Factors associated with the development of arterial hypertension in a quilombola community*

Fatores associados ao desenvolvimento de hipertensão arterial em uma comunidade quilombola

Factores asociados con el desarrollo de hipertensión arterial en una comunidad quilombola

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Abstract: Objective: to evaluate factors associated with the development of Arterial Hypertension (AH) among individuals living in a *quilombola* [peopled with ancestors from the African continent] community. **Method:** cross-sectional study, carried out with 74 participants. Data were collected by filling out two forms with sociodemographic / socioeconomic and lifestyle questions. Descriptive and inferential statistical analysis was performed. **Results:** female gender, black race, married, incomplete elementary education and economic class C2 predominated. The presence of AH was self-reported by 37.8%, of these 22.9% were women and 14.9% men. Higher percentages of non-obese, non-smoking, non-alcoholic and practitioners of some type of physical activity were obtained. Regarding dietary habits, the consumption of fruit, vegetables, salads, industrialized spices, processed and ultra-processed foods was observed. Concerning the recommendations on healthy eating, 64.9% stated they had never received guidance and 48.6% did not seek health care. **Conclusion:** significant percentages were found relating to risk factors for the development of AH.
Descriptors: Hypertension; Risk Factors; Group with Ancestors from the African Continent; Health Status Indicators; Epidemiology

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Resumo: **Objetivo:** avaliar os fatores associados ao desenvolvimento da Hipertensão Arterial (HA) em indivíduos residentes de uma comunidade quilombola. **Método:** estudo transversal, realizado com 74 participantes. Os dados foram coletados por meio do preenchimento de dois formulários, sendo eles: sociodemográfico/socioeconômico e sobre estilo de vida. Realizou-se análise estatística descritiva e inferencial. **Resultados:** predominou o sexo feminino, raça preta, casados, ensino fundamental incompleto e a classe econômica C2. 37,8% autorreferiu presença da HA, destes, 22,9% eram mulheres e 14,9%, homens. Obteve-se maiores percentuais de não obesos, não tabagistas, não alcoólatras e praticantes de algum tipo de atividade física. Quanto aos hábitos alimentares, observou-se o consumo de frutas, legumes, hortaliças, temperos industrializados, alimentos ultraprocessados e processados. Quanto as recomendações sobre alimentação saudável, 64,9% afirmaram nunca ter recebido orientações e 48,6% não procura o serviço de saúde. **Conclusão:** foi constatado percentuais significativos relativos a fatores de risco para o desenvolvimento da hipertensão.
Descritores: Hipertensão; Fatores de Risco; Grupo com Ancestrais do Continente Africano; Indicadores Básicos de Saúde; Epidemiologia

Resumen: **Objetivo**: evaluar los factores asociados al desarrollo de la Hipertensión Arterial (IA) en personas residentes en una comunidad quilombola. **Método:** estudio transversal, realizado con 74 participantes. Los datos se recogieron rellenando dos formularios, sociodemográfico/socioeconómico y de estilo de vida. Se realizó un análisis estadístico descriptivo y de inferencia. **Resultados:** predominó el sexo femenino, la raza negra, los casados, la educación básica incompleta y la clase económica C2. El 37,8% auto declaró la presencia de AH, de los cuales el 22,9% eran mujeres y el 14,9%, hombres. Se obtuvieron mayores porcentajes de no obesos, no fumadores, no alcohólicos y practicantes de algún tipo de actividad física. En cuanto a los hábitos alimentarios, se observó el consumo de frutas, verduras, hortalizas, especias procesadas, alimentos ultra procesados y procesados. En cuanto a las recomendaciones sobre alimentación sana, el 64,9% afirma no haber recibido nunca orientaciones y el 48,6% no solicita el servicio de salud. **Conclusión:** se constataron porcentajes significativos relativos a los factores de riesgo para el desarrollo de la hipertensión.
Descriptores: Hipertensión; Factores de Riesgo; Grupo con Antepasados del Continente Africano; Indicadores de Salud; Epidemiología

Introduction

Chronic non-communicable diseases (NCDs) are characterized as one of the major public health problems in the world, occurring on a larger scale in underdeveloped countries, where there are poorer and more vulnerable populations. They have a slow evolution, usually they are asymptomatic, they generate suffering, irreversible complications and negative economic impact. Arterial hypertension (AH) belongs to this group and constitutes one of the main causes of illness and death. AH consists of a circulatory problem with high prevalence, low rate of

control and high disabling power. It is considered one of the main risk factors for the development of cardiovascular (CVD), kidney, brain and vascular diseases.[1]

Risk factors for the development AH include inadequate nutrition, alcoholism, smoking, physical inactivity, obesity, disorders of glucose and lipid metabolism, in addition to ethnic, environmental and socioeconomic factors.[2-3] Regarding ethnic factors, the black race is twice as likely to develop AH than white individuals, one possible explanation is the theory that black people could present a sodium-saving gene that leads to cellular sodium influx and cellular calcium efflux, causing organic changes that result in elevated blood pressure (BP).[4]

According to scientific evidence, health status has been related to ethnic-racial issues, revealing inequalities in the profiles of illness and death when comparing white populations with those who claim to be black or mixed race. These groups are in a situation of social vulnerability and suffer from disparities in the provision and access to health services, rendering them more vulnerable to diseases such as AH.[5]

It is in this context that quilombola communities are inserted, the definition of which is based on criteria of self-attribution, with their own historical trajectory, specific territorial ties and presumption in black ancestry related to resistance against the historical oppression suffered. They are usually located in rural areas, with high levels of illiteracy and impoverished living, housing and sanitation conditions, together with difficult access to health services.[6]

Given that AH is a multifactorial clinical condition and in most cases a final result of the interaction between genetic, sociocultural, environmental and demographic factors,[2-3] the present research seeks to answer the following research question: What are the main factors that contribute to the development of AH among quilombola community residents in the state of Piauí (PI)?

It is therefore imperative to portray this population as ethnic groups in situations of social vulnerability and who, historically, have undergone a process of expropriation of culture and rights with a resulting impact on health indicators. In addition, there is little research that

seeks to ascertain the health status and the determinants of diseases that affect vulnerable populations. Thus, studies on the theme make it possible to understand the conditions of the health / disease process in these populations, in addition to contributing to the formulation and implementation of public policies. In view of the above, the present study aimed to assess the factors associated with the development of AH among individuals living in a quilombola community.

Method

Cross-sectional study carried out in a quilombola community located in the south-central region of the State of Piauí, Brazil. The community is located seven kilometers from the city of Paquetá - PI, has self-definition of its racial ethnic identity and is certified by the Fundação Cultural Palmares.

The population consisted of residents of the community with 48 families registered in the Family Health Strategy (FHS) and 167 inhabitants. The inclusion criteria adopted were: age over 18 years; a resident of the quilombola community; participation in all stages of the research, including the interview, the anthropometric measurements and taking BP; as well as being registered and monitored by the FHS. As exclusion criteria: impediments to obtaining anthropometric measures, for example, being in a wheelchair or bedridden; pregnant women, due to the occurrence of changes in the Body Mass Index (BMI); and people with cognitive deficits informed by the participant or a family member. A total of 93 residents were excluded, such that the study sample consisted of 74 participants.

Initially, the community leader was contacted to explain and grant authorization to carry out this project. Then, the nurse responsible for the FHS who assisted the community was contacted, so that together with the Community Health Agents (CHA) it was possible to organize a chronogram.

Data collection took place at the participant's own home, during September and October 2019. At the time, the researcher presented the project and explained the research objectives, risks and benefits, those who agreed to participate signed the free and informed consent term. Next two forms were applied, one containing socioeconomic and sociodemographic data and the other with variables related to lifestyle and anthropometric data, which were entered into the EpiCollect software. This software was used by the researcher and the team previously trained by her, totaling five members. In households with more than two residents, the forms were applied individually in separate environments to minimize the risk of embarrassment, and the activity was performed within approximately 15 minutes.

The socioeconomic and sociodemographic forms were designed to collect information regarding age, sex, race, marital status, education, family composition and income, presence of AH and estimated time of diagnosis. After this information, an economic classification was carried out, defined by classes A, B1, B2, C1, C2, D, E.

For the variables on lifestyle, these were subdivided into anthropometric, lifestyle, food and BP values. The criterion used for racial identification was self-attribution, as defined by the Brazilian Institute of Geography and Statistics (IBGE).

As for the anthropometric variables, the weight was checked using a portable digital scale, which was installed in a level place. After the balance was turned on, it was checked to see if it was zeroed. Then, the participant was instructed to stand straight, in the center of the scale, with the feet together and arms extended along the body.[7]

Since all of the research participants could walk, their height was verified with the individual standing, using a non-flexible measuring tape of 1.5 meters, which was fixed to a flat wall, 100 cm from the ground. The participants were instructed to remove any foot ware or object from their head, position themselves in the center of the place with the tape, their feet as

close as possible to the wall forming a 90º angle with their legs, arms extended along the body and looking at a fixed point at eye level.[7]

In order to assess the nutritional status, BMI was adopted, which is obtained by means of the ratio between weight and the square of height. Results with less than or equal to 22 kg/m² were classified as underweight, then appropriate or normal between 22 and 27 kg/m² and overweight above or equal to 27 kg/m².[7]

In order to assess central adiposity, a marker that identifies possible cardiovascular and metabolic risks, the waist circumference (WC) was measured. After obtaining the value, those participants who obtained WC> 102 cm and participants who obtained WC> 88 cm were classified as obese.[8]

To obtain BP, the technique recommended by the VII Brazilian Guideline for Arterial Hypertension was followed, with values between 121/81 to 139/89 considered as prehypertension; stage I hypertension between 140/90 to 159/99; stage II hypertension between 160/100 to 179/109 and stage III hypertension values ≥ 180/110. The values were computed and corresponded to the Mean Arterial Pressure (MAP).[8]

Regarding the variables of lifestyle and eating habits, we sought to collect information about the patterns of individual food consumption and behavior practiced by individuals. The data collected were digitized and analyzed using the IBM Statistical Package for the Social Sciences (SPSS), version 20.0. For data analysis we used calculation of the mean, standard deviation, maximum and minimum values, in addition to Pearson's Chi-square test, Spearman's correlation coefficient test, Mann-Whitney U Test and Kruskal-Wallis tests. For the Spearman correlation test, the following values for association were considered: 0 (null); 0-0.3 (weak); 0.3-0.6 (regular); 0.6-0.9 (strong); 0.9-1 (very strong) and 1 (perfect).

The findings were presented through tables, discussed and analyzed according to the relevant literature. For all inferential statistical analyses, those with p <0.05 were considered statistically significant.

The project was approved on August 15, 2019, by the Research Ethics Committee of the Federal University of Piauí, under decision No. 3.511.138/CAAE: 18501519.8.0000.8057, following all the ethical standards required by Resolutions 466/2012 - 510/2016 - 580/2018, from the Ministry of Health. The responsible researcher followed all bioethical principles such as beneficence, non-maleficence, autonomy and justice.

Results

A total of 74 residents from the quilombola community were analyzed, the predominant sex was female (55.4%). Their age ranged from 18 to 78 years, with a mean of 44.2 years and standard deviation 17.6. Regarding race, those who considered themselves black predominated (67.6%). In terms of marital status, 55.4% were married and lived with family members (45.9%). Regarding schooling, incomplete elementary education (37.8%) predominated and in terms of economic class, class C2 (39.2%) prevailed.

For the anthropometric variables and lifestyle, 50% said they did not have AH, 12.2% reported not knowing if they did or not and 37.8% self-reported the presence of the disease (of these 22.9% were women and 14.9% men). The time of AH diagnosis predominated between one and five years of presence of the morbidity (16.2%).

With regard to BP, 39.2% presented normal blood pressure values. Regarding BMI, 47.3% had a normal weight, with a mean and standard deviation of 24.63 ± 3.95 kg/m². WC varied between 51.5 cm and 113.0 cm, with a predominance of the non-obese classification (67.5%). As for the smoking habit, non-smokers predominated (89.2%), as well as those who did not

consume alcoholic beverages (54.1%). Furthermore, over half of the participants reported the practice of some type of physical exercise (52.7%).

When asked about their eating habits, 62.2% had three meals a day, 91.9% consumed fruit, 95.9% vegetables and salads and 73% reported the use of industrialized spices, although 94.6% said they did not add salt to served food. Regarding processed sausage meat or canned foods, 54.1% do not consume this type of food, however more than half of the participants reported the consumption of biscuits, fried snacks and carbonated drinks (79.7%, 56.8% and 68.9%, respectively). With regard to recommendations on healthy eating, 64.8% said they had never received these guidelines and 48.6% did not seek health care due to AH.

Table 1 shows the numerical and percentage distribution of the BP classification according to age group. It was observed that 22% of the participants aged between 18 and 25 years of age are classified as normal or pre-hypertension. Stage I hypertension prevailed in the groups between 34 to 41 and 58 to 65 years old, with 4% in each group. Stage II AH predominated between ages 66 to 80 years old, with 5.4%. In stage III hypertension, there was one participant in the age group between 66 and 72 years old (1.3%).

Table 1 – Numerical (n) and percentage (%) distribution of blood pressure according to age range (n = 74). Picos-PI, 2019.

Age range (yrs)	Normal or pre-hypertension		AH I*		AH II†		AH III‡	
	n	%	n	%	n	%	n	%
18-25	16	22.0	1	1.3	-	-	-	-
26-33	3	4.0	-	-	-	-	-	-
34-41	10	13.5	3	4.0	-	-	-	-
42-49	7	9.5	2	2.7	1	1.3	-	-
50-57	12	16.3	1	1.3	1	1.3	-	-
58-65	2	2.7	3	4.0	-	-	-	-
66-72	2	2.7	1	1.3	2	2.7	1	1.3
73-80	3	4.0	1	1.3	2	2.7	-	-

*Arterial hypertension stage I. † Arterial hypertension stage II. ‡ Arterial hypertension stage III. p=0.000

In Table 2, the variable of presenting AH was related to those variables related to lifestyle and diet. There was a statistically significant association between the variable evaluated and whether or not they had received recommendations on healthy eating (p = 0.002), showing that not being informed about appropriate food can favor the onset of AH.

Table 2 – Association between the presence of AH with the variables related to lifestyle and alimentation of the participants (n = 74). Picos-PI, 2019

Qualitative variables	Arterial hypertension
	p-Value*
Physical activity	0.386
Smoking	0.277
Recommendations on alimentation	**0.002**
Consuming processed sausage meat	0.683

* Pearson's Chi-square test.

Continuing, an analysis was performed between the correlation between mean systolic blood pressure (SBP) and mean diastolic blood pressure (DPB) with BMI and WC, with a moderate correlation between BMI and mean SBP and low with mean DPB (r = 0.350; p = 0.002 and r = 0.295; p = 0.011) respectively. In addition, WC correlates moderately with mean SBP (r = 0.359; p = 0.002) and has a weak correlation with mean DPB (r = 0.282; p = 0.015) (Table 3).

Table 3 – Correlation between mean systolic blood pressure and mean diastolic blood pressure with BMI and WC of the participants (n = 74). Picos-PI, 2019

Anthropometric variables	Mean SBP[+]	Mean DPB[‡]
BMI[§]	r = **0.350**; p = 0.002*	r = **0.295**; p = 0.011*
WC[‖]	r = **0.359**; p = 0.002*	r = **0.282**; p = 0.015*

[*]Spearman's correlation coefficient test. [+] Systolic blood pressure. [‡] Diastolic blood pressure. [§]Body mass index. [‖]Waist circumference.

Then, a statistical association was made between socioeconomic and sociodemographic variables with mean SBP and mean DBP. There was an association between gender and mean

SBP (p = 0.043). Next, Spearman's correlation test was performed, with a weak association between age and mean SBP (r = 0.298; p = 0.010) and high correlation between family income and mean DBP (r = 0.808; p = 0.0001). A statistically significant association was found between marital status and mean SBP and mean DBP (p-0.029; 0.049, respectively) (Table 4).

Table 4 - Association between mean systolic and diastolic blood pressure with socioeconomic and sociodemographic variables (n = 74). Picos-PI, 2019

Variables	Mean SBP[§]	Mean DBP[‖]
Sex	0.043[*]	0.240[*]
Age	r = 0.298; p = 0.010[†]	r = 0.152; p = 0.197[†]
Income	r = 1.000; p = 0.905[†]	r = 0.808; p = 0.0001[†]
Race	0.079[‡]	0.359[‡]
Marital status	0.029[‡]	0.049[‡]
Education	0.123[‡]	0.184[‡]

[*]Mann-Whitney U Test. [†] Spearman's correlation coefficient. [‡]Kruskal-Wallis. [§]Systolic blood pressure. [‖] Diastolic blood pressure.

Discussion

The results of this study revealed a population profile similar to that found in various other quilombola communities in Brazil, composed of a population with a mean age of 43 years, predominantly black, a prevalence of females,[3] married[5,9] and a high rate of illiteracy / incomplete elementary education.[10]

It is relevant to study the education variable, since it can influence the type of occupation of individuals and, consequently, family income.[11] In addition, the higher the level of education, the better the understanding and access to information, thus leading the individual to have a greater concern with their health and well-being, consequently generating a better state of health and quality of life.

Another striking feature was the low economic class, calculated based on housing and living conditions. Several studies have shown that this public tends to have a low income.[6,10,12-14] Such circumstances occur due to the conditions to which they were subjected throughout the

historical formation of the community, which manifests in diseases and health problems arising from the process of marginalization to which they are exposed.[11]

In this investigation, the presence of AH was high, similar to the percentages found in the literature, which vary between 26% and 52.5%.[10,13,15-16] However, this prevalence cannot be compared, considering the diversity of methods used in other studies, mainly regarding population sampling.

As for the time of diagnosis, the results obtained were contrary to the cross-sectional survey carried out with the quilombola population in the state of Sergipe, which demonstrated a mean duration of 9.59 years living with AH.[10] However, comparing this aspect with that of other communities can result in errors, since it is conditioned by the presence of several other factors, such as the presence and quality of health services in the community, providing an early diagnosis; schooling, increasing the level of information; means of transport, favoring travel to the health service; and income.

Regarding gender, of this percentage that self-reported AH, over half were women, thus implying a statistically significant association between the variables sex and mean SBP, thus enabling the affirmation of a higher prevalence of the disease in females. However, a cross-sectional study obtained a contradictory result, showing greater male influence for AH.[12]

Likewise, an ecological study, when comparing the prevalence of AH among men and women living in the community of Agrovila, located in the state of Amazonas, identified a percentage of 23.31% in the female population over 18 years old and 5.93% in men over 18 years of age, which represented a 3.934 times higher risk for the prevalence of AH among women compared to men, a factor that should not be justified as a mere coincidence.[17] In contrast, research conducted with the same type of population group in question, found no statistically significant difference between genders and elevated blood pressure levels.[3,10,13] With regard to BP classification, the majority presented normal blood pressure values; however, the rate of pre-hypertensive individuals

was slightly elevated, which calls attention to a possible increase in the occurrence of hypertension in this community, since pre-hypertensive individuals can progress to AH.

Regarding BMI, it was observed that the majority of the studied population was within the normal range, with a low rate of overweight. These data corroborate the cross-sectional study carried out in the quilombola community of Tomé Nunes-Bahia, which, when analyzing the prevalence of overweight and associated factors in 112 adult members of a quilombola community, identified 66.1% normal and 27.7% overweight.[9] However, these results differ from other findings in the literature where studies reported a high rate of overweight / obesity, consumption of fatty foods and salt.[3,12,14]

Although BMI calculation is the tool used most in research to classify obesity, it is not able to distinguish lean mass from adipose mass, nor differentiate the distribution of body fat or detect the increase in fat, and may be less accurate in older individuals, due to the loss of lean mass and weight reduction, and overestimated in muscular individuals.[18] When analyzing the values obtained with the measurement of WC, the prevalence of a non-obese classification was found, this finding being on the contrary to that obtained in cross-sectional studies performed with residents of the quilombola community of Codó, in Maranhão, at a different period of time.[16.19]

When analyzing lifestyle, the results were satisfactory. There was a greater range of participants who never consumed alcoholic beverages and who were not smokers, equivalent to the results obtained in the study carried out with the quilombola community of Alcântara, state of Maranhão, which showed a predominance of 75% non-alcohol drinkers and 77% non-smokers.[20] However, most of the literature is contradictory, showing that the consumption of alcoholic beverages and the use of tobacco is high in this type of population.[6,10,14,21] In continuity, it was observed that the practice of some type of physical exercise was presented in a positive form. When investigating this variable, the type of work performed by the participant was taken

into account, since the majority of the community practices subsistence agriculture, which requires physical effort and walking.

As for eating habits, consumption of fruit, vegetables and salads was identified. This result corroborated a cross-sectional study carried out with adult individuals from ten quilombola communities in Bahia, which found a percentage of 77.8% for fruit consumption and 81.4% for vegetables.[22] Likewise, high percentages were obtained for ultra-processed products, such as biscuits and carbonated drinks, which are rich in sugar, oils, fats and substances synthesized in the laboratory from food and other organic sources, constituting a risk factor for the development of non-transmissible chronic disease.[18]

Regarding the consumption of processed sausage meat or canned foods, the results were positive, demonstrating that the majority reported not consuming this type of food. In contrast, the consumption of processed products, such as fried snacks, was high. This type of food is produced by adding salt, sugar, oil or vinegar, which are harmful to health when used in excess.[18]

The use of industrialized spices was shown to be high; in contrast, a study carried out with 213 individuals from the quilombola community Boqueirão, located in the rural area of the municipality of Vitória da Conquista, in the State of Bahia, obtained a low percentage for their use, presenting a greater preference for homemade spices.[6] Such a result obtained in the sample merits attention, since this type of product is rich in sodium, the excessive consumption of which represents one of the main risk factors for AH, associated with cardiovascular and renal events.[8]

Despite the high consumption of industrialized spices, the participants stated that they did not add salt to the food after being served, which constitutes a favorable variable against the development of AH. However, generalizations cannot be used for other Brazilian communities, because when studying quilombolas in the State of Sergipe, a negative answer was obtained for the question "add salt to the food served".[10] Regarding the recommendations on healthy eating, the majority stated that they had never received this type of guidance, unlike a cross-sectional

study carried out with adults from ten quilombola communities in southwest Bahia, which found that 67.0% of the participants affirmed they had received guidance on healthy eating.[22]

Regarding regular visits to the health service, studies have reported a contradictory follow-up to that found in this research.[22-23] However, this comparison is biased, since one must consider the reality to which each community in question is submitted, in that their geographic location is predominantly rural and therefore distant from the Basic Health Unit that serves this region, in addition to the lack of public and private transportation to commute to and from the Basic Health Unit.

The association between BP values and age group was analyzed, obtaining statistical significance. Likewise, an observational study conducted in the Mata Cavalo community, in Minas Gerais, found a prevalence of AH in the age groups above 40 years old.[13] Researchers claim that as the quilombola population ages, the number of hypertensive individuals tends to increase.[10]

The association between the variable "has AH" and the variables related to "lifestyle and food" among the participants was analyzed, with significance to the variable "recommendations on food', demonstrating that the occurrence of an unsatisfactory level of assistance and the low demand for health services can favor the onset of various diseases, including AH. It was also observed that the result obtained from the correlation between mean systolic and diastolic blood pressure with BMI and WC corresponded to those found in quilombolas in the mid São Francisco of Bahia.[9]

Statistical significance was found when correlating the mean systolic and diastolic blood pressure with the BMI and WC of the participants, as well as identified in a cross-sectional study carried out with black populations in the municipality of Salvaterra, on Ilha do Marajó. The latter study also found that the systolic and diastolic pressures had a weak, but significant positive correlation with WC, demonstrating that the blood pressure grows gradually and simultaneously with the WC measurement.[12]

In this study, the statistical association between socioeconomic and sociodemographic variables with mean SBP and mean DBP was also analyzed, obtaining significant associations consistent with findings in the literature, which demonstrates that gender and income are determining and conditioning factors for the development of AH, and also showed a higher percentage of married hypertensive individuals.[5,11,14] The promotion of self-care through health education is a fundamental tool in the control of systemic arterial hypertension and / or Diabetes Mellitus. Health professionals need to seek actions together with the community in order to identify their difficulties and plan interventions based on the needs of that reality.[24]

Finally, some limitations need to be considered. The first is related to the transversal character of the study, which makes it impossible to establish causal relationships since it does not reveal the existence of a temporal sequence between exposure to the factor and the later development of the disease. Another limitation concerns the scarcity of studies on the subject, making it difficult to compare results.

Conclusion

The factors associated with the development of AH in the quilombola community studied were low education and income, high consumption of industrialized spices, biscuits, fried snacks and carbonated drinks, as well as a lack of nutritional guidance and low procurement of health services.

The results obtained enable interventions aimed at the real needs of individuals within this community. Studies of this nature contribute as a preventive measure facilitating the control of chronic diseases. Therefore, an attempt is made to engage community leaders in order to negotiate with the public authorities to achieve favorable public policies.

In the same way, it is sought to change the work philosophy of the Family Health team in order to plan and expand health education actions seeking to meet the needs of the population who

live in this location. Along the same lines, to encourage home visits to be carried out, thus promoting greater continuity of health care and enabling the creation of bonds with the health workers.

References

1. Machado JC, Cotta RMM, Moreira TR, Silva LS. Análise de três estratégias de educação em saúde para portadores de hipertensão arterial. Ciênc Saúde Colet. 2016;21(2):611-20. doi: https://doi.org/10.1590/1413-81232015212.20112014

2. Malta DC, Bernal RTI, Andrade SSCA, Silva MMA, Velasquez-Melendez G. Prevalência e fatores associados com hipertensão arterial autorreferida em adultos brasileiros. Rev Saúde Pública. 2017; 51(Suppl 1):1-11. doi: 10.1590/s1518-8787.2017051000006

3. Belfort IKP, Avelar MF, Nunes JDC, Monteiro SCM. Elevação de níveis pressórios em uma comunidade quilombola. Rev Bras Promoç Saúde. 2017;30(3):1-8. doi: https://doi.org/10.5020/18061230.2017.6135

4. Barreto NDM, Pacheco JRB, Marins SR, Magalhães CF, Cardoso GP, Houaiss M. Prevalência da hipertensão arterial nos indivíduos de raça negra. Arq Bras Med. 1993;67(6):449-51.

5. Bezerra VM, Andrade ACS, Medeiros DS, Caiaffa WT. Pré-hipertensão arterial em comunidades quilombolas do sudoeste da Bahia, Brasil. Cad Saúde Pública. 2017;33(10):e00139516. doi: https://doi.org/10.1590/0102-311x00139516

6. Silva TSS, Bonfim CA, Leite TCR, Moura CS, Belo NO, Tomazi, L. Hipertensão arterial e fatores associados em uma comunidade quilombola da Bahia, Brasil. Cad Saúde Colet. 2016;24(3):376-83. doi: https://doi.org/10.1590/1414-462x201600030068

7. Ministério da Saúde (BR). Orientações para coleta e análise de dados antropométricos em serviços de saúde: norma técnica do sistema de Vigilância Alimentar e Nutricional - SISVAN. Brasília (DF): Ministério da Saúde; 2011.

8. Malachias MVB, Póvoa RMS, Nogueira AR, Souza D, Costa LS, Magalhães ME, et al. 7th Brazilian guideline of arterial hypertension. Arq Bras Cardiol. 2016;107(Supl 3):1-83. doi: https://doi.org/10.5935/abc.20160153

9. Mussi RFF, Queiroz BM, Petróski EL. Excesso de peso e fatores associados em quilombolas do médio São Francisco baiano, Brasil. Ciênc Saúde Colet. 2018;23(4):1193-200. doi: https://doi.org/10.1590/1413-81232018234.03662016

10. Santos DMS, Prado BS, Oliveira CCC, Almeida-Santos MA. Prevalência da hipertensão arterial sistêmica em comunidades quilombolas do estado de Sergipe, Brasil. Arq Bras Cardiol. 2019;113(3):383-

90. doi: https://doi.org/10.5935/abc.20190143

11. Santos RC, Silva MS. Condições de vida e itinerários terapêuticos de quilombolas de Goiás. Saúde Soc. 2014;23(3):1049-63. doi: https://doi.org/10.1590/S0104-12902014000300025

12. Cordovil YF, Almeida SS. Variáveis antropométricas e fatores de risco cardiovascular associados em Quilombolas Marajoaras. RBONE [Internet]. 2018 nov [acesso em 2019 nov 21];12(71):406-15. Disponível em: http://www.rbone.com.br/index.php/rbone/article/view/718

13. Santos EC, Scala LCN, Silva AC. Prevalência de hipertensão arterial e fatores de risco em remanescentes de quilombos, Mato Grosso, Brasil. Rev Bras Hipertens [Internet]. 2015 dez [acesso em 2019 dez 01];22(3):100-5. Disponível em: http://docs.bvsalud.org/biblioref/2018/03/881238/rbh_v22n3_100-105.pdf

14. Melo MFT, Silva HP. Doenças crônicas e os determinantes sociais da saúde em comunidades quilombolas do Pará, Amazônia, Brasil. Rev ABPN [Internet]. 2015 [acesso em 2019 dez 15];7(16):168-89. Disponível em: https://www.abpnrevista.org.br/index.php/site/article/view/103

15. Pauli S, Bairros FS, Nunes LN, Neutzling MB. Prevalência autorreferida de hipertensão e fatores associados em comunidades quilombolas do Rio Grande do Sul, Brasil. Ciênc Saúde Colet. 2019; 24(9):3293-303. doi: https://doi.org/10.1590/1413-81232018249.28002017

16. Castro, M. M. S. Hipertensão arterial e fatores associados: um estudo em comunidades de afrodescendentes quilombolas no maranhão [monografia]. São Luís: Universidade Federal do Maranhão; 2015. Curso de Medicina.

17. Mariosa DF, Ferraz RRN, Santos-Silva EN. Influência das condições socioambientais na prevalência de hipertensão arterial sistêmica em duas comunidades ribeirinhas da Amazônia, Brasil. Ciênc Saúde Colet. 2018;23(5):1425-36. doi: https://doi.org/10.1590/1413-81232018235.20362016

18. Associação Brasileira para o Estudo da Obesidade e da Síndrome Metabólica. Diretrizes brasileiras de obesidade 2016. 4ª ed. São Paulo: Associação Brasileira para o Estudo da Obesidade e da Síndrome Metabólica; 2016.

19. Fonseca RLM. Dislipidemia em comunidades de afrodescendentes quilombolas no Maranhão [monografia]. São Luís: Universidade Federal do Maranhão; 2016. Curso de Medicina.

20. Silva CM. Avaliação da gordura visceral por tomografia computadorizada em hipertensos de população quilombola de Alcântara-MA [monografia]. São Luís: Universidade Federal do Maranhão; 2017. Curso de Medicina.

21. Freitas IA, Rodrigues ILA, Silva IFS, Nogueira LMV. Perfil sociodemográfico e epidemiológico de uma comunidade quilombola na Amazônia Brasileira. Rev Cuid. 2018;9(2):2187-200. doi: https://doi.org/10.15649/cuidarte.v9i2.521

22. Bezerra VM, Caiaffa WT, Andrade ACS, César CC. Desconhecimento da hipertensão arterial e seus determinantes em quilombolas do sudoeste da Bahia, Brasil. Ciênc Saúde Colet. 2015;20(3):797-807. doi: https://doi.org/10.1590/1413-81232015203.14342014

23. Andrade AO, Aguiar MIF, Almeida PC, Chaves ES, Araújo NVSS, Freitas Neto JB. Prevalência da hipertensão arterial e fatores associados em idosos. Rev Bras Promoç Saúde [Internet]. 2015 [acesso em 2019 nov 21];27(3):303-11. Disponível em: https://periodicos.unifor.br/RBPS/article/view/2729

24. Oliveira MSN, Almeida GBS, Chagas DNP, Salazar PR, Ferreira LV. Autocuidado de idosos diagnosticados com hipertensão arterial e/ou diabetes mellitus. Rev Enferm UFSM. 2017;7(3): 490-503. doi: https://doi.org/10.5902/2179769226344

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