

# Oral health of elderly people living in a rural community of slave descendants in Brazil

## Saúde oral de idosos vivendo em comunidade de descendentes de escravos no Brasil

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### Abstract

**Background:** Oral health has an important impact on quality of life and should be an integral part of the overall health of the individual. Quilombolas, afro-descendants communities, live in difficult-access rural areas and with several obstacles on the use of health services. **Objective:** This study is aimed to analyse the oral health conditions of the older Quilombola population in the North of Minas Gerais, Brazil, and the main limitations faced by these communities regarding public health services' access. **Method:** This study evaluated the oral health of elderly Quilombola population in the North of Minas Gerais, Brazil. The study's population consisted in 669 Quilombolas, aged 65 to 74 years old, residing in 33 Quilombola rural communities that are located in 20 different counties of Brazil. Examinations and interviews were conducted in the houses of the elderly people surveyed for the assessment of oral health condition, analysing the use of dental health services, objective conditions (clinical) and subjective conditions (reported). **Results:** Most of the interviewees were self-declared black, female, illiterate and living below the minimum wage. More than 50% of the elderly Quilombola population interviewed were edentulous and only 17% used total prosthesis. The smiling was the main impact of oral condition reported by them in everyday life. **Conclusion:** The analysis provided by this study exposes the impact of overlooked oral health conditions in minority populations as Quilombolas and reinforces the need of public investments in those vulnerable communities.

**Keywords:** aged; oral health; epidemiology; public health.

### Resumo

**Introdução:** A saúde bucal tem um enorme impacto na qualidade de vida e deveria ser integrada à saúde geral de todo indivíduo. Os quilombolas, comunidades de afrodescendentes, vivem em áreas rurais de difícil acesso e com diversos obstáculos em relação ao uso de serviços de saúde. **Objetivo:** Este estudo tem como objetivo analisar as condições de saúde bucal da população quilombola idosa do norte de Minas Gerais, Brasil, e as principais limitações enfrentadas por ela no acesso a serviços públicos de saúde. **Método:** Este estudo avaliou a saúde bucal dos quilombolas idosos no norte de Minas Gerais, Brasil, analisando o impacto dela em seu dia a dia. A população do estudo foi constituída por 669 quilombolas, com idade entre 65 e 74 anos, residentes em 33 comunidades rurais quilombolas localizadas em 20 municípios diferentes do Brasil. Foram realizados exames e entrevistas nas casas dos idosos pesquisados para avaliar a condição de saúde bucal, analisando o uso de serviços de saúde odontológica, condições objetivas (clínicas) e condições subjetivas (relatadas). **Resultados:** A maioria dos entrevistados se autodeclarou negra, feminina, analfabeta e vivendo abaixo do salário mínimo. Mais de 50% dos idosos quilombolas entrevistados eram edêntulos e apenas 17% faziam uso de próteses dentárias totais. O principal impacto da condição bucal, relatado por eles, na vida cotidiana, foi no sorriso. **Conclusão:** A análise fornecida por este estudo expõe o impacto de condições de saúde bucal negligenciadas em populações minoritárias, como quilombolas, e reforça a necessidade de investimentos públicos nessas comunidades vulneráveis. **Palavras-chave:** idoso; saúde bucal; epidemiologia; saúde pública.

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## INTRODUCTION

The increase of the older population has been a factor of great transformations in Brazilian society, as in global population. It motivated the health organization to be adequated to the contemporary demographic and epidemiological profile. Data from the World Health Organization claim that by 2025 the world will have approximately 75% of people over 65 years old featuring an increase of age and anticipation of life<sup>1</sup>. These changes require that means must be developed in order to ensure quality of life for this growing population. Investments in health promotion, prevention, and rehabilitation for the elderly population are important and the guarantee of a basic health care, according to their needs<sup>2</sup>.

Recognizing the importance of older adults' quality of life, oral health must be an integral part of the overall health of individuals, once the oral amendments may have direct impact on the daily lives of this population in particular<sup>3</sup>. Precarious oral health has been related with increased cardiac risk factors, lower life expectancy and overall quality of life and this is a growing matter worldwide, becoming an important public health issue on the 21<sup>st</sup> century<sup>4</sup>. Even in developed countries, the availability of dental services is unequal and it varies with people's social, political and economic factors. As the population ages, the incidence of tooth loss, edentulism and the use of dental prostheses, impacts directly on the elderly people's quality of life<sup>4,5</sup>. These conditions are worsened by common older adults' disabilities such as Alzheimer's disease, stroke, and diabetes, that result in mental deterioration and physical infirmity leading to a complicated oral hygiene<sup>6</sup>. Therefore, it is necessary to know not only the objective needs (clinical) but also the subjective needs (reported) which interfere in social interactions of elderly people's life.

The intrinsic relationship between oral health and racial, geographic and social aspects of certain population's strata, such as minority groups is well evidenced in scientific literature. In United States, farmworkers, Hispanic and African Americans have lower levels of oral health and greater dental health needs<sup>7</sup>. In Australia, some remote communities, such as Aboriginal and rural populations, have poorer oral health and lack of dental health awareness, suffering from more edentulism rates, denture need and dental decay<sup>8</sup>. Rural African populations, often associated with poverty and lower education levels, have higher rates of dental treatment needs, inadequate oral health and poor access to dental care services<sup>9</sup>.

In Brazil, the term "quilombo" was used to characterize particular groups of black refugees who organized resistance movements against the slave system<sup>10</sup>. These traditional communities currently live in organized ethnic-social spaces and occupying several Brazilian states, and they were recognized by Decree 4.887 as "[...] ethnic-racial groups, according to self-award criteria, with black ancestry and historical background, endowed with specific territorial relationships [...]"<sup>11,12</sup>. Rural communities formed by these ethnic-racial groups are called "Quilombo Communities";

the residents of these communities are called "Quilombolas"<sup>13,14</sup>. Therefore, the "Quilombo Communities" in Brazil concentrate particular anthropological, racial and economic characteristics that lead to negative impacts on oral health.

The Unified National Health System of Brazil (SUS) has advanced in the execution of its principles and implementation of health services, though there are still social inequalities in access, utilization, and quality of these services, especially when the analyses are stratified by race/skin colour and ethnicity<sup>11</sup>.

The issue of access to health in Quilombola communities remains a subject that promotes debate regarding analysis of public-private responsibilities, exclusion, inequality, inequity, management of the health system and respect for culture and ethnic identity<sup>12,15</sup>. It is essential that public health policies seek the inclusion of Quilombola communities in effective actions that complement the State's social responsibility cycle, to which ethics should be aggregated as a principle of libertarian conscience, in order to obtain justice as equity and welfare of the human being<sup>12,13,16</sup>.

Recently, Brazilian health authorities have been engaged in offering Public Dental care of quality, with preventive and rehabilitative proposals that can reach all age groups<sup>3,16</sup>. There is a common consensus among global public health that oral and general health should be debated and planned together, as part of a holistic health system. According to the British Dental Association (BDA), to decline the inequalities in oral health, it should be part of a wider general health public policy and work fully integrated with primary health care<sup>6</sup>.

Oral health is not dissociated from general health of the individual; therefore, to know and evaluate the state of oral health in traditional communities' elderly patients is rather important to provide information to support public policies, which can be efficient to meet these population groups' needs<sup>10,11,16,17</sup>.

Throughout the world, ethnic and socioeconomic minorities have more barriers to access to health than the general population, culminating in greater deterioration of general health<sup>18,19</sup>. Especially in the elderly population, the problem increases due to the difficulties they often find in self-care, lack of information, low levels of education and poor general health<sup>20</sup>. This study aimed to analyse the oral health conditions of the older Quilombola population in the North of Minas Gerais (Brazil) and the limitations of access that these communities face, regarding public health services.

## METHOD

This is a census, observational, cross-sectional, descriptive study, which data collection work was carried out in 2014.

The target population comprised 669 elderly people, aged 65 to 74 years old, residents of 33 rural Quilombola communities, which are distributed around 20 different northern cities in the state of Minas Gerais, Southeast of Brazil. All of the elderly participants descendants of slaves involved in this study are residents of rural communities.

It is important to note that in Brazil, the Southeast region is the most developed and the northeast region is the least developed. In the Southeast of Brazil, the northern region of Minas Gerais is the area with the worst indicators of development, where the study was conducted. In the northern region of Minas Gerais, the greater number of populations of slaves descendants who live in rural communities is concentrated<sup>18</sup>.

Socioeconomic status is closely linked to the availability of services and self-awareness concerning oral health, once people who do not have access to free and wide oral health through social programmes, more difficult it is to perform preventive measures regarding tooth loss, for instance. When ethnic groups are as well in lower socioeconomic strata of society, they suffer from more issues of deteriorated oral health than other groups when compared<sup>19,21</sup>.

Although, according to Brazilian laws, citizens are considered elderly from the age of 60, it was selected the age group of 65 to 74 years old, once this is the group age adopted by the Ministry of Health of Brazil when conducting epidemiological surveys of oral health in the older population. As stated in the Descriptive Population Map of the State Federation of Minas Gerais Quilombo Rural Communities, the 33 rural communities in the north of Minas Gerais had, during the study period, 731 registered elderly people in the age group studied. During the research, it was observed that 39 elderly people had transferred residence to urban areas and 23 of them did not have physical or cognitive condition necessary to participate. Thus, as applied in the methodology of the Ministry of Health of Brazil in the 'SB Brazil 2010', those participants either with difficulty engaging answers or low responsiveness assessed by the researcher were excluded.

To proceed with the study, rules, methodological procedures and guidelines of the Ministry of Health of Brazil in national survey conducted in 2010 (SB Brazil 2010) were followed<sup>22</sup>; and the same questionnaires and instruments for data collection were used. Demographic data was collected (age, race, education level, per capita income in real, people living per room), evaluated the objective conditions of oral health (number of teeth present, use and need for dentures, tooth decay), subjective oral health conditions (satisfaction with oral health, self-perceived need for dental treatment, self-perceived need of dentures, pain sensitivity in the last 6 months), use of dental services (consults with a dentist, when and where was the last consult, the reason of the last visit, how would they evaluate the last visit), impact of oral health conditions in their daily lives (eating, emotional state, social, sports, talking, smiling, study or work, sleeping).

Examinations and interviews were conducted in the houses of those surveyed. For the assessment of oral health condition, the tests were performed under natural lighting, with the help of dental mirror, periodontal probe and the use of wooden spatulas for better intraoral view. The tests were conducted by previously trained and calibrated dentists (Kappa agreement  $\geq 0.60$ ).

The collected data was tabulated and analysed using the SPSS (Statistical Software Package for Social Sciences) v. 18.0. The results are shown in tables.

The study was approved by the Research Ethics Committee of the State University of Montes Claros (report n° 3043).

## RESULTS

As shown on Table 1, 81.0% (n= 619) of the 669 Quilombola elderly participants in this study say they were black, 58.7% (n=393) were female and 66.1% (n=442) of them reported illiteracy. Regarding family organizations and households, 42.2% (n=282) declared that lived in a house with up to 1.50 residents/room, 34.7% (n=232) lived in a house with

**Table 1.** Socioeconomic conditions and use of dental services among elderly quilombola in the north of Minas Gerais, Brazil, 2014 (N = 669)

Personal Characteristics	N	%
<b>Gender</b>		
Female	393	58.7
Male	276	41.3
<b>Race</b>		
White/Yellow	50	7.5
Black/Brown	619	92.5
<b>Marital Status</b>		
Has a spouse	404	60.4
Doesn't have a spouse	265	39.6
<b>Education</b>		
Literate	227	33.9
Illiterate	442	66.1
<b>Income per capita in Brazilian Real (R\$)*</b>		
$\geq 1,056.00$	40	6.0
$\geq 352.0 < 1,056.00$	182	27.2
$< 352.0$	447	66.8
<b>Residents per room</b>		
Up to 1.50	282	42.2
1.51 to 2	232	34.7
More than 2.0	155	23.2
<b>Use of dental services</b>		
<b>Have been to the dentist</b>		
Yes	612	91.5
No	57	8.5
<b>When was the last consult*** +</b>		
< 01 year	116	19.0
01 to 03 years	99	16.3
$\geq 03$ years	394	64.7
<b>Where was the last consult** +</b>		
Public service	356	58.2
Private service	256	41.8
<b>Reason for the last consult** +</b>		
Review/prevention	18	2.9
Treatment	213	34.8
Pain/extraction	381	62.3
<b>Assessment of the last consult** +</b>		
Satisfactory	577	94.4
Unsatisfactory	34	5.6

\*Minimum wage = R\$ 880.00<sup>23</sup>; \*\*Analysis conducted with participants who have consulted with the dentist; +Number of respondents below the number of participants

1.5-2 residents/room and 23.2% (n=155) inhabited in a home with more than 2 residents/room. Only 60.4% (n=404) of Quilombola elderly participants reported being married. Concerning socioeconomic status, nearly 70% reported less than half the minimum wage income per capita.

Regarding the use of dental services, 91.5% (n=612) said they have been to the dentist, however, more than 64.7% said that the last visit to the dentist occurred more than three years ago. The main reason for dental consulting was tooth pain or extraction (62.3%), followed by dental treatment (34.8%) and only 2.9% consulted for prevention of oral and dental diseases. Most of dental appointments were at public services (58.2%) and nearly 95% of participants declared satisfied with the previous consultation (Table 1).

**Table 2.** Objective and subjective conditions of oral health among elderly quilombolas in the north of Minas Gerais, Brazil, 2014. (N = 669)

Objective conditions of oral health	N	%
<b>Number of present teeth</b>		
≥ 16 teeth	64	9.5
01 to 15 teeth	248	37.1
Totally edentulous	357	53.4
<b>Use of total upper prosthesis</b>		
No	412	61.6
Yes	257	38.4
<b>Use of total lower prosthesis</b>		
No	553	82.7
Yes	116	17.3
<b>Use of total prosthesis</b>		
Doesn't use	410	61.3
Use in one of the arches	145	21.7
Use in both arches	114	17.0
<b>Need of total upper prosthesis</b>		
No	171	25.6
Yes	498	74.4
<b>Need of total lower prosthesis</b>		
No	291	43.5
Yes	378	56.5
<b>Need of total prosthesis</b>		
Doesn't need	154	23.0
Need in one of the arches	154	23.0
Needs in both arches	361	54.0
<b>Subjective conditions of oral health</b>		
<b>Satisfaction with own oral health*</b>		
Satisfied	322	48.3
Unsatisfied	345	51.7
<b>Self-perceived for need treatment</b>		
No	350	52.3
Yes	243	36.3
Doesn't know	76	11.4
<b>Self-perceived need for total prosthesis*</b>		
No	236	36.0
Yes	419	64.0
<b>Pain (last 06 months)</b>		
No	245	36.6
Yes	76	11.4
Edentulous (for more than 06 months)	348	52.0

\*Number of respondents lower than number of participants

About oral health conditions in the interviewed Quilombola elderly population, only 9.5% (n=64) had more than 16 teeth in mouth, and more than half were totally edentulous (Table 2). Although most of them had the need to use total upper prosthesis (74.4%) and total lower prosthesis (56.5%), only 38.4% used upper dentures and 17.3% had lower dentures (Table 2). The low rate of denture use is repeated when both arches dentures are analysed, since 54% needed and only 17% used the prosthesis (Table 2).

On subjective perceptions about oral health, 48.3% (n=322) were satisfied with their health and 52.3% (n=350) thought there was no need for any dental treatment. When asked about tooth pain in last 6 months, only 11.4% responded affirmatively, because most of them (52%) was edentulous for the last 6 months or more (Table 2).

Regarding to impacts of oral health on daily life of Quilombola elderly people, only 6.8% declared alteration of emotional state, 2.0% said it affected exercising, 5.0% said it affected studying or working and only 3.5% declared it interfered with socializing (Table 3). Their main complaints about oral health impacts were smiling (18.6%), eating (12.9%), speaking (12.5%) and sleeping (12.2%) (Table 3).

**Table 3.** Impact of oral health conditions on the daily life of elderly quilombola in the north of Minas Gerais, Brazil, 2014. (N = 666)

Variables	N	%
<b>Eat</b>		
No	580	87.1
Yes	86	12.9
<b>Emotional state</b>		
No	621	93.2
Yes	45	6.8
<b>Social Context</b>		
No	643	96.5
Yes	23	3.5
<b>Practice of sports</b>		
No	653	98
Yes	13	2.0
<b>Speak</b>		
No	583	87.5
Yes	83	12.5
<b>Smile</b>		
No	542	81.4
Yes	124	18.6
<b>Study or work</b>		
No	633	95.0
Yes	33	5.0
<b>Sleep</b>		
No	585	87.8
Yes	81	12.2

## DISCUSSION

The access to health care in rural and remote communities is not a challenge restricted to developing countries. Either communication, transport, availability of health professionals willing to work in areas far from bigger cities, financial impairment and several other difficulties are encountered by the health systems concerning insertion of equal health care in rural areas as it is available in cities and greater centres<sup>24</sup>.

Race in Brazil has generated debates about the prejudice, exclusion, and inequality for the access to health services<sup>16,25</sup>. Among the vulnerable groups, Quilombolas; ethnic and racial groups formed by African descents, with modes and own culture, living in rural areas and living with the difficulties of access and use of health services stand out<sup>26</sup>.

The oral health status results in a multifaceted set, including factors related to the organization of supply, sociodemographic characteristics of users, the epidemiological profile and aspects related to the services provided (Public/Private)<sup>27,28</sup>. The results of this study pointed out that the black population, illiterate and low-income corresponds to the vast majority of Quilombola rural communities<sup>12,29</sup>. These data confirm the actual situation of oral health of the Quilombola communities, which has been forgotten over the years by the government as the right to basic health care<sup>13,26</sup>. With the implementation of SUS in Brazil, the access to health care services was expanded to a greater portion of the population<sup>18</sup>.

The population surveyed in this study is black, rural, low level of education and low income; a clear picture of unfavourable conditions and negative impact on the health situation. This specific minority group in Brazil reflects the status of oral health of several traditional and rural populations around the globe, constituted by a variety of ethnic and cultural groups, but mainly with lower income and literacy levels.

Although most of the elderly participants surveyed had used dental services, most of them did it for more than three years, seeking dental care only in cases of pain or extraction. It is noticed that the exclusion condition creates a culture of immediate resolutions, where there is no place for prevention and health promotion<sup>14</sup>. In a survey conducted in the urban population of the state of Minas Gerais<sup>30</sup>, the percentage of those who have been to the dentist is slightly lower (88.5%) and 55.1% report have consulted the dentist 3 years ago or more, before the interview. In the national survey<sup>22</sup>, 84% have been to the dentist, and 42.3% had visited the dentist more than three years before the survey.

In addition to the poor conditions of oral health, it was found a high edentulism index among the Quilombola elderly people surveyed, where a low percentage of Quilombolas elderly participants had a minimum of 16 teeth in the oral cavity, and more than half did not have any remaining dental element. Poor

condition of oral and high edentulism rate are not unique to this Quilombola population presented here; in the states of São Paulo and Goiás<sup>29,31</sup>, Quilombola residents also had inadequate oral health condition. Another low percentage found in the north of Minas Gerais (Brazil) was related to the use of upper and lower denture, which showed a great contradiction since it is a population in which more than half consists of edentulous. The problem of oral prosthetic rehabilitation affects many elderly people throughout Brazil<sup>3,22,28,32</sup>. During a research on oral Quilombolas health conducted in south of Brazil, it was verified that an urban Quilombo community had 12.8% of edentulous adults, compared with other rural Quilombo community, with 13.4% of adults without tooth<sup>33</sup>.

Edentulism rates are globally decreasing in many countries such as United States, Sweden, United Kingdom and, recently studied, also in Brazil<sup>34</sup>. Surveys conducted in Brazil, between 1986 and 2010, demonstrated a significant decrease on edentulism rates, mainly among teenagers and middle-age adults, with projections of nearly zero percent of edentulism in those groups until 2040<sup>34</sup>. On the other hand, among Brazilians, this decrease in edentulism midst elderly is not observed such as in other countries. Projections on edentulism in Brazilian seniors are of an increase until 2040, although these estimations are not exactly accurate<sup>34</sup>. In São Paulo (2015), it was estimated that 1.9% of population was edentulous and in Southeast region of Brazil the estimate of edentulism was of 2.6% (2010)<sup>35</sup>. Black people have an increased risk on 22% of losing tooth, compared with white people, reinforcing the iniquity on oral health access that affects majority of self-declared black people in Brazil, as well as Quilombolas<sup>36</sup>. Among Brazilians, in 2010, the edentulism rate was of 2.4% in white people and 3.5% amid black or brown people<sup>35</sup>. Therefore, it is evident the enormous difference between the edentulism rates among Quilombola elderly people in this study, which reached 53.4% of the population.

Most of the older adults surveyed reported being unhappy with their own oral health status. Although they reported not needing dental treatment, more than half declared a need for dentures, indicating that they have different conceptions for the term "treatment" and for the installation of prosthesis. It can be seen that dissatisfaction with the oral health of this population comes with the self-perceived need for denture<sup>3</sup>.

Assuming that the individual is the author of his own health and his oral condition interferes directly or indirectly in their quality of life<sup>3</sup>, being ashamed of smiling, having difficulty to eat and to speak were the main events reported as the impact of the health conditions on the daily lives of people current in the community. Other aspects of functional character, such as difficulty sleeping and working were also reported by the elderly participants, relating to oral health condition and their influence on daily activities<sup>37,38</sup>.

The subjective conditions of oral health show that there is an urgent need for appropriate attention and the implementation of public policies that can meet the demands of this population group.

Globally, the inequalities of oral health between urban and rural areas and between majority and minority ethnic-racial groups remain. Comparing the Brazilian Quilombola scenario with global scene, the situation reproduces what is found in other countries. Groups formed by minorities, low-income population and living in areas away from urban centres lack fair access to healthcare, health education and preventive measures in health. When they reach old age, those problems are aggravated with the complications of oral health previously mentioned, resulting in lower quality of life than those who did not face the same negligence in the past.

The results represent a significant contribution explaining the actual condition of oral health of the elderly quilombo residents and the great impact that social inequalities have on their health. Exclusion and health inequality along the Quilombola population, particularly in the north of Minas Gerais, is a reality already mentioned by authors who previously discussed this matter.

The oral health status of the elderly Quilombolas is proof of how neglected this group has been by the government, in the matters of their most basic rights; and here, the right to basic dental care.

The main barriers to dental services access were: low education, low income, race/colour and the scarce supply of oral health services. These are essential items to understand the reality of the health status presented in this study. The results pointed to a situation of inadequacy regarding oral health of elderly people, where high rate of tooth loss along with the need for access to health services and to receive prosthetic rehabilitation were observed.

The Ministry of Health of Brazil has reported great improvement of Brazilians' oral conditions. However, Quilombola communities still experience deficient access to current public policies and health education programs and are also marginalized from modern dental treatments and professionals available only in city centres. Afro-descendant population is numerical majority. However, as a result of their social vulnerability, the Quilombola remnants are the minority and fight for equity in health. In Brazil, public health policies have been prioritized for most groups at the expense of social minorities.

As in other countries worldwide, Brazilian rural territories have worse socioeconomic indicators than urban areas and constitute an important axis of concentration of impairment to oral health and it is another barrier regarding the adequate access to health services. Accordingly, there is a need to intensify the implementation of public policies that contribute to the achievement of equity in oral health, as part of a holistic and inclusive health system.

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