Assessment of cardiovascular risks among users of primary health care services

Avaliação de riscos cardiovasculares em usuários de serviços de atenção primária à saúde

DOI: 10.55905/rcssv12n2-026

Received on: June 27th, 2023
Accepted on: July 24th, 2023

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ABSTRACT

Objective: The aim of the study was to investigate Cardiovascular Risk (CVR) among users of Primary Health Care (PHC) services in a municipality in the state of Minas Gerais/Brazil. Materials and Methods: The study was carried out from January to April 2023, with an assessment of CVR through the application of the Framingham Global Risk Score (GRS) among PHC users. Results: Eighty PHC users were evaluated, 31 males (39%) and 49 females (61%), mean age between 55 and 59 years. Among those evaluated, 57 (71%) do not smoke and 23 (29%) smoke, 54 (68%) are not diabetic and 26 (32%) are diabetic, 62 (78%) have a history of arterial disease in the family and 18 (22%) do not have it, the mean total cholesterol assessed ranged between 178.5 and 217.5 mg/dl and the mean untreated systolic blood pressure ranged between 134 and 143 mmHg, and treated between 125 and 134 mmHg. Data on the GRS showed an overall mean score of
15.75 (18.83%). The analysis of the Framingham GRS average among women identified a value of 14.92 (15.98%) and among men, 17.1 (23.34). Most men and women had high CVR. Conclusion: It is concluded that most patients had a high cardiovascular risk and that prevention strategies and urgent treatments are needed among those evaluated.

**Keywords:** systolic blood pressure, cardiovascular risk, overall risk score, cerebrovascular.

**RESUMO**

Objetivo: O objetivo do estudo foi investigar o Risco Cardiovascular (RCV) entre usuários de serviços da Atenção Primária à Saúde (APS) de um município do estado de Minas Gerais/Brasil. Materiais e Métodos: O estudo foi realizado de janeiro a abril de 2023, com avaliação da RCV por meio da aplicação do Framingham Global Risk Score (GRS) entre usuários da APS. Resultados: Foram avaliados 80 usuários da APS, 31 do sexo masculino (39%) e 49 do sexo feminino (61%), com idade média entre 55 e 59 anos. Dentre os avaliados, 57 (71%) não fumam e 23 (29%) fumam, 54 (68%) não são diabéticos e 26 (32%) são diabéticos, 62 (78%) possuem histórico de doença arterial na família e 18 (22%) não possuem, o colesterol total médio avaliado variou entre 178,5 e 217,5 mg/dl e a pressão arterial sistólica média não tratada variou entre 134 e 143 mmHg, e tratados entre 125 e 134 mmHg. Os dados do GRS mostraram uma pontuação média geral de 15,75 (18,83%). A análise da média de Framingham GRS entre as mulheres identificou o valor de 14,92 (15,98%) e entre os homens, 17,1 (23,34). A maioria dos homens e mulheres apresentou alta RCV. Conclusão: Conclui-se que a maioria dos pacientes apresentava alto risco cardiovascular e que são necessárias estratégias de prevenção e tratamentos urgentes entre os avaliados.

Palavras-chave: pressão arterial sistólica, risco cardiovascular, pontuação geral de risco, cérrebro vascular.

**1 INTRODUCTION**

Cardiovascular Diseases (CVD) are pathological changes that affect the heart and blood vessels. Currently, they are the main cause of death in Brazil, affecting mainly the population between the ages of 30 and 69 years. In addition, CVD impose limitations on the quality of life of the population in social, physical and financial aspects, and on health systems (1).

CVDs are a challenge for the health system, given that they represent the major cause of death in the world population (2). In this sense, in addition to advancing age and hereditary issues, some risk factors can be treated, such as inadequate diet, high blood pressure, alcohol use, hypercholesterolemia, physical inactivity, smoking and obesity (1,2).

Since 2021, more than 203,000 people have died from CVD in Brazil, ranking first in the world in this regard. Among these cases, some stand out, such as chronic heart...
failure, hemorrhagic cerebrovascular accident (CVA) and others, which mostly victimize elderly people between 70 and 79 years of age. The pandemic, in turn, further aggravated the condition of heart disease, as it is estimated that social isolation reduced, on average, 150 minutes per week dedicated to moderate physical exercise, such as walking and outdoor activities (3). In 2018, a study published showed that the Brazilian adult population did not practice sports at levels indicated by the World Health Organization (WHO) (4). Considering that one of the best ways to avoid such illnesses is the practice of physical exercises. Facts like those mentioned above are plausible justifications that externalize why, in addition to other factors, people suffer the consequences of these pathologies.

Risk factors and CVDs can predispose to cerebrovascular diseases and, therefore, generate cognitive decline, as they share the same pathophysiology (2,5). This happens because the brain is very dependent on the cardiovascular system in order to eliminate heat and metabolic products, in addition to supplying energy. In this way, it is seen that the lack of energy supply, as well as the accumulation of metabolic products can, due to a cardiac alteration, promote the emergence of dementia, including Alzheimer's and other neurological pathologies (6).

CVD risk factors are associated with the occurrence of cardiac and cerebrovascular pathologies, such as hemorrhagic stroke, which represents 20% of all strokes, with intracranial hypertension (ICH) being the most common. Individuals with hypertension who do not undergo monitoring and treatment are the most likely to have strokes (7).

The prevalence of risk factors for coronary artery disease (CAD) in the State of Rio Grande do Sul emphasizes the importance of strict blood pressure control in the acute phase and minimally invasive surgical evacuation of hemorrhage, if necessary. The group with the highest prevalence of stroke in this study were white men aged between 45 and 84 years (7).

When dealing with CVD risks, studies of global health mention that the population does not exercise according to the levels indicated by the WHO and it is important to emphasize that sedentary lifestyle is not the only factor to be studied for trace the CVD susceptibility profile. From sociodemographic studies published, the risks are divided into two large spheres, non-modifiable risk factors, such as age, sex and heredity; and modifiable risk factors such as heart disease, obesity, dyslipidemia, smoking, hypertension, stress and diet. Within the non-modifiable categories, age and gender, some
studies conducted by North American universities have shown that obesity in women, when associated with smoking, increases the chances of developing more serious heart diseases. While obese men and alcoholics are more likely to develop pathologies (8). In this sense, it is worth mentioning that obesity is a disease caused by the accumulation of fats in the blood due to sedentary lifestyle, a potential agent for diabetes.

Thus, studies of cardiovascular risks among users of health services in primary care in the city of São João del-Rei/Minas Gerais become extremely important in order to identify and propose interventions that enable prevention and health promotion of users, reducing the risks of CVD and cerebrovascular disease that trigger serious problems in the functionality and systemic functions of the patient.

The study investigated CVD risks among users of PHC services in the city of São João del-Rei.

2 MATERIAL AND METHODS

The study was carried out from August 2022 to May 2023 in the city of São João del-Rei (MG). The study is original, with cross-sectional design. Users who agreed to participate in the 18 Basic Health Units (BHU) in the city of São João del-Rei were interviewed. To carry out this study, the Framingham GRS was used to assess CVD risks among PHC users, allowing the identification of the group of patients with mild, moderate and high CVD risk.

The project was submitted to the ethics committee involving human beings considering resolution 466 of the National Ethics Committee and was approved with CAAE code equal to 60625622.3.0000.9667.

For data analysis, mean and standard deviation were considered, in addition to using the chi-square test for data analysis. A significance level of 5% was considered.

3 RESULTS

Eighty PHC users were evaluated, 31 male (39%) and 49 female (61%). The age of the evaluated users varied between 55 and 59 years old, with 55 years old being the average age. About 57 (71%) do not smoke and 23 (29%) smoke.

It was identified that 54 (68%) are not diabetic and 26 (32%) are diabetic; 62 (78%) users have a family history of arterial disease and 18 (22%) do not.

The evaluation of the mean total cholesterol showed that the values ranged between 178.5 and 217.5 mg/dl and the mean untreated systolic blood pressure ranged
between 134 and 143 mmHg. The analysis of the mean treated systolic blood pressure varied between 125 and 134 mmHg.

The Framingham GRS data demonstrated an overall point average of 15.75 (18.83%). The analysis of the mean GRS among women identified a value of 14.92 (15.98%) and among men, 17.1 (23.34).

When analyzing the data with the Framingham GRS, it is possible to observe that men in general have 23% of GRS, which is equivalent to high risk. Among women, the GRS was 15%, which also corresponds to high risk. According to the number of patients stratified between GRS levels, it was possible to observe that 10 women were at low risk, 07 at intermediate risk and 27 at high risk. Among men, 8 are at intermediate risk and 19 at high risk, as shown in Table 1.

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Source: WHO (2019) and authors

4 DISCUSSION

The research results demonstrated a high cardiovascular risk among women and men assessed in primary health care in the investigated municipality.

These data draw attention to the need for health education and prevention of risk factors for cardiovascular and cerebrovascular diseases that are caused by an increase in CVR (9). Coronary heart disease and stroke are the most common diseases in the world, with low- and middle-income countries being the most affected (10).

In the present study, an average age of 55 years was identified among those evaluated, with a higher number of females than males. The WHO study (1) also identified an approximate average age of 54 years among men and 56 years among women.

Although most of those evaluated in the research did not smoke and were not diabetic, high data on total cholesterol and treated and untreated systolic blood pressure
impacted the calculation of CVR, placing most of those evaluated at high risk. In the work of WHO (1) it was identified that the history of diabetes and smoking associated with cardiovascular disease decreases with age, especially among women.

The Framingham GRS is an instrument recommended for the assessment of CVR in Brazil and worldwide and is easy to handle for evaluation (11). Thus, it is possible to identify the risk of individuals to develop a cardiovascular event within 10 years (12).

Systemic Arterial Hypertension (SAH) and high cholesterol levels significantly increase the probability of cardiovascular events (13,14), therefore, it becomes extremely important to calculate the CVR as a form of prevention and awareness of patients to adhere to the treatment and decrease the mortality from CVD, such as stroke and acute myocardial infarction (AMI) (15). In the WHO study (1), a higher incidence of AMI was observed among men of the 376,177 participants, between the years 1960 and 2013, in 21 regions of the world. It was also observed that the incidence of stroke was similar between genders.

Thus, it becomes extremely important to evaluate the CVR of health users, since treatment and prevention strategies can be motivated in the services in order to reduce these serious cases and thus impact with better results and a decrease in mortality from these conditions.

5 CONCLUSION

It is concluded that most of the evaluated patients had a high cardiovascular risk, which draws attention to the high risk of developing cerebrovascular diseases, AMI and kidney diseases in up to 10 years. Prevention strategies and urgent treatment are needed among those evaluated.

ACKNOWLEDGMENTS

The present study was supported by Copex/Uniptan/Afya
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