



Dental Health Diagnosis in Quilombola Communities in Northern Minas Gerais - Minas Gerais.

Diagnóstico de Saúde Bucal em Comunidades Quilombolas do Norte de Minas Gerais - Minas Gerais.

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ABSTRACT

Objective: The aim was to diagnose the oral health situation in two quilombola communities in the North of Minas Gerais, Monte Alto and Dos Nogueiras. **Method:** A cross-sectional, population-based, descriptive study was conducted. A questionnaire was administered to assess socioeconomic, cultural, and oral health conditions using the Oral Health Impact Profile. Information such as gender, age, skin color, education level, water supply, sanitation, family income, daily habits, tobacco and alcohol use, and self-perceived health conditions were collected. Through clinical examinations by calibrated examiners, prevalent oral diseases in both communities were identified. The data underwent descriptive and bivariate analysis, using Pearson's chi-squared test (X^2) with a 95% confidence level and a significance level (α) of 5%. **Results:** In the Monte Alto quilombola community, absence of sewage treatment, low education levels, limited access to healthcare services, high rates of edentulism, and carious lesions were identified. In the Dos Nogueiras quilombola community, a high percentage of smokers, consumption of cariogenic foods, carious lesions, and periodontal diseases were observed. **Conclusion:** Oral health problems were attributed to poor sanitation

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conditions, limited access to healthcare services, consumption of cariogenic foods, and a high prevalence of smokers.

Keywords: Oral Health, Quilombo, Diagnosis, Oral, Social Vulnerability.

RESUMO

Objetivo: diagnosticar a situação de saúde bucal em duas comunidades quilombolas do Norte de Minas Gerais, Monte Alto e Dos Nogueiras. **Método:** Foi realizado um estudo transversal, descritivo e de base populacional. Foi aplicado um questionário para avaliar as condições socioeconômicas, culturais e de saúde bucal por meio do Oral Health Impact Profile. Foram coletadas informações como sexo, idade, cor da pele, escolaridade, abastecimento de água, saneamento, renda familiar, hábitos diários, uso de tabaco e álcool e condições de saúde autopercebidas. Através de exames clínicos realizados por examinadores calibrados, foram identificadas doenças bucais prevalentes em ambas as comunidades. Os dados foram submetidos à análise descritiva e bivariada, utilizando-se o teste qui-quadrado de Pearson (X^2) com nível de confiança de 95% e nível de significância (α) de 5%. **Resultados:** Na comunidade quilombola Monte Alto foram identificados ausência de tratamento de esgoto, baixa escolaridade, acesso limitado aos serviços de saúde, altos índices de edentulismo e lesões de cárie. Na comunidade quilombola Dos Nogueiras foi observado elevado percentual de fumantes, consumo de alimentos cariogênicos, lesões cariosas e doenças periodontais. **Conclusão:** Os problemas de saúde bucal foram atribuídos às más condições de saneamento, ao acesso limitado aos serviços de saúde, ao consumo de alimentos cariogênicos e à alta prevalência de fumantes.

Palavras-chave: Saúde Bucal, Quilombo, Diagnóstico, Boca, Vulnerabilidade Social.

INTRODUCTION

The term "quilombo" in Brazil, used by enslaved Africans, evokes the concept of a space and a movement of resistance of Black men and women who formed a social organization¹. Quilombo represented a place where formerly enslaved individuals fully embraced their culture, preserving their own identity, lifestyle, and religious beliefs. In this context, interpersonal relationships gained meaning when shared common values within the community, promoting the acceptance of exploitation and submission that were imposed upon slaves before the abolition of slavery, transforming this act of valorization into an act of resistance².

For a long time, Quilombola communities in Minas Gerais have been struggling to reclaim their lands and resist daily in order to establish a just life where their culture and identity are respected and valued³. These communities face social inequality, making them more vulnerable in society⁴.

State that, in general, Quilombola populations are the most disadvantaged and excluded when it comes to health, including oral health, due to the difficulty of accessing these services⁵. Oral health also influences individuals' lifestyles, reflecting on their well-being, self-esteem, and socialization.

In line with the National Oral Health Policy, which emerged in 2003 through the "Brazil Smiling" program, a series of measures were taken to promote, prevent, and recover the oral health of the Brazilian population through the unified health system, reorganizing and improving services provided to citizens. Within these guidelines, it includes expanding access to dental treatment for all citizens in an integral and humanized manner (PNSB, 2003), which also involves traditional peoples and communities.

Covering 89 municipalities and subdivided by the Brazilian Institute of Geography and Statistics (IBGE) into seven micro-regions, the North is the mesoregion of the state that concentrates the largest number of Quilombola communities⁶. In this context, studies on the oral health conditions of Quilombola communities in Northern Minas Gerais become important in order to understand the prevalent diseases among the quilombos, the possible factors that interfere in their oral health conditions, the access to oral health services, and the habits and customs of the population⁷. Therefore, the objective of this study was to perform a diagnosis, identifying the main oral diseases present in the populations of the Quilombo dos Nogueiras and Quilombo Monte Alto in Northern Minas Gerais.

METHODS

The study was submitted and approved by the Ethics Committee for Animal Experimentation at Montes Claros State University under opinion number 5.408.657, dated 23/03/2022. This approval demonstrated that the research design and procedures met the necessary ethical standards, including the protection of participants' rights and well-being. By following these ethical principles, the researchers aimed to conduct a responsible and respectful

study, promoting transparency and the highest ethical standards throughout the entire research process.

This study is a cross-sectional, population-based, and descriptive research conducted in the Quilombo dos Nogueiras and Quilombo Monte Alto communities, located in the urban and rural areas of the municipality of Montes Claros-MG, Brazil. These two communities comprise individuals of all age groups, including children, youth, adults, and elderly.

Initially, a survey was conducted to identify all individuals belonging to the communities, and subsequently, they were classified and grouped according to sex and age range. The groups were categorized as follows: children (aged 5 to 12), youth (aged 15 to 19), adults (aged 35 to 44), and elderly (aged 65 to 74) following the guidelines of the World Health Organization (WHO).

The interviews and evaluations were carried out by 4 healthcare professionals with higher education, who were previously trained and calibrated to ensure consistency and reliability in data collection. The Kappa (K) agreement test was used, finding values considered satisfactory (0.80).

The calibration process consisted of the following steps:

1. Theoretical training: The healthcare professionals underwent theoretical training, which involved a theoretical and interactive presentation of the adopted diagnostic criteria. Manuals and projected images were used to demonstrate the different oral health conditions that were assessed.
2. Practical training: The professionals conducted examinations on volunteers who were selected beforehand in a spacious area following biosafety guidelines. Each volunteer was examined a maximum of 4 times to avoid fatigue and discomfort. An experienced epidemiologist led these stages, ensuring adherence to the recommended methods for basic oral health research.
3. Training and calibration for diagnostic criteria: This stage lasted approximately one week. A 3-day interval was provided between training and calibration to allow examiners to assimilate their knowledge about the criteria and practice the procedures. The consistency of each individual examiner (intra-examiner reproducibility) and the variations between examiners

(inter-examiner reproducibility) were evaluated. The examiners demonstrated consistency using a common standard.

4. Data collection: The data collection took place at the headquarters of the Quilombola communities, where the environment was open, ventilated, and well-lit with natural light.

These calibration measures were implemented to ensure the accuracy and reliability of the data collected during the oral health assessments in the Quilombo dos Nogueiras and Quilombo Monte Alto communities.

5. To obtain the results, a standardized questionnaire was administered, containing questions related to social, economic, and cultural aspects. The questionnaire covered factors associated with oral health diseases, an assessment scale of oral health in quality of life (simplified version of the Oral Health Impact Profile), and an epidemiological survey through a clinical oral examination.

6. Socioeconomic data were collected, including information on sex, age, self-declared skin color, education level, marital status, water supply, access to electricity, sanitation, family income, common habits, tobacco and alcohol use. Subjective health conditions were evaluated through self-perception of health status, defined as the dependent variable in this study. This evaluation aimed to identify the possible prevalent oral diseases in the communities, such as dental caries, periodontal diseases, soft tissue lesions, tooth structure loss, traumas, and other alterations, using age groups or sex as variables. The diagnosis was carried out in an appropriate setting, at the headquarters of the communities, during morning and afternoon sessions, without any intervention.

The combination of questionnaires, epidemiological surveys, and clinical oral examinations allowed for a comprehensive assessment of oral health conditions in the Quilombo dos Nogueiras and Quilombo Monte Alto communities, considering both objective clinical indicators and subjective self-perceptions of oral health and its impact on quality of life.

The data was tabulated and analyzed using the statistical software SPSS (Statistical Package for the Social Sciences). This analysis aimed to establish a different approach and diagnosis from previous studies. Initially, a descriptive analysis of the data was performed, followed by a bivariate analysis to examine the association between oral health conditions and social, economic, and cultural demographic characteristics.

The data underwent descriptive and bivariate analysis, using Pearson's chi-squared test (X^2) with a 95% confidence level and a significance level (α) of 5%. This analysis was carried out to assess possible vulnerabilities between the two communities.

Descriptive analysis helped identify associations between oral health and the demographic characteristics of the population. The utilization of the *SPSS software* allowed for the evaluation of complex relationships and provided valuable insights into the overall oral health status and its determinants in the studied communities.

RESULTS

According to the sociodemographic data collected from the Quilombo dos Nogueiras and Quilombo Monte Alto communities, it was possible to identify their living conditions, sanitary conditions, and potential oral health-related issues.

The association between sociodemographic factors and oral health status was further analyzed to understand potential correlations between these variables. Education level, income, and other socioeconomic characteristics were examined to determine their impact on oral health outcomes in the communities. The results revealed valuable insights into the disparities and vulnerabilities related to oral health among different age groups and social backgrounds.

Based on the data, the study identified 100 inhabitants in Nogueiras and 30 inhabitants in Monte Alto, distributed among children, adolescents, adults, and elderly individuals. The majority of residents in both communities self-identified as Afro-Brazilians or people of mixed race (Negros Pardos) (Table 1).

The residents of the Quilombo Monte Alto community mostly rely on subsistence from their own agricultural and livestock productions, while the Quilombo dos Nogueiras community shows more occupational diversity with individuals engaged in various professions. Furthermore, there are distinct religious practices among the residents, with some identifying as umbandistas and others as Catholics (Table 1).

In terms of education, the majority of residents in both communities are literate, while only a small percentage has completed high school or attained higher education qualifications (Table 1).

A notable difference between the two communities is the availability of sewage treatment. The Quilombo Monte Alto lacks this essential resource, whereas it is present in the Quilombo dos Nogueiras community (Table 1).

Table 1- Sociodemographic Data of the Quilombo dos Nogueiras and Quilombo Monte Alto Populations, Montes Claros-MG, 2022.

VARIABLES	N	%	% OVERALL TOTAL
Nogueira (NO)	100	76,9	76,9
Monte Alto (MA)	30	23,1	23,1
Total	130	100,0	100,00
GENDER	N	%	% OVERALL TOTAL
	NO MA		
Female	45 21	45,0 70,0	49,2
Male	55 9	55,0 30,0	50,8
EDUCATION LEVEL	N	%	OVERALL TOTAL
Illiterate	11 6	11,0 20,0	13,1
Literate	15 18	15,0 60,0	25,4
Elementary education	30 1	30,0 3,3	6,2
High school	29 2	29,0 6,7	23,8
Higher education / College	7 3	7,7 10,0	7,7
RELIGION	N	%	% OVERALL TOTAL
Catholic	8 30	8,0 100,0	29,2
Protestant or Evangelical	10 0	10,0 0,0	7,7
Umbanda or Candomblé	81 0	81,0 0,0	62,3
No religion / None	1 0	1,0 0,0	0,8
SKIN COLOR	N	%	% OVERALL TOTAL
White	10 1	10,0 3,3	8,5
Mixed race / Brown	40 13	40,0 43,3	40,8
Black	50 16	50,0 53,3	50,8
OCCUPATION	N	%	% OVERALL TOTAL
Rural Producer / Farmer	0 26	0,0 86,7	17,2
Others	100 4	100,0 13,3	82,7

The dissatisfaction with oral health observed in both Quilombo communities highlights the significance of oral health as a determinant of overall well-being and quality of life. The fact that 62.3% of the respondents perceive their self-esteem and lifestyle to be directly affected by their oral health condition emphasizes the crucial role of dentistry within the social context. Since it has been identified the need for dental treatment by the majority of individuals in both Quilombo communities, relevance of toothache reported by most participants in the research, and the Quilombo Monte Alto's challenges with water treatment and lack of access to essential services (Table 2).

Table 2- Basic Sanitation Conditions and Self-Declared Oral Health Status of Quilombo dos Nogueiras and Quilombo Monte Alto, Montes Claros-MG, 2022.

PIPED WATER		N	%	% OVERALL TOTAL
		NO	MA	
Yes		100	30	100,0
No		0	0	0,0
SEWAGE TREATMENT		N	%	% OVERALL TOTAL
Yes		95	0	95,0 0,0
No		5	30	5,0 100,0
ELECTRICITY		N	%	% OVERALL TOTAL
Yes		99	30	99,0 100,0
No		1	0	1,0 0,0
ARE YOU SATISFIED WITH YOUR SMILE		N	%	% OVERALL TOTAL
Yes		44	5	44,0 16,7
No		56	25	56,0 83,3
HAVE YOU SOUGHT DENTAL TREATMENT BEFORE?		N	%	% OVERALL TOTAL
Yes		70	22	70,0 73,3
No		30	8	30,0 26,7
HAVE YOU EXPERIENCED TOOTHACHE BEFORE?		N	%	% OVERALL TOTAL
Yes		81	30	81,0 100,0
No		19	0	19,0 0,0
ORAL HEALTH AFFECTS SELF-ESTEEM AND LIFESTYLE		N	%	% OVERALL TOTAL
Yes		61	20	61,0 66,7
No		39	10	39,0 33,3
DO YOU CONSIDER THAT YOU NEED DENTAL TREATMENT?		N	%	% OVERALL TOTAL
Yes		76	30	76,0 100,0
No		24	0	24,0 0,0
HOW DO YOU CONSIDER YOUR ORAL HYGIENE?		N	%	% OVERALL TOTAL
Poor		9	17	9,0 56,7
Fair		45	7	45,0 23,3
Good		42	6	42,0 20,0
Excellent		2	0	2,0 0,0

Regarding risk factors in the communities, Quilombo dos Nogueiras showed a higher number of smokers (Table 3) and excessive consumption of cariogenic foods, evidenced mainly during the community's religious meetings as a traditional custom.

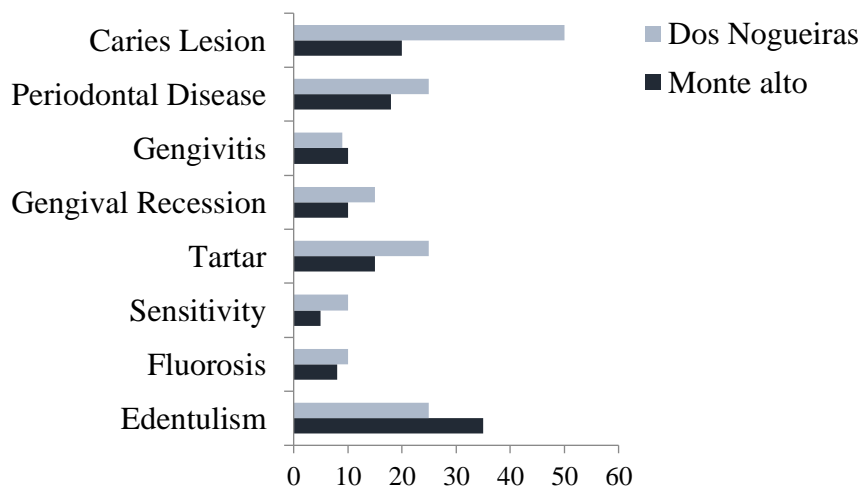
Moreover, the presence of comorbidities such as hypertension, diabetes, and heart problems in the communities reflects the burden of Non-Communicable Chronic Diseases (NCDs) (Table 3).

Table 3 - Risk Factors for Non-Communicable Chronic Diseases in Quilombo dos Nogueiras and Quilombo Monte Alto, Montes Claros - MG, 2022.

COMORBIDITY	N	%	% OVERALL TOTAL
Yes (Hypertension; Diabetics; Heart Disease; Obesity)	26 14	26,0 46,7	38,8
Não	74 16	74,0 53,3	69,2
SMOKER	N	%	% OVERALL TOTAL
Yes	51 0	51,0 0,0	39,2
No	49 30	49,0 100,0	60,8
ALCOHOL CONSUMPTION	N	%	% OVERALL TOTAL
Yes	43 15	43,0 50,0	44,6
No	57 15	57,0 50,0	55,4
USE OF DENTAL FLOSS	N	%	% OVERALL TOTAL
Yes	38 11	38,0 36,7	40,0
No	62 19	62,0 63,3	60,0
DO YOU HAVE ACCESS TO TOOTHBRUSH, TOOTHPASTE, AND DENTAL FLOSS?	N	%	% OVERALL TOTAL
Yes	100 8	100,0 26,7	83,1
No	0 22	0,0 73,3	16,9

The prevalence of dental problems, such as dental caries, periodontal diseases, and edentulism, is a concerning issue. When evaluating the Quilombo communities, it becomes apparent that both have high percentages of dental caries (Graph 1).

Graph 1 – Prevalence of oral health problems in the communities, Quilombo Monte Alto and Quilombo dos Nogueiras.



The high demand for oral rehabilitation using prostheses, particularly in the Quilombo Monte Alto community, is a significant concern.

DISCUSSION

Certain factors such as education level, income, and socioeconomic characteristics are known to influence the perception of oral health, as suggested by⁸.

These socio-economic and cultural characteristics may have implications for oral health in both communities. Factors such as income, education, and access to basic services like sewage treatment can significantly influence oral health outcomes. Additionally, cultural practices and religious beliefs might impact oral health behaviors and utilization of dental services.

There are areas in Brazil where proper water treatment is not available, leading to inadequate water fluoridation⁹. This observation aligns with the current situation in the Quilombo Monte Alto, where the sewage treatment index is significantly low. Consequently, there is a noticeable negative impact on the oral health of the residents, as the lack of water fluoridation can lead to the diagnosis of carious lesions, among other dental problems. These issues can worsen and even result in tooth loss.

Also support this observation, as they point out that the limited use of dental services among Quilombola communities is connected to inequalities stemming from social and economic conditions¹⁰.

The contrasting realities between Quilombo Monte Alto and Quilombo dos Nogueiras highlight the significant impact of social and environmental factors on oral health and overall health outcomes. Addressing the broader social determinants of health, such as water and sanitation infrastructure, is crucial in promoting oral health and reducing disparities in the Quilombo communities. Public health efforts should prioritize equitable access to dental services and work towards improving overall living conditions to achieve better oral health outcomes for the residents¹¹.

The presence of chronic systemic conditions in the communities underscores the need for comprehensive and integrated healthcare approaches. Public health initiatives should focus on improving the overall living conditions, promoting health education, and providing early

detection and management of chronic diseases to improve the well-being of the Quilombo communities and reduce health disparities. The NCDs can be influenced by the lack of access to information, overall social inequalities, and other vulnerabilities that contribute to their development¹².

The findings underscore the significance of implementing oral health initiatives that address the specific needs and challenges faced by the Quilombo communities.

The high prevalence of toothache reported by most participants in the research highlights the significance of dental pain as a common oral health issue in both Quilombo communities. It also indicates the need for improved access to dental services to address dental pain and other oral health problems effectively.

These habits, among others, may be related to the prevailing culture in the community, as noted in the distribution of sweets and candies to celebrate the day of São Cosme and Damião, a festive date in the Umbanda religion. Umbanda is an Afro-Brazilian religious tradition centered around festive rituals and offerings to deities, often involving the presentation of gifts and offerings¹³.

Integrating oral health education and preventive measures into religious and cultural celebrations can be a valuable approach to address oral health disparities and improve the overall well-being of the residents¹⁴. The fact that the population feels the need for dental treatment underscores the importance of addressing the oral health disparities and access to dental care that exist within these communities.

While the Brazilian Unified Health System (SUS) aims for universal and comprehensive healthcare, the Quilombola population often receives less assistance. Therefore, there is a need for effective methods to facilitate access to dental care and provide health promotion and preventive measures that are tailored to the reality of this specific population.

Brazil has one of the highest prevalences of dental caries and periodontal diseases, which can lead to significant oral health consequences⁸.

The prevalence of tooth loss in both communities, especially in Quilombo Monte Alto, leads to a substantial number of edentulous individuals who struggle to adapt to this reality. Addressing the high prevalence of dental problems and edentulism in the Quilombo communities requires a comprehensive approach that includes oral health education, preventive measures, and access to affordable and quality dental services. Considering that edentulism

affects important aspects of daily life, including chewing, speech, and aesthetics, and can have a considerable impact on social interactions and overall well-being¹⁵.

Indeed, the high prevalence of periodontal diseases in Quilombo dos Nogueiras may be linked to the elevated number of smokers in the community. Habits, such as smoking, can predispose individuals to various diseases, including periodontal disease, as noted by¹⁶. Tobacco use has been identified as a significant risk factor for the development of periodontal disease¹⁷.

The study also allowed for the identification of some limitations, among them, the historical experiences of discrimination and exploitation. Quilombola communities may be distrustful of external researchers, which can affect study participation and the quality of collected data. The historical, cultural, socio-economic conditions, and access to healthcare diversity require specific approaches for each community, making it difficult to generalize the results.

CONCLUSION

Both the rural community of Monte Alto and the urban community of Dos Nogueiras face precarious oral health conditions, necessitating essential dental interventions and public policies aimed at assisting the population to mitigate disparities and barriers encountered in accessing healthcare services, as well as addressing low levels of education and other vulnerabilities.

The study results can provide crucial evidence to inform the development of public policies aimed at improving oral health in quilombola communities. This may include initiatives to increase access to dental services and provide culturally sensitive oral health education.

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