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ORIGINAL ARTICLE

RISK ESTIMATION OF CARDIOVASCULAR DISEASES AMONG INDIGENOUS ADULTS OF THE KRENAK ETHNICITY, MINAS GERAIS, BRAZIL

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ABSTRACT

Objective: to estimate the risk of cardiovascular diseases in indigenous Krenak through the Framingham Cardiovascular Risk Score. **Methodology:** cross-sectional epidemiological study conducted with indigenous people aged 30 to 74 years, in Indigenous Land located in the eastern region of Minas Gerais, Brazil. The data collected were: weight and height to calculate BMI, measurement of blood pressure and casual capillary blood glucose, sex, age and smoking. The cardiovascular risk estimated at 10 years was calculated from the Framingham Score algorithm. In addition, normal cardiovascular risk, optimal cardiovascular risk and cardiovascular age were calculated. The sample was characterized with the presentation of absolute and relative frequencies of the variables that make up the cardiovascular risk score of Framingham, stratified by sex. **Results:** it was observed that cardiovascular risk at 10 years among the Krenak indigenous was higher than normal risk, as well as cardiovascular age was higher than chronological age, although most of the sample had a low cardiovascular risk at 10 years, no statistical difference between the sexes. **Conclusion:** despite the predominance of low cardiovascular risk in 10 years among the Krenak indigenous, the result of cardiovascular age above chronological age can cause morbidity and mortality from cardiovascular diseases over time in this population.

Keywords: Risk Factors. Cardiovascular Diseases. South American Indians. Comumunity Health Nursing.

INTRODUCTION

Cardiovascular diseases (CVD) represent the main cause of morbidity and mortality in the world and are responsible for one third of all deaths. In addition, they constitute one of the main causes of hospitalization, invalidity pensions and granting of sick leave, which causes a great social and economic burden[1].

Framingham's pioneering study demonstrated the indisputable role of dyslipidemia, systemic arterial hypertension (SAH), smoking, *diabetes mellitus* (DM) and age in the genesis of CVD[2]. In addition to these, other factors are already well described in the literature, such as central obesity, sedentary lifestyle, psychosocial factors and the diet characterized by high consumption of red and processed meats, high-fat dairy, of sugary drinks and refined grains[1].

In several parts of the world, records of Chronic Non-Communicable Diseases (NCDs) in indigenous peoples are increasingly frequent and concomitant to the important transformations in the ways of life and environmental conditions that take place from the growing contact with non-indigenous and with the economies of local markets. These transformations are permeated by frequent elements in this type of scenario, such as territorial losses and environmental degradation, violence, marginalization and health inequities, keeping local specificities[3]. Data from the World Bank for Social Development estimate that indigenous people represent about 4.5% of

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the global population and are among the poorest 10% in the world, with health indicators worse than national averages[4]. In many countries, the persistent prevalence of malnutrition among indigenous people has been accompanied by increased overweight and obesity, a phenomenon known as "double burden of malnutrition", since they share the same determinants (maternal, infant, socioeconomic, biological, genetic and nutritional factors)[5].

A similar scenario can be observed among indigenous peoples in Brazil. Although still scarce, the literature points to the relevant presence of cardiovascular risk factors among Brazilian indigenous people[6]. SAH, DM, dyslipidemias, abdominal obesity and overweight were observed in studies conducted with the ethnicities Khisedjê[7], Aruák[8], Guarani-Mbya[9], Xavante[10], Munduruku[11], Krenak[12], Kaingang[13] and Terena[14], at the national level, through the records of the Mortality Information System (SIM), of the Ministry of Health (MS)[15].

In the case of the determination of cardiovascular risk in 10 years, so far only one study has investigated this estimate in a Brazilian indigenous population. This study was conducted with the indigenous Xavante from Volta Grande, Mato Grosso, aged 20 years or more of both sexes. The authors observed a high prevalence of cardiovascular risk at 10 years for both sexes (20.9%)[10]. High rates of cardiovascular risk have also been observed in indigenous people from other parts of the world, such as Australia, which already has the main cause of death among indigenous people in CVD[16].

The Framingham Cardiovascular Risk Score is a mathematical algorithm, which enables through clinical and laboratory variables (age, blood pressure, use of antihypertensive, smoking, DM, total cholesterol and HDL) estimate the risk of CVD at 10 years and classify the individual as low, medium and high risk[2]. This score has been recommended by scientific societies such as the Brazilian Society of Cardiology (BSC)[1] and the American Heart Association (AHA)[17]. International studies have used this score in indigenous populations; however, it has limitations because it is a minority population[18]. Thus, the suggestion is to perform additional analyses, such as the estimation of cardiovascular age, also proposed by the researchers of the Framingham Cohort[2].

In a previous study conducted with the Krenak indigenous people, there was a high prevalence of factors that predispose to CVD, such as hypertension (31.2%) and abdominal obesity (57%)[12]. Thus, the present study aimed to estimate the risk of CVD in Krenak indigenous people of the State of Minas Gerais through the Framingham Cardiovascular Risk Score. The evidence generated by this study may contribute to the description of the scenario of the epidemiology of CVD among Brazilian indigenous peoples and subsidize multisectoral actions in order to improve the reduction of the occurrence of CNCD that has been increasing in an accelerated way in the segment indigenous.

METHODOLOGY

This is a cross-sectional epidemiological study conducted with the Krenak population aged between 30 and 74 years from all five villages of the Krenak Indigenous Land (TI - *Terra Indígena*), located in the municipality of Resplendor, Vale do Rio Doce, Minas Gerais, Brazil.

Study population

The Borún Indians belonging to the Macro-Jê linguistic trunk, widely known by the name Krenak, comprise the last East Botocudos (groups that used ear and lip buttons). The history of the Krenak Indians is marked by territorial conflicts with non-indigenous people until the restitution of part of the lands they traditionally occupied in 1997, with the demarcation of four thousand hectares in the municipality of Resplendor, Minas Gerais[19].

Currently, the greatest challenge of the Krenak indigenous people is the environmental damage caused in Rio Doce by the company Samarco S/A, in 2015 (date prior to the data collection of this research). The mining tailings that leaked from the Fundão Dam in Mariana/MG reached part of the extension of the river that passes inside the TI. Approximately 126 Krenak families living on the banks of the river were affected, impacting on their

livelihoods, such as food production and access to clean water, which became totally unfeasible[12].

According to the Census provided by the Special Indigenous Health District Minas Gerais and Espírito Santo (DSEI MG/ES), in 2016, the resident population in the five villages of the Krenak IT consisted of 431 indigenous. To participate in the study were selected individuals aged between 30 and 74 years, totaling 142 indigenous. This age group was defined according to the criteria of applicability of the Framingham Score used to estimate cardiovascular risk at 10 years[2]. After the exclusions (mental disability, women in gestational period and those who had not completed one year postpartum) and losses (indigenous people who were not present in IT during data collection and refusals), the final study sample consisted of 117 indigenous people.

Data were collected in the villages in 2016. The data collected were: physical examination (Antropometry and blood pressure measurement), biochemical (casual capillary blood glucose) and application of a structured questionnaire containing information on sex, age and smoking. For detailed description of data collection see previous publication[12].

Evaluation of the estimated cardiovascular risk outcome in 10 years

The cardiovascular risk estimated at 10 years was calculated from the Framingham score algorithm[2] in the Statistical Software for Professional (Stata®), which is based on the following components: sex, age in years (complete), systolic and diastolic blood pressure, current drug treatment for hypertension, smoking, diagnosis of DM, total cholesterol and high density lipoprotein (HDL). Alternatively to total cholesterol and HDL, the Body Mass Index (BMI) can be used, due to its high correlation with morbidity and mortality due to CVD[2], the method chosen for this study since blood samples from the participants were not collected.

Each of these elements produces an algorithm that can be used to predict the relative risk of a cardiovascular event occurring in 10 years. The final result can be expressed in percentage and classified as: low risk (< 10%), medium risk (≥ 10% and < 20%) and high risk (≥ 20%) for cardiovascular event in 10 years[2].

Based on equations proposed by the Framingham Cohort researchers, normal cardiovascular risk (the expected cardiovascular risk for a given sex and age group), optimal cardiovascular risk (the ideal cardiovascular risk for a given sex and age group) and cardiovascular age were also calculated. These values were also used to estimate the risk ratio, which was classified as: < 1 (estimated cardiovascular risk is lower than normal or optimal risk, and cardiovascular age is lower than chronological risk), and > 1 (the estimated cardiovascular risk is higher than normal or optimal risk, and cardiovascular age is higher than chronological) [2].

These additional calculations allow us to know the risk factors for CVD of a given population, in addition to establishing which individuals have greater or lesser potential to develop such diseases[2].

Body weight was measured by means of a properly calibrated portable digital scale (Mars Scientific, with a capacity of 150kg and accuracy of 50g). The height measurement was made in triplicate, in order to ensure the accuracy of the data, and obtained with the use of a portable stadiometer (Exact height, with extension of 2m and accuracy of 1mm).

The final values of weight and height were obtained by the average of the two closest values. From the data of weight and height, the BMI - [weight (kg) / height² (m²)] was calculated. Continuous BMI values were used in the calculation of the score algorithm, but the classification proposed by the World Health Organization (WHO)[20] was also used to stratify participants into: eutrophic 18.5 ≥ and < 25; overweight ≥ 25 and < 30; and obesity ≥ 30.

Systolic blood pressure (SBP) and diastolic blood pressure (DBP) were obtained by oscillometric method using a digital arm Tensiometer with automatic monitor (Omron HEM-7200) and appropriate cuffs to the perimeter of the individual's arm. Three measurements in the right arm were performed, with two minutes of interval between them, following the recommendations of the Brazilian Society of Cardiology (BSC)[1].

For data analysis, the definitive measure corresponds to the average of the last two readings, the first reading being disregarded. This mean was used to calculate the score, and the cut-off points defined by the Brazilian Guideline of Arterial Hypertension[1] characterize the sample in: normotensive if SBP < 140 mmHg and/or DBP < 90 mmHg and hypertensive if SBP ≥ 140 mmHg and/or DBP ≥ 90 mmHg. In addition, participants were asked about the use of medicines for hypertension prescribed by a doctor. Information on the use of medicines for hypertension was confirmed by the local indigenous health team.

Casual blood glucose was collected by means of a portable glucometer (Roche Accu-Chek Active), with the aid of a lancer, disposable lancets and blood glucose reading strips, both for individual use. To characterize the sample, individuals were classified with normal blood glucose when the values were ≤ 99mg/dl fasting or < 200mg/dl without fasting; and hyperglycemia for values ≥ 100mg/dl fasting or ≥ 200mg/dl without fasting[21] or using oral hypoglycemic and/or insulin. Information on oral hypoglycemic and/or insulin use was confirmed by the local indigenous health team. Continuous values were used to calculate the score.

Age was self-reported by the participant, while gender was assessed by the interviewer. Smoking was assessed based on the question: "Do you currently smoke?". Based on the answers obtained, the participants were classified as follows: in the case of response "yes", the individual was considered a smoker; in cases where the participant reported that he does not currently smoke, but has already used a cigarette sometime in his life, he was considered a former smoker; in cases where the participant reported never having used a cigarette, he was considered a non-smoker.

Data Analysis

The analysis of the data was conducted in the program Stata®, version 14, at a level of statistical significance of 5%.

Initially, the sample was characterized with the presentation of absolute and relative frequencies of the variables that make up the cardiovascular risk score of Framingham, stratified by sex. Statistical differences were evaluated by Pearson's chi-square test.

Then, medians and interquartile intervals of cardiovascular risk at 10 years, normal cardiovascular risk, optimal cardiovascular risk, chronological age and cardiovascular age were described.

Finally, the ratios of cardiovascular risk at 10 years with normal cardiovascular risk and optimal risk and cardiovascular age with chronological age were presented by means of absolute and relative frequencies, stratified by sex. Statistical differences were evaluated with Pearson's chi-square test.

Ethical considerations

The study was approved in the following instances: Human Research Ethics Committee of the Federal University of Minas Gerais (opinion n. 25406413.9.0000.5149), National Research Ethics Commission (CONEP – opinion n. 867.977), National Council for Scientific and Technological Development (CNPq) and National Indian Foundation (case number 08620.078.625/2015-86). Local indigenous leaders were contacted and provided consent for the study. All individuals who participated in the research signed the Informed Consent Form (ICF). For the illiterate, fingerprints were used to document the science in participation of the study.

RESULTS

The sample of this study was composed of 49.5% of male participants. Most participants were between 30 and 39 years of age (60.7%). Regarding the variables used to calculate the Framingham score, we observed the prevalence of hypertension (57.3%), hyperglycemia (20.5%), obesity (41%), and smoking (14.5%). Most of the participants had a cardiovascular risk score at 10 years considered low (75.2%). There were no statistical differences between the sexes **(Table 1).**

Table 1. Frequency of cardiovascular risk indicators and estimated 10-year cardiovascular risk of Krenak indigenous people, stratified by gender. Resplendor - MG, 2016 (n=117).

Variáveis	Sexo		Total	p – valor*
	Male	Female		
	n (%)	n (%)	n (%)	
Age (years)				0,928
30-39	36 (62,1)	35 (59,3)	71 (60,7)	
40-49	11 (12,4)	14 (12,6)	25 (21,4)	
50-59	6 (10,3)	5 (8,5)	11 (9,4)	
60 or more	5 (8,6)	5 (8,6)	10 (8,6)	
Smoking†				0,127
Non smoker	33 (56,9)	44 (74,6)	77 (65,8)	
Ex-smoker	14 (24,1)	9 (15,3)	23 (19,7)	
Smoker	11 (19)	6 (10,2)	17 (14,5)	
Arterial hypertension‡				0,298
Yes	22 (37,9)	28 (47,5)	67 (57,3)	
No	36 (62,1)	31 (52,5)	50 (42,7)	
Hyperglycemia (mg/dl)				0,385
Yes	10 (17,2)	14 (23,7)	24 (20,5)	
No	48 (82,8)	45 (76,3)	93 (79,5)	
BMI (kg/m²)§				0,189
Eutrophic	13 (22,4)	11 (18,6)	24 (20,5)	
Overweight	26 (44,8)	19 (32,2)	45 (38,5)	
Obese	19 (32,8)	29 (49,2)	48 (41)	
Cardiovascular risk‖				0,358*
Low	41 (70,7)	47 (79,7)	88 (75,2)	
Moderate	10 (17,2)	9 (15,3)	19 (16,2)	
High	7 (12,1)	3 (5,1)	10 (8,6)	

Nota: *p-valor do teste de qui-quadrado de Pearson; †Tabagismo – qualquer indivíduo que fuma, independente da frequência e intensidade; ‡ Hipertensão arterial (PAS ≥ 140mmHg e/ou PAD ≥ 90mmHg e/ou em uso de medicamento anti-hipertensivo); § IMC – Índice de Massa Corporal; ‖ Risco cardiovascular - Baixo (< 10%); Moderado (≥ 10% e < 20%); Alto (≥ 20%); *p-valor do teste de qui-quadrado de Pearson.

When assessing the median cardiovascular risk in 10 years among the Krenak (4.58%), we observed that this was higher than the median normal risk (2.38%) and optimal (1.85%). The median cardiovascular age estimated (45 years) was higher than the median chronological age (37 years) **(Table 2).**

Table 2. Medians and interquartile ranges of measures of cardiovascular risk in 10 years, normal risk and optimal risk, cardiovascular and chronological age of Krenak indigenous people. Resplendor - MG, 2016 (n=11

Variables	Percentiles		
	25%	50%	75%
Chronological age (in years)	33	37	44
Cardiovascular age (in years)	36	45	60
Cardiovascular risk in 10 years (%)	2,67	4,58	9,90
Normal cardiovascular risk (%)	1,78	2,38	4,98
Great cardiovascular risk (%)	1,32	1,85	3,61

Although most of the sample had a low cardiovascular risk in 10 years, the ratios of this indicator with normal cardiovascular risk and optimal cardiovascular risk higher than the unit (1) were very high: respectively, 79.5% and 94.5%. Therefore, the largest portion of the sample had cardiovascular risk at 10 years higher than the risk that would be normal or optimal for age. The proportion of participants with the ratio between cardiovascular age and chronological age higher than the unit (1) was also very high (79.5%). In the comparison between the sexes, the percentages of men who presented cardiovascular risk at 10 years higher than normal risk and cardiovascular age higher than chronological age were statistically higher in relation to women (p = 0.007) **(Table 3).**

Table 3. Comparison of measures of cardiovascular risk in 10 years, normal risk and optimal risk, cardiovascular age and chronological age of Krenak indigenous people, stratified by gender. Resplendor – MG, 2016 (n=117).

Variáveis	Sexo		Total	p – valor
	Male n (%)	Female n (%)	n (%)	
Ratio of estimated cardiovascular age and chronological age‡				0,007*
> 1	52 (89,7)	41 (69,5)	93 (79,5)	
< 1	6 (10,3)	18 (30,5)	24 (20,5)	
Ratio of estimated cardiovascular risk and normal cardiovascular risk§				0,007*
> 1	52 (89,7)	41 (69,5)	93 (79,5)	
< 1	6 (10,3)	18 (30,5)	24 (20,5)	
Ratio of estimated cardiovascular risk and optimal cardiovascular risk‖				0,207†
> 1	57 (98,3)	54 (91,5)	111 (94,9)	
< 1	1 (1,7)	5 (8,5)	6 (5,1)	

Note: *Pearson's chi-square test; †Fisher's exact test; ‡ Ratio of estimated cardiovascular age and chronological age – greater when estimated cardiovascular age is greater than chronological age, smaller when estimated cardiovascular age is less than chronological age; §Ratio of estimated cardiovascular risk and normal cardiovascular risk – higher when estimated cardiovascular risk is greater than normal risk, lower when estimated cardiovascular risk is lower than cardiovascular risk; ‖Ratio of estimated cardiovascular risk is optimal cardiovascular risk – higher when estimated cardiovascular risk is greater than optimal risk, lower when estimated cardiovascular risk is less than optimal cardiovascular risk.

DISCUSSION

Our findings indicate that the Krenak have low risk for CVD estimated at 10 years by the Framingham Score; however, 12.1% of men and 5.1% of women were at high risk for developing these diseases (data not shown in the table).

This fact can be explained by the majority of participants being in the age group of 30 to 39 years old. The Brazilian Society of Cardiology establishes that an important cardiovascular risk factor is age 45 years or older[1]. However, comparing it to the normal and optimal cardiovascular risks estimated for this population, the cardiovascular risk in 10 years was higher, indicating that, although low, it is above what would be considered normal and optimal according to the Framingham Score.

A study conducted with the Xavante indigenous population showed data similar to those found in the present study[10]. The cardiovascular risk estimated in this population was low (78%), as well as that found in the Krenak (75%). The percentage of Xavante indigenous who presented moderate and high cardiovascular risk (11.7% and 10.4%, respectively) was also similar to Krenak (16.2% and 8.6%, respectively).

Regarding sex, both studies indicated that men have a higher cardiovascular risk than women. It is noteworthy that most of the Krenak population is composed of young individuals, and women are mostly of childbearing age. This fact may partly explain the lower cardiovascular risk than men, since estrogen is a protective factor for the occurrence of CVD[22].

It is also noteworthy that, although the majority of Krenak indigenous people have low cardiovascular risk, cardiovascular age and cardiovascular risk estimated at 10 years were higher than chronological age and the normal and optimal risks proposed by the Framingham Score.

Among the researched universe, this is the only study that presents such comparisons. Oliveira and Barroso[23] explain that arterial stiffness emerges as a normal aging process and it is expected that biological age is proportional to cardiovascular age. However, when observing the findings among the indigenous Krenak, this was not found, which can be explained by the high presence of risk factors associated with CVD, such as hypertension and obesity, used in the calculation of cardiovascular age.

Research has shown an important increase in the prevalence of risk factors for CVD among Brazilian indigenous people and other parts of the world[3,4]. Total obesity and abdominal obesity are important risk factors for CVD and are independently associated with coronary heart disease, heart failure, hypertension, DM and dyslipidemia[1]. Between 2001 and 2018, studies carried out with the indigenous Aruák[8], Guaraní-Mbya[9], Xavante[10], Kaingang[13] and

Terena[14] showed an overweight variation of 21.9% to 39.6% and obesity of 4.8% to 47.3%, values close to those found among the indigenous Krenak.

The SAH, practically non-existent in the first studies conducted with Brazilian indigenous peoples, currently presents high proportions, such as that found among the Khisêdje[7], Aruák[8], Guaraní-Mbya[9], Xavante[10], Munduruku[11] and Kaingang[13].

In addition, a previous study based on the population under analysis[12] already indicated the high prevalence of hypertension among Krenak indigenous people (31.2%) aged over 18 years. SAH is one of the causes of endothelial dysfunction and platelet aggregation, and is closely associated with the adoption of western eating habits and unhealthy lifestyle, such as physical inactivity[1].

In the study of Toledo and collaborators[24] with indigenous people from Manaus, the prevalence of hypertension and other factors associated with CVD were lower than the present study and others already described in the literature. The authors suggest that this finding is associated with the maintenance of the traditional lifestyle.

The prevalence of glycemic alterations among indigenous people is also relatively high, and the data found among the Krenak (20.5%) were similar to the study conducted with the Khisêje ethnic group (23.1%)[7]. Clinical and epidemiological evidence support that individuals with diabetes have a higher cardiovascular risk, since it is often associated with dyslipidemia and endothelial alterations[1,2,25].

It is suggested that the profile found in this study is the result of significant changes in lifestyles among Brazilian indigenous societies, such as the expansion of agrarian borders, environmental degradation, conflicts over the demarcation of indigenous lands and their proximity to urban centers, together with problems in the health care of indigenous communities[3,15].

In the case of the Krenak, the contamination of the Rio Doce by mud with mining tailings from the Fundão dam, maintained by Samarco S/A, is a factor that can influence the lifestyle changes of this population. The Rio Doce was used by them for fishing, leisure, irrigation of subsistence agriculture and practice of sacred rituals. Both for this reason and for the proximity to the city, the foods that were previously produced within the TI itself were replaced by those bought in supermarkets, mostly industrialized.

Regarding the limitations of this study, the external validity of our findings should be interpreted cautiously, because the sample studied is not probabilistic. In addition, the cross-sectional design that measures the event and the outcome at the same time is not able to infer about the changes that have occurred over time. On the other hand, this study has the following potential: the measures were measured by appropriate techniques and trained interviewers; the study included all indicators for cardiovascular risk assessment; and was the only study with indigenous population that evaluated chronological age and cardiovascular age.

CONCLUSION

Despite the prevalence of low cardiovascular risk in 10 years among the Krenak indigenous, the estimated cardiovascular age was higher than chronological age, which may cause morbidity and mortality from CVD over time in this population. This is a worrying and challenging scenario for the health services that serve the Krenak, considering the complexity of managing chronic conditions. At the same time, this finding can be understood as one of the consequences of the living conditions imposed on this ethnic group in recent decades.

Although data collection occurred seven years ago, there is still a shortage of studies and a lack of national health data for the indigenous population, which limits the knowledge of the health needs of this ethnic group. In this perspective, the strategies of prevention and control of risk factors related to NCDs among indigenous peoples of Brazil should necessarily take into account their social and historical determination, at th

ABSTRACT

Objective: to estimate the risk of cardiovascular diseases in indigenous Krenak through the Framingham Cardiovascular Risk Score. **Methodology:** cross-sectional epidemiological study conducted with indigenous people aged 30 to 74 years, in Indigenous Land located in the eastern region of Minas Gerais, Brazil. The data collected were: weight and height to calculate BMI, measurement of blood pressure and casual capillary blood glucose, sex, age and smoking. The cardiovascular risk estimated at 10 years was calculated from the Framingham Score algorithm. In addition, normal cardiovascular risk, optimal cardiovascular risk and cardiovascular age were calculated. The sample was characterized with the presentation of absolute and relative frequencies of the variables that make up the cardiovascular risk score of Framingham, stratified by sex. **Results:** it was observed that cardiovascular risk at 10 years among the Krenak indigenous was higher than normal risk, as well as cardiovascular age was higher than chronological age, although most of the sample had a low cardiovascular risk at 10 years, no statistical difference between the sexes. **Conclusion:** despite the predominance of low cardiovascular risk in 10 years among the Krenak indigenous, the result of cardiovascular age above chronological age can cause morbidity and mortality from cardiovascular diseases over time in this population.

Keywords: Risk Factors. Cardiovascular Diseases. South American Indians. Comumunity Health Nursing.

ESTIMACIÓN DE RIESGO DE ENFERMEDADES CARDIOVASCULARES ENTRE ADULTOS INDÍGENAS DE LA ETNIA KRENAK, MINAS GERAIS, BRASIL

RESUMEN

Objetivo: estimar el riesgo de las enfermedades cardiovasculares a los indígenas Krenak por medio de la Puntuación de Riesgo Cardiovascular de Framingham. **Metodología:** estudio epidemiológico transversal realizado con indígenas de 30 a 74 años, en Tierra Indígena localizada en la región este de Minas Gerais, Brasil. Los datos recolectados fueron: peso y altura para calcular el IMC, medición de la presión arterial y glucemia capilar casual, sexo, edad y tabaquismo. El riesgo cardiovascular estimado en 10 años fue calculado a partir del algoritmo de Puntuación de Framingham. Además, se han calculado el riesgo cardiovascular normal, el riesgo cardiovascular óptimo y la edad cardiovascular. La muestra fue caracterizada con la presentación de las frecuencias absolutas y relativas de las variables que componen la puntuación de riesgo cardiovascular de Framingham, estratificada por sexo. **Resultados:** se observó que el riesgo cardiovascular en 10 años entre los indígenas Krenak fue superior al riesgo normal, así como la edad cardiovascular fue mayor que la edad cronológica, aunque la mayoría de la muestra presentó un bajo riesgo cardiovascular en 10 años, sin diferencia estadística entre los sexos. **Conclusión:** a pesar de la predominancia de bajo riesgo cardiovascular en 10 años entre los indígenas Krenak, el resultado de la edad cardiovascular superior a la edad cronológica puede ocasionar morbimortalidad por enfermedades cardiovasculares a lo largo del tiempo en esa población.

Palabras clave: Factores de Riesgo. Enfermedades Cardiovasculares. Indios Sudamericanos. Enfermería en Salud Comunitaria.

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