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PREVENTION OF CARDIOVASCULAR DISEASES IN THE WORKING-AGE POPULATION: AN INTERVENTION PROJECT IN THE ALENTEJO REGION

PREVENÇÃO DAS DOENÇAS CARDIOVASCULARES NA POPULAÇÃO EM IDADE ATIVA: UM PROJETO DE INTERVENÇÃO NA REGIÃO ALENTEJO

PREVENCIÓN DE ENFERMEDADES CARDIOVASCULARES EN LA POBLACIÓN EN EDAD LABORAL: UN PROYECTO DE INTERVENCIÓN EN LA REGIÓN DEL ALENTEJO

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ABSTRACT

Introduction: Cardiovascular diseases are one of the main causes of morbidity and mortality worldwide. Their multidimensional nature and serious consequences contribute for being one of the most urgent public health problems.

Objective: To identify cardiovascular risk factors and to estimate the cardiovascular risk of an active population in Central Alentejo.

Methods: Exploratory, descriptive study with a quantitative approach. Sample made up of 31 female individuals. Collection of information through the application of a questionnaire for sociodemographic, anthropometric characterization, lifestyles and risk factors for cardiovascular diseases and carrying out screening to estimate cardiovascular risk.

Results: Regarding clinical variables, it appears that 61.8% have total cholesterol values above the recommended level, 41.9% pre-obesity, 32.3% class I obesity and 6.5% class II obesity. As for behavioral variables and lifestyles, it is observed that 64.5% rarely practice physical exercise and 6.5% never practice it, most participants (61.3%) do not follow the daily recommendations for the food group – cereals, derivatives and tubers. About cardiovascular risk, 44.1% had moderate risk and 2.9% very high risk. It should be noted that 45.8% are unaware of the symptoms associated with Acute Myocardial Infarction and 47.9% of the symptoms associated with Stroke.

Conclusion: The high prevalence of cardiovascular risk factors in the studied population makes it imperative to develop prevention strategies, promoting healthy lifestyles and improving health literacy.

Keywords: Cardiovascular Diseases; Health Education; Healthy Lifestyle; Risk Factors; Prevention.

RESUMO

Introdução: As doenças cardiovasculares constituem uma das principais causas de morbilidade e mortalidade em todo o mundo. O seu carácter multidimensional e as graves consequências cooperam para que sejam consideradas um dos mais urgentes problemas de saúde pública.

Objetivo: Identificar fatores de risco cardiovascular e estimar o risco cardiovascular de uma população ativa do Alentejo Central.

Métodos: Estudo exploratório, descritivo, de abordagem quantitativa. Amostra constituída por 31 indivíduos do sexo feminino. Recolha de informação mediante aplicação de ques-

tionário para caraterização sociodemográfica, antropométrica, estilos de vida e fatores de risco para doenças cardiovasculares e realização de rastreio para estimar o risco cardiovascular.

Resultados: Relativamente às variáveis clínicas verifica-se que 61,8% apresentam valores de colesterol total acima do recomendado, 41,9% pré-obesidade, 32,3% obesidade classe I e 6,5% obesidade classe II. Quanto às variáveis comportamentais e estilos de vida observa-se que 64,5% raramente praticam exercício físico e 6,5% nunca o praticaram, a maioria das participantes (61,3%) não segue as recomendações diárias para o grupo de alimentos – cereais, derivados e tubérculos. No que concerne ao risco cardiovascular, 44,1% apresentava risco moderado e 2,9% risco muito alto. De salientar que 45,8% desconhecem os sintomas associados ao Enfarte Agudo do Miocárdio e 47,9% os sintomas associados ao Acidente Vascular Cerebral.

Conclusão: A elevada prevalência de fatores de risco cardiovascular na população estudada torna imperativo o desenvolvimento de estratégias de prevenção, de promoção de estilos de vida saudável e de melhoria da literacia em saúde.

Palavras-chave: Doenças Cardiovasculares; Educação em Saúde; Estilo de Vida Saudável; Fatores de Risco; Prevenção.

RESUMEN

Las enfermedades cardiovasculares son una de las principales causas de morbilidad y mortalidad a nivel mundial. Su carácter multidimensional y sus graves consecuencias colaboran para que sean considerados uno de los problemas de salud pública más urgentes.

Objetivo: Identificar los factores de riesgo cardiovascular y estimar el riesgo cardiovascular de una población activa en el Alentejo Central.

Métodos: Estudio exploratorio, descriptivo con abordaje cuantitativo. La muestra está compuesta por 31 individuos del sexo femenino. Recopilación de información mediante la aplicación de un cuestionario de factores sociodemográficos, antropométricos, de estilo de vida y de riesgo de enfermedades cardiovasculares y tamizaje para estimar el riesgo cardiovascular.

Resultados: Variables clínicas: 61,8% tenían valores de colesterol total por encima de lo recomendado, 41,9% pre obesidad, 32,3% obesidad clase I y 6,5% obesidad clase II. Variables de comportamiento y estilos de vida: el 64,5% practica poco ejercicio físico y el 6,5% nunca lo practica, la mayoría de los participantes (61,3%) no sigue las recomendaciones diarias del grupo de alimentos cereales, derivados y tubérculos. Riesgo cardiovascular: el 44,1% tenía riesgo moderado y el 2,9% riesgo muy alto. Cabe señalar que el 45,8% desco-

noce los síntomas asociados al Infarto Agudo de Miocardio y el 47,9% los síntomas asociados al Accidente Cerebrovascular.

Conclusión: La alta prevalencia de factores de riesgo cardiovascular en la población estudiada hace imperativo desarrollar estrategias de prevención, promover estilos de vida saludables y mejorar la alfabetización en salud.

Descriptores: Educación en Salud; Enfermedades Cardiovasculares; Estilo de Vida Saludable; Factores de Riesgo; Prevención.

INTRODUCTION

Cardiovascular diseases (CVD) constitute an important public health problem worldwide, with social, economic and cultural impact. They are considered the main cause of death, representing 44% of deaths from non-communicable diseases[1].

It is estimated that in 2016 these pathologies were directly responsible for 17.9 million deaths, which represents 31% of all global deaths, with 85% of these deaths being essentially caused by acute myocardial infarction (AMI) and Cerebrovascular Accident (CVA[2]. In Portugal, CVDs were responsible for 33,624 deaths in 2019, which corresponds to 29.9% of deaths nationwide, registering an increase of 2.1% compared to the previous year[3].

Cardiovascular diseases are classified in the group of non-transmissible chronic diseases that develop slowly and silently throughout an individual's life. They include heart and vessel diseases, the most frequent being acute myocardial infarction and CVA[2]. Although its etiology is multifactorial, the most common pathophysiological process underlying it is atherosclerosis, an inflammatory process that develops when a substance called atherosclerotic plaque is deposited on the artery walls[4], hindering or preventing blood circulation, and which is associated with multiple factors.

Cardiovascular risk factors are conditions that lead to an increased likelihood of developing and developing cardiovascular disease. They can be divided into modifiable factors, including Arterial Hypertension, Diabetes *Mellitus*, dyslipidemia, overweight/obesity, smoking, physical inactivity and non-modifiable factors, such as age, sex, race and family history[5].

The high prevalence of cardiovascular risk factors in the population, as well as their modifiable nature and the costs associated with health care, whether due to inadequate use of health services or poor management of the disease, highlight the importance of investing in primary prevention of cardiovascular disease.

Most of these CVDs can be prevented by assessing behavioral risk factors, namely: tobacco consumption, unhealthy diet and obesity, sedentary lifestyle and alcohol abuse. In this context, and since the prevention of these pathologies is one of the most important public health policies, it is fundamental to adopt global strategies that promote healthy lifestyles[6]. The important role of health education is reinforced, in order to raise awareness of risky behaviors and contribute to change them.

In the context of the prevention of these diseases, the assessment of cardiovascular risk (CVR) is also recommended, which reflects the probability of developing a cardiovascular disease, in a given period of time, based on different risk factors that are independent predictors of increased risk of the disease[7]. In Europe and Portugal, the SCORE (Systematic Coronary Risk Evaluation) scale is used to calculate the CVR. This global risk assessment scale is used in primary prevention and should only be applied to asymptomatic people with no personal history of CVD. It estimates the risk of cardiovascular events over a ten-year period and allows risk to be stratified into four classes, namely, very high risk (SCORE ≥ 10%), high risk (SCORE ≥ 5% and < 10%), moderate risk (SCORE ≥ 1% and < 5%) and low (SCORE < 1%)[7].

This study focuses on the identification of cardiovascular risk factors and determination of the CVR of professionals in a Residential Structure for the Elderly People (RSEP) in Central Alentejo. Its purpose is to make a diagnosis of the situation of this population and, in this way, contribute, based on the methodology of health planning, to the elaboration of a community intervention project.

METHODS

This is an exploratory, descriptive study with a quantitative approach. The sample consisted of 31 individuals, in working age, who carry out their professional activity in a Residential Structure for Elderly People (RSEP) in Central Alentejo and who agreed to participate.

Data were collected by carrying out a screening in which the CVR was determined, and a questionnaire was applied for sociodemographic and anthropometric characterization of the participants, as well as the identification of their eating habits, physical exercise, smoking habits, factors of cardiovascular risk and knowledge about cardiovascular diseases. The questionnaire by Capucho (2013)[8] was selected, which is structured in two parts, the first part relating to sociodemographic and anthropometric data of the population and the second to lifestyles, namely: eating habits, smoking, physical exercise, use of health care and risk factors for cardiovascular disease, totaling 31 questions. It was applied directly to the population. For its use, permission was obtained from the author.

The ethical considerations set out in the Declaration of Helsinki were applied, particularly about ensuring the protection of collected data and voluntary and informed participation. All participants consented to their participation through the Free and Clarified Informed Consent (Consentimento Informado Livre e Esclarecido – CILE). It should be noted that approval was also obtained from the Ethics Committee – Area of Health and Welfare of the University of Évora.

The statistical treatment of the data was processed using the IBM Statistical Package Social Sciences (SPSS) program, version 24, using descriptive statistics.

RESULTS

In this study, 31 individuals participated (Table 1↗), all of whom were female, aged between 20 and 64 years old (71%). As for the household, all participants mention living with someone. The predominant educational level is the 3rd cycle (32.3%).

As for professional activity, the majority (71%) are direct action assistants.

Regarding the assessment of the anthropometric profile (Table 2↗), parameters such as height, weight, Body Mass Index (BMI) and waist circumference were evaluated. The data collected indicated that most participants were pre-obese (41.9%) and obese (38.8%). Regarding the abdominal perimeter, it was found that 3.2% of the respondents had an increased risk and 48.4% of the respondents had a much-increased risk of early onset of cardiovascular disease.

About eating habits, it was found that 80.6% of respondents consume fruit two to three times a day, while 19.4% only do it once a day. As for the consumption of vegetables, 45.2% of respondents reported eating vegetables two to three times a day, 38.7% once a day, while 12% do it four to five times a week and 12.9% two to three times a week.

Regarding the frequency of fish intake, it was observed that 22.6% eat fish two to three times a day, 32.3% once a day, 19.4% four to five times a week, 12.9% two to three times a week, 9.7% once a week and 3.2% say they never eat fish. As for meat consumption, it was shown that this is consumed two to three times a day by 29%, once a day by 41.9%, four to five times a week by 16.1% and two to three times a week by 12.9% of respondents.

Regarding the intake of cheese, milk and yogurt, it was found that 51.6% of the respondents do it two to three times a day, 19.4% once a day, 16.1% four to five times a week, 3.2% two to three times a week and 9.7% just once a week.

Bread and cereals are consumed two to three times a day by 38.7% of respondents, once a day by 38.7% and four to five times a week by 22.6%.

It was shown that 12.9% eat fat and fried foods two or three times a day, 9.7% once a day, 35.5% two or three times a week, another 35.5% once a week, while 6.5% reported never consuming fat and fried foods.

Regarding the consumption of sweets and biscuits, it was found that 16.1% do it two to three times a day, 16.1% once a day, 3.2% four to five times a week, 45.2% two to three times a week, 16.1 % once a week and 3.2% never consume this type of food.

About daily water intake, it was found that 6.5% ingest less than half a liter daily, 12.9% half a liter, 22.6% one liter, 41.9% one and a half liters and 16.1% ingest more than one and a half liters.

Regarding the consumption of alcoholic beverages, 48.4% of respondents reported never consuming this type of beverage, 41.9% consume it rarely, 6.5% consume it two to four times a month and 3.2% do not answer the question posed.

As for the practice of physical exercise, of at least 30 minutes, (Table 3[7]) it was observed that only 6.5% of the respondents practice physical exercise daily, 64.5% rarely do it and 6.5% claim never to have practiced.

Data regarding smoking habits showed that most of the sample (83.9%) had never smoked.

About a history of cardiovascular disease, all respondents claim that they have never had this type of pathology.

When asked about the symptoms associated with AMI (Graph 1[7]), 45.8% of respondents are unaware of the symptoms, or do not answer the question asked. The rest recognize as symptoms of AMI, feeling of lipothymia (2.1%), pain, pressure, tightness in the chest (14.6%), chest pain with irradiation (4.2%), sweating (8.3%), nausea (6.3%), vomiting (6.3%),

anxiety (2.1%), difficulty breathing (4.2%), palpitations (4.2%) and abdominal pain radiating to the shoulders (2.1%), that is, the most reported symptom was pain, pressure and chest tightness.

Still with regard to cardiovascular diseases, particularly stroke (Graph 2↗), it appears that 47.9% of respondents do not know or do not answer the question presented, with 4.2% indicating alteration of the state of consciousness as a symptom, 8.3% referring speech alteration, 12.5% decreased strength in the hemi bodies, 8.3% labial commissure deviation, 6.3% headache, 4.2% refer to high blood pressure, 6.3% indicate change in vision and 2.1% mention nausea and vomiting, that is, the most mentioned symptom was the decrease in strength.

About cardiovascular risk factors, 41.9% of respondents have a medical diagnosis of risk factors for cardiovascular disease, while 58.1% are not diagnosed with risk factors for cardiovascular disease. Considering the results obtained regarding cardiovascular risk factors, 36.4% had Arterial Hypertension, 36.4% dyslipidemia, 22.7% obesity and 4.5% Diabetes *Mellitus*.

Regarding the usual blood pressure values, it is observed that 19.4% of respondents do not know or do not answer the question posed. With regard to the usual systolic blood pressure values, it is observed that 32.3% have an excellent SBP, 12.9% a normal SBP, 19.4% a high normal SBP, 9.7% grade 1 hypertension and 6.5% grade 2 hypertension. About the usual diastolic blood pressure values, 45.2% of respondents are in the optimal category, 16.1% are in the normal category, 3.2% are in the high normal category, and 16.1% are in the grade 1 hypertension category.

About the usual cholesterol level, it appears that 25.8% usually register values below 190 mg/dl and, in the same percentage, another 25.8% reach values above 190 mg/dl. It should be noted that 48.4% of respondents did not answer the question posed. In view of this reality, in the screening carried out, the total cholesterol was assessed, and it was observed that 38.2% of the population had values below 190 mg/dl, while 61.8% had values above 190 mg/dl.

Regarding the usual blood glucose level, 3.2% of respondents refer that this value is usually below 70 mg/dl, 38.7% refer that it is between 70-140 mg/dl and 3.2% refer that it usually reaches values greater than 200 mg/dl. There is also a considerable number (54.8%) that do not answer the question. As such, in the screening carried out, the capillary glycemia parameter was evaluated, with the following results being obtained: 2.9% of the population presented values compatible with hypoglycemia, 85.3% were normoglycemic, 8.8% presented values compatible with prediabetes and 2.9% with diabetes.

The determination of the cardiovascular risk of the study population was carried out using the SCORE[7] scale, and it was verified that 52.9% of the participants were classified as having low risk for the development of CVD. However, 44.1% are classified as moderate risk and 2.9% as very high risk (Graph 3↗).

DISCUSSION

In the present study, we can see that we are facing an overweight population, with a higher prevalence than the national one (67.6%). In Portugal, there has been a marked and consistent increase in the prevalence of overweight in recent decades, and according to the results of the National Food and Physical Activity Survey (*Inquérito Alimentar Nacional e de Atividade Física* – IAN-AF)[9] more than half of the Portuguese adult population (58.1%) are overweight. This trend was also reported in a study by INSA[10], with a prevalence of overweight of 62.1%. The results of this study may eventually be explained by the predominance of low education in the sample, a reality similar to the national context, where, according to data from the 1st National Health Survey with Physical Examination (*Inquérito Nacional de Saúde com Exame Físico* – INSEF)[11], the standardized prevalence of Obesity is higher in individuals with no schooling or with schooling at the level of basic education (39.4%) compared to individuals with schooling at the level of Higher Education (19.5%).

Waist circumference is associated with CVD risk. Considering the data referring to this health indicator, it was found that this population has an increased and much increased risk of early onset of cardiovascular disease. These results are in line with those published in the EuroAspir IV study[12], which attested that central obesity (increased abdominal perimeter) affects 70% of Portuguese people with high cardiovascular risk. It should be noted that at national level the prevalence of abdominal obesity is 45.3%.

The Mediterranean diet, a proven healthy eating pattern, is associated with the prevention of cardiovascular diseases. Considering the data related to eating habits, the values obtained for this sample are close to the recommendations of the National Program for the Promotion of Healthy Eating[13]. There was, however, a low consumption of bread and cereals. Inadequate eating habits remain as one of the five factors that most contribute to the loss of years of healthy life for the Portuguese. Among the factors pointed out, the low consumption of whole grains stands out, in line with the results obtained in this sample. It is also evident that the Alentejo Region, in line with data from the National Food and Physical Activity Survey 2015-2016[9], has an adherence to the Mediterranean diet of 30.7%, the second highest in the country, a percentage still low.

Physical exercise is assumed to be a basic component in the prevention of cardiovascular diseases. In view of the data obtained, we are dealing with a mostly sedentary population. Identical conclusions were found in a national study[14], in which 74% of Portuguese people say they never, or rarely, practice physical exercise, registering an increase of 8% in the last 8 years, and only 5% claim to practice regularly. regular. In this sequence, a study[15] by the World Health Organization (WHO) points out that 43.2% of the Portuguese practice physical activity considered insufficient.

The sample shows that most respondents (83.9%) did not have smoking habits, while 16.1% already had smoking habits, and currently only 9.7% maintain these habits, consuming an average of 7 cigarettes daily. The results presented are in line with the data released in the National Health Survey, 2019[16] which revealed that the prevalence of tobacco consumption in the population residing in Portugal is 16.8% and that about 14% do so daily. However, when analyzing the data at regional level, it was found that the prevalence in this population is slightly lower than that recorded in the Alentejo Region (19.1%), which is the second region in the country with the highest prevalence of tobacco consumption. It should be added that the results of the e_COR[9] study estimated a prevalence of smoking in Mainland Portugal of 25.4%. In view of the above, it was verified that there is a decrease in the prevalence of tobacco consumption in recent years, as expressed in the Report of the National Program for the Prevention and Control of Tobacco Use 2020, of the General Health Directorate (*Direção-Geral da Saúde* – DGS)[17].

High Blood Pressure (HBP) is assumed to be the main and most frequent modifiable cardiovascular risk factor, so its treatment and control are fundamental. In this study, we found that most of the population has systolic blood pressure values that fall into the optimal and normal category. About diastolic blood pressure values, there was also a predominance of the optimal and normal categories, with 45.2% and 16.1%, respectively. In agreement with these data, the study by Branquinho[18] found that the majority of its population (47.6%) had normal blood pressure values. In this sequence, it should be noted that the prevalence of hypertension in Portugal showed a downward trend, recording a prevalence of 36% according to INSEF[11] (2015) against the 43.1% recorded in the INSA study[10] in the period from 2012 to 2014.

Dyslipidemia is a major risk factor in the development of CVD, as it is directly involved in the atherosclerosis process. In the present study, there was a high prevalence of total cholesterol values greater than 190 mg/dl. Nationally, and according to data from the INSEF[11] study, about half of the population (52.3%) had total cholesterol values equal to or greater than the recommended value (190 mg/dl). The high prevalence of this risk factor is also observed in the national study of the *Instituto Nacional de Saúde Doutor Ricardo*

Jorge[9] where the prevalence of total cholesterol values ≥ 200 mg/dl in the Portuguese population is 56.3% and the prevalence of total cholesterol ≥ 240 mg/dl is 31.3%.

Diabetes *Mellitus* is one of the most important risk factors for cardiovascular disease. In this study, it was found that 2.9% of the population has values compatible with pre-diabetes and 8.8% with diabetes, however the majority of this population, 85.3% are normoglycemic, that is, they have normal values of capillary glycemia, in line with the reference values of the Protective Association of Diabetics of Portugal (*Associação Protetora dos Diabéticos de Portugal* – APDP)[19]. It should be noted that in Portugal, the prevalence of diabetes estimated through the INSEF[11] in the population aged between 25 and 74 (9.8%), was lower than the prevalence recorded in the report of the National Diabetes Program (PND)[20] of 2019, whose value was 10 to 13% of the population aged 20 to 79 years old, remaining as one of the highest in Europe.

Knowledge regarding CVD, as well as all its constraints, is fundamental for its understanding and prevention, but it is also vital for changing the lifestyle and behavior of individuals. Health literacy is fundamental in the decision-making process in health and consequently in achieving better results. In this study, it was found that the respondents have low literacy in cardiovascular health, with 45.8% unaware of the symptoms associated with AMI and 47.9% unaware of the symptoms associated with stroke. The data obtained corroborate those found in the study published by the Portuguese Society of Cardiology (*Sociedade Portuguesa de Cardiologia* – SPC)[21], in which approximately 30% of the participants did not answer or did not know how to answer questions related to the risk of AMI and stroke.

One of the topics of cardiovascular prevention is the prediction of cardiovascular risk, so the calculation of this risk is essential. The SCORE[7] algorithm was used to assess the CVR. Overall, it was verified that 52.9% of the participants are classified as low risk, however 44.1% are classified as moderate risk and 2.9% as very high risk of developing cardiovascular events, in a period of 10 years, being the age group of 50 to 59 years-old and the lowest level of education, where there is a greater risk. Contrary to what was presented in the present study, the National Health Survey with Physical Examination (INSEF)[11] found that very high cardiovascular risk is more frequent in the age group of 60 to 65, reaching 25.6%. However, it also found concordant data between them, namely very high cardiovascular risk being more frequent in people with less schooling, having registered 20.1% in people with no schooling or with schooling at the 1st cycle level, compared to 6.4% in people with schooling at the higher education level. It should also be noted that the study shows that in mainland Portugal, the Alentejo Region, with 12.5%, is the one with the highest prevalence of very high CVR, in contrast, the Center Region

is found with 9.6%. Another study, by Branquinho[17] found that most of the population (25.4%) had low risk, 31.7% moderate risk, 6.3% high risk and 3.2% very high risk of cardiovascular events. In this study, the very high CVR was observed in the age group from 51 to 60 years old.

CONCLUSION

Cardiovascular diseases (CVD) are very prevalent in the community, the results of this study are an example of this reality.

In the studied population, the presence of cardiovascular risk factors was verified, with a high prevalence of overweight, sedentary lifestyle, hypercholesterolemia and inadequate eating habits, as well as a high lack of knowledge regarding cardiovascular diseases, reinforcing the need to improve the health literacy.

The results obtained are worrying, which highlights the pertinence of implementing urgent preventive strategies. It is important to highlight that most CVDs can be prevented by effectively addressing behavioral risk factors, including diet, weight, physical activity, smoking and alcohol intake. Equally important is the assessment of cardiovascular risk as a means of preventing cardiovascular events.

In this framework, health promotion actions, with a focus on healthy habits and lifestyles, particularly the practice of healthy eating and physical activity, control of cardiovascular risk factors, calculation of cardiovascular risk, clinical surveillance and improvement of health literacy, are essential for the prevention of CVD and consequently for the improvement of the quality of life.

Authors' contributions

RV: Study coordination, study design, data collection, storage and analysis, review and discussion of results.
EC: Study design, data analysis, review and discussion of results.
AC: Study design, data analysis, review and discussion of results.
MG: Study design, data analysis, review and discussion of results.
AC: Study design, data analysis, review and discussion of results.
AD: Study design, data analysis, review and discussion of results.
All authors read and agreed with the published version of the manuscript.

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Table 1 – Sociodemographic characterization of the study population.

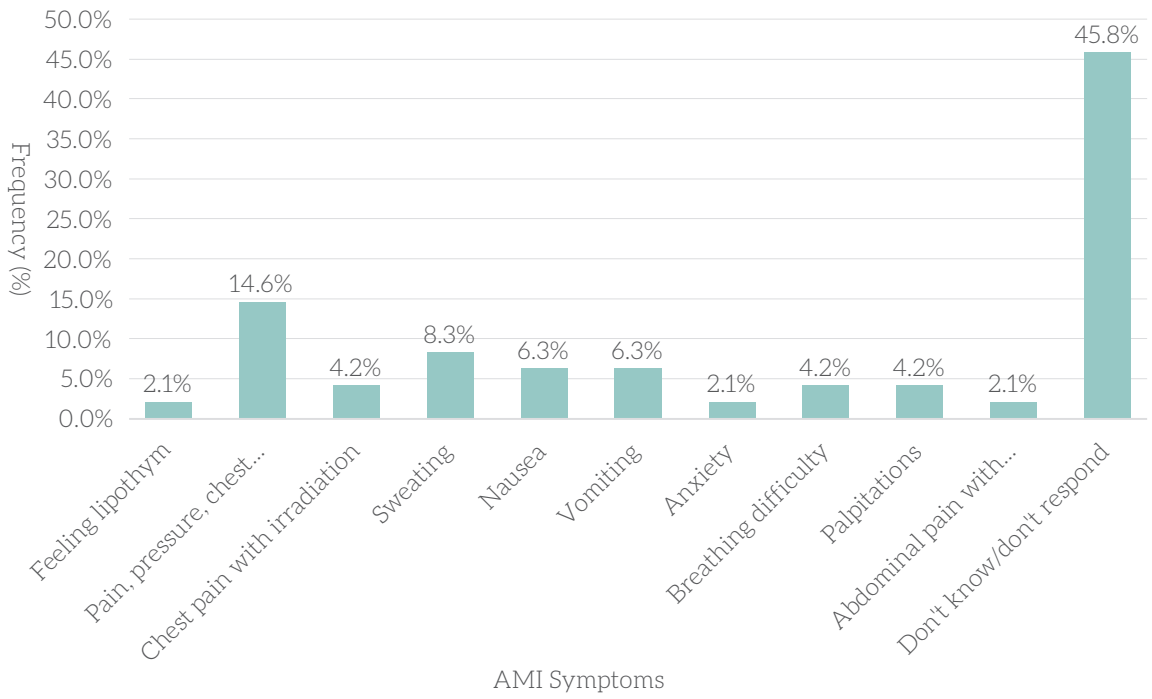
Sample description	N	%
Age group		
20-29	2	6.5
30-39	5	16.1
40-49	11	35.5
50-59	11	35.5
60-64	2	6.5
Gender		
Female	31	100
Educational level		
Can't read or write	1	3.2
1st cycle (1st – 4th grade)	4	12.9
2nd cycle (5th – 6th grade)	6	19.4
3rd cycle (7th – 9th grade)	10	32.3
High school (10th – 12th grade)	4	12.9
Higher education	6	19.4
Family members		
Lives with someone	31	100

Table 2 – Anthropometric characterization of the study population.

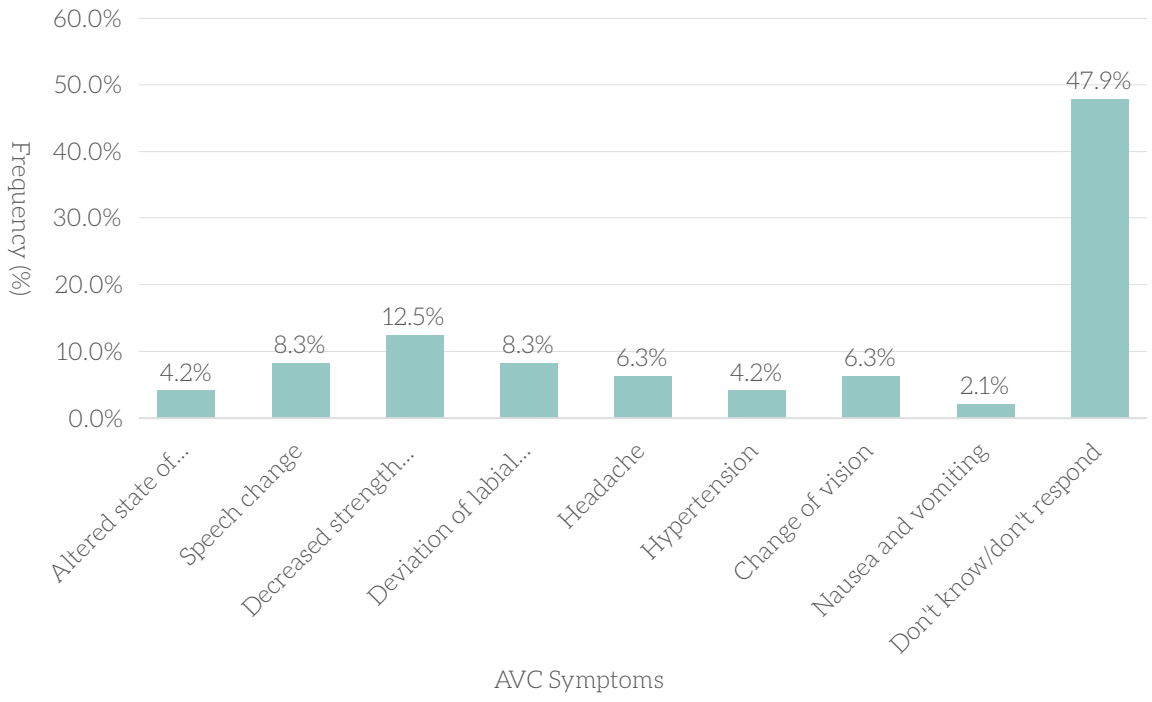
Anthropometric profile	N	%
Body mass index (BMI – kg/m²)		
Low weight (< 18.5)	1	3.2
Normal weight (18.5 to 24.9)	5	16.1
Pre-obesity (25.0 to 29.9)	13	41.9
Class I obesity (30.0 to 34.9)	10	32.3
Class II obesity (35.0 to 39.9)	2	6.5
Abdominal circumference (cm)		
< 80cm	6	19.4
> 80cm	1	3.2
> 88 cm	15	48.4
Don't know/don't answer	9	29.0

Table 3 – Characterization of the exercise practice of the study population.

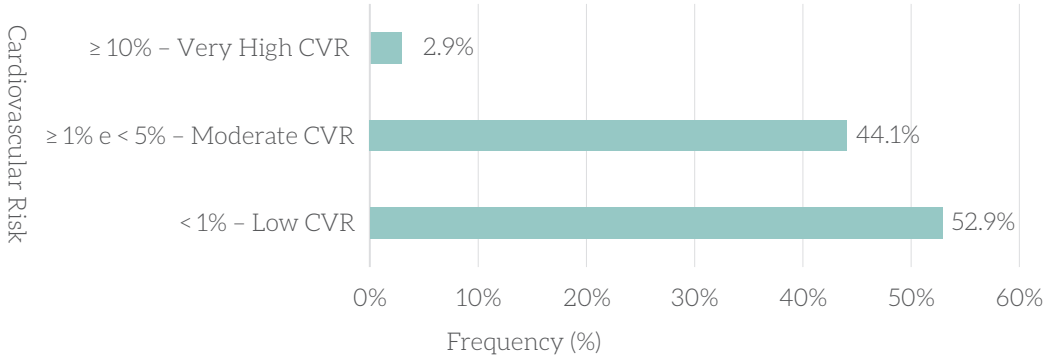
Physical exercise	N	%
Frequency of practice physical exercise (at least 30 minutes)		
Daily	2	6.5
3 to 4 times weekly	3	9.7
4 or 5 times weekly	4	12.9
Rarely	20	64.5
Never	2	6.5



Graph 1 – AMI symptoms identified by the study population.



Graph 2 – Stroke symptoms identified by the study population.↖



Graph 3 – Determination of the cardiovascular risk of the study population.↖