


Vulnerability analysis and quilombola women's health in a mining area in the Amazon


Vulnerabilidade e saúde de mulheres quilombolas em uma área de mineração na Amazônia

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Abstract

Vulnerability encompass different factors that contribute to exposing individuals and groups to the illness processes. In this study, this concept was used to assess the health situation of 139 women living in eight quilombola communities located in a mining area, on the banks of the Trombetas River, in Oriximiná, Pará, Brazil. Data were collected by semi-structured individual interviews, which underwent quantitative analysis and descriptive statistics. Although quilombola communities are historically vulnerable, women are further weakened by individual, social, and programmatic factors, revealed in the poor access to education, information, work, income and health. Hence, public policies specifically suited to their gender and socio-cultural profile are needed.

Keywords: Women's Health; Vulnerability Analysis; Quilombola Communities; Quilombo's Health.

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Resumo

O conceito de vulnerabilidade considera diferentes fatores que concorrem para a exposição de indivíduos e grupos a processos de adoecimento. Neste estudo, o referido conceito foi utilizado com o objetivo de avaliar a situação da saúde de 139 mulheres residentes em oito comunidades quilombolas, localizadas em uma área de exploração mineral, nas margens do Rio Trombetas, em Oriximiná (PA). O estudo serviu-se de entrevistas individuais semiestruturadas para coleta de dados, os quais foram submetidos a uma abordagem quantitativa e analisados por meio de estatística descritiva. Embora as comunidades quilombolas sejam historicamente vulneráveis, os dados evidenciaram que as mulheres são ainda mais fragilizadas por fatores individuais, sociais e programáticos que se revelam nas dificuldades de acesso à educação, à informação, ao trabalho, à renda e à saúde. Elas necessitam, portanto, de políticas públicas especialmente adequadas à sua condição de gênero e ao seu perfil sociocultural.

Palavras-chave: Saúde da Mulher; Análise de Vulnerabilidade; Comunidades Quilombolas; Saúde da População Quilombola.

Introduction

The concept of vulnerability is important in public health because it allows the interpretation of the onset of communicable diseases from alternative approaches to those based on the concept of risk, typical of epidemiology, as well as to individualizing approaches to disease management (Oviedo; Czeresnia, 2015; Sanchez, 2015). The use of this concept, especially in the study of sexually transmitted infections, has been highly effective in revealing indicators of social inequities and inequalities in gender, race and class, which are relevant factors of exposure to illness (Andrade, 2017; Guilhem; Azevedo, 2008).

Perceived by Oviedo and Czeresnia (2015, p. 238) as a “constitutive and constituent ontological dimension of human life”, vulnerability is a state that compromises, temporarily or permanently, the capacity of individuals or groups to make decisions and act, exposing them to diseases and other damage as a result of this condition (Guerrero, 2010). However, several factors geographic, economic, environmental, social, cultural and political, go beyond the individual dimension and converge to determine vulnerability, in social and programmatic levels.

Thus, individual choices and behaviors, moral systems and cultural traditions, public policies and government programs, among other elements contribute, at different levels, to the health of individuals and groups of individuals. In other words, vulnerability is linked to the living conditions of a population and reflects its social inequalities (Garcia et al., 2008; Oliveira et al., 2015; Taquetti, 2010).

The concept of vulnerability was used in this study to assess the health conditions of quilombola women living in eight communities located on the banks of the Trombetas River, in the municipality of Oriximiná, in the northwest of the state of Pará. It is a historically marginalized social group, whose trajectory dates to Brazil’s colonial and slave past. Specifically in this region, quilombola occupation dates to the flight of slaves from rural properties in the inland of the Amazon region situated in the state of Pará where Africans and their descendants were systematically enslaved until the end of the

19th century (Funes, 2000; Salles, 2005). This population earns their living from traditional and family-based agro-extractive activities, and even today it is not adequately supported by health, education, housing, sanitation, communication, work, and income policies.

Besides the historical context of marginalization, more recently, in the 1970s, black rural or quilombola communities in the region were unexpectedly faced with the installation of a mining company in the area they inhabited. With support from the Brazilian government, the mining company *Mineração Rio do Norte* (MRN) set, in the middle of the forest, a complex industrial plant, connecting dozens of mines to a river port, which is the main gateway to village *Porto Trombetas*, established in 1976, together with the first bauxite shipment abroad. This village is, in fact, a company town restricted to MRN employees and guests, equipped with hospital, sanitation services, school, bank, commerce, club, bars, churches and cleaning and private security services, among others (Cumbuca Norte, 2016). The infrastructure of MRN is much better than in several cities in the Lower Amazon region, where it is located.

In four decades, MRN has become one of the world's largest producers of bauxite, attracting to Porto Trombetas and surroundings countless workers - mostly men - from various cities of Pará, other Brazilian states and even other countries. In On the other hand, the cumulative socio-environmental impacts of mining activity have worsened significantly the historic vulnerability of quilombola communities and produced changes in their ways of life, including reflections on the health of individuals, such as attest to studies carried out in the region.

The Quilombola Component Study (ECQ) conducted in 2016, as part of the environmental licensing of new bauxite mines in the region, recorded among the main negative impacts of mining the increase in the rate of occurrence of diseases, whose significance was considered very high (Cumbuca Norte, 2016). The diversity of diseases that communities associate with the mining activity is also significant: AIDS and other sexually transmitted infections, obesity, cancer, itchy skin, hypertension, respiratory problems, allergies,

urinary tract infections, gastritis and intestinal infections, among others.

In a study later conducted by the Comissão Pró-Índio de São Paulo, focusing specifically on the water-mining interaction, which involves from the exploration of the deposit to the processing of the ore, Andrade (2018) corroborated the ECQ records regarding the health conditions of the local population. The author pointed out that, in the perception of quilombolas, water and air pollution, resulting from mining, causes diseases that “did not exist before” (Andrade, 2018, p. 38).

This research also attests that, in the close contact with mining routines, the susceptibility of the researched quilombola communities, particularly women, is exacerbated by restrictions on access to knowledge, means and health care services, that make up structural dynamics of exclusion of this social segment from public policies on education, housing, employment and income. Although the provision of health services through projects in the communities and emergency care at MRN's hospital facilities contribute to meet some of the needs of the quilombolas, as a rule, they are left with the difficult and insufficient recourse to public health services offered at the municipal headquarters of Oriximiná (Castro, 2019).

According to Fidelis (2019), the recent expansion of access of members of certain quilombola communities to some health services maintained by MRN, in the village of Porto Trombetas, results from claims that gained momentum after publication, in 2017, of the technical reports on the identification and delimitation of the Alto Trombetas I and II territories. The publication of these reports constituted a significant advance in the process of recognition of the territorial right of those communities and gave them more power to negotiate with the company, especially in the context of environmental licensing processes. The quality of the services offered in the communities, however, is a frequent target of complaints. Its restricted focus on prevention, the lack of specialized treatments, and even racial discrimination practices were complaints noted by Fidelis (2019), especially among women.

In this context, assuming that quilombola women present greater vulnerability to illness, this

study seeks to evaluate the health conditions of women from eight communities in the Trombetas region. Thus, the study asks: What are and how do the vulnerabilities of quilombola women living on the banks of the Trombetas River, in Oriximiná (PA)?

Methodology

Study area

The occupation of lands by black communities in Oriximiná began in the 19th century after successive escapes of enslaved Africans who worked in farms located on the Amazon River bed (Acevedo; Castro, 1998; Funes, 2000). The source of the Trombetas River, which crosses Oriximiná from north to south, as well as the course of other tributaries on the left bank of the Amazon River, was the preferred destination of black individuals who sought freedom in the forests of the region, due to its specific geographic characteristics and the network of collaboration established with indigenous peoples who inhabited the region.

With the support of the natives, Africans and their descendants formed so-called *mocambos* in areas of

dense forests, fertile lands and fishy waters, somewhat protected by waterfalls that hindered the recapture expeditions. In the *mocambos*, the blacks developed a relatively autonomous way of life, based primarily on extractivism and agricultural production for own consumption and exchange with local traders, as well as with the natives themselves (Funes, 2000).

Throughout the 20th century, after the abolition of slavery, much of the population of the *mocambos* moved to areas of easier access and closer to urban centers where their production was commercialized. The Blacks dispersed throughout the Trombetas Basin, forming various population centers. From the 1980s to the 1990s, these settlements became associated in the form of 37 communities self-identified as quilombola communities. Distributed in eight territories, these communities have currently around ten thousand individuals (Comissão Pró- Índio de São Paulo, 2020).

Eight communities belonging to three quilombola territories were defined for this study, due to their proximity to Port Trombetas (Figure 1). There are 378 families living there, with an average number of six members each, representing an estimated total population of 2,268 people (Chart 1).

Figure 1 – Map of the Trombetas River region



Source: L. Andrade, 2011.

Chart 1 – Characterization of communities

COMMUNITY	TERRITORY	TITRATION	AREA (ha)	FAMILIES
Boa Vista	Boa Vista	1995	1.125,0341	150
Água Fria	Água Fria	1996	5.571.355	23
Terra Preta, Serrinha, Arancuan de Cima, Arancuan do Meio, Arancuan de Baixo e Bacabal	Trombetas	1997	80.887,0941	205

Source: Comissão Pró-Índio de São Paulo (2020) adaptado.

Access to quilombola communities is exclusively by river. Small community or private boats depart from the municipal headquarters of Oriximiná to the communities. The trips take five to eight hours, depending on the distance from the community. Consequently, traveling to seek basic services entails a considerable expenditure of time and financial resources.

Also, there is a lack of Basic Health Units (UBS) in the territories. Therefore, most of the quilombola population does not receive regular health care. This population relies mainly on medicinal plants and on traditional knowledge to cure common diseases such as colds, diarrhea, fever, wounds and localized pain. Another widely used resource is the search for local specialists such as chiropractors and prayer healers. The residents of these communities rarely seek the official health care system and therefore, they are rarely given prescriptions for the use of industrialized drugs.

The infrastructure of these communities is precarious. Devoid of a power supply system, they use generators powered by diesel oil, which are turned on for about three hours at night, or for a longer time on commemorative dates and days of meetings of the residents. The water used by residents is obtained directly from rivers, lakes and streams, either manually or through community microsystems, and is boiled and/or treated with hypochlorite solution when it is supplied by Community Health Agents (ACS).

There is only one elementary school in each territory. Therefore, young people are forced to migrate to Oriximiná or other larger cities to attend high school. As this migration to Oriximiná entails costs, most quilombola families cannot send their children to study in that city. Due to the impossibility

of pursuing their studies in order to have more opportunities for professional qualification, young people turn to the activities traditionally carried out in the communities or, more recently, to mining and logging.

The main traditional economic activities are agriculture, the production of manioc flour and the extraction of non-wood forest products, in particular, Brazil nuts, whose sale is converted into monetary income. Fishing and hunting are exclusively for own consumption, being essential sources of protein in the diet of quilombola families. In addition to these practices, wage labor and temporary work as self-employed persons or through cooperatives have become increasingly common. In the Boa Vista quilombola Territory (TQ), for example, at least one member of almost all families works in the mining sector. In Trombetas TQ, several residents are employed in activities of management, extraction and sale of wood.

According to the prevalent sexual division of labor, common in rural areas, men are in charge of services considered “heavy”, either in traditional activities or in mining and logging companies. Some of their activities include clearing the land for planting, hunting, working in mines, cutting wood and in areas for reforestation.

Women, in turn, are mainly dedicated to domestic work, maintenance of the farming land, and fishing for family consumption. When they enter the labor market, they usually provide general services, gardening and cleaning services, both on the company’s premises and in the homes of middle and high-ranking employees (Maini, 2018). Finally, although the topic is not openly discussed in the communities, some women work as sex workers in Vila Paraíso, which is close

to Port Trombetas and is frequented by mining workers (Madeira-Filho et al., 2012). Also known as Brega 45, the village is usually associated with an increase in the cases of unwanted pregnancies and sexually transmitted infections in the region.

Data collection and analysis

This study has an exploratory, descriptive, prospective, cross-sectional methodology, with a quantitative approach. Participants were 139 women contacted with the aid of five community health agents (ACS) and community leaders, who also provided logistical support during the field research. The following criteria were used for the selection of the participants: they should have permanent residence in the communities and be 15-55 years old, as it has been previously agreed with the Association of Remaining Quilombo Communities of the Municipality of Oriximiná (ARQMO) and local leaders.

In accordance with CNS Resolution No. 466/2012, the study was evaluated and approved by the Research Ethics Committee. A Free and Informed Consent Form was signed by all participants, and for participants under 18, it was signed by parents/guardians, and a Term of Assent, signed by the adolescents was included.

The field research was developed in two stages, both in October 2016. First, meetings were held with the employees and the women appointed by them, for the presentation of the proposal, its objectives, possible risks and benefits. The meetings were held in community shacks, church halls and schools, and lasted about 20 to 30 minutes.

Subsequently, the researchers made home visits for the administration of a form composed of 56 closed-ended and open-ended questions, for the characterization of the group's socioeconomic profile and identification of the vulnerabilities in the local health system. All visits were accompanied by ACS or local leaders, but the forms were applied individually, and in the locations chosen by the participants, inside or outside the residence, so that the meetings were private and the participants felt free to answer the questions.

The data obtained in the field research were stored in an Excel spreadsheet and transferred to SPSS version 20 and Bioestat version 5.3 programs for statistical treatment. The results were described by absolute and relative frequencies, and sample weighing was considered in relative frequency.

Results and discussion

The sample consisted of 139 quilombola women, and the results were stratified according to age groups: 16-20 years; 21-30 years, 31-40 years, 41-50 years of 51-60 years and distributed by territory as follows: 44 (31.7%) in TQ Boa Vista; 16 (11.6%) in TQ Água Fria; and 79 (56.7%) in TQ Trombetas. The average age of the participants was 30 years old (sd = 10.31), ranging from 16 to 55 years. In the age range of 21-30, young adults, there were 51 women (36.8%). They make up the largest group of respondents, of 115 (82.7%) women aged up to 40 years, therefore, in their reproductive stage.

Regarding color/race, 88 women declared themselves black (63.3%), and 51 (36.7%) said they were brown, corroborating data related to the history of black occupation and racial affirmation in the region (Table 1).

Table 1 – Demographic characteristics of quilombola women from the Trombetas River (Pará), 2016

VARIABLES	AGE (N = 139)											
	16-20 years		21-30 years		31-40 years		41-50 years		51-60 years		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
COLOR/RACE												
Black	15	55,5	32	62,7	23	62,2	8	66,7	10	83,3	88	63,3
Brown	12	44,5	19	37,3	14	37,8	4	33,3	2	16,7	51	36,7

continue...

Table 1 – Continuation

VARIABLES	AGE (N = 139)											
	16-20 years		21-30 years		31-40 years		41-50 years		51-60 years		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
EDUCATION												
Never studied	0	-	0	-	0	-	1	8,3	4	33,3	5	3,6
Inc. elementary school	1	3,7	5	9,8	11	29,7	6	50,0	6	50,0	29	20,9
Comp. elementary school	11	40,7	22	43,1	13	35,1	2	16,7	0	-	48	34,5
Inc. high school	0	-	3	5,9	0	-	0	-	0	-	3	2,2
Comp. high school	14	51,9	15	29,4	11	29,7	1	8,3	2	16,7	43	30,9
Inc. higher education	1	3,7	3	5,9	0	-	1	8,3	0	-	5	3,6
Comp. higher education	0	-	3	5,9	2	5,4	1	8,3	0	-	6	4,3
MARITAL STATUS												
Single	16	59,3	13	25,5	6	16,2	1	8,3	3	25,0	39	28,0
Married/ Stable union	11	40,7	37	72,5	28	75,7	11	91,7	9	75,0	96	69,1
Separated	0	-	1	2,0	3	8,1	0	-	0	-	4	2,9

Regarding education, 48 (34.5%) had completed elementary school, and 43 (30.9%) had completed high school. Women over 41 years had the lowest levels of education, which is consistent with the late establishment of school units in the communities. Only six (4.3%) women aged 21-50 years had attended higher education, within the scope of the National Teacher Training Plan (Parfor), implemented in 2009, by the Ministry of Education to improve the training of teachers in the public basic education network (Table 1). Low educational level is a common trait in quilombola communities in Pará, since most of the population has completed only primary education, and modular classes are common.

As for the marital status of the participants, 96 (69.1%) were married or lived in a stable relationship; 39 (28.0%) were single and 4 (2.9%) were separated (Table 1). The prevalence of married women is explained by cultural and economic reasons and by aspects related to the quilombola way of life, in which the family is the fundamental productive unit. In fact, in the local communities, women marry very often before reaching adulthood and their husbands are often older men who earn income from farming their own cleared lands, wage labor or even retirement.

To describe the living conditions of the respondents data related to income, housing and access to water were crossed (Table 2). The largest group consisted of 86 (61.9%) women who did not perform paid work

and did not earn a regular income. These women were usually supported by their companions or sometimes would earn money by providing general services in Vila de Porto Trombetas, selling agricultural products or even handicraft products. In this group, 26 (30.2%) lived in brick houses; 51 (59.3%) in wooden houses; and 9 (10.5%) in straw houses. Regarding water supply, 26 women (30.2%) obtained it directly from the river; 51 (59.3%) were supplied by a community microsystem; and 9 (10.5%) had wells.

Only 53 (38.1%) women said they performed paid activities. Regarding individual monthly income, 32 (60.4%) of them received less than the minimum wage in force at the time; 19 (35.8%) received one to two minimum wages; and only 2 (3.8%) received more than two minimum wages. In this group of women, 36 (67.9%) lived in brick houses, while 17 (32.1%) had wooden houses; 34 (64.2%) consumed water distributed by a community microsystem; and 19 (35.8%) had a private well (Table 2).

Table 2 – Working conditions of quilombola women, Rio Trombetas (Pará), 2016

VARIABLES	YES		NO		TOTAL	
	N	%	N	%	N	%
PAID ACTIVITY	53	38,1	86	61,9	139	100
INDIVIDUAL MONTHLY INCOME						
< 1 salary	32	60,4	-	-	32	60,4
1 to 2 salaries	19	35,8	-	-	19	35,8
> 2 salaries	2	3,8	-	-	2	3,8
TYPE OF HOUSING						
Brick houses	36	67,9	26	30,2	62	44,6
Wooden houses	17	32,1	51	59,3	68	48,9
Straw houses	0	-	9	10,5	9	6,5
WATER FOR CONSUMPTION						
Community microsystem	34	64,2	51	59,3	85	61,2
Private well	19	35,8	9	10,5	28	20,1
River	0	-	26	30,2	26	18,7

Among the parameters used to characterize the socioeconomic profile of the participants, the following deserve mention: a) affirmation of blackness as an identification criterion and ethnic-racial belonging consistent with the history of occupation and the quilombola social organization in Oriximiná; b) low education due to the lack of educational services in the quilombos; and c) labor market exclusion and the low income earned by women, highlighting their economic dependence on their partners/spouses.

The last two factors are strongly interconnected and contribute to increasing women's individual and social vulnerability to illness, deepening gender inequalities in the quilombos. On the other hand, structural aspects of the municipality of Oriximiná and, particularly, of Trombetas river, express specific geographical, social, economic, and political conditions, which contribute to characterize the vulnerability of the quilombola population as a whole, and particularly of women, in Brazil (Silva, 2011).

The precarious health assistance in TQ Boa Vista, Água Fria and Trombetas clearly corroborates a routine situation in quilombola communities in Pará (Cavalcante, 2011). None of the eight communities covered in the study had a UBS, although five had community health agents (ACS) - which is not quite different from the percentage of 57.0% of communities in Pará that count on ACS services (Oshai; Silva, 2013). The absence of UBS, and in some of them, even of ACS, signals the situation of marked programmatic vulnerability of the quilombola population, recurrently neglected in public health policies (Guerrero, 2015).

Given the local conditions and the importance of cultural traditions, women often resort to homemade remedies when they fall ill. As is usual in black rural communities, they are preferably treated with preparations derived from barks, roots, leaves and oils, vegetables or animals, whose production is based on knowledge passed from generation to generation (Sales; Albuquerque; Cavalcanti, 2009). In fact, this is the option of 81 (58.3%) respondents, while the search for hospitals and pharmacies is preferred by 51 (35.7%) and 7 (5.0%) women, respectively (Table 3).

Table 3 – Educational activities to prevent diseases developed in quilombola communities, Rio Trombetas (Pará), 2016

VARIABLE	(n = 139)	%
PREVENTION ACTIVITY		
Yes	68	48,9
FREQUENCY OF ACTIVITIES		
Yearly	56	82,3
Monthly	8	11,8
Semiannual	4	5,9
RESPONSIBLE FOR THE ACTIVITY (n = 68)		
ACS	17	25,0
Nurses	25	36,8
Others (interns)	26	38,2

continue...

Table 3 – Continuation

VARIABLE	(n = 139)	%
PUBLIC HEALTH SERVICE AVAILABLE IN THE COMMUNITY		
No	139	100,0
TRANSPORT FOR ACCESS TO HEALTH SERVICE		
Motorized canoe	43	30,9
Community boat	59	42,4
Family boat	21	15,2
Others	16	11,5
CONDUCT WHEN YOU ARE SICK		
Take home remedy	81	58,3
Go to the hospital in the city (Oriximiná)	51	36,7
Go to the pharmacy in the city (Oriximiná)	7	5,0

The low demand for assistance in the units of the official healthcare system is partly explained by the geographical characteristics of the Trombetas Basin, which, in general, are typical of Northern Brazil. The lowest percentages of health service use in the country are concentrated in this region (Stopa et al., 2013). For example, people who live near the Trombetas River need to travel to Porto Trombetas or to the city of Oriximiná to reach a hospital, that is, long, exhausting, and costly trips are necessary. For this purpose, 59 (42.4%) women use the community boat; 43 (30.9%) use their own motorized canoe; and 21 (15.2%) use the family boat (Table 3).

Due to environmental constraints associated to the mining activity, quilombola women from TQ Boa Vista are registered as users at the hospital of the mining company (MRN), however, this option is not available to residents of all communities surrounding the company, except in urgent and emergency cases. In these specific cases, the patient's condition can be stabilized at the Porto Trombetas hospital, but the continuity of treatment must be given at the municipal hospital of Oriximiná, which demands from the patients and their eventual

companions resources for the displacement. Taking into account the regional geography, Castro (2019) points out that the costs of boat fuel, food, lodging, and transportation in the city are not compatible with the means of most quilombola families, given their situation of social vulnerability. Therefore, it is not uncommon for treatments to be discontinued.

In this scenario, preventive actions must be taken to improve the health conditions of the quilombola population. However, these actions are usually carried out through lectures, and local women do not seem to be interested in them. Only 68 (48.9%) respondents participated in any action of this type. According to 56 (82.3%) participants, these activities are carried out annually and are itinerant. The speakers are mainly nursing professionals from Oriximiná, as reported by 25 (36.8%) women; ACS, according to 17 others (25.0%); and interns in technical course, according to 26 (38.2%) women (Table 3).

Thus, investments in prevention actions based on diversified and emancipatory methodologies are considered, which take into account the traditional knowledge of quilombola communities and pay special attention to the most appropriate ways of approaching women, in order to make them play an active role in the development of individual and collective health care strategies, thus reducing the individual vulnerability of these women.

Regarding medical appointments, the participants were asked whether they sought assistance to deal with a health problem in the six months preceding the interviews. Only 51 (36.7%) women answered yes to the question, and 45 (88.2%) reported that it was difficult to obtain medical assistance. Among them, 44 (86.3%) sought public health services in the city of Oriximiná, and 35 (68.6%) did so in urgent situations (Table 4).

Table 4 – Type of health care for quilombola women, Rio Trombetas (Pará), 2016

VARIABLE	N	%
CONSULTATION (last 6 months)	(n = 139)	
Yes	51	36,7
No	88	63,3

continue...

Table 4 – Continuation

VARIABLE	N	%
PLACE OF PERFORMANCE	(n = 51)	
Public Service-City	44	86,3
Public-Community Service	2	3,9
Hospital-Vila Service	3	5,9
Others	2	3,9
CONSULTATION TYPE		
Routine	16	31,4
Urgency	35	68,6
DIFFICULTY IN SERVICE		
Yes	45	88,2%
No	6	11,8%
EXAMS (last 3 years)		
Yes	10	74,1%
EXAM PLACE		
Health center-city	88	85,4%
Community actions	4	3,9%
Others (private)	11	10,75

Problems of access to healthcare services by the target population of this study is shown on the data obtained. Associated with the ineffectiveness of these services, this factor is one of the most relevant components of the vulnerability of quilombola communities to illnesses and their consequences (Garcia et al., 2008). Due to the lack of primary care services in the communities, and because there was no resizing of the services available in the city, this population, historically marginalized and culturally discriminated, tends to remain excluded from the official health care system (Cavalcante, 2011).

The ineffectiveness of the health services, in turn, may be related to the slowness and/or insufficiency of diagnostic services, which are essential for the definition of appropriate and timely treatments (Santos, 2016). In this regard, the study showed that 103 (74.1%) participants underwent health tests at some point in their lives.

However, considering only the three years before the study, this number dropped to 70 (67.9%). It was found that 88 (85.4%) of the women who participated in the study underwent exams at a UBS in the city of Oriximiná; of these, 4 (3.9%) underwent exams within the scope of health actions in the TQ; and 11 (10.7%) underwent the exams in private services (Table 4).

Regarding the most common diseases among the respondents, 107 (74.8%) reported diseases of the integumentary system, such as itching and skin wounds. Flu and pneumonia were reported by 86 (61.9%) women. Gynecological problems, body pains and chronic diseases, such as hypertension and diabetes, were less mentioned (Table 5).

Table 5 – Most common health problems reported by quilombola women, Rio Trombetas (Pará), 2016

VARIABLE	N	%
PROBLEMS	(n = 139)	
Integumentary system-itching, wounds	107	74,8%
Respiratory-influenza, pneumonia	86	61,9
Gynecological-Discharge	24	17,3
Pains-lumbar, tooth	18	12,9
Hypertension	15	10,8
Diabetes	7	5,1
Accidents (snake bite, injuries)	16	11,5
Others (cancer, rheumatism)	2	1,4

Regarding the activities of the bauxite mining company in the surrounding communities, it is estimated that skin and respiratory problems may be associated with water and air pollution by residues from ore washing, drying and transport activities. This situation is more serious in the Boa Vista community, closer to the mining company's port, where quilombolas interviewed by Andrade (2018) claim that, before the establishment of MRN, the waters of the Trombetas river and the Água Fria stream were

clean and healthy, but now they are contaminated and cause diseases.

According to the author, the Brazilian Institute of the Environment and Renewable Natural Resources (Ibama), which is responsible for the environmental licensing of the project, notified the mining company that pollution in water courses used by the Boa Vista community had reached levels capable of causing damage to the health of the quilombolas (Andrade, 2018). In fact, the increasing difficulty in accessing drinking water has been reported by the population as one of the main negative impacts of mining (Cumbuca Norte, 2016). Therefore, most of the residents stopped using natural sources and began to collect water from the taps available in Vila de Porto Trombetas, using recycled plastic bottles. Many women reported that, as with children, who play in the river and in streams, they are also more affected by waterborne diseases, due to the daily activities of washing clothes, collecting and using the liquid for cooking (Cumbuca Norte, 2016).

The set of factors identified in this study converges to exacerbate the vulnerability of quilombola women in the programmatic dimension. First, there is a notable lack of primary health care services in the areas surveyed, characterized by the lack of basic health units (UBS) and the insufficient care provided by community health agents (ACS). The referred lack of health services, added to the fact that quilombola communities are far from urban centers, which concentrate public services, makes access to health services exceedingly difficult. This difficulty translates into the repeated denial of a constitutional right to the quilombola population of the Trombetas River region, who cannot access hospitals, pharmacies and other health equipment and services.

Second, the unavailability of essential resources for the early diagnosis of diseases favors the worsening of health conditions that, otherwise, could be more easily controlled. These factors contribute to the inability of health services

to solve the health problems of the quilombola population. These individuals also find it difficult to schedule their laboratory tests, wait a long time for the results of the tests and often do not find any specialist to explain the results to them. These factors contribute to the ineffectiveness of the treatments adopted.

Prevention, which could be a powerful means of intervention in this scenario, comprises actions that are not very attractive or effective, usually carried out in the form of lectures, given by professionals from the city of Oriximiná, who are probably not very familiar with the reality, way of life and culture of quilombola communities.

Paradoxically, despite being the most important and most used local health strategy, the wide collection of traditional knowledge associated with natural resources applicable to the maintenance of well-being and the cure of diseases is often ignored in actions targeted to the communities. Thus, the endogenous potential of quilombola territories for the development of individual and collective health practices is little explored, both in terms of prevention and in terms of the diagnosis and treatment of diseases.

Regarding all the aspects reported, the situation in TQ Boa Vista, Água Fria and Trombetas is similar to the one described by Cavalcante (2011) in most quilombola communities in the Amazon region in the state of Pará, where health services are concentrated in large cities. Thus, the unassisted population can only rely on sporadic campaigns or actions that do not take in consideration the real needs of the users. However, some characteristics of the Trombetas river region aggravate the vulnerability of the communities surveyed.

The environmental damage caused directly or indirectly by the mining activities developed in the surroundings of the said quilombola territories threatens the residents' health. As it has been shown, the frequent and inevitable contacts with water and air polluted by bauxite residues affect the integumentary and respiratory systems and are related to the diseases most commonly identified among the women interviewed. Thus, the lack of

health policies is exacerbated by the ineffectiveness of the environmental policy in mitigating the harmful effects of mining, intensifying the programmatic vulnerability of the quilombola population of the region of Trombetas river.

Final considerations

Quilombola communities are a segment of Brazilian society whose educational, work and health opportunities have historically been very limited. Therefore, this population lives in a continuous state of vulnerability (Silva, 2011). In the Amazon, the susceptibility of quilombola communities is aggravated by the dimensions and geographic characteristics of the region, as residents of rural and riverside areas need to travel great distances to urban centers where public services and facilities are concentrated. (Cavalcante, 2011; Oshai; Silva, 2013; Guerrero, 2016). Thus, such communities tend to remain outside the inclusive processes of the country's health network.

In the region of the Trombetas river, which is far from the municipal headquarters in Oriximiná and has suffered the impacts of mineral exploitation for four decades, quilombola communities are affected by vulnerability factors in three dimensions: individual, social and programmatic. The precarious living, working, and housing conditions of this population, always associated with the absence or insufficiency of public policies that address their needs, contribute significantly to the increase of their fragility. Due to the lack of health services in their territories, quilombolas depend on the assistance provided at MRN facilities, in emergency situations, and on the routine health care services provided by the city of Oriximiná, which are difficult to access, expensive and ineffective. Moreover, health promotion and disease prevention actions carried out in quilombola territories are sporadic and inefficient.

With regard to women, vulnerability to diseases is more significant in the three

dimensions cited, in all quilombola communities surveyed. In the individual dimension, the low level of education and restricted access to specialized health information make it difficult for them to incorporate preventive knowledge and attitudes into everyday actions. In the social dimension, the historical gender inequality makes the precarious living conditions of quilombola families more harmful to women, as they have less access to job and income opportunities than men, and, consequently, less decision-making power. In the programmatic dimension, the absence and/or ineffectiveness of public health policies reinforces women's dependence on men, on the mining company and on the services provided in Oriximiná.

In this context, there is a clear need for new public policies tailored to the needs of quilombola women from the region of Trombetas river, their gender condition and their ethnic-cultural profile. These issues have been repeatedly neglected in the health actions carried out in the communities surveyed. In addition to regularly providing opportunities for health care and assistance to these women, these policies should include specific health promotion and prevention activities for the target audience.

This, in turn, implies formulating socially and culturally appropriate mechanisms to encourage the involvement of quilombola women in practices that contribute to reducing their vulnerabilities to illnesses. Therefore, it is essential that trained health professionals are inserted in the communities of the Trombetas river to develop actions that will empower quilombola women to play a decisive role in the management of their health. These joint actions will strengthen health care practices inherent to the living conditions of these women, reducing their vulnerabilities.

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Authors' contributions

Nascimento and Arantes took part in analysis, data interpretation and writing. Nascimento was responsible for designing. Carvalho performed the critical review and approval of the final version.

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