



Survey of the living conditions and health status of older persons living in Quilombola communities in Bequimão, Brazil: the IQUIBEQ Project

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Abstract

Aim To analyze the socioeconomic conditions and health status of older persons living in 11 Quilombola communities (settlements originally created by escaped slaves) in the Baixada Maranhense region, Brazil.

Subjects and methods A cross-sectional household survey of the socioeconomic status, sanitary conditions, health behavior, and self-reported morbidities was conducted with 208 older persons. Fisher's exact test and the chi-squared test were performed ($\alpha = 5\%$) to determine statistically significant gender and age differences in the prevalence of morbidities and multimorbidities (≥ 2 and ≥ 3 diseases). The respondents were categorized into three age ranges: 60 to 69 years, 70 to 79 years, and ≥ 80 years.

Results The median age was 70. The majority of respondents had poor socioeconomic status and sanitary conditions and showed poor results across all dimensions of health (self-reported health status, limitations in performing activities of daily living, and leisure time physical activity). The most prevalent morbidities were high blood pressure, back problems, and glaucoma/cataracts. Statistically significant gender differences were only found for high cholesterol, asthma/bronchitis, and cancer ($p < 0.05$). The prevalence of multimorbidity was found to be high (52.9% for ≥ 2 diseases and 26.4% for ≥ 3 diseases; $p < 0.001$). The prevalence of both groups of multimorbidity was greater among women ($p < 0.05$) and in the 70 to 79-year age group. Statistically significant differences in prevalence rates across age groups were found among men for both multimorbidity groups (≥ 2 chronic diseases, $p = 0.003$, and ≥ 3 chronic diseases, $p < 0.001$).

Conclusion The findings show that older Quilombolas experience poor health and social conditions characterized by the lack of public investment to bring their health status in line with that of the general population.

Keywords Older persons · Social conditions · Groups of African descent · Health status · Health surveys

Introduction

Population aging is a global phenomenon and is strongly linked to socioeconomic and health status, lifestyle, and social and health behaviors. In Brazil, inequalities in the living conditions and health status of older persons vary according to

sex, race, and place of residence and are particularly pronounced among vulnerable groups living in remote areas (Fallar and Marcon 2013; Oliveira et al. 2014a; World Health Organization 2015).

Various nationwide surveys involving the general older population have been conducted in Brazil. However, few population-based surveys have been undertaken with groups of socially vulnerable older persons with specific characteristics and needs, such as remote Quilombola, indigenous, and rural communities that have historically experienced social exclusion (Oliveira et al. 2014b; Melo et al. 2017; Silva et al. 2018).

Quilombola communities are territories largely made up of descendants of escaped slaves. They are spaces of resistance and struggle for rights and the conservation of cultural and religious beliefs, values, and traditional practices rooted in

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their African ancestry. Quilombos emerged as an alternative for the collective survival of slaves who refused to accept the rules imposed by the Brazilian colonial system. Today, they constitute an expression of the history of resistance to exclusion by black people who have been deprived of property and continue to experience precarious living conditions and social exclusion (Silva 2015; Silva et al. 2016).

Officially recognized Quilombola communities are found across all regions of Brazil. Their geographical distribution is related to the racial formation process and settlement policy implemented during the period of Portuguese colonization (from the discovery of the country in 1500 to independence in 1822) and the imperial governments (from independence in 1822 until the abolition of slavery in 1888 and subsequent emergence of the Republic in 1889). The majority of Quilombola communities are concentrated in the country's Northeast Region, particularly in the states of Maranhão (27.7%) and Bahia (30%). The Baixada Maranhense region concentrates the largest number of *Quilombola* communities in Maranhão, with more than a third of the state's Quilombos ($n = 200$; 36.2%). The few studies of Quilombola communities in Brazil show that the majority of families live in poverty, depend on the government benefits program *Programa Bolsa Família*, declare themselves black or brown, and live in places with poor household and community sanitation facilities (Brasil 2012; Bezerra et al. 2014; Kochergin et al. 2014). With regard to health, a study of 27 Quilombola communities in 15 municipalities in the State of Maranhão reported a lack of adequate health care and disease prevention strategies, a shortfall of doctors and primary healthcare facilities, and the presence of neglected diseases (Silva et al. 2016).

The available data on the general Quilombola population provide overall estimates of socioeconomic and health status, thus concealing substantial differences among particular groups, such as older persons, whose situation is often worse than that of the general older population, as disadvantages overlap throughout the life cycle and are reproduced across generations. In view of the above, research on the socioeconomic and health status of older Quilombolas can provide valuable inputs for managers and healthcare professionals to inform the implementation of social and health actions that seek to promote well-being, health, and quality of life in this group.

This study therefore analyzes socioeconomic conditions and health status among older persons living in Quilombola communities in the Baixada Maranhense region in northeast Brazil.

Materials and methods

Study area and population

This study is part of the "Population Survey of the Living Conditions and Health Status of Older Persons Living in

Quilombola Communities in the Baixada Maranhense Region" (*IQUIBEQ Project*), a cross-sectional household survey conducted in 11 communities in Bequimão, Maranhão. All communities are officially recognized as Quilombola communities by the Palmares Cultural Foundation and Ministry of Culture, which oversee the community certification process (Map 1).

Bequimão is located in the North Mesoregion and Baixada Ocidental Maranhense Microregion on the side of Highway MA-211, 83 km from the state capital, São Luís, and 31 km from the Campus Expansion of the Federal University of Maranhão (UFMA, acronym in Portuguese) in Pinheiro. In 2010, Bequimão had a total area of 761.49 km²; a population of 20,344 inhabitants (67.5% living in rural areas; $n = 13,732$ persons), 12.3% of whom were older persons (≥ 60 years; $n = 2500$); Human Development Index (HDI) of 0.601; Gini index of 0.558; and Gross Domestic Product per capita of R\$ 2754.37. In 2018, the population was estimated at 21,260 inhabitants.

The study population comprised persons aged ≥ 60 years living in communities selected in coordination with the local social services department and with the help of community health agents (CHAs) from the respective communities. The CHAs conducted a census to find out the number of elderly people in the communities, producing a list of 220 older persons with information on sex and date of birth. All the people on the list were invited to participate in the study. Refusals and difficulties in finding individuals on two visits to the communities on different dates resulted in a final study sample of 208 older persons.

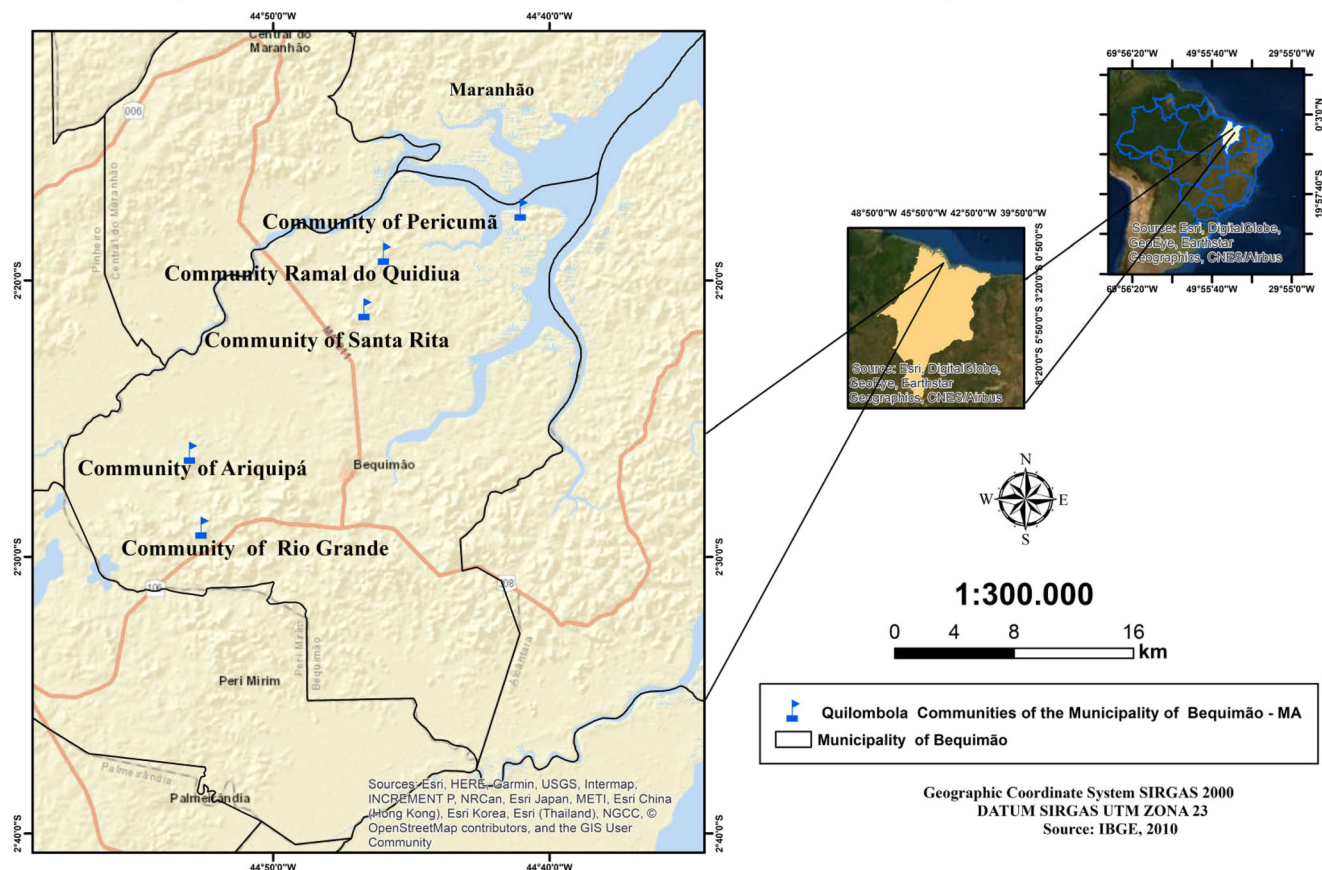
Data were collected on weekdays during office hours between July and October 2018. A pilot study was conducted prior to the main study to adjust the instruments and for the purposes of interviewer training. The interviewers used a manual to clarify any doubts.

Variables and questionnaires

Two questionnaires were administered. The first investigated socioeconomic characteristics, health status, access to and use of healthcare services, and surveillance of noncommunicable diseases and associated risk factors. The second was the Mini Mental State Examination (MMSE).

The following variables were used for the purposes of this study: sex; age; race/skin color; marital status; number of household members; education level; family income in Brazilian reals; socioeconomic status according to the *Novo Critério Brasil* (Associação Brasileira de Empresas de Pesquisa 2018), criterion developed by the Brazilian Market Research Association (ABEP, acronym in Portuguese); receipt of a pension, *bolsa família*, or other benefits; use of appropriate building materials for the walls (rendered or unrendered masonry), roof (tiles, concrete slab), floor (tiled, concrete);

QUILOMBOLA COMMUNITIES OF THE MUNICIPALITY OF BEQUIMÃO- MARANHÃO



Map 1 Geographic localization of Quilombola communities in Bequimão (IQUIBEQ Project), Maranhão, Brazil, 2018

number of rooms; water supply; drinking water treatment; sewage disposal; self-assessment of general health status grouped into positive (very good and good) and negative (moderate, bad, and very bad); number of limitations in performing basic and instrumental activities of daily living (ADL and IADL, respectively) (Nunes et al. 2018b); possession of private health insurance; medical diagnosis of a chronic disease/condition; use of medicinal plants and phytotherapy for treatment; practice of leisure time physical activity; smoker/previous history of smoking; alcohol consumption.

The respondents were also asked whether they had been diagnosed with the chronic diseases/conditions on a previously prepared list. Multimorbidity was categorized into two groups (≥ 2 or ≥ 3 chronic diseases) and analyzed according to sex and age.

Data analysis

Data analysis was performed using the statistical software program Stata® version 14 statistical software program (StataCorp LP, College Station, TX, USA). The absolute and relative frequencies of the study variables were calculated, and the prevalence of self-reported morbidities and

multimorbidities were controlled for age and sex. Fisher's exact test or the chi-squared test was performed adopting a significance level of $p < 0.05$.

Ethical considerations

The study was approved by the Research Ethics Committee of the University Hospital at the Federal University of Maranhão (approval number 2.476.488, 28/01/2018), and all participants signed an informed consent form before data collection.

Results

The median age of the study sample (208 older persons aged ≥ 60 years born between 1914 and 1958) was 70.0 years (64–78 years). Almost half of the sample (48.6%) was aged up to 69 years, and 19.2% were long-lived (≥ 80 years). The majority were women (54.3%), black (59.1%), illiterate (54.3%), lived with at least three people (57.7%), had a family income of between one and two minimum salaries (63.9%), from socioeconomic status group E (81.3%), and received a pension

(91.8%), although only 6.7% received the *bolsa família*. Just over a third (35.6%) were married/in a stable relationship.

With respect to housing conditions, the majority of respondents lived in houses with four to seven rooms (68.3%), the walls and roof made out of inappropriate building materials (clay, straw, reused wood, leftover building material) (64.4% and 89.9%, respectively), and floors made out of inappropriate materials (69.7%). The most common form of water supply was a well or spring located on the property (59.6%), and 68.7% of the respondents practiced appropriate drinking water treatment. Over half of the households (56.7%) had a septic tank, and 89.4% burned household waste (Table 1).

Self-reported health status was negative among the majority of respondents (58.2%), and the prevalence of cognitive impairment was 15.8%. The majority of respondents also showed at least one limitation in performing ADLs (57.7%), with 20.7% reporting ≥ 4 limitations. The data also show that 97.6% of respondents did not have private health insurance, and 60.6% reported having been diagnosed with a chronic disease/condition. The use of medicinal plants and phytotherapy for treatment was reported by 67.3% of respondents, and 80.8% did not practice leisure time physical activity. The majority of respondents (91.4%) were non-smokers; however, 40.9% had a previous history of smoking. The majority (75.8%) also abstained from drinking; however, 12.1% of respondents reported alcohol abuse (Table 2).

The most frequently self-reported morbidity was high blood pressure (57.2%), followed by back problems (34.1%), glaucoma/cataracts (30.3%), and high cholesterol (24%). Diabetes mellitus was reported by 13.9% of the respondents. The majority of the diseases were more frequent in women than men; however, statistically significant differences were only found for high cholesterol ($p = 0.01$), asthma or bronchitis ($p = 0.01$), and cancer ($p = 0.04$), with the latter being more common in men (Table 3).

With regard to multimorbidity, 52.9% of respondents had ≥ 2 chronic diseases and 26.4% had ≥ 3 . There was a statistically significant difference in prevalence of multimorbidity between men and women: 40% compared with 63.7%, respectively, for ≥ 2 chronic diseases ($p < 0.001$) and 19% compared to 32.7%, respectively, for ≥ 3 chronic diseases ($p < 0.025$). Prevalence of multimorbidity was greatest among the 70 to 79-year age group for both multimorbidity groups: 64.2% ($p < 0.060$) for ≥ 2 chronic diseases and 34.3% ($p < 0.206$) for ≥ 3 chronic diseases. These differences were not statistically significant. The analysis of prevalence of multimorbidity by sex showed statistically significant differences in prevalence rates across age groups among men in both multimorbidity groups (≥ 2 chronic diseases, $p = 0.003$; and ≥ 3 chronic diseases, $p < 0.001$). However, statistically significant differences were not found for women, where prevalence rates were high ($\geq 63.2\%$) in all age groups for ≥ 2 chronic diseases and

Table 1 Socioeconomic, demographic, and sanitary characteristics of older persons living in Quilombola communities (≥ 60 years) in Bequimão (IQUIBEQ Project), Maranhão, Brazil, 2018

Variables	(N = 208)	%
Sex		
Male	95	45.7
Female	113	54.3
Age group (years)		
60 to 69	101	48.6
70 to 79	67	32.2
≥ 80	40	19.2
Skin/race color		
Black	123	59.1
Brown	60	28.9
Other	25	12.0
Marital status		
Married/stable relationship	74	35.6
Separated/divorced	28	13.5
Widow	52	25.0
Single	54	25.9
Literate		
Yes	95	45.7
No	113	54.3
Number of household members		
Living alone	32	15.4
Two	56	26.9
Three or more	120	57.7
Family income (minimum salary of R\$954)		
< 1 minimum salary	75	36.1
1 to 2 minimum salaries	133	63.9
Socioeconomic status*		
C	4	1.9
D	35	16.8
E	169	81.3
Benefits received		
Pension/other benefits	191	91.8
<i>Bolsa família</i>	14	6.7
Number of rooms in household		
≤ 3	4	1.9
4 to 7	142	68.3
≥ 8	62	29.8
Use of adequate building materials for:		
Walls	134	64.4
Roof	187	89.9
Floor	64	30.7
Water supply		
Connected to the public water system	37	17.8
Well or spring on the property	124	59.6
Well or spring outside the property	45	21.6
Other	2	1.0
Treatment of drinking water		
Adequate	143	68.7
Inadequate	65	31.3
Sewage disposal		
Septic tank	118	56.7
Rudimentary septic tank	59	28.4
Open-air	31	14.9
Household waste collection		
Thrown into the open air	22	10.6
Burned/buried	186	89.4

*None of the respondents were from groups A and B

Table 2 Health indicators and behavior among older persons living in Quilombola communities (≥ 60 years) in Bequimão (*IQUIBEQ Project*), Maranhão, Brazil, 2018

Variables	(N = 208)	%
Self-reported health status		
Positive	87	41.8
Negative	121	58.2
Cognitive impairment (MMSE)*		
Yes	32	15.8
No	170	81.2
Number of limitations in performing activities of daily living		
0	88	42.3
1 to 3	77	37.0
≥ 4	43	20.7
Possession of private health insurance		
Yes	5	2.4
No	203	97.6
Medical diagnosis of chronic disease/condition		
Yes	126	60.6
No	82	39.4
Use of medicinal plants and phytotherapy		
Yes	140	67.3
No	68	32.7
Leisure time physical activity		
Yes	40	19.2
No	168	80.8
Smoker		
Yes	18	8.6
No	190	91.4
History of smoking		
Yes	85	40.9
No	123	59.1
Alcohol consumption**		
Abstinent	177	75.8
Nonabusive consumption	25	12.1
Alcohol abuse	25	12.1

*Total reported 202 older persons; **Total reported 207 older persons

highest in the youngest age group for ≥ 3 chronic diseases (Table 4).

Discussion

The results of this study show that older Quilombolas experience significant overlapping inequalities and vulnerabilities, characterized by poor socioeconomic status and inadequate household and community sanitation facilities. The majority of respondents showed poorer results across all health dimensions compared with other studies with older persons in

Brazil. The prevalence of negative self-reported health status, cognitive impairment, functional impairment, lack of practice leisure time physical activity, alcohol abuse, and use of medicinal plants for treatment was high.

The most prevalent morbidities were cardiovascular diseases and musculoskeletal disorders, which may be related to the way of life in Quilombola communities and manual agricultural work, which has been the main source of livelihood since the slavery era (Ferreira et al. 2019). In general, the prevalence of chronic morbidities and multimorbidities was higher in women; however, the prevalence of morbidities associated with complications was higher among men. The association between sex and age and multimorbidity observed by this study suggests that aging in Quilombola communities goes hand in hand with greater social and health needs and that health behavior and the use of health services varies according to sex. The findings also suggest that older Quilombolas face significant structural disadvantages, characterized by poor living conditions, lack of public investment to tackle social needs, and vast disparities in health status compared with other studies with older persons.

Previous studies have shown that older brown and black people in Brazil are disadvantaged in terms of socioeconomic and demographic indicators, health status, and access to and use of health services (Oliveira et al. 2014a, b; Antunes and Moré 2009; Silva et al. 2018; Oliveira and Luiz 2019). This picture tends to be worse for older black persons living in rural areas (Ferreira et al. 2019; Oliveira and Luiz 2019) or Quilombola communities, with studies showing that the sanitary and material deprivation identified by the present study closely resembles that in Quilombola communities in other states in Brazil (Bezerra et al. 2014; Kochergin et al. 2014; Oliveira et al. 2014b; Santos et al. 2016; Silva et al. 2016).

These stark inequalities are deeply woven into the fabric of society. Ever since the period of slavery to the present day, the material conditions of life and health of black people have been worse than those of white people, characterized by poorer sanitation and health facilities, lack of access to education and health, and fewer employment opportunities in black areas (Oliveira et al. 2014a; Oliveira and Luiz 2019). Typically located in rural areas, Quilombola communities tend to be isolated, increasing their level of exposure to health inequalities and limiting access to social and health services (Kochergin et al. 2014). Historical processes of racial segregation and discrimination have meant that these communities have accumulated disadvantages across life cycles and generations, exposing brown and black people to exclusion and marginalization, resulting in multiple historical, logistical, and practical barriers to social and health services and adversely impacting the well-being and health of Quilombolas. These inequalities continue to be captured by the social and health indicators of older Quilombolas, especially in the State of Maranhão.

Table 3 Self-reported medically diagnosed morbidities among older persons living in Quilombola communities (≥ 60 years) in Bequimão (IQUIBEQ Project), Maranhão, Brazil, 2018

Self-reported morbidity	Sex						<i>p</i> value*
	Total		Male		Female		
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
High blood pressure	119	57.2	48	50.5	71	62.8	0.07
Back pain, chronic back/neck pain, lower back pain, sciatica/pain in the vertebrae or disc	71	34.1	29	30.5	42	37.2	0.31
Glaucoma/cataracts	63	30.3	28	29.5	35	31.0	0.81
High cholesterol	50	24.0	15	15.8	35	31.0	0.01
Arthritis or rheumatism	32	15.4	10	10.5	22	19.5	0.07
Diabetes Mellitus	29	13.9	11	11.6	18	15.9	0.38
Asthma or bronchitis	15	7.2	2	2.1	13	11.5	0.01
Heart diseases	15	7.2	6	6.3	9	8.0	0.65
Stroke	15	7.2	8	8.4	7	6.2	0.54
Heart attack	8	3.8	2	2.1	6	5.3	0.23
WMSD	6	2.9	3	3.2	3	2.7	0.83
Depression	5	2.4	2	2.1	3	2.7	0.79
Angina	4	1.9	2	2.1	2	1.8	0.86
Lung disease	4	1.9	2	2.1	2	1.8	0.86
Chronic kidney failure	5	2.4	2	2.1	3	2.7	0.87
Cancer	3	1.4	3	3.2	0	0.0	0.04
Heart failure	4	1.9	2	2.1	2	1.8	0.86

* Pearson's chi-squared or Fisher's exact test; WMSD = work-related musculoskeletal disorders

The indicators of general health status and health behavior revealed by the present study are worse than those of the general older population and general older black and brown population reported by national studies (Oliveira et al. 2014b) and studies in the states of São Paulo (Antunes and Moré

2009; Nunes et al. 2018b; Silva et al. 2018) and Maranhão (Oliveira et al. 2014a), those of the Quilombola population aged ≥ 18 years in Vitória da Conquista in Bahia (Bezerra et al. 2014; Kochergin et al. 2014), and those of the national population of rural workers aged ≥ 18 years (Moreira et al.

Table 4 Prevalence of chronic multimorbidities and association with sex and age among older persons living in Quilombola communities (≥ 60 years) in Bequimão (IQUIBEQ Project), Maranhão, Brazil, 2018

Variables	≥ 2 chronic diseases (<i>N</i> = 110)		≥ 3 chronic diseases (<i>N</i> = 55)	
	%	<i>p</i> value ¹	%	<i>p</i> value ¹
Total ²	52.9	—	26.4	—
Sex				
Male	40.0	0.001	19.0	0.025
Female	63.7		32.7	
Age group (years)				
60 to 69	45.5	0.060	22.8	0.206
70 to 79	64.2		34.3	
≥ 80	52.5		22.5	
Male age groups (years)				
60 to 69	28.9	0.003	9.6	0.001
70 to 79	65.5		41.4	
≥ 80	28.6		7.1	
Female age groups (years)				
60 to 69	63.3	0.980	36.7	0.723
70 to 79	63.2		29.0	
≥ 80	65.4		30.8	

¹ Pearson's chi-squared test; ² *p* value < 0.001 for differences between ≥ 2 and ≥ 3 chronic diseases

2015). In general, the prevalence of negative self-reported health status, cognitive impairment, functional impairment, dependence on public health services, smoking and previous history of smoking, chronic diseases, sedentary lifestyles, and alcohol abuse found by the present study was greater than that reported by previous studies with Quilombolas and populations with similar racial and socioeconomic characteristics living in comparable settings. Other studies with Quilombola and rural communities also reported a low prevalence of leisure time physical activity and high prevalence of manual labor among older persons (Bezerra et al. 2015; Sousa et al. 2018). The data presented by the present study show that respondents with poor health were also likely to show negative self-reported health status, functional impairment, and low levels of leisure time physical activity. These are key indicators of quality of life and well-being in old age and are therefore useful for identifying inequalities across different population groups and social settings (Oliveira et al. 2014a, b; Antunes and Moré 2009; Santos et al. 2016; Silva et al. 2018). In this respect, our findings show that the respondents have poorer health and are less active than older persons in other settings, which is directly associated with the characteristics age, gender, skin color/race, socioeconomic status, presence of chronic diseases, and functional disability described above.

The pattern of chronic morbidities and multimorbidities revealed by this study reflects underlying mechanisms that contribute to the transmission of inequalities across life cycles and generations, thus shaping lifestyles, work, and the lack of access and use of health services (Moreira et al. 2015; Nunes et al. 2018a; Silva et al. 2018; Oliveira and Luiz 2019). This study showed that the most frequent morbidities (back problems, arthritis and rheumatism, glaucoma/cataracts, high blood pressure, diabetes, high cholesterol, and asthma and bronchitis) are associated with the daily routine of agricultural work, life in remote areas, and the adoption of unhealthy lifestyle behaviors throughout life, which has taken place in a context of significant social and health needs. This morbidity pattern may be the result of the physical rigors of manual agricultural labor, as well as the lack of adequate medical care and prevention and control of the risk factors commonly associated with chronic degenerative diseases, which are becoming increasingly common among Brazilians (Moreira et al. 2015; Nunes et al. 2018a).

The analysis of multimorbidity is another useful way of assessing the health status of older persons living in Quilombola communities (Villacampa-Fernandez et al. 2017; Botes et al. 2018; Nunes et al. 2018a). Multimorbidities represent a growing public health concern, given the high prevalence of and disadvantages associated with co-occurring disorders (Barnett et al. 2012; Prados-Torres et al. 2014). These diseases occur with aging, worsening income, and socioeconomic and sanitary deprivation

(Barnett et al. 2012; Lefèvre et al. 2014; Prados-Torres et al. 2014; Botes et al. 2018; Islas-Granillo et al. 2018) and require specialized healthcare, resulting in enormous human and social costs. The negative consequences of multimorbidity include a greater risk of disability, frailty, and hospitalization as well as reduced quality of life and well-being, and increased mortality (Barnett et al. 2012; Lefèvre et al. 2014; Prados-Torres et al. 2014; Villacampa-Fernandez et al. 2017; Botes et al. 2018; Islas-Granillo et al. 2018; Nunes et al. 2018a). In this respect, the presence of ≥ 3 diseases can be a marker for a high rate of declining health (Islas-Granillo et al. 2018).

The data showed that the prevalence of multimorbidity was high. More than half the respondents reported ≥ 2 diseases, while over a quarter had ≥ 3 diseases, showing that multimorbidity was common in older persons living in Quilombola communities. Other studies have also shown that the prevalence of multimorbidity was higher among older persons, among women across all ages, and in areas with low socioeconomic status (Barnett et al. 2012; Lefèvre et al. 2014; Prados-Torres et al. 2014; Botes et al. 2018). Some studies reported higher prevalence rates than the present study (Villacampa-Fernandez et al. 2017; Costa et al. 2018), while others showed lower rates (Prados-Torres et al. 2014; Nunes et al. 2018a). However, comparability of findings is limited because of marked differences in methodology relating to the characteristics of the study populations, number and type of chronic diseases analyzed, type of assessment instruments, and measurement methods. This limitation has also been reported by other studies (Villacampa-Fernandez et al. 2017; Costa et al. 2018). The study of multimorbidity is a new area of research, and there is still a lack of standard methods and concepts. In this respect, the present study is the first of its kind to investigate this problem in older persons living in Quilombola communities. However, current research shows the need for a broad range of strategies to ensure that health services reach the most vulnerable population groups and those who have difficulties accessing and using services (Nunes et al. 2018a). Joint efforts to tackle these morbidities could produce a range of health benefits due to the cumulative advantages resulting from the prevention and control of common risk factors. This requires integrated and coordinated health services to meet growing demand.

This study has a number of limitations. First, cross-sectional studies measure risk and protective factors and outcomes simultaneously and are therefore limited in their ability to determine the direction of associations. Older people who are aware of their health status may adopt healthier behaviors and thus dilute normally expected associations. In addition, the results are subject to survival bias. In this respect, it is possible that the respondents were more resilient than other community members, therefore surviving the socioeconomic conditions experienced in the communities, but at the same time exhibiting greater physical and cognitive vulnerability

due to the accumulation of disadvantages and overlapping risks. The morbidities investigated by this study were assessed using a list of diseases and self-reported diagnoses. No medical confirmation of the diagnoses of these morbidities was requested. This, together with gender and age differences in access to and the use of healthcare services, may explain the marked differences in the prevalence of chronic morbidities and multimorbidities between sexes and age groups. In this respect, self-reported medical diagnosis has been shown to have low sensitivity and specificity. The prevalence of chronic morbidities and multimorbidities was greater among women. This may be explained by survivorship bias, since male life expectancy is lower than that of females and those who survive tend to have better health status (Nunes et al. 2018a). Furthermore, women are more likely to use health services and therefore be diagnosed with a disease.

Despite these limitations, the findings show stark inequalities between older persons living in Quilombola communities and the general population. This situation persists due to the government's weakness in implementing affirmative action to promote equity. The lack of attention to the rights of older Quilombolas leads to the reproduction and overlapping of social disadvantages resulting from the interplay among race/skin color, gender, work, place of residence, social class, and education and may be a marker of the overwhelming lack of actions to promote equity (Silva 2015; Antunes and Moré 2009; Silva et al. 2016; Melo et al. 2017).

Conclusions

The findings of this study show that population surveys are a useful tool for investigating and monitoring the social inequalities experienced by older persons living in Quilombola communities. The data presented suggest that the living conditions and health status of this population group are poor and worse than those experienced by the general older population in Brazil, revealing the need for effective actions to reduce the inequalities and weaknesses that jeopardize the well-being and quality of life of this group. Major efforts are urgently needed to promote the health, autonomy, and independence of older Quilombolas in order to meet the needs of this group and reduce the health inequalities identified by this study.

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Compliance with ethical standards

The study was approved by the Research Ethics Committee of the University Hospital of the Federal University of Maranhão (approval no. 2.476.488, 28/01/2018), and all participants signed an informed consent form before data collection.

Conflict of interest The authors declare that they have no conflict of interest.

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