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Cardiovascular risk factors in older adults of a *quilombola* community

Fatores de risco cardiovascular em idosos de uma comunidade quilombola

Factores de riesgo cardiovascular en ancianos de una comunidad quilombola

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ABSTRACT

Objective: to describe the frequency of cardiovascular risk factors in the older adults of a *quilombola* community. **Method**: in this cross-sectional study of 62 older adults of a *quilombo* registered with Brazil's Family Health Strategy, the data collected were analyzed using the Chi-square test. **Results:** risk factor frequencies were: 67.7% for arterial hypertension; 54.8%, abdominal adiposity; 22.6%, high capillary blood glucose; 19.4%, overweight; 3.2%, sedentary lifestyle; and 3.2%, smoking. Statistical difference was observed only for abdominal adiposity in older, white women ($p<0.05$). **Conclusion:** this study identified a high frequency of cardiovascular risk factors in *quilombola* older adults treated in primary health care, particularly arterial hypertension, abdominal adiposity, and high capillary blood glucose. These results indicate the need to improve *quilombola* communities' access to health services.

Descriptors: Aged; Cardiovascular Diseases; Risk Factors; Primary Health Care.

RESUMO

Objetivo: descrever a frequência dos fatores de risco cardiovascular em idosos de uma comunidade quilombola. **Método:** estudo transversal desenvolvido com idosos quilombolas cadastrados na Estratégia Saúde da Família. A coleta foi realizada com uma amostra de 62 idosos, utilizando-se o teste do qui-quadrado para análise dos dados. **Resultados:** as frequências dos fatores de risco foram: 67,7% de hipertensão arterial, 54,8% de adiposidade abdominal, 22,6% de glicemia capilar elevada, 19,4% de excesso de peso, 3,2% de sedentarismo e 3,2% de tabagismo, com diferença estatística apenas para adiposidade abdominal em idosas de cor branca ($p<0,05$). **Conclusão:** o estudo identificou elevada frequência de fatores de risco cardiovasculares nos idosos quilombolas atendidos na atenção primária à saúde, com destaque para hipertensão arterial, adiposidade abdominal e glicemia capilar elevada. Os resultados apontam a necessidade de melhoria de acesso da comunidade quilombola aos serviços de saúde.

Descritores: Idoso; Doenças Cardiovasculares; Fatores de Risco; Atenção Primária à Saúde.

RESUMEN

Objetivo: describir la frecuencia de factores de riesgo cardiovascular en los adultos mayores de una comunidad quilombola. **Método:** en este estudio transversal de 62 adultos mayores de un quilombo inscrito en la Estrategia de Salud de la Familia de Brasil, los datos recolectados se analizaron mediante la prueba de Chi-cuadrado. **Resultados:** las frecuencias de los factores de riesgo fueron: 67,7% para la hipertensión arterial; 54,8%, adiposidad abdominal; 22,6%, glucemia capilar elevada; 19,4%, sobrepeso; 3,2%, sedentarismo; y 3,2%, tabaquismo. Se observó diferencia estadística solo para la adiposidad abdominal en mujeres blancas mayores ($p <0.05$). **Conclusión:** este estudio identificó una alta frecuencia de factores de riesgo cardiovascular en adultos mayores quilombolas tratados en atención primaria de salud, particularmente hipertensión arterial, adiposidad abdominal y glucemia capilar alta. Estos resultados indican la necesidad de mejorar el acceso de las comunidades quilombolas a los servicios de salud.

Descriptores: Anciano; Enfermedades Cardiovasculares; Factores de Riesgo; Atención Primaria de Salud.

INTRODUCTION

Aging is considered a physiological, progressive, and dynamic process characterized by organic changes that can result in reduced capacity of adaptation in the organism, causing a series of health complications.

Advancing age is known to lead to the presence of chronic and disabling diseases that can have an impact on people's autonomy. In 2013, only 22.3% of the Brazilian older adults reported not having any chronic disease. Approximately half of them (48.6%) reported having one or two chronic diseases, and 29.1%, three or more. Among the reported diseases, there is a predominance of cardiovascular diseases (CVDs)[1].

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The association between longevity and the increased occurrence of chronic diseases is known in the literature, signaled by higher morbidity due to CVDs in older individuals. CVDs are growing rapidly due to inadequate life habits, which thus increases the need to know the health status and the risk factors involved in the onset of these diseases[2].

CVDs are examples of complex diseases, i.e., those that have a genetic and environmental component in their etiology. A study documents that ethnicity was significantly associated with most of the adverse outcomes in the health indicators even after controlling the main sociodemographic factors[3]. Currently, cardiovascular diseases are the leading cause of death in the five Brazilian regions and are more prevalent among low-income individuals[4].

A study assessing the cardiovascular risk factors found that brown- and black-skinned individuals, numerous in quilombola communities[5], are the most vulnerable groups.

Quilombola communities involve the participation of ethnic-racial groups according to the self-attribution criterion, with specific territorial relations, and with a presumption of black ancestry related to the resistance to historical oppression[6]. Quilombos were created during the slavery period in Brazil, although currently they are not necessarily related to this type of occupancy[7].

The historical trajectory of the black-skinned population in Brazil shows that these individuals have been fighting for better health conditions and Quality of Life (QoL). In view of several demonstrations and of racial inequalities in Brazil, the National Policy of Integral Health of the Black Population (*Política Nacional de Saúde Integral da População Negra*, PNSIPN) was created with the objective, among others, of increasing the access of black-skinned individuals, particularly those belonging to quilombola communities, to health actions and services[8].

Generally, quilombola communities are located in the rural area, have high levels of illiteracy, and present precarious conditions of living, sanitation, housing, and access to the health services. Furthermore, these ethnic-racial groups underwent a historical process of expropriation of their culture and rights, which is reflected in their health indicators[7]. Given the persistence of racial disparities, diverse systematic evidence shows that black-skinned people have a higher incidence of diseases and die earlier, regardless of the age group[3].

An intensification of social and political actions directed to these communities is observed; however, despite the increase in the number of such actions, the studies still demonstrate that the human development indicators in these sites are still unequal and characterized as lower in relation to the general society[6].

In view of the above, the aim of this study was to describe the frequency of cardiovascular risk factors in older adults from a quilombola community.

METHOD

A descriptive and cross-sectional study was conducted in a quilombola community located in the rural area of a municipality in the state of Piauí, Brazil[8]. The community has access to the services provided by the Family Health Strategy (FHS), including the following: medical visits, nursing visits, monitoring of hypertensive and diabetic patients, visits by a community health agent, and home visits. Therefore, the FHS team provided support for data collection, which consisted of visits to all the households with older adults in the assigned area.

The study population comprised 62 older adults, selected according to the following inclusion criteria: being 60 years old or older, residing in the quilombola community, not being bedridden, and being registered in the Family Health Unit (FHU). The 62 older adults living in the community met the inclusion criteria and were thus included in the sample.

Before data collection, a survey of the older adults living in the community was conducted using the existing registry from the FHU in which the participants are treated and followed-up. This stage took place from August to October 2018 by means of home visits for the measurement of blood pressure, random blood sugar level, and collection of anthropometric measures such as: weight, height, abdominal circumference (AC), and calculation of the Body Mass Index (BMI).

Data was collected using an instrument including the sociodemographic variables (age, gender, marital status, race, income, schooling, and occupation) and the cardiovascular risk factors (smoking, alcohol intake, sedentarism, obesity, blood sugar levels, and arterial hypertension).

With regard to smoking, the participants of the sample were asked on their smoking habits, and those reporting to smoke at the time of the interview were considered smokers. Similarly, alcohol intake was assessed by asking the participants whether they consumed alcoholic beverages until that moment. Those respondents who reported not performing any physical activity were classified as sedentary. For the older adults who reported to be physically active, the frequency and type of physical activity was asked: jogging, cycling, swimming, aquarobics, dancing, or just riding a bicycle[9].

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Obesity was classified by means of weight and height values and the subsequent calculation of the Body Mass Index (BMI). Using the formula BMI=Weight(kg)/[Height]²(m), older adults with a BMI ≥ 30 kg/m² were classified as obese[7]. Weight was measured using an Even® electronic scale with a maximum capacity of 300 kg, with the participant barefoot and wearing light clothing and accessories. Height was measured using a portable stadiometer, with the volunteers in a standing position with the head raised and the arms extended along the body.

AC was measured with an inextensible 1.5 m measuring tape with 0.5 cm accuracy. The tape was positioned at the midpoint between the costal border and the illiac crest. Values for increased AC were set at ≥ 94 cm for men and at ≥ 80 cm for women[10].

The participants' blood pressure (BP) was measured using a stethoscope and a sphygmomanometer, by the indirect method, with a properly sized cuff. Three BP measurements were taken (with a one-minute interval between each). These measures were obtained at the end of the interview, in order to ensure that the individuals were at rest, seated, with the legs uncrossed, the feet resting on the floor, the back resting on the chair, relaxed, the left arm resting on the table at the heart level, the palm of the hand facing up, and with no clothes that could create a tourniquet to the limbs. Moreover, it was ensured that the participants were not with a full bladder, had not practiced physical activities for the last 60 minutes before the measurement, and had not consumed alcoholic beverages, coffee, food, or had smoked for the last 30 minutes before the measurement. High BP was defined as systolic BP ≥ 140 mmHg and diastolic BP ≥ 90 mmHg[11].

Blood sugar levels were measured using an *On Call® Plus* glucometer and a sterile lancet to collect a blood drop from participants' finger. Altered sugar levels were those with a result ≥ 200 mg\dl[12].

Data was tabulated and analyzed in IBM SPSS Statistics®, version 20.0, based on the frequency distribution, and the statistical differences were verified using the chi-square test. Statistical significance was set at $p < 0.05$.

In order to ensure compliance with the ethical principles, the study participants were interviewed in their homes, were informed about the objectives of the research, and received the Free and Informed Consent Form. Therefore, data collection was initiated only after the older adults gave their consent and signed the aforementioned form. The project was approved by the Research Ethics Committee under opinion No. 2,746,707.

RESULTS

According to the sociodemographic characterization of the older adults, it was observed that most of the participants were women (56.5%), aged from 70 to 79 years old (50%), married (67.7%), did not have any occupation (64.5%), were Catholic (93.5%), black-skinned (51.6%), illiterate (66.1%), and had an income of one minimum wage (100%).

The most prevalent cardiovascular risk factors among the older adults were arterial hypertension (67.7%), increased AC (54.8%), and altered blood sugar levels (22.6%), as shown in Table 1.

TABLE 1: Distribution of the cardiovascular risk factors, according to the gender of the older adults (n=62). Picos-PI, Brazil, 2018.

Risk factors		Gender						
		Male		Female		p*	Total	
		n	%	n	%		n	%
Smoking	Yes	1	1.6	1	1.6	0.685**	2	3.2
	No	26	41.9	34	54.8		60	96.8
Sedentarism	Yes	-	-	2	3.2	0.500**	2	3.2
	No	27	43.5	33	53.2		60	96.8
Obesity	Yes	5	8.1	7	11.3	0.884*	12	19.4
	No	22	35.5	28	45.2		50	80.6
Increased AC	Yes	8	12.9	26	41.9	<0.001*	34	54.8
	No	19	30.6	9	14.5		28	45.2
High BP	Yes	15	24.2	27	43.5	0.071*	42	67.7
	No	12	19.4	8	12.9		20	32.3
Altered blood sugar levels	Yes	6	9.7	8	12.9	0.953*	14	22.6
	No	21	33.9	27	43.5		48	77.4

*Pearson's x^2; **Fisher's Exact Test.

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The frequencies of arterial hypertension, abdominal adiposity, blood sugar levels, overweight, sedentarism, and smoking were, respectively, 43.5% for older women and 24.2% for older men (p>0.05), 41.9% for older women and 12.9% for older men (p<0.05), 12.9% for older women and 9.7% for older men (p>0.05), 11.3% for older women and 8.1% for older men (p>0,05), and 3.2% for older women (p>0.05) and 1.6% for older men (p>0.05).

Table 2 shows that the cardiovascular risk factors (CVRFs) were more frequent among older adults in the age group from 70 to 79 years old, compared to those of the other age groups, including sedentarism (50.0%), hypertension (38.7%), and increased AC (32.3%). No significant statistical association was observed between the older adults' age group and the CVRFs.

TABLE 2: Distribution of the cardiovascular risk factors, according to the age group (n=62). Picos-PI, Brazil, 2018.

Risk factors		Age group						p*	Total	
		60 ├69		70 ├79		80 and over				
		n	%	n	%	n	%		n	%
Smoking	Yes	-	-	2	3.2	-	-	0.356	2	3.2
	No	24	38.7	29	46.8	7	11.3		60	96.8
Sedentarism	Yes	22	35.5	31	50.0	7	11.3	0.195	60	96.8
	No	2	3.2	-	-	-	-		2	3.2
Obesity	Yes	6	9.7	4	6.5	2	3.2	0.428	12	19.4
	No	18	29.0	27	43.5	5	8.1		50	80.6
Increased AC	Yes	11	17.7	20	32.3	3	4.8	0.307	34	54.8
	No	13	21	11	17.7	4	6.5		28	45.2
High BP	Yes	14	22.6	24	38.7	4	6.5	0.264	42	67.7
	No	10	16.1	7	11.3	3	4.8		20	32.3
Altered blood sugar levels	Yes	4	6.5	7	11.3	3	4.8	0.345	14	22.6
	No	20	32.3	24	38.7	4	6.5		48	77.4

*Pearson's x^2

In relation to the association of the skin color with the RFs, a statistically significant association was only observed with increased AC (p=0.003). Among the investigated risk factors, sedentarism (51.6%) and high BP (40.3%) were the most prevalent among the black-skinned older adults (Table 3).

TABLE 3. Association of the cardiovascular risk factors with the skin color of the older adults. Picos-PI, 2018.

Risk factors		Skin color						p*	Total	
		Black		White		Other				
		n	%	n	%	n	%		n	%
Smoking	Yes	1	1.6	-	-	1	1.6	*0.186	2	3.2
	No	31	50.0	24	38.7	5	1.6		60	96.8
Sedentarism	Yes	32	51.6	23	37.1	5	8.1	*0.139	60	96.8
	No	0		1	1.6	1	1.6		2	3.2
Obesity	Yes	3	4.8	7	11.3	2	3.2	*0.111	12	19.4
	No	29	46.8	17	27.4	4	6.5		50	80.6
Increased AC	Yes	11	17.7	18	29.0	5	8.1	**0.003	34	54.8
	No	21	33.9	6	9.7	1	1.6		28	45.2
High BP	Yes	25	40.3	14	22.6	3	4.8	*0.180	42	67.7
	No	7	11.3	10	16.1	3	4.8		20	32.3
Altered blood sugar levels	Yes	6	9.7	7	11.3	1	1.6	*0.616	14	22.6
	No	26	81.2	17	70.8	5	83.3		48	77.4

*Likelihood ratio test; **Chi-square test

DISCUSSION

The higher percentage of older women observed in the present research corroborates with data published in other studies[13,14]. According to the 2010 Demographic Census, women live a mean of 7.6 years longer than men[8].

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The predominance of women in practically all the age groups, as evidenced by the increased female life expectancy, has been markedly growing in Brazil according to several population-based studies, such as the National Household Sample Survey (*Pesquisa Nacional por Amostras de Domicílios*, PNAD)[15]. The findings of the study are in line with those of international studies, probably due to early mortality among men, with a consequent longer life expectancy among women, which can explain the higher number of women in the studies conducted with older adults.

The predominance of an older adult population in the age group from 70 to 79 years old was consistent with a survey conducted with older adults from 15 Brazilian capital cities and from the Federal District (55.4%)[16]. This fact can have an influence on the health conditions, since most individuals of very advance age are more fragile and require more complex services.

With regard to marital status, the majority of the older adults under study was married, a result similar to the one found in a study that investigated the RFs among older adults in Minas Gerais[17]. The fact of the older adults being married can increase the probability of adherence to the treatment of cardiovascular diseases, since it is known that family support is of utmost importance in disease treatment and prevention[18].

As for schooling, 66.1% of the participants reported having never studied, a higher percentage than that observed in study on cardiovascular RFs among older adults in the inland of Minas Gerais[17]. Low schooling among the quilombola older adults can be explained by the history of slavery among the black-skinned population, which had been excluded from society and had their rights denied for many years; additionally, since the participants live in a rural community, low schooling can be associated with difficulties in accessing the schools.

The participants' low income can be a factor that hinders prevention and control of the cardiovascular RFs, as well as the adoption of healthy life habits.

With regard to skin color, 51.6% of the respondents self-reported as black-skinned, a result in line with a study conducted with older adults in Bahia[19], in which 56% of the participants were black-skinned. Some transformations have been observed in the racial composition of the Brazilian older population, since there was a greater percentage of white-skinned older adults in 2000, followed by brown- and black-skinned individuals and, in 2010, according to the Brazilian demographic census[8], there was a decrease in the proportion of white-skinned older adults and an increase in the number of brown- and black-skinned older adults.

The inequality regarding access to the health system perceived among the black-skinned community is a consequence of the long-lasting neglect to their social rights, which reflects in the reduced well-being of this population during the aging process[13].

In relation to lifestyle, the high frequency of sedentarism among the participants corroborates with the findings of a study conducted in Floriano-PI, which identified that 74.8% of the older adults were sedentary[17]. Another study conducted in quilombola communities located in the North of Minas Gerais, also presented a positive association ($p < 0.001$) between sedentarism and the development of chronic non-communicable diseases (CNCDs), especially among men. The sedentarism identified in older adults belonging to the quilombola communities can be associated with factors such as social inequality, limited quality of life, low schooling, and poor access to information, factors that reflect the vulnerability of this social group in countless domains[20].

Central obesity was found in 54.8% of the older adults under study, being the most prevalent RF among women (45.2%) and black-skinned older adults (51.6%), in agreement with a research study conducted in Vitória da Conquista-BA with quilombola people, in which a higher prevalence of obesity among women was evidenced[21].

Central obesity represents a relevant issue in the health care setting and can be associated, even in part, with nutritional transition, as well as with the demographic and epidemiological transformations. Furthermore, its predominance among women is probably due to the accumulation of fat in the abdominal region caused by the frequent metabolic and hormone dysfunctions in women over the years[22].

The accumulation of abdominal fat in females is related to the metabolic change marking the climacteric period and characterized by reduced levels of lipoprotein lipase, which is responsible, along with estrogen, of regulating fat accumulation and its distribution in the tissues. There is a trend of perivisceral fat accumulation, with the development of an android pattern of fat distribution[23].

The RF of arterial hypertension was highly frequent among the older adults, affecting 67.7%. This result is similar to that found in another research study[4] and higher than those of a study conducted in Porto Alegre-RS, in which 40% of older adults had arterial hypertension[24]. AH a highly prevalent condition in Brazil that often presents associated comorbidities and has a high mortality risk. It is considered one of the biggest risk factors for cardiovascular diseases, with repercussions in the individuals' quality of life[4].

The prevalence of older women (43.5%) with arterial hypertension was higher than that observed in older men (24.2%). This finding diverges from that of a study conducted in Rio Grande do Sul, in which hypertension was higher

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among men. SAH was the main RF for the onset of cardiovascular diseases caused by the combination of other predicting risk factors for cardiovascular events, such as obesity and dyslipidemias[24].

A cross-sectional study conducted in the state of Sergipe shows that there is a high prevalence of SAH (26%) in quilombola communities compared to estimates for the general population (20.4%) in that state. Additionally, a number of studies with the general population developed both in Brazil and in other countries signal the prevalence of SAH as the individual ages. Another relevant evidence is that the black-skinned community has a greater predisposition to arterial stiffness in relation to the other ethnicities[14].

It is worth highlighting that 59.5% of the hypertensive older adults were black-skinned. Among black-skinned individuals, the prevalence and severity of hypertension are higher, which can be related to ethnical and/or socioeconomic factors. In Brazil, there is a predominance of mixed-race individuals, who can differ from the black-skinned people with regard to the characteristics of hypertension[16].

The limitation of this study consisted in the difficulty in accessing the homes of the quilombola older adults, a fact that is intrinsically related to the low demand of this community for the services provided in the FHU. Therefore, the need is ratified to perceive the quilombola populations from an equitable perspective, because this collective is historically surrounded by inequalities (due to precarious conditions in the rural area with lack of basic sanitation, to difficulties in accessing the health services, and to low income) or even by the remnants of a cultural heritage that lead to the social, cultural, and economic marginalization of this community.

CONCLUSION

The present study identified a high frequency of cardiovascular risk factors among the quilombola older adults treated in primary health care, especially regarding arterial hypertension, abdominal adiposity, and blood sugar levels. The results point to the need of improving the access of the quilombola community to the health services.

Humanized and individual care of the quilombolas should effectively ensure access to the health actions and services and must be part of the actions conducted by the primary health care teams involved in the continuous cardiovascular follow-up of the older adults living in the rural area.

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