Social inequalities and household food insecurity in *quilombola* communities in Brazil

Desigualdades sociais e insegurança alimentar em comunidades quilombolas no Brasil

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A B S T R A C T

Objective

To evaluate the relationship between sociodemographic characteristics and food insecurity in *quilombola* communities in Brazil.

Methods

Microdata from the 2011 *Quilombola* Census "Assessment of the food and nutritional security situation in titled *quilombola* communities" were evaluated. The Brazilian household food insecurity measurement scale was used to evaluate household food insecurity status. Multinomial regression models were used to test the association between sociodemographic characteristics and food insecurity.

Results

The prevalence of food insecurity was 86.1% (mild: 30.2%; moderate/severe: 55.9%). In the final adjusted model, the factors significantly associated with moderate/severe food insecurity (p-value<0.001) were: head of household being

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single or divorced, head of household with 1-7 years of schooling, a larger domicile size, households with children under 5 years of age, precarious sanitation, a household income of less than the minimum wage, and being from a *quilombola* communities in the North of the country.

Conclusion

The results indicated that the prevalence of food insecurity among *quilombola* households is high, requiring the implementation of public policies to promote food and nutritional security and to mitigate the historical social injustices suffered by this population.

Keywords: Census data. Ethnic groups. Food and nutrition security. Poverty. Social vulnerability.

R E S U M O

Objetivo

Avaliar a relação entre características sociodemográficas e insegurança alimentar em comunidades quilombolas no Brasil.

Métodos

Os microdados do Censo Quilombola de 2011, "Avaliação da situação de segurança alimentar e nutricional nas comunidades quilombolas tituladas", foram analisados. A Escala Brasileira de Insegurança Alimentar foi usada para avaliar o nível de insegurança alimentar dessa população. Modelos de regressão multinomial foram utilizados para testar a associação entre características sociodemográficas e insegurança alimentar.

Resultados

A prevalência de insegurança alimentar foi de 86,1% (leve: 30,2%; moderada/grave: 55,9%). No modelo final ajustado, verificou-se que as residências cujos responsáveis eram solteiros/divorciados, com escolaridade entre 1-7 anos, aquelas onde havia maior aglomeração familiar, presença de crianças menores de cinco anos, com precário saneamento básico, da macrorregião Norte do país e famílias com renda mensal familiar inferior a um salário mínimo apresentaram associação significativa com insegurança moderada/ grave (p-valor <0,001).

Conclusão

Os resultados indicaram que as famílias quilombolas apresentavam elevada prevalência de insegurança alimentar, sendo necessária a implementação de políticas públicas para promoção da segurança alimentar e nutricional e que minimizem as históricas injustiças sociais sofridas por essa população.

Palavras-chave: Coenso de população. Grupos étnicos. Segurança alimentar e nutricional. Pobreza. Vulnerabilidade social.

I N T R O D U C T I O N

Quilombolas are people of African descent whose past was marked by slavery in Brazil. They have a distinct ethnic identity and define themselves as *quilombolas* based on their relationship with the land, the environment in which they live, and their cultural and religious traditions and practices [1]. They live in communities called quilombos, which are located in almost all states of Brazil, mainly in rural and geographically isolated areas where access to education, health, and infrastructure services is limited [2,3]. *Quilombolas* were legally recognized in the Brazilian Constitution of 1988, specifically in article 68 of the transitional constitutional provisions. In 2003, a definition for these communities was established as "ethnic-racial groups, according to self-attributed criteria, with their own historical trajectory, endowed with specific relations with the land, presumed black ancestry related to resistance to the historical oppression suffered" [1].

Studies carried out with *quilombolas* have revealed a high prevalence of household Food Insecurity (FI) as measured using the *Escala Brasileira de Insegurança Alimentar* (EBIA, Brazilian Household Food Insecurity Measurement Scale) [3-8]. However, there are still few studies with this population that evaluate the association of FI with social inequality and poverty.

Social inequality and poverty are two key determinants of FI that have serious repercussions for vulnerable population groups, such as *quilombolas* [9]. Research on the subject in Brazil has mainly covered local *quilombola* communities with a small sample of individuals [2,3,6,7]. Besides that, there are few studies investigating the consequences of FI on this population on a national level and using official data [7]. The association between food and nutrition security and Brazilian descendants of enslaved Africans is recent. The *Quilombola* Census is an unprecedented survey of this population with respect both to the geographical area it covers and to its thematic scope, providing data that permits nationwide investigations and comparisons of results in different regions of Brazil. It could also be used to make an innovative assessment of the FI of *quilombolas*, as assessed by the EBIA, and how this interfaces with sociodemographic indicators.

This study proposes to address the gap in national research on household food insecurity and social inequalities among *quilombolas*. Its aim is to evaluate the relationship between sociodemographic characteristics and FI in *quilombola* communities in Brazil. Thus, the results of this study would contribute to the scientific debate about how social inequalities affect the food security of people living in *quilombos* and from different ethnic and racial segments and minorities in Brazil. These data are an important first step for the development of effective public policies for the advancement of the right to health and food and nutrition security for the *quilombola* population.

METHODS

This study evaluated microdata from the *Quilombola* Census carried out between April and November 2011, which was conceived and coordinated by the *Ministério do Desenvolvimento Social e Combate à Fome* (MDS, Ministry of Social Development and the Fight against Hunger), in partnership with other public agencies [10-11]. The present study used anonymized microdata from a public domain database, specifically the data collected in sociodemographic questionnaire and the EBIA [10].

The *Quilombola* Census investigated 169 *quilombola* communities (9,193 households) with titled lands in Brazil. Titling is the legal recognition of the collective use of land, and its absence can have negative repercussions on the socioeconomic and health status of the *quilombola* population [12]. This study did not include households with a member who did not self-identify as a *quilombola* (n=251; 2.7%), that did not live in titled land (n=75; 0.9%), whose head of household was less than 15 years old (n=3; 0.03%), or about which some data was missing (n=121; 1.3%). After applying these exclusion criteria, the final study sample consisted of 8,743 *quilombola* households who answered the *Quilombola* Census (95.1%). These households were not in every state of the country, but did cover each of its five regions. More details about the census and its methodology can be accessed in the report published in 2014 [11].

FI was evaluated using EBIA, which was established in 2003 for use in national surveys after a process of adaptation and validation of the US Household Food Security Survey Module (HFSSM) for the Brazilian population [13,14]. The EBIA contains 14 dichotomous items (yes/no) covering information related to food deprivation within a recall period of three months [13]. In the EBIA, eight of these questions are administered to domiciles composed of only adults, while all 14 are administered to those with at least one under-eighteen member.

The EBIA takes the household as the unit of study. FI was classified into four categories according to the sum of affirmative answers: (i) food security (absence of food restrictions, no concerns about food shortages in the future); (ii) mild FI (concern or uncertainty about access to food, compromising quality of diet and posing a risk to the subsistence of the domicile members); (iii) moderate FI (quantitative restrictions, especially among adults); and (iv) severe FI (significant reduction in the amount of food available for both adults and children, with a clear interruption of regular dietary intake and a high likelihood of hunger) [15].

In this study, moderate and severe FI were grouped together in view of the interest in identifying the prevalence of the most serious levels of FI, and because they have similar characteristics, following the methodology used elsewhere [16]. This combination of moderate and severe FI into a single group was adopted recently in the 2019 report from Food and Agriculture Organization (FAO) [17]. Details of the EBIA classifications are available in the literature [13,14,18].

A structured sociodemographic questionnaire was administered to build up a profile of the head of household (gender, age, marital status, and years of schooling) and the household (number of residents, number of children under 5 years, number of rooms, electricity, adequate sanitation, adequate water supply, region, and total monthly household income). Sanitation was considered adequate if there was sewage and garbage collection. The regions were classified using the geopolitical divisions (North, Northeast, South/ Southeast, and Central-West). The South and Southeast regions were combined as they both have fewer *quilombola* communities and are sociodemographically similar. Total monthly household income was estimated by summing the income of all the residents (government benefits, paid work, pensions, sale or breeding of animals, and sale of handicrafts), categorized according to the 2011 monthly minimum wage (R$545.00) and converted to dollars using the dollar-real exchange rate of July 1, 2011 ($349.31).

A descriptive analysis was performed estimating the prevalence and confidence intervals (95%CI) of the categories of FI and the sociodemographic characteristics. Then a multinomial logistic regression model was designed to estimate the *odds ratios* (OR) and respective 95%CI, considering three categories of FI: food security (reference level); mild FI, and moderate/severe FI. The multinomial logistic regression model was used, in which the estimated OR and 95% CI of each variable were adjusted for the effect of the other sociodemographic variables studied. Associations with a *p*-value of less than 0.05 in the unadjusted multinomial logistic regression model were included in the final model at a significance level of 5% (*p*<0.05). All the variables were included in the final model except gender (*p*>0.05). Inconsistent or incomplete data were excluded. Analyses were performed using the statistical software Stata 13.0 [19].

According to Brazilian Health Council resolution 510/2016, surveys that use information from a public domain database do not need to be registered with or evaluated by the National Research Ethics Committee [20]. Thus, ethical approval was not required for this paper.

RESULTS

Of the 8,743 domiciles investigated, 86.1% reported FI, with 55.9% having moderate/severe FI. Most of the domiciles were headed by men aged ≥51, either married or cohabiting, with 1-7 years in formal education. The majority of the domiciles had 3-5 members, had no children under 5 years, and lived in residences with 1-4 rooms. While 81.9% reported having electricity, only 5.2% had adequate sanitation. Most of the *quilombola* population lived in the North region and most of the households had a monthly income of half to one monthly minimum wage (Table 1).

In the multinomial logistic regression analysis (Table 2), after adjusting for all the variables (except gender) and taking food security as a reference category, it was observed that the chances of moderate/ severe FI were 50% lower when the household was headed by an adult aged ≥51 vis-a-vis households headed by adults aged 31-40. When the head of household was single/divorced, the chance of moderate/severe FI was 1.5 times higher than in those headed by a couple (married or cohabiting). A lower educational level of the head of household was also statistically associated with a higher chance of moderate/severe FI.

Table 1 – Prevalence and respective confidence interval of household food insecurity and sociodemographic characteristics of *quilombolas* communities in Brazil. *Quilombola* Census, 2011.

Variables	n	%	95% CI
Food insecurity	8,551		
Food security		13.9	13.2-14.7
Mild food insecurity		30.2	29.3-31.2
Moderate/severe food insecurity		55.9	54.8-56.9
Head of household			
Gender	8,743		
Male		62.6	61.6-63.6
Female		37.4	36.4-38.4
Age (years)	8,624		
15-19		1.5	1.2-1.7
20-30		20.7	19.9-21.6
31-40		23.4	22.6-24.3
41-50		19.0	18.1-19.8
≥51		35.4	34.4-36.4
Marital status	8,710		
Married/cohabiting		75.5	74.6-76.4
Single/divorced		24.5	23.6-25.4
Years of schooling	8,597		
Illiterate/never studied		23.6	22.7-24.5
1-7		60.7	59.7-61.8
≥8		15.7	14.9-16.4
Household characteristics			
Number of residents	8,743		
1-2		20.5	19.7-21.4
3-5		52.1	51.0-53.1
≥6		27.4	26.5-28.3
Number of children under 5 years	8,743		
0		62.4	61.3-63.4
≥1		37.6	36.6-38.7
Number of rooms	8,696		
1-4		64.0	63.0-65.0
≥5		36.0	35.0-37.0
Electricity	8,725		
Yes		81.9	35.0-37.0
No		18.1	17.3-18.9
Adequate sanitation	8,743		
Yes		5.2	4.7-5.7
No		94.8	94.3-95.3
Adequate water supply	8,707		
Yes		63.0	62.0-64.0
No		37.0	36.0-38.0
Region	8,743		
North		55.0	53.9-56.0
Northeast		29.6	28.6-30.6
South/ Southeast		3.9	3.5-4.4
Central West		11.5	10.8-12.1
Total monthly household income[1]	8,743		
≤½ minimum wage		26.7	25.8-27.6
>½ and ≤ 1minimum wage		55.8	54.8-56.9
>1 minimum wage		17.5	16.7-18.3

Notes: [1]Minimum Wage: 349.31 USD at the time of the research, considering the USD-Brazilian real exchange rate of July 1, 2011. CI: Confidence Interval.

Table 2 – Unadjusted and adjusted odds ratio and confidence intervals of the relationship between sociodemographic characteristics and household food insecurity of *quilombolas* communities in Brazil. *Quilombola* Census, 2011.

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| | | Food insecurity | | | | | | | | | | |
| | | Mild food insecurity | | | | | Moderate/severe food insecurity | | | | | |
	n	%	OR Unadjusted	95%CI	OR Adjusted	95%CI	n	%	OR Unadjusted	95%CI	OR Adjusted	95%CI
Head of Household												
Gender												
Male	1,603	30	1.0		-		2,994	56.0	1.0		-	
Female	982	30.6	1.0	0.9-1.2	-		1,782	55.5	1.0	0.9-1.1	-	
Age (years)												
15-19	25	1.0	0.5	0.3-1.0*	0.4	0.2-0.7**	74	1.6	0.5	0.3-0.8**	0.7	0.4-1.2
20-30	427	16.8	1.0	0.8-1.3	-		1,122	23.8	0.9	0.7-1.0	0.9	0.7-1.2
31-40	437	17.2	1.0		1.0		1,348	28.5	1.0		1.0	
41-50	420	16.5	1.4	1.1-1.7*	1.1	0.9-1.5	1,020	21.6	1.1	0.8-1.3	-	
≥51	1,233	48.5	1.1	0.9-1.3	-		1,160	24.6	0.3	0.3-0.4***	0.5	0.4-0.6***
Marital status												
Married/cohabiting	1,698	65.9	1.0		1.0		3,923	82.3	1.0		1.0	
Single/divorced	878	34.1	1.1	1.0-1.3	1.0	0.9-1.2	841	17.7	0.5	0.4-0.6***	1.5	1.2-1.8***
Years of schooling												
Illiterate/never studied	766	30.1	1.6	1.3-2.0***	1.4	1.1-1.8*	902	19.2	1.2	1.0-1.4	2.4	1.8-3.1***
1-7	1,373	54.0	1.5	1.3-1.9***	1.4	1.1-1.7*	3,158	67.1	2.2	1.9-2.6***	2.1	1.7-2.6***
≥8	405	15.9	1.0		1.0		647	13.7	1.0		1.0	
Household characteristics												
Number of residents												
1-2	1,162	45.0	1.0		1.0		141	3.0	1.0		1.0	
3-5	1,126	43.6	0.8	0.7-0.9***	0.9	0.7-1.0	2,730	57.2	15.3	12.3-18.8***	16.9	13.2-21.6***
≥6	297	11.5	0.7	0.6-0.8**	0.8	0.6-1.0	1,905	39.9	36.5	28.5-46.7***	39.6	29.2-53.7***
Number of children under 5 years												
0	2,040	78.9	1.0		1.0		2,352	49.2	1.0		1.0	
≥1	545	21.1	0.8	0.7-0.9**	1.0	0.8-1.2	2,424	50.8	3.1	2.7-3.6***	1.5	1.2-1.8***
Number of rooms												
1-4	1,504	58.5	1.4	1.2-1.6***	1.1	1.0-1.4	3,347	70.4	2.3	2.0-2.7***	1.5	1.3-1.8***
≥5	1,068	41.5	1.0		1.0		1,407	29.6	1.0		1.0	
Electricity												
Yes	2,084	80.8	1.0		1.0		3,840	80.5	1.0		1.0	
No	496	19.2	2.0	1.6-2.4***	1.5	1.2-2.0***	927	19.5	2.0	1.6-2.4***	1.7	1.3-2.1***
Adequate sanitation												
Yes	152	5.2	1.0		1.0		119	2.5	1.0		1.0	
No	2,433	94.8	2.7	2.1-3.4***	1.5	1.1-2.0*	4,657	97.5	6.6	5.2-8.4***	2.7	1.9-3.8***
Adequate water supply												
Yes	1,640	62.4	1.0		1.0		3,074	64.6	1.0		1.0	
No	968	37.6	0.9	0.8-1.0	0.8	0.7-1.0*	1,688	35.4	0.8	0.7-0.9***	0.9	0.8-1.1
Region												
North	1,093	42.3	3	2.3-3.9***	2.0	1.4-2.7***	3,148	65.9	23	16.5-32.2***	12.3	8.3-18.3***
Northeast	906	35.0	2.8	2.1-3.6***	2.0	1.5-2.8***	1,226	25.7	9.9	7.1-14.0***	6.4	4.3-9.6***
South/Southeast	130	5.0	1.0		1.0		49	1.0	1.0		1.0	
Central West	456	17.6	3.2	2.4-4.3***	1.9	1.3-2.6***	353	7.4	6.7	4.6-9.6***	3.5	2.2-5.4***

Table 2 – Unadjusted and adjusted odds ratio and confidence intervals of the relationship between sociodemographic characteristics and household food insecurity of *quilombolas* communities in Brazil. *Quilombola* Census, 2011.

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| | Food insecurity | | | | | | | | | | | |
| | Mild food insecurity | | | | | | Moderate/severe food insecurity | | | | | |
	n	%	OR Unadjusted	95%CI	OR Adjusted	95%CI	n	%	OR Unadjusted	95%CI	OR Adjusted	95%CI
Total monthly household income[1]												
≤½ minimum wage	894	34.6	2	1.7-2.3***	1.2	1.0-1.4	1,668	34.9	3.8	3.2-4.5***	1.1	0.9-1.3
>½ and ≤1 minimum wage	594	23.0	1.4	1.2-1.7***	1.9	1.5-2.2***	2,063	43.2	5.1	4.4-6.1***	3.0	2.5-3.7***
>1 minimum wage	1,097	42.4	1.0		1.0		1,045	21.9	1.0		1.0	

Notes: [1]Minimum Wage: 349.31 USD at the time of the research, considering the USD-Brazilian real exchange rate of July 1, 2011. *p<0.05; **p<0.01; ***p<0.001. CI: Confidence Interval; OR: Odds ratio.

Turning to the domicile variables, household size was the variable most strongly related to moderate/severe FI, with households of 3-5 individuals having an almost 40 times higher likelihood of experiencing moderate/severe FI. Households with children younger than 5 years and with fewer rooms were also significantly more exposed to moderate/severe FI. The absence of electricity and adequate sanitation in the domiciles was positively related to moderate/severe FI. The North region was the region most negatively associated with the most severe levels of FI, especially when compared to the South/Southeast. Regarding income, the *quilombola* households whose combined income was between half and one minimum wage were three times more likely to suffer moderate/severe FI than those who received more than one minimum wage (Table 2).

DISCUSSION

Data from the government's nationwide demographic and socioeconomic survey of 2013 showed a significant reduction of FI in Brazil [21]. However, the data analyzed here, from the 2011 survey of *quilombola* households, found the FI of this population group to be almost four times higher than the estimated level for the Brazilian population in 2013 (86.1% versus 22.6%). It should be noted that even when we consider the skin color/race classification of heads of household in the 2013 survey, the proportion of moderate/severe FI among black and brown-skinned individuals was still lower than that observed among *quilombola* households (11.1% versus 55.9%) [21].

Recently, the National Family Expenditure Study, based on data collected in 2017 and 2018, pointed to an increase in all levels of FI in the Brazilian population [15]. This data reflects the setback in advances in social policies to promote food and nutrition security and a return of hunger in the country [22]. In that study, it was observed that severe FI was more prevalent among those whose self-reported skin color was black or brown than among those who were white-skinned [15]. Although the National Family Expenditure Study does not provide any specific analysis of the country's *quilombola* population, data on the greatest increase in all forms of FI among black and brown-skinned people is indicative of the continued entrenchment of racial inequality in access to adequate food in the country.

Other studies that have investigated the prevalence of FI in *quilombolas* corroborate our findings [2,3,7,8,23]. Indeed, Carvalho *et al*. [5] and Ribeiro *et al*. [6] observed FI to affect about 80% of the

quilombola population. It should be noted that these surveys evaluated communities within a single region and small samples, unlike the national footprint of the *Quilombola* Census analyzed here.

Household income is pivotal in enabling access to adequate food and reducing FI, since it mediates the relationship between social and economic indicators and FI [24]. The association between food security and income is well documented in the literature [25,26]. In this study, the lowest monthly income was also a determining factor for moderate/severe FI, since 82.5% of the *quilombola* domiciles earned up to one minimum wage at the time of the research. Income is a prerequisite for the purchase of food and reduction of FI.

According to Rêgo and Castro [27] based on census microdata, the economy of the former *quilombos* was based on the use of available natural resources (*e.g.*, medicinal plants and wild animals) in association with subsistence agriculture. When investigating the data from the 2011 census, they observed that *quilombola* households still engaged in subsistence farming, and that 30.4% of the investigated population sold part of their produce or bred animals for sale [11].

Ribeiro *et al.* [28] found that *quilombos* in Bahia, northeastern Brazil, had difficulty in producing and marketing their food because of a lack of union amongst the farmers and a lack of associations and trade unions to stimulate production. This reinforces the importance of public policies for rural development designed to stimulate family farming in traditional communities, resulting in income generation. It is hoped that by increasing the food production in their lands, they could boost their income by selling the surplus produce, thereby reducing their social vulnerability and FI, and encouraging autonomy and an improved standard of living [29,30].

The present study investigated *quilombola* households who have the title to their lands, which means the legal right to occupy their territories. Land is important for cultural and physical reproduction, food production, and subsistence, making it an essential aspect of this population's livelihood [31]. Titling is therefore indirectly responsible for improving socioeconomic conditions and reducing FI. When a community lacks guarantees and protections for their lands, this hinders their cultural expression, autonomy, and agro-ecological development, with direct consequences on their livelihoods [12].

Silva [31] investigated rural black-skinned communities in Colombia and found that issues related to soil degradation for crops and restrictions against water use due to the intervention of land grabbers and farmers were factors behind FI in this population. He also reinforced the importance of such communities to have land for growing food, promoting food and nutritional security.

Another factor that can influence food production is the climate. This is a particular concern in the drought-prone Northeast region of Brazil, where advanced techniques are required to maintain production [28]. The FAO cites climate change as a major cause of increased hunger in the world and relates it to key factors affecting food security, such as the production, sale, and access to food [17,32,33].

We observed in our study that the higher the age group of the heads of household, the lower the proportion of moderate/severe FI, which could be down to contributions by older people to family income [34]. Data from the National Family Expenditure Study indicated that FI was less prevalent in households that included older people [15]. Pensions make up a large portion of older people's income, even those with a low income are eligible to receive benefits from social welfare income transfer programs [35]. Such benefits help boost the income of these households, and may help reduce their FI.

The head of household's education level was also found to be inversely associated with moderate/severe FI. This underlines the importance of basic education in the acquisition of knowledge and information and improved access to job opportunities and a higher income, yielding a reduction in the poverty cycle and FI [36].

As to household characteristics, moderate/severe FI was higher in the domiciles with over six residents. A higher domicile density increases the need for resources to buy food, while a larger domicile does not always tally with a higher family income [36,37]. The association between food security and domicile density is well documented [11,25,38,39]. A high prevalence of *quilombola* households without adequate sanitation was also found, which indicates social vulnerability and deficient hygienic and sanitary conditions and infrastructure, which could compromise health due to infectious diseases [40]. An association between inadequate sanitation and FI in population-based studies has also been found by Santos *et al*. [41] and Araújo *et al*. [42]. This lack of basic sanitation is another indication of social inequalities and precarious living conditions, compromising the health of citizens by making them more susceptible to diseases attributable to inadequate sanitation. Another factor that was related to the presence of moderate/severe FI was the absence of electricity, indicating its importance for the maintenance and storage of food, and the reduction of FI.

Regarding the region of residence, the households from the North and Northeast were more likely to experience moderate/severe FI. These regions have a higher proportion of rural areas and have historically been marked by poverty and worse socioeconomic and health indicators, which are reflected in the *quilombola* population [21,41,43-46]. Due to the historical process of land occupation, these regions were more populated by ethnically different groups and have a higher proportion of communities certified and recognized as descendants of *quilombolas* [47].

The current study has some limitations. EBIA is a validated instrument for both urban and rural populations, but not specifically for *quilombolas*, which may be a possible limitation to estimating FI among this population group. However, because it is a subjective measure that evaluates access to an adequate quality and quantity of food, it may be assumed that EBIA can be used to identify FI in this group as well, as other studies have observed [2,3,5-8,21]. Also, as it was not part of the objective, the association between food production and FI was not investigated, which prevents us from stating whether the *quilombola* households investigated were food producers and whether or not this production was sufficient to cover their needs and if there was any excess production for sale.

CONCLUSION

Although Brazil is a pioneer in tackling FI and in its efforts to revert its great historical debt to its descendants of black slaves, the findings of this study indicate that inequalities of access to adequate food and hunger still persist alongside low education levels, low income, and poor sanitation in *quilombola* communities. There is a pressing need for food security monitoring and evaluation indicators not only in quilombos, but also in other ethnic and racial segments and minorities in Brazil, such as indigenous people. In addition, efforts to plan and implement social programs to fight hunger and encourage rural development must be maintained to minimize FI and boost the economic autonomy of these most underprivileged communities.

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C O N T R I B U T O R S

The authors participated in all study and manuscript stages: conception, design, proposition of ideas, critical analysis and interpretation of data, review and writing the final version of the article.

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