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ORIGINAL ARTICLE

RISK FACTORS FOR CARDIOVASCULAR DISEASE IN THE ELDERLY

FATORES DE RISCO PARA DOENÇAS CARDIOVASCULARES EM IDOSOS

FACTORES DE RIESGO PARA ENFERMEDADES CARDIOVASCULARES EN ANCIANOS

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ABSTRACT

Objectives: to evaluate cardiovascular conditions and to identify modifiable risk factors for cardiovascular diseases in the elderly. ***Method***: descriptive, cross-sectional and quantitative study with 246 elderly subjects. A questionnaire with open questions regarding patient identification was applied, relating sociodemographic data, risk factors and information on health conditions. For data analysis, the Pearson Chi-Square test was performed. ***Results***: 75.7% of the participants were women, 94.3% were retired. Alcohol consumption, active and passive smoking were reported, respectively, by 8.9%, 11.8% and 18.3% of respondents. Changes in blood pressure were identified in 58.6% of the elderly in the first evaluation, 81.8% in the second and 74.3% in the third evaluation. ***Conclusion:*** it was possible to outline the profile of cardiovascular health status and of modifiable risk factors for cardiovascular diseases in the elderly population, which will support interventions aimed at health promotion and disease prevention. ***Descriptors:*** Nursing; Elderly; Cardiovascular Diseases.

RESUMO

Objetivos: avaliar as condições de saúde cardiovascular e identificar os fatores de risco modificáveis para doenças cardiovasculares em idosos. ***Método***: estudo quantitativo, transversal e descritivo com 246 idosos. Aplicou-se um formulário com questões abertas, referentes à identificação do paciente, relacionando dados sociodemográficos, fatores de risco e informações sobre as condições de saúde. Para análise dos dados, realizou-se o teste Qui-Quadrado de Pearson. ***Resultados***: 75,7% dos participantes eram mulheres, 94,3% aposentados. O uso de bebidas alcoólicas, fumo ativo e passivo foram referidos, respectivamente, por 8,9%, 11,8% e 18,3% dos entrevistados. A pressão arterial esteve alterada em 58,6% dos idosos na primeira avaliação, 81,8% na segunda e 74,3% na terceira. Conclusão: foi possível traçar o perfil da saúde cardiovascular e dos fatores de risco modificáveis para as doenças cardiovasculares na população idosa, que subsidiarão de base para intervenções voltadas à promoção da saúde e prevenção dos agravos. ***Descritores***: Enfermagem; Idosos; Doenças Cardiovasculares.

RESUMEN

Objetivos: evaluar las condiciones de salud cardiovascular e identificar los factores de riesgo modificables para enfermedades cardiovasculares en ancianos. ***Método***: estudio cuantitativo, transversal y descriptivo con 246 ancianos. Se aplicó un formulario con preguntas abiertas, referentes a la identificación del paciente, relacionando datos sociodemográficos, factores de riesgo e informaciones sobre las condiciones de salud. Para análisis de los datos, se realizo el test Chi-Cuadrado de Pearson. ***Resultados***: 75,7% de los participantes eran mujeres, 94,3% jubilaldos. El uso de bebidas alcohólicas, fumador activo y pasivo fueron referidos, respectivamente, por 8,9%, 11,8% y 18,3% de los entrevistados. La presión arterial estuvo alterada en 58,6% de los ancianos en la primera evaluación, 81,8% en la segunda y 74,3% en la tercera. ***Conclusión***: fue posible trazar el perfil de la salud cardiovascular y de los factores de riesgo modificables para las enfermedades cardiovasculares en la población anciana, que subsidiarán de base para intervenciones dirigidas ala promoción de la salud y prevención de los problemas. ***Descriptores***: Enfermería; Los Ancianos; Enfermedades Cardiovasculares.

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INTRODUCTION

Among the problems arising from aging considered as risk factors for cardiovascular diseases, hypertension can be considered a major cause of morbidity and mortality and cardiovascular complications, and it is sometimes related to some type of physical disability for the elderly. In this way, it generates a higher financial cost, considering the need for specialized services offered by the State, as well as the expansion of primary care services.

Another chronic disease that is very present in the elderly population is diabetes mellitus, which is not only a disease, but a heterogeneous group of metabolic alterations characterized by hyperglycemia as a consequence of insulin action, insulin secretion or both.[1] If there is no proper control, this disease may lead to other cardiovascular diseases, as well as the functional impairment of the elderly, among other problems.

Dyslipidemias are also considered relevant risk factors for the development of cardiovascular diseases. The measures of Total Cholesterol and LDL-C are used to evaluate cardiovascular risk, confirmed by evidences of several researches, constituting the main therapeutic target for the prevention of cardiovascular disease.[2]

It is worth mentioning that another important risk for cardiovascular diseases is the sedentary lifestyle, considered the fourth risk factor for mortality at a global level.[3] Sedentary and overweight individuals, with obesity, hypertension and fasting glycemia above 100 mg/dl have been the main victims of these often silent diseases, which have become serious public health problems and caused a real global epidemic.[4]

Aging is a dynamic and progressive process that causes various changes in the organism, either they are morphological, psychological, functional or biological, leading to decreased functional capacity and the development of non-communicable chronic diseases. As a phenomenon, the growth of the elderly population has been observed as a worldwide event. In the national context, the current Brazilian population has more than 201 million people, with 12.6% being 60 years old or more. Of these, 55.7% are women and 44.3% are men, evidencing a tendency towards inversion in the population growth model, with progressive increase of the elderly and relative reduction of the young population.[5]

Senescence, therefore, is a fact and has drawn the health professionals' attention, as it is estimated that in 2025 there will be 1.2 billion people aged more than 60 years. It is also expected that by 2050 this number will double and 80% of the elderly will be living in developing countries.[6]

In line with this, it is essential to formulate policies and programs capable of meeting the peculiarities of the aging process that meet the increased life expectancy and the search for healthy aging. In Brazil, the National Policy on the Elderly Health has as a priority the recovery, maintenance and promotion of autonomy and independence of the elderly.[7]

Thus, the concern for the functional capacity of the elderly emerges as a new highlight. In order to meet this demand, there are health networks in which services are implemented in accordance with national policies and the principles of the Unified Health System: comprehensiveness, universality and equity. Therefore, the goal is to plan and develop resolutive and effective actions, as well as to improve the quality of care and services. Within the framework of the existing national policies and those implemented in practice, priority is given to health promotion actions.

In this regard, actions aimed at the cardiovascular health of the elderly should be performed, considering that this population presents a greater risk of cardiovascular alterations, both as a consequence of the aging process and by the continuity of harmful life habits. This event is supported by several studies, such as that which exposes that about 60.0% of individuals aged 60 years or more have high blood pressure levels.[8]

In this context, it is necessary to develop research together with populations at risk for the development of cardiovascular disorders, such as the elderly population, including the investigation of modifiable risk factors for the development of hypertension and/or diabetes mellitus. It is also essential to verify anthropometric measurements, blood pressure, capillary glycemia and cholesterol to follow up people who already have a medical diagnosis of these pathologies, as well as the early detection of new cases.

This study aimed to evaluate cardiovascular health conditions and to identify modifiable risk factors for cardiovascular diseases in the elderly.

METHOD

This is a quantitative, cross-sectional and descriptive study, with primary source, whose

data collection occurred from January 2013 to February 2015, with 246 elderly people attended in 14 Social Assistance Reference Centers, distributed in the 12 municipalities of Maciço de Baturité region (Aratuba, Acarape, Aracoiaba, Barreira, Guaramiranga, Itapiúna, Mulungu, Ocara, Pacoti, Redenção, Baturité and Capistrano), in which weekly activities are carried out with the elderly.

Initially, these places were visited in order to meet the elderly and those responsible for carrying out these activities. Subsequently, a meeting was held with the coordinators of the Social Assistance Reference Centers to present the research project. Subsequently, the elderly were invited to participate in the research, and after explaining the intended objectives and method, a date was set for data collection with those who expressed interest. The collection was performed in a place reserved by the institution itself, without interference from people not involved.

On the scheduled date, the research procedures were clarified again. At the time, a questionnaire was used, which consisted of open questions regarding patient identification, relating sociodemographic data and information on health conditions, especially cardiovascular health and presence of modifiable risk factors for the onset of cardiovascular diseases, such as sedentary lifestyle, overweight or obesity, smoking and alcohol consumption. After the interview, anthropometric data, blood pressure measurements and blood glucose and cholesterol levels were collected. The verification of glycemic and cholesterol levels occurred through capillary blood collection using test strips according to the True Read® and Accutrend Plus Roche® devices, respectively.

In order to investigate blood pressure levels, the following equipment was used: sphygmomanometers with aneroid manometers, tested and calibrated, and double stethoscopes; sets of varying widths, trying to maintain the recommended ratio of width corresponding to the arm circumference.[8]

Blood pressure measurements were obtained at three consecutive moments and the final value considered was the average of the last two measurements that were repeated under ideal conditions and on at least two occasions.[9] Thus, the participants identified with blood pressure levels above those considered normal were again evaluated twice with intervals of at most 15 days to confirm the altered values. The return was scheduled with the researcher through the coordinators of the Social Assistance Reference Center in which the research took place.

For the interpretation of the blood pressure levels, the recognized and suitable standards for the casual measurement in the medical office were considered in individuals older than 18 years, according to the following parameters for systolic blood pressure and diastolic blood pressure (mmHg): Optimal (<120 < 80); Normal (<130 <85); Borderline (130-139 and 85-89); Stage 1 hypertension (140-159 and 90-99); Stage 2 hypertension (160-179 and 100-109); Stage 3 hypertension (≥ 180 and ≥ 110); and Isolated systolic hypertension (≥ 140 and <90).[9]

Considering that the objective of the study was not the classification by medical diagnoses, but rather the comparison with physiological levels, the values of the systolic blood pressure ≤ 120 to 139 mmHg and of the diastolic blood pressure ≤ 80 to 89 mmHg were considered as normality standard. Values above these were considered abnormal and, if confirmed, were referred to the care.

For the evaluation of glycemic levels, capillary glycemia was measured using the True Read® glycosimeter and its respective test strips. A drop of capillary blood was collected from one of the fingers by inserting the tip of a disposable needle suitable for such purpose.

In turn, the results of capillary glycemia, measured at any time of day, without observing the interval of the last meal, were treated according to the recommendations of the Ministry of Health, that is, random glycemia less than or equal to 140 mg/dl was considered normal; between 141 and 149 mg/dl, doubious; between 200 mg/dl and 270 mg/dl, probable diabetes and greater than or equal to 270 mg/dl, very probable diabetes.[10]

For the lipid evaluation, it was used the same blood collection procedure used for blood glucose. The parameters proposed by the V Brazilian Directive on Dyslipidemias and Prevention of Atherosclerosis[2] were adopted, which presents the following reference values (mg/dl) for dyslipidemias in adults over 20 years: isolated hypercholesterolemia: when there is an increase of LDL-C alone (≥ 160 mg/dl); isolated hypertriglyceridemia: increased TG alone (≥ 150 mg/dl); mixed hyperlipidemia: increased values of LDL-C (≥ 160 mg/dl) and TG (≥ 150 mg/dl); low HDL-C: decreased HDL-C (men <40 mg/dl and women <50 mg/dl) alone or in combination with increased LDL-C or TG.[2]

Pearson's Chi-Square test was used to verify the dependence between the variables of interest or the pattern of the distribution of the proportion of answers were distributed equally between the groups. The Fisher exact test was used in contingency tables in which the assumptions of the chi-square test were not satisfied and/or when relatively small samples were taken, i.e., when more than 20% of the expected frequencies were less than five or some expected frequency was less than one.

The study respected the ethical principles of research with human beings, which express concern for the ethical dimension, ensuring the confidential nature and absence of physical, financial or emotional loss for the respondent and all the guarantees to the participant, as recommended by the National Commission of Ethics and Research/CNP. The research project was approved by the Ethics and Research Committee of the UFC and approved with number: 06298312.9.0000.5054.

RESULTS

Regarding the sociodemographic data, the majority of the evaluated elderly belonged to the female sex (75.6%), was married (48%) and retired (94.3%). The average individual income was 804 reais, with an average family income of 1,240 reais.

Regarding data related to risk factors, it was identified that 30.1% of the participants had direct or indirect contact with smoking. The majority (80.1%) did not report alcohol consumption. Regarding the practice of physical exercises, 62.2% reported adherence to some physical activity. However, 32.9% did not practive physical activity.

It is noteworthy that 33.3% and 25.2% of the elderly presented alterations in the Body Mass Index (BMI) compatible with overweight and obesity, respectively. Of the participants, 61.8% had measures of waist circumference altered, according to the parameters established for the sex.

Regarding the data collected on capillary glycemia and cholesterol, the following results were evidenced: 22.8% of the participants had borderline cholesterol and 12.6% had high cholesterol. Regarding glycemia, 34.6% of the elderly presented altered glycemic indexes, varying from dubious diabetes to very probable diabetes. Table 1 presents the data referring to the assessment of the blood pressure of the elderly of the Maciço de Baturité region.

Table 1. Blood pressure assessment of the elderly attended at the Social Assistance Reference Centers, distributed in the municipalities of Maciço de Baturité (CE), Brazil, 2016.

Final classification of blood pressure evaluations	Normal	Pre-hypertension	S1H	S2H	S3H	TOTAL
	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
First Evaluation	102(41.4)	40()16.3	73(29.7)	17(6.9)	14(5.7)	246(100.0)
Second Evaluation	26(18.2)	32(22.4)	61(42.6)	21(14.7)	03(2.1)	143(100.0)
Third Evaluation	30(25.7)	16(13.7)	50(42.7)	17(14.5)	04(3.4)	117(100.0)

Legend: SH – Stage of Hypertension.

Regarding blood pressure, 144 (58.6%) of the elderly patients had a change in pressure at the first evaluation point, being classified as pre-hypertension and stage 3 hypertension. Participants who presented alterations were evaluated two more times at different times. In the second evaluation, 143 elderly people whose blood pressure values presented percentage of change of 81.8% between pre-hypertension and stage 3 hypertension.

The third evaluation was carried out with 117 elderly patients, of which 74.3% presented blood pressure levels between pre-hypertension and stage 3 hypertension. It should be noted that in 61 elderly patients, blood pressure levels remained altered in all the three moments.

Table 2 presents data on the association of modifiable risk factors and cholesterol.

Table 2. Result of the association test of risk factors and cholesterol outcome of the elderly attended at the Social Assistance Reference Centers, distributed in the municipalities of the Maciço de Baturité (CE), Brazil, 2016.

		Cholesterol						
Modifiable risk factors		Optimal n(%)	Borderline n(%)	High n(%)	ACLA[1] n(%)	ABLA[2] n(%)	TOTAL	p-value
Active smoking	Yes	09(45)	07(35)	01(05)	01(05)	02(10)	20	0.698
	No	31(40)	20(26)	16(21)	05(06)	05(06)	77	
	Not currently	43(42)	29(28)	14(14)	04(04)	12(12)	102	
Passive smoking	Yes	10(34)	10(34)	04(14)	04(14)	01(03)	29	0.424
	No	60(43)	39(28)	23(16)	04(03)	15(11)	141	
	Not currently	13(45)	07(24)	04(14)	02(07)	03(10)	29	
Alcohol consumption	Yes	02(12)	07(41)	02(12)	00(00)	06(35)	17	0.011
	No	70(43)	45(28)	27(16)	10(06)	11(07)	163	
	Not currently	11(58)	04(21)	02(10)	00(00)	02(10)	19	
Illicit drugs	Yes	00(00)	00(00)	00(00)	00(00)	01(00)	01	0.145
	No	83(42)	56(28)	31(16)	10(05)	18(09)	198	

Legend: [1]ACLA - Values above the device limit; [2]ABLA – Values below the device limit.

When observing the relationship between risk factors and cholesterol levels, it is noted that alcohol consumption had a significant association (p-value = 0.011).

Table 3 presents information regarding the association between the main sociodemographic variables and modifiable risk factors studied.

Table 3. Association of sociodemographic variables and modifiable risk factors of the elderly attended at the Social Assistance Reference Centers, distributed in the municipalities of the Maciço de Baturité (CE), Brazil, 2016.

Risk factor / Sociodemographic Variable		Active smoking Yes n(%)	No n(%)	NC1 n(%)	p-value	Alcohol consumption Yes n(%)	No n(%)	NC n(%)	p-value
SEX	Male	13(22)	17(28)	30(50)	<0.001	07(12)	30(50)	23(38)	<0.001
	Female	16(09)	81(44)	89(48)		15(08)	167(90)	04(02)	
MARITAL STATUS	Without partner	18(14)	50(39)	60(47)	0.183	01(05)	14(78)	03(17)	0.234
	With partner	11(09)	48(41)	59(50)		09(08)	93(79)	16(13)	
AGE	< 70 years old	13(11)	55(45)	54(44)	0.249	12(10)	94(77)	16(13)	0.472
	≥ 70 years old	16(13)	43(35)	65(52)		10(08)	103(83)	11(09)	
LEVEL OF EDUCATION	< 8 years	27(13)	78(37)	108(51)	0.046	20(09)	168(79)	25(12)	0.516
	≥ 8 years	02(06)	19(60)	11(34)		02(06)	28(88)	02(06)	

Legend: 1N.A. – Not currently.

There was a significant association between sex and active smoking (p-value <0.001) and alcohol consumption (p-value <0.001), as well as level of education (schooling) and active smoking (p-value = 0.046).

Table 4 identifies the association between waist circumference measures (p-value <0.001) and body mass index; there was also a significant relation with physical activity (p-value = 0.014).

Table 4. Relationship between waist circumference and practice of physical activity with Body Mass Index (BMI) of the elderly attended at the Social Assistance Reference Centers, distributed in the municipalities of the Maciço de Baturité (CE), Brazil, 2016.

Variable		Body Mass Index (BMI)				Total	p-value
		Low n(%)	Normal n(%)	Overweight n(%)	Obesity n(%)		
Waist circumference	Normal	17(18)	56(60)	19(20)	02(02)	94	<0.001
	Changed	04(03)	25(16)	63(41)	60(39)	152	
Physical activity	Yes	07(00)	56(00)	53(00)	37(00)	153	0.014
	No	13(16)	25(31)	23(28)	20(25)	81	
	N.C.1	01(08)	00(00)	06(50)	05(42)	12	

Legend: 1N.A. – Not currently.

DISCUSSION

As to gender, the sample was predominantly female (75.6%). Regarding morbimortality and life expectancy, the differences between the male and female gender can be elucidated from five aspects: biological-genetic characteristics; ethnic and social differences and inequalities; behavior and certain social expectations; seek and use of health services and health professionals.[11]

Regarding marital status, 48.0% of the participants were married and/or lived with partners and 34.6% were widowers. Being married is an important protective factor, especially regarding adherence to treatment, since the family support is highly relevant for the acquisition of new habits of life and for the follow-up of drug treatment. Thus, the spouse becomes the main company and the stimulus for daily activities. In addition, the greater the presence of family, friends and spouse, the more they renew their strength to overcome the obstacles that appear with increasing age.[3]

Regarding the association between risk factors and sociodemographic variables, there was a statistically significant association between active smoking and male sex, as well as between alcohol consumption and male sex. In this study, it was observed that 30.1% of the participants reported direct or indirect contact with smoking.

Similar results were found in a survey conducted in 27 cities in Brazil, in which 70% of current smokers are aged 60 years or more. Smoking is the leading cause of preventable death worldwide, and just like alcohol consumption, this habit is more common in males. Tobacco addiction is considered a pathology and is set in the International Classification of Diseases - 10th review (ICD-10) in the group of mental disorders and behaviors associated with the use of psychoactive substances.[12]

It is observed that smokers, when compared to non-smokers, have a worse dominance over issues related to social, psychological and physical aspects, as well as worse quality of life. Also, smokers living on average 10 years less than non-smokers, with a two-fold increased risk of occurrence of cardiovascular events over a ten-year period. There is also a doubling of the relative risk of acute myocardial infarction in smokers over 60 years of age when compared to non-smokers.[13]

In addition, smoking is considered a public health problem due to its relationship with hypertension, aneurysms, respiratory problems, impotence in men, infertility in women, vascular diseases and various types of cancers. It is also responsible for the financial impact resulting from various expenditures, such as treatment of diseases caused by exposure to tobacco, deaths of citizens of productive age and higher rates of early retirements.[14]

It is known that the elderly are in the age group that presents the highest risk for diseases and chronic diseases. Thus, the use of cigarettes contributes to the increased risk for complications, comorbidities and therapeutic harm due to the effect of tobacco on the metabolism of various drugs. Studies have indicated that smoking tends to occur concomitantly with several other unhealthy behaviors, such as physical inactivity, insufficient intake of fruits and vegetables, excessive consumption of alcoholic beverages and saturated fats of animal origin, thus increasing even more the probability of one developing chronic diseases.[15]

Many chronic conditions are linked to aging society, but also to lifestyle choices such as smoking, alcoholism, risky sexual behavior, inappropriate eating habits and physical inactivity, as well as genetic predisposition.[16]

Alcoholism was reported by only 8.9% of the participants; however, 11.0% had already used alcohol at some point in their life. Therefore, although the majority of the elderly do not use alcohol, attention is needed to this risk factor, since it is known that alcoholism is a significant public health

problem in the country, leading to numerous pathologies. Alcohol abuse and dependence interfere with the quality of life of the elderly, increasing the frequency of morbidities, causing functional restrictions or even death, also interfering in the lives of those who live with the alcoholic.[17]

Excessive consumption of alcoholic beverages is closely linked to deleterious effects on the body. Still according to the author, its chronic use can cause a series of disorders, among them the cardiomyopathies.[18] In this sense, the active aging process has as one of its objectives the development of health promotion and disease prevention programs through cessation of alcohol and tobacco use and the encouragement of physical activity. Alcohol is considered a licit drug that causes physical, psychological and social problems. It is estimated that 10% of the elderly population consume alcohol, being more common among males, as identified in the present research. Physiological aging causes changes in alcohol metabolism, making the elderly more sensitive to alcohol intoxication. Therefore, the harmful use of this substance can also have an impact on the social, family and health contexts of these individuals.[12]

A study showed that alcohol abuse puts the elderly at greater risk of vulnerability to the development of physical, psychological and social problems that are not always detected by professionals in different health services. Thus, estimates of current alcohol consumption in the elderly population vary, but its consequences at this stage of life, in addition to the severity of health problems, have had a major impact on health care. [19]

Another risk factor present in the study was the sedentarism, referred by 37.8% of the participants. Currently, this is considered a worldwide problem that should be eliminated in order to reduce the risks for the development of cardiovascular diseases.[4] Scholars have reported that from the age of 50, the benefits of regular physical activity may be more relevant to avoiding, minimizing, and/or reversing many of the physical, psychological, and social declines that often accompany old age. The change in lifestyle also requires the regular practice of physical activities, besides the hypocaloric and hyposodic intake, the reduction or abandonment of smoking, alcoholism and adherence to treatment.[6]

The lack of control of blood pressure was also found to be a relevant problem in the study population, because among the 142 elderly patients who reported a diagnosis of arterial hypertension, 48 presented hypertensive peaks, despite taking medication.

It is important to remember that control of blood pressure in people with SAH is closely related to adherence to the prescribed treatment. Non-adherence to medication is a major concern for health professionals, so futher studies are needed to improve adherence to antihypertensive treatments, especially in people with SAH and high cardiovascular risk, among which the control of complications may significantly reduce mortality due to these diseases, as well as the costs of treating these complications.[20]

It is estimated that 69% of the elderly with a history of acute myocardial infarction, 77% of those who had had a stroke and 74% of those with a history of heart failure may have a previous diagnosis of arterial hypertension. Nevertheless, it is extremely important that subjects in this period of life are more aware of the condition in which they are, and that they undergo treatment for arterial hypertension more frequently than those of middle age, since the rates of pressure control in the elderly are low, especially in those over 80 years of age.[8]

It was also foung a significant percentage of participants (13%) with altered blood pressure levels, but who were unaware of this condition. This reveals that this population deserves increased attention from both health professionals and public policies for a better development of activities that reduce the risk of illness through actions aimed at health promotion and early detection of diseases.

Among non-communicable chronic diseases, diabetes mellitus also has a high incidence in the elderly.[21] In 2014, it was estimated that in Brazil there would be 11.9 million individuals in the age group of 20 to 79 years with diabetes, and it could reach 19.2 million in 2035.[22]

This is a worrying date and, in this study, when comparing the elderly who reported knowledge of having diabetes and the elderly who had their capillary glycemia evaluated, we have the following data: 23.2% reported having a diagnosis of diabetes mellitus and, in relation to blood glucose, 22.8% had doubtful diabetes and 6.9% had diabetes. It is important to emphasize that the costs caused by diabetes mellitus affect the individual, the family and the society, but not only in the economic aspect. Intangible costs, such as pain, anxiety, inconvenience and loss of quality of life also have a significant impact on the lives of people with diabetes and their families, something difficult to quantify.[23]

Therefore, this chronic disease may cause greater damage, especially in the elderly population that already experiences physiological changes inherent to aging.

As for the presence of dyslipidemias, in the measurement of cholesterol through capillary blood collection, 22.8% of the participants had borderline cholesterol and 12.6% had high cholesterol. These data show that the elderly may be prone to greater cardiovascular complications, as well as to lower quality of health status.

Corroborating with the findings of this study, the literature demonstrates that, with increasing life expectancy, it has become common to have a higher incidence and prevalence of some diseases that are closely related to aging and that have a direct connection with the habits of life maintained by the population, among them the dyslipidemias, more specifically cholesterol, which hads gained considerable visibility, being considered an independent, linear and continuous risk factor for several diseases.[24]

Studies also have pointed out that, in recent years, the presence of elevated lipid levels in the blood has been common, especially cholesterol alterations, emphasizing, therefore, the need to perform tests aimed at its early detection.[25]

In this research, we also detected a statistical association of cholesterol values with alcohol consumption (p = 0.011). This association is also evidenced in the V Brazilian Guideline on Dyslipidemias and Prevention of Atherosclerosis[2], which emphasizes that, in the elderly, dyslipidemias have usually a secondary origin associated with diabetes mellitus, glucose intolerance, nephrotic syndrome, hypothyroidism (especially in females), alcoholism, obesity or use of medications such as thiazide diuretics and non-selective beta-adrenergic blockers. [2]

Regarding the classification of BMI, it is noteworthy that, in the present study, 25.2% of the participants were classified as obese. Associations between BMI and waist circunference (p-value <0.001) and BMI and physical activity (p-value = 0.007) were also present. These results are in line with a survey involving hypertensive elderly people enrolled in a Family Health Unit in Londrina/PR, whose prevalence of obesity was even higher, 64.3%, which may be explained due to the expected increase of tissue grease during the aging process.[26]

Obesity is considered one of the comorbidities that leads to chronic inflammatory conditions, as well as the predisposition of other risk factors, such as dyslipidemia, hypertension and diabetes, which in turn increase even more the risk of cardiovascular problems.[27]

The association between BMI and sedentary lifestyle was also evidenced in a study carried out in Paraná with 53 patients with stage 1 hypertension, which observed significant reductions in BMI after six months of physical activity.[26] It is important to highlight that physical inactivity increases the risks for obesity, arterial hypertension, type II diabetes and causes a reduction in HDL-cholesterol levels, besides having a direct effect on the growth of atheroma plaque.[27]

Obesity combined with sedentary lifestyle contributes to the onset of diseases, especially cardiovascular diseases. The incentive to adopt healthy habits, such as keeping the weight in the standard of normality, according to each participant, adherence to healthy diets and regular practice of physical activity are parameters to maintain a healthier life.[28]

In view of the above, it is worth mentioning the follow-up of this public, since the consequences of arterial hypertension, as well as other cardiovascular diseases, are complications that can often cause permanent disability in the elderly and reduce their quality of life.

CONCLUSION

This study provided an analysis of the profile of the elderly regarding cardiovascular health and modifiable risk factors, as well as provided information about their life habits. However, it had as a limitation the participation of elderly people who did not attend all the meetings in the Social Assistance Reference Centers in Maciço de Baturité-CE.

It should be emphasized that this research contributed significantly to the population of Maciço de Baturité, since it identified high blood pressure levels in a significant percentage of the elderly people who had no knowledge of this condition. It also allowed referral of participants with changed blood pressure, blood glucose and/or lipid levels for follow-up and/or treatment at health units.

It is hoped that this study will provide health professionals with the widening of knowledge and perceptions in the search for a practice that favors the elderly health. At the same time, it is assumed that it can support other works in this perspective, serving as a encouragement to new investigations, as well as a foundation for the construction of

strategies that favor improvement of the quality of care of the elderly population.

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