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Association between racial iniquities and oral health status: a systematic review

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Abstract *The present study aimed to investigate the association between racial iniquities and oral health status. This is a systematic review with a protocol registered on the Prospero Platform (CRD42021228417), with searches carried out in electronic databases and in gray literature. Our study identified 3,028 publications. After applying the eligibility criteria and risk of bias analysis, 18 studies were selected. The results indicate that individuals of black/brown race/skin color have unfavorable oral health conditions, mainly represented by self-rated oral health, tooth loss, caries, and periodontitis. The results showed racial iniquities in oral health in different countries, for all analyzed indicators, with a greater vulnerability of the black population.*

Key words *Oral health, Health status disparities, Racial groups, Ethnic health*

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Introduction

The relationship between racial iniquities and oral health status can be explained by economic and social disadvantages, difficulties in accessing and providing adequate health care, and discriminatory attitudes towards the black population[1]. By recognizing racism, ethnic-racial inequalities, and institutional racism as social determinants of health conditions, actions can be taken in low and middle-income countries to promote health equity for the black population[2,3]. Racism is an ideology in which one group exercises hierarchical power over another, based on the self-reported conception of superiority[4,5]. Health inequalities are influenced by racism in three ways: first, cultural racism, which incorporates stereotypes and the naturalization of discriminatory practices; second, institutional racism, which limits this racial group's access to the benefits they are entitled to by right, in addition to ignoring racial discrimination as a determinant of health iniquities, as there are no investments that promote strategies to identify discriminatory practices and promote health equity; and third, individual racism, which promotes physical and mental violence by institutions and individuals[5-8]. In this context, it must be considered that exposure to structural and interpersonal racism contributes to the biological "incorporation" of exposures arising from this ecological and social context in which they live, favoring racial iniquities in health[9,10].

Iniquities, in turn, are characterized by the injustice that some groups suffer when they do not benefit from public actions or policies aimed at the entire population, and due to the fact that these differences are not avoided or repaired by public authorities[5]. Racial iniquities caused by institutional racism place black people in a situation of social vulnerability, as this portion of the population has less access to information and education; worse working, employability, and housing conditions; and less purchasing power, which directly influences access to health[7,9].

Assessing oral health status considering race/skin color can also express the existence of racial iniquities[1]. Periodontitis, a disease that affects the supporting and protective tissues of the teeth, in addition to favoring tooth loss, triggers pro-inflammatory events, which appear in many ways in systemic diseases and disorders[11]. Tooth decay tends to cause pain and increases the likelihood of tooth loss[12]. Self-rated oral health, in turn, can reflect the way individuals perceive their health and is therefore influenced by beliefs, sociodemographic profile, and various situations and oral health problems, such as pain, tooth loss, chewing difficulties, and esthetic needs, among others[13].

As the epidemiological situation of oral health in populations in low and middle-income countries is still quite serious[3], the recognition of iniquities in oral health should be considered a priority research topic to reinforce the need to develop interventions aimed at improving the oral health of populations. By contrast, systematic review studies on racial iniquities in oral health are incipient. From this perspective, the present study aimed to analyze the association between racial iniquities and oral health status.

Method

Register and Protocol

This is a systematic review study conducted according to the Preferred Reporting Items for Systematic Reviews (PRISMA) standards[14]. The study protocol was registered in PROSPERO under number CRD42021228417.

Eligibility Criteria

The eligibility criteria were based on population, exposure, outcome, and type of study, which were distributed as follows:

- Population: people aged≥18 years (as they have greater autonomy in deciding to participate in the study);
- Exposure: black and brown race/skin color (group that has historically been exposed to racism);
- Outcome: oral health status (patients who have periodontitis, caries, tooth loss, and need for prosthesis);
- Study design: observational epidemiological study designs (ecological, cross-sectional, case-control, cohort).

Studies published in any period, in Portuguese, Spanish or English, were included. Any study whose population was made up of children or adolescents, which did not have a racial profile, and which were experimental studies were excluded. Having a comparison group was not considered an inclusion criterion, so as not to exclude studies that only analyzed black/brown skin color groups.

Information sources

Study searches were carried out until October 14, 2022, in the following electronic databases: Medline/PubMed, Scopus, Web of Science, SciELO, Lilacs, ScienceDirect, and Embase. In addition, a search regarding the references for included articles, conference abstracts, and databases containing gray literature (ProQuest) was conducted in Google Scholar and in catalogs of theses and dissertations.

Search strategies

The descriptors were defined considering each database, for Medline, Scopus, Web of Science, and Science Direct, MeSH (Medical Subject Headings); for SciELO, Lilacs, ProQuest, Google Scholar, and catalogs of theses and dissertations, DECs (Health Sciences Descriptors); and for Embase, Emtree (Embase subject headings). When obtaining the descriptors representing the eligibility criteria, these were combined with the Boolean operators, OR and AND, so that the final search strategy was defined in each database mentioned above (Chart 1). The search strategies took into account the guidelines of the Peer Review Electronic Search Strategy (PRESS)[15].

Study selection

The search results were exported to the Rayyan Systems Inc. - Rayyan program (https://www.rayyan.ai)[16]. Using this application, duplicate articles were checked and selected by title and summary by two researchers, independently. If the abstract was not available and, in this case, if the title was suggestive of inclusion, the article remained in the database and was passed on to the next stage of the assessment of eligibility by reading the full text. In this screening stage, if there was disagreement concerning the eligibility judgment between two reviewers, the decision to include or exclude articles was made by a third researcher.

Subsequently, all articles that were screened in the previous phase had their eligibility confirmed by reading the full text, also independently, by two reviewers. Any disagreement was resolved either by consensus or by a third reviewer, who was a professional with extensive experience in the field. At the end of the process, the total number of studies actually eligible to construct the systematic review was obtained.

Data Extraction

Data from the included articles were extracted by three independent researchers and subsequently compared. All information was organized in an Excel spreadsheet, focusing on the most relevant information:

- Study characteristics: authors, year, location, type of study;
- Participant characteristics: number of participants included;
- Exposure Characteristics: number of individuals, black or brown race/skin color, and characteristics of these groups;
- Outcome variable: oral health condition assessed (decayed, missing and filled teeth, periodontitis or need for dental prosthesis); and instrument for diagnosing oral health status;
- Main results of the studies.

Quality assessment of the included studies

All studies that met the eligibility criteria had their methodological quality assessed by two examiners, independently, and were subsequently compared. The Newcastle-Ottawa scale was used to assess the quality of cross-sectional and cohort observational studies[17]. This tool evaluates seven items (adapted for cross-sectional studies) and eight items (for cohort studies), divided into three groups: selection of study groups; comparability of groups; and verification of exposure or outcome of interest. Each item corresponded to a specific star score already determined by the scale. Studies evaluated using this scale could receive a maximum of 9 stars in total – the more stars, the lower the risk of bias[17].

Data analysis

A description of the relevant aspects for the analysis of the studies selected for the systematic review was carried out, based on the creation of a summary table. The risk of bias assessment was organized in a table format. As all evaluators, independently, assessed all titles and abstracts, and all read them in full. It was deemed unnecessary to obtain the kappa agreement index to evaluate agreement between evaluators.

Chart 1. Search strategies per database.

PubMed (424 articles)	((“adult”[MeSH Terms] OR “adult”[All Fields] OR “adults”[All Fields] OR “adult s”[All Fields] OR (“young adult”[MeSH Terms] OR (“young”[All Fields] AND “adult”[All Fields]) OR “young adult”[All Fields])) AND (“humans”[MeSH Terms] AND “medline”[Filter]) AND ((“racism”[MeSH Terms] OR “racism”[All Fields] OR “racism s”[All Fields] OR “racisms”[All Fields] OR (“race relations”[MeSH Terms] OR (“race”[All Fields] AND “relations”[All Fields]) OR “race relations”[All Fields]) OR (“vulnerable populations”[MeSH Terms] OR (“vulnerable”[All Fields] AND “populations”[All Fields]) OR “vulnerable populations”[All Fields])) AND (“humans”[MeSH Terms] AND “medline”[Filter])) AND ((“tooth loss”[MeSH Terms] OR (“tooth”[All Fields] AND “loss”[All Fields]) OR “tooth loss”[All Fields] OR (“dental caries”[MeSH Terms] OR (“dental”[All Fields] AND “caries”[All Fields]) OR “dental caries”[All Fields]) OR (“periodontal”[All Fields] OR “periodontally”[All Fields] OR “periodontically”[All Fields] OR “periodontics”[MeSH Terms] OR “periodontics”[All Fields] OR “periodontic”[All Fields] OR “periodontitis”[MeSH Terms] OR “periodontitis”[All Fields] OR “periodontitides”[All Fields]) OR (“oral health”[MeSH Terms] OR (“oral”[All Fields] AND “health”[All Fields]) OR “oral health”[All Fields])) AND (“humans”[MeSH Terms] AND “medline”[Filter]))) AND ((humans[Filter]) AND (medline[Filter]))
Lilacs (16 articles)	Adult [Words] and African Continental Ancestry Group [Words] and Periodontal Diseases or Tooth Loss or Dental Caries [Words]
SciELO (67 articles)	((raça) OR (racismo) OR (preconceito) OR (quilombolas)) AND (saude oral)
Embase (278 articles)	(adult:ab,ti OR ‘young adult’:ab,ti OR ‘race difference’:ab,ti OR ethnic:ab,ti OR ‘racial aspects’ OR (racial AND aspects)) AND (‘oral health care’/exp OR ‘oral health care’)
Scopus (584 articles)	(TITLE-ABS-KEY (adults) AND TITLE-ABS-KEY (racism) OR TITLE-ABS-KEY (race AND relations) OR TITLE-ABS-KEY (vulnerable AND populations) AND TITLE-ABS-KEY (tooth AND loss) OR TITLE-ABS-KEY (dental AND caries) OR TITLE-ABS-KEY (periodontitis) OR TITLE-ABS-KEY (oral AND health))
Web of Science (773 articles)	#1 TÓPICO: (racism) OR TÓPICO: (race relations) OR TÓPICO: (Vulnerable Populations) Índices=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Tempo estipulado=Todos os anos #2 TÓPICO: (Tooth Loss) OR TÓPICO: (Dental Caries) OR TÓPICO: (Periodontitis) OR TÓPICO: (Oral Health) Índices=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Tempo estipulado=Todos os anos #1 AND #2
Science Direct (839 articles)	adult AND Race AND Health Status Disparities AND Oral Health

Source: Authors.

Results

Studies selected in the systematic review

The search process resulted in the identification of 3,028 publications. In the screening, duplicates were removed (n=631), resulting in 2,397 scientific articles, of which 75 were chosen to be read in full, and 2,322 records were excluded by reading the title, as they did not meet the eligibility criteria (Figure 1). After reading the article in full and comparing the reviewers, 18 scientific articles were included in this systematic review.

Characterization and study results

The included studies were conducted in Brazil, the United States and Australia. Of the seventeen articles selected, fifteen are cross-sectional studies, two are cohort studies, and one is ecological. The studies were published between 2004 and 2021 (Chart 2).

Of the eleven studies conducted in Brazil, six evaluated *quilombola* communities. The main outcomes analyzed were: oral health status[18,19], tooth loss[20], negative self-rated oral health[13], periodontal disease[21], and access to dental services[22].

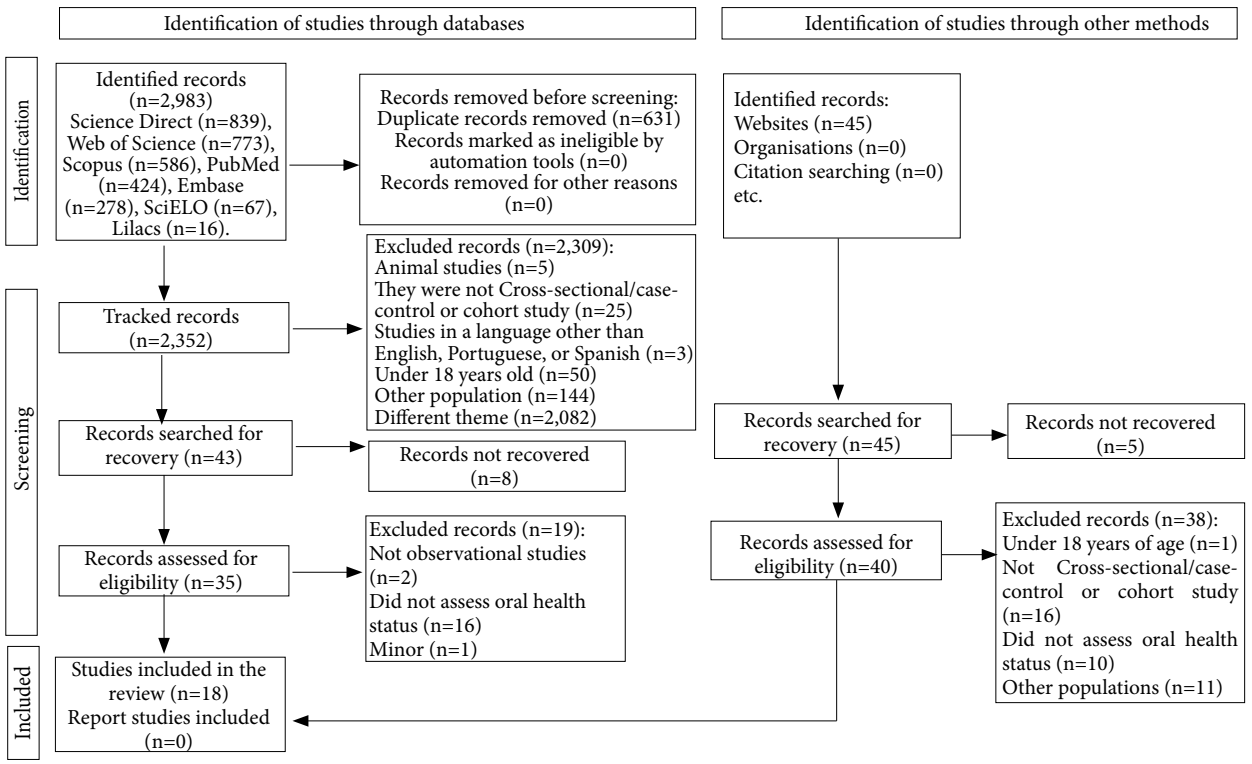

Figure 1. Flowchart of the article selection process for the systematic review, according to PRISMA guidance.

Source: Authors.

In general, *quilombolas* showed restricted access to dental care and a precarious oral health status.

Still in Brazil, other studies presented the following outcomes: the DMFT index (number of decayed, lost, and filled permanent teeth), tooth loss, anterior edentulism, pain of dental origin and need for prosthesis[1]; tooth loss[23]; periodontitis[24]; oral cancer[25]; and self-rated oral health[26]. Only one study did not associate a worse oral condition with race, but rather with income[24]. One Brazilian study showed that black people die more often from oral cancer than do white people[25].

Six studies were conducted in the United States[27-32]. The studied population was made up of adult individuals, with the most frequent outcome being tooth loss[28-30,33]. All research associated worse oral health status in exposed individuals than in the control group, in addition to associating a worse oral health status with racial discrimination[29]. Finally, the Australian article, when evaluating racial discrimination, indicates a likely association with compromised oral health[4].

The results recorded ethnic-racial iniquities in all of the analyzed indicators. The black population had less access to dental services[22,27]. Precarious oral health status, a high rate of edentulism[18], or tooth loss[1,32], a greater chance of tooth loss when compared to white people[23,28], and a higher mortality rate due to oral cancer[25].

Risk of bias

Regarding the risk of bias in the included studies, high methodological quality was observed in most articles. The average score on the scale was 7.4 in cross-sectional studies, in which the studies varied between 6 and 9 stars, while in the cohort studies this average was 7.5, with score variations ranging from 7 to 8. The aspects that scored negatively referred to limitations related to the sample, a lack of adjustments for confounding variables, and a description of the statistical analysis.

Chart 2. Characteristics of the studies included in the systematic review.

Authors/ Year	Location	Design	Population	Exposure variable	Outcome variable	Assessment tool	Main findings
Fisher *et al.*, 2004[27]	USA	Cohort study	873 non-institutional individuals	Access to dental service/age/ gender/race/ income/number of teeth	Oral disadvantage: gum disease, sensitive tooth (hot and/or cold) or dental disease.	Interview and application of a structured questionnaire.	Whites were more likely to seek dental services than blacks. Among patients with severe periodontitis, white patients had more successful treatments.
Chavers *et al.*, 2007[31]	USA	Cohort study	873 people	Dental care, demographic factors and socioeconomic factors	Oral disadvantage	Data were extracted from a prospective longitudinal study on oral health and dental care.	There are significant differences in the incidence of oral disadvantages based on the approach to dental care, race, gender, area of residence, level of formal education, and financial status.
Jimenez *et al.*, 2009[32]	USA	Cross-sectional study	16,821 people	Race/education/ poverty income index/occupation, dental insurance/use of dental care/medical insurance/ gender/region of residence/foreign origin.	Tooth loss	*National Health and Nutrition Examination Survey III (NHANES III) - Clinical examination and interviews.*	The association between the number of missing teeth and socioeconomic factors was attenuated among blacks and Mexican Americans, when compared to whites in this study population.
Guiotoku *et al.*, 2012[1]	Brazil	Step 1: Cross-sectional study Step 2: Ecological study	12,811 adults of both sexes aged 35 to 44. In a second moment, in an attempt to contextualize inequities, we started working with a group of 6,918 black and brown people.	Step 1: Average family income (in US dollars) and education (in years of study), access to the dentist and race/ skin color. Step 2: average family income, human development index (HDI) and Gini index (IGini).	Stage 1: Caries (DMFT index), tooth loss, previous edentulism, dental pain, need for prosthesis and access to a dentist. Stage 2: average DMFT, average number of missing teeth and prevalence of previous edentulism, dental pain, and need for prosthesis, aggregated by state.	Secondary data from the SB Brazil 2002-2003 national survey. The oral examination was carried out at home by calibrated examiners.	Significant differences were observed between race/color groups for all outcomes studied. Racial inequities in oral health were evident in Brazil, with greater vulnerability of the black population (blacks and browns) in relation to whites.
Antunes *et al.*, 2013[25]	Brazil	Ecological study	8,505 people living in the city of São Paulo who died from oral cancer	Race, black skin color/male gender	Oral cancer	Mortality and Census Information System 2000.	The oral cancer death rate doubled for black men from 2003-2009
Bruno *et al.*, 2013[21]	Brazil	Cross-sectional study	29 quilombola individuals	Race, black skin color	Oral Lesions/Periodontal Disease	Community Periodontal Index (CPI)	A high prevalence of periodontal disease was found (75.86%) in quilombolas.

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Chart 2. Characteristics of the studies included in the systematic review.

Authors/ Year	Location	Design	Population	Exposure variable	Outcome variable	Assessment tool	Main findings
Celeste *et al.*, 2013[23]	Brazil	Cross-sectional study	2,791 employees from a university campus in Rio de Janeiro	Behavioral markers/Self-reported discrimination/race	Self-reported tooth loss	Data were collected using a self-administered questionnaire	After adjustment, black people had an odds ratio of being in a higher category of missing teeth equal to 1.39 (95%CI 1.12-1.72), and brown people, 1.33 (95%CI 1.10-1.60), when compared to whites.
Figueiredo *et al.*, 2016[19]	Brazil	Cross-sectional study	120 quilombola individuals	Quilombola community and water fluoridation	Oral health condition	Structured questionnaire and periodontal examination, in addition to collecting drinking water	Wide prevalence of cavities, as well as tooth loss, with a higher rate associated with the rural quilombola community.
Bidinotto *et al.*, 2017[13]	Brazil	Cross-sectional study	583 individuals belonging to the Quilombola community	Race, black skin color, low income	Negative self-rated oral health	Application of a structured questionnaire.	Negative self-rated oral health was reported by 313 (53.1%) individuals. Satisfaction with appearance and chewing is a factor associated with quilombolas' self-rated oral health.
Nazer and Sabbah, 2018[28]	USA	Cross-sectional study	76,273 participants over 40 years old	Black/Hispanic/ Other	Tooth loss	Use of secondary data. Application of a structured questionnaire over the telephone.	African Americans are more likely to have tooth loss than other ethnic groups. The significant association between ethnicity and tooth loss persisted even after adjusting for socioeconomic position.
Sandes *et al.*, 2018[18]	Brazil	Cross-sectional study	669 quilombolas, aged 65 to 74 years, living in 33 rural quilombola communities spread across 20 different municipalities	Socioeconomic conditions/use of dental services	Oral health condition	Interviews and examinations were carried out	The quilombolas analyzed choose to seek dental care only in cases of pain or extraction. Precarious oral health conditions, high rate of edentulism. Most elderly people reported being unhappy with their own oral health status.
Han, 2019[30]	USA	Cross-sectional study	12,307 adults	Education/ household income/ demographics	Visits to the dentist/ Self-reported tooth loss/ Number of missing teeth	*National Health and Nutrition Examination Surveys (NHANES)*	Non-Hispanic blacks report worse self-rated oral health than non-Hispanic whites

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Chart 2. Characteristics of the studies included in the systematic review.

Authors/ Year	Location	Design	Population	Exposure variable	Outcome variable	Assessment tool	Main findings
Celeste *et al.*, 2019[24]	Brazil	Cross-sectional study	9,779 individuals aged 35 to 44	Income/education/race	Periodontitis	Interview and oral examination	Higher income and education were associated with a decreased prevalence of moderate to severe periodontitis. There were no significant interactions between income and race or education, nor between race and education, nor between race and periodontitis.
Araújo *et al.*, 2020[20]	Brazil	Cross-sectional study	864 quilombola individuals	Socioeconomic and demographic variables and health conditions variables	Tooth loss	Application of a structured questionnaire.	The majority of quilombolas in the semi-arid region of Bahia reported losing at least one tooth due to extraction, and those who reported having tooth decay were more likely to have a tooth extracted.
Schuch *et al.*, 2021[4]	Australia	Cross-sectional study	2,798 individuals	Perceived racial discrimination/ income/education	Compromised oral health	Based on data from the National Dental Telephone Interview Survey.	Perceived racial discrimination is associated with oral health problems, and this relationship is socially standardized.
Miranda *et al.*,2021[22]	Brazil	Cross-sectional study	406 quilombola elderly people	Sociodemographic characteristics of quilombola elderly people	Access to dental services	Structured interviews and clinical dental examinations.	Quilombola elderly people had precarious oral health conditions and had restricted access to dental services. Elderly people had greater difficulty accessing dental health services.
Muralikrishnan and Sabbah, 2021[29]	USA	Cross-sectional study	4,858 individuals	Racial discrimination	Tooth loss	Behavioral Risk Factor Surveillance System (BRFSS) 2014	This study demonstrated a potential role for discrimination in tooth loss among American adults. Discrimination could also explain part of the ethnic inequalities in oral health.
Karam *et al.*, 2022[26]	Brazil	Cross-sectional study resulting from a cohort	537 individuals	Social and racial inequalities	Oral health self-assessment	Oral Health Study (OHS)	The results of this study demonstrate racial disparities in oral health regardless of income and education. Furthermore, negative self-rated oral health was identified as being more prevalent among participants belonging to racial/ skin color minorities.

Source: Authors.

Discussion

The results of this review illustrated that the black population has a worse oral health status, mainly in relation to tooth loss, poor self-rated oral health, and cavities. The studies included in the systematic review, although presenting a low risk of bias, show a high heterogeneity, which placed limits on the meta-analysis, due to the possibility of raising questions about the validity of combining results[34]. As research involving race/skin color and oral health is still recent, many outcomes have been analyzed, which makes it difficult to cross-reference data.

The studies included reveal that *quilombola* residents are not happy with their self-reported oral health[12,19], and they have a high prevalence of cavities[20], tooth loss[21], and periodontitis[22]. There was an association between black race/skin color and/or income and problems with the mouth, such as tooth loss, periodontitis, cavities and oral cancer[13,19-22,24-26,32]; the oral health condition was worse in black individuals than in white individuals[1,23,25,28,29,31,34]; a worse oral health status was identified when exposed to racial discrimination[4,30] and a probable relationship between tooth loss and low economic status[32].

Among *quilombola* individuals, their compromised oral health can be explained by factors that characterize social inequalities. *Quilombola* communities are located in rural areas, far from dental care centers, which makes it difficult for this population to access oral health treatment and guidance. Another relevant factor is economic; these families mostly live on a subsistence economy, and because they live far from dental care points, travel costs can limit these people to only searching for a dentist in urgent situations. *Quilombos* were refuges for enslaved people, who were able to build safe homes for their families in these spaces[13,19,21-23]. Historically, *quilombos* represent the resistance of a people who, to this day, suffer the consequences of colonialism when facing racial, socioeconomic, and health iniquities established by institutionalized racism[35].

In general, socioeconomic status is relevant in maintaining good oral health, as it allows the individual access to treatments, prevention, and hygiene guidance[29,31]. The concentration of wealth and exploitation of the black population, previously with slavery and today with underemployment, as well as precarious housing and schools in outlying neighborhoods, keeps this population with less access to better living conditions, thereby promoting the health iniquities experienced by these individuals .

Among the most important oral diseases for public health are periodontitis and tooth decay. The first, in addition to contributing to tooth loss, can favor the occurrence and/or severity of diabetes, endocarditis, and metabolic syndrome, among others[12]. Five studies included in this review cite a higher prevalence of periodontitis in black individuals, characterizing a greater exposure of this population to chronic diseases[1,21,24,27,34]. The second is the result of the demineralization of dental hard tissues, promoted by dysbiosis of the oral microbiota. Its etiology is associated with multiple factors, such as a diet rich in fermentable carbohydrates, a lack of/poor oral hygiene, prevalence of cariogenic bacteria, genetic predisposition, and exposure time[36]. Without adequate treatment and biofilm control, cavities can lead to tooth loss[20].

For both diseases, access to dental care and hygiene materials are the best prevention strategies. Fluoride associated with the disorganization of the biofilm promoted by brushing are the best resources to prevent cavities[36]. Another essential and low-cost measure for preventing cavities is water fluoridation[37]. In Brazil, since 1974, water fluoridation has been governed by Law 6,050[38], and in 2011, Ordinance 2,914, issued by the Ministry of Health, established the maximum content of 1.5 mg of Fluoride per liter of water[39]. A study carried out in the *Quilombola* Community of Cocalinho did not identify the presence of the ion in the water supplied by the city hall to the community; of the *quilombolas*, 72.41% had cavities, and 31.03% had already lost at least one tooth, confirming yet another health iniquity by depriving the *quilombola* population of the right to health[40].

If prevention and treatment strategies for these oral diseases are not accessible, the likelihood of tooth loss increases, which explains the high prevalence of edentulism in this population[20]. The lack of teeth directly impacts the quality of life of these individuals with impairments in chewing, speech, nutrition, esthetics, and psychological condition[41,42]. One of the treatment possibilities is dental prosthesis. However, access to this service through the Unified Health System (SUS) is still precarious, as data from SB Brazil 2010[43] indicated that 68.8% of the Brazilian population needs a prosthesis, with this need being more prevalent among low-income individuals[44].

The difficulty in accessing oral health services for the black population may explain part of this unfavorable oral condition found in the black and brown populations[45]. Factors related to limited access to dental services are: few dental teams in the public health system; a lack of financial

resources to pay for dental appointments/plans; difficulty in traveling to the place of care, whether due to insecurity, the cost of travel, difficulties, or lack of transportation[46-48]; and racial discrimination in the health services themselves[49,50]. The health inequalities suffered by people of African descent confirm the cruelty exercised by institutional racism, which establishes a chain of social, economic, and health iniquities in such a way that it remains a structure of domination and exploitation of the black population[51,52].

In general, the findings of this systematic review raise numerous aspects that need to be considered when planning public health interventions with a view to improving the oral health of the most vulnerable populations. By identifying and describing the existence of racial iniquities in oral health, the results provide a clear synthesis for the planning of public policies that recognize that individuals of black/brown race/skin color need to have a guarantee of equity in actions that involve improving one's oral health status. If strong action is not taken to expose and eliminate structural racism in all countries, oral health iniquities will persist. Strategies range from the involvement of dental education institutions to strong policy regulation[52].

Although this review was broad in order to ensure the inclusion of as many published studies as possible, it is possible that the search strategy did not capture all studies on the topic. Furthermore, it is important to highlight that some studies did not include a control group, such as those that include only *quilombolas* in the sample, as well as the identification of different outcomes, which made it unfeasible to conduct a meta-analysis. The strengths of this review include the extensive search, the use of different analytical categories, and the assessment of the risk of bias. Furthermore, the study presented methodological rigor, carried out by independent reviewers, and qualitatively analyzed data from primary studies on oral health and racial iniquities.

Final considerations

Our results show that black and brown people had unfavorable oral health conditions. To change this scenario, it is necessary to establish public equity policies in order to provide black citizens with adequate oral health conditions. Necessary measures include informing the general population about racism and establishing programs to combat institutional racism; diagnosing the needs of the black race/color population, in order to offer differentiated and specific treatments, thus reducing the differences in vulnerability of this population; and expanding dental care networks in regions with a greater presence of the black population. The findings of this review, therefore, indicate the importance of strengthening the understanding that it is necessary to have a public point of view on the oral health of this group. Within the scope of professional practices, it is necessary to expand oral health promotion strategies in the black population, as well as encourage research with prospective methods, in an attempt to assess the impacts of racism on oral health.

Collaborations

LAO Reis: construction of the protocol, search of the databases, selection of studies, and write-up of the article. SS Miranda: construction of the protocol, search of the databases, selection of studies (third reviewer), and write-up of the article. BR Fonseca: construction of the protocol, search of the databases, selection of studies, and write-up of the article. M Pereira: construction of the protocol and write-up of the article. MS Natividade: write-up and final review of the article. E Aragão: write-up and final review of the article. TP Lara: write-up and final review of the article. JS Nery: write-up and final review of the article.

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