82	<0,001	6,78	3,17-14,47	<0,001
Local of last visit	Public	1,29	1,09-1,53	0,002	0,36	0,23-0,57	<0,001
	Particular, health plan, covenants	1,00			1,00		

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Demographic variables Block 1		Not inflated			Inflated		
		RM	CI 95%	p-value	OR	CI 95%	p-value
Reason for last visit	Review, prevention, treatment and other	1,00			1,00		
	Pain	0,85	0,65-1,11	0,251	0,73	0,30-1,77	0,49
	Extraction	0,67	0,55-0,81	<0,001	1,29	0,72-2,32	0,38

RM: Ratio of average

OR: Odds Ratio

CI 95%: confidence interval of 95%

Table 2. Average Ratio (RM) and odds ratio (OR) of teeth present estimates of the simple model of zero-inflated negative binomial regression. Pesqueira, 2010.

Table 3 presents the results of multiple hierarchical model, according to the theoretical model presented in Figure 2. Was observed that among the variables in block 1 only age and sex were statistically significant. Being female is an increased likelihood of tooth loss (OR = 2.68). In block 2 only satisfaction variable in the final model and their effects were controlled for block 1.

In block 3 variables time of last visit and reason for last visit remained the final model. A higher probability of not having teeth was related to having made the last visit for more than 3 years (OR = 2.65).

Demographic variables Block 1		Not inflated			Inflated		
		RM	CI 95%	p-value	OR	CI 95%	p-value
Age Group	Adults	2,29	2,02-2,59	<0,001	0,04	0,02-0,09	<0,001
	Elderly	1,00			1,00		
Sex	Male				1,00		
	Female				2,68	1,63-4,43	<0,001
Perception variables Block 2		**Not inflated**			**Inflated**		
		RM	**CI 95%**	**p-value**	**OR**	**CI 95%**	**p-value**
Satisfaction with teeth/mouth	Satisfied	0,88	0,78-1,00	0,05	3,40	1,81-6,36	<0,001
	Neither satisfied nor dissatisfied	0,95	0,76-1,19	0,69	1,83	0,59-5,63	0,287
	Dissatisfied	1,00			1,00		
Acess variables Block 3		**Not inflated**			**Inflated**		

Demographic variables Block 1		Not inflated			Inflated		
		RM	CI 95%	p-value	OR	CI 95%	p-value
		RM	CI 95%	p-value	OR	CI 95%	p-value
Time of last visit	Less than 1 year				1,00		
	1 to 2 years				0,33	0,08-1,33	0,118
	3 years and more				2,65	1,05-6,70	0,038
Reason for last visit	Review, prevention, treatment and other	1,00			1,00		
	Pain	0,92	0,75-1,12	0,424	0,19	0,05-0,70	0,012
	Extraction	0,79	0,68-0,92	0,003	0,36	0,15-0,85	0,020

* Adjusted for variables in block 1.

* Adjusted for variables in block 1 and 2.

* Adjusted for variables in block 1, 2 and 3.

RM: Ratio of average

OR: Odds Ratio

CI 95%: confidence interval of 95%

Table 3. Average Ratio (RM) and Odds Ratio (OR) of teeth according to estimates from multiple hierarchical multilevel model of zero-inflated negative binomial regression. Pesqueira, 2010.

4. Discussion

The average number of permanent teeth found in this study was lower than that found by [37]. Adults in this study had an average of 17.91 permanent teeth (± 7.90) and older had an average of 4.16 permanent teeth (± 6.15). Early tooth loss is considered a predictor of future tooth loss and grows with increasing age. In studies carried out by [37-39] confirmed an increase in the loss of teeth with increasing age.

The increase in edentulism with age seems to be a universal trend, creating the social imaginary figure of the old toothless elderly and the acceptance of tooth loss as a natural evolution of the human dentition, more or less in the sense of "we are born without teeth and die without teeth" [40].

Females had increased likelihood of tooth loss. This finding corroborates the results found in the study done by Indians of the Guarani tribe [39] and in studies of the general population [21, 41, 42]. A possible explanation would be the increased use of dental services by women, resulting in overtreatment would cause the loss of the tooth.

According to [43], increased tooth loss in women reveals some phenomena related to gender differences in health. Among these phenomena, we have the longest life expectancy of women

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who would be prolonging exposure to determinants of edentulism or the greatest care that the woman spends with their health.

Although the social and environmental areas of study have been insignificant to tooth loss, studies are needed to better understand the influence of acculturation on tooth loss among indigenous.

Although in distinct and involving other human, social, economic and environmental factors timescale, contemporary indigenous groups, once in contact with national societies also experience socio-economic and ecological changes with strong potential to change oral health conditions [10, 44].

When related tooth loss and income observed insignificance, but the study shows that those who have a higher income have less teeth in the mouth. This is due to the elderly who have a higher income than adults and they have fewer teeth than adults. In our study, those who can read and write and who attends or has attended school any time in life, proved to be less chances of tooth loss. These conditions influence the pattern and type of use of oral health services. This model is reaffirmed by [39], where low education is strongly associated with greater tooth loss.

There are significant correlations between early tooth loss and social variables, such as the human development index, ethnicity, education, income under the minimum wage, lack of fluoridation of city water and living in cities with fewer than 10,000 inhabitants, which have already been reported in other studies [27].

However, it is difficult to compare studies of tooth loss among Indians and the general population because of the few relevant studies, different methodologies and different age groups.

Individuals who said they were satisfied with their oral health have fewer teeth. This result is related to the elderly, given the absence of teeth does not seem to impact on daily life. The adults in the study expressed dissatisfaction with oral health, but reported no problems related to functional activity and/or social.

Regarding the visit to the dentist was possible to observe an increased risk of tooth loss. According to[45], considering that the only way to experience tooth loss is to enter the dental care system (with the small exception of the self-extraction), since having access people have increased risk of tooth loss.

The main reason for the last visit was extraction. There are two hypotheses for [26]: firstly, those first decide to remove a tooth due to a specific problem and will extract it to the dentist or, on the other hand, decide to see a dentist first because of a problem specific and go to the dentist to see what can be done. In the first case, the specific symptoms and problems determine the loss of teeth. In the second case, the dental care determines tooth loss and problems and symptoms would have a direct effect on the use of dental services and indirect about losing teeth.

This latter fact reveals the importance of the function of the dentist in maintaining oral health, yet there to highlight all the influence of hegemonic paradigms and dominant ideology

contained in the dental practice of a particular historical moment [40]. This is one of the reasons why teeth are extracted could be recovered, since this alternative is considered the most convenient and also the most economical [18, 46].

In the daily routine of the people, the alterations produced by the loss of teeth should be the object of concern of the dental profession [47]. However, the approach of professionals, most often only considers the biological and restorative perspectives, ie, the restoration of teeth should be done according to the best principles of the technique, neglecting the effects of tooth loss in quality of life patients [48, 49].

Considering the results in multilevel analysis, it was possible to contemplate some of the complexity inherent in the health-disease process. This possibility ensured the simultaneous approach of contextual and individual factors in the analysis.

5. Conclusion

This study showed that: the average permanent teeth decreases considerably with advancing age, male sex is what has more teeth, self-perception is a satisfactory condition when there is tooth loss and oral health impacts are mainly perceived on who has more teeth. Access to services reveals a high proportion of the population that has already been to the dentist in public service for over three years and the reason for the visit was tooth extraction.

The differences between the oral health status of indigenous and non-indigenous constitute a framework of inequality between these two populations. It is necessary to rethink the routine visits to the dentist, since the factors associated with the presence of teeth are different for both individuals of the same age group, as different age groups. As well as the services of dental care does not have adequate infrastructure is sufficient to absorb the demand of the indigenous population, especially in adult and elderly.

Considering the epidemiological profile of the indigenous ethnic groups is important to highlight that are developed and put into public policies, in order to seek intervention strategies in oral health care.

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