ANALYSIS OF MORTALITY FROM ACUTE MYOCARDIAL INFARCTION IN BRAZIL BETWEEN 2012 AND 2022

ANÁLISE DA MORTALIDADE POR INFARTO AGUDO DO MIOCÁRDIO NO BRASIL ENTRE OS ANOS DE 2012 A 2022

ANÁLISIS DE LA MORTALIDAD POR INFARTO AGUDO DE MIOCARDIO EN BRASIL ENTRE 2012 Y 2022

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ABSTRACT

The study "Mortality from Acute Myocardial Infarction, Brazil (2012 to 2022)" analyzed data from DATASUS to understand the relationship between acute myocardial infarction (AMI) and sociodemographic variables, such as age, race, and education level. The study highlighted that most cases occurred in middle-aged and older adults, reinforcing the association between aging and a higher risk of AMI. Regarding skin color, the data did not show a direct correlation, although ethnic subgroups point to possible genetic influences. Regarding education, a higher incidence of AMI was observed in individuals with lower educational levels, suggesting the impacts of social inequalities and limited access to health information.

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The study emphasizes the need for public policies focused on the prevention and management of AMI, considering the most vulnerable groups.

Keywords: Acute Myocardial Infarction. Mortality. Risk Factors. Sociodemographic Data. Aging. Education.

RESUMO

O estudo "Mortalidade por Infarto Agudo do Miocárdio, Brasil (2012 a 2022)" analisou dados do DATASUS para compreender a relação entre o Infarto Agudo do Miocárdio (IAM) e variáveis sociodemográficas, como faixa etária, cor da pele e nível de escolaridade. A pesquisa destacou que a maioria dos casos ocorreu em adultos de meia-idade e idosos, reforçando a associação entre envelhecimento e maior risco de IAM. Quanto à cor da pele, os dados não evidenciaram correlação direta, embora subgrupos étnicos apontem para possíveis influências genéticas. Em relação à escolaridade, observou-se maior incidência de IAM em indivíduos com menor nível educacional, sugerindo impactos de desigualdades sociais e acesso limitado à informação em saúde. O estudo enfatiza a necessidade de políticas públicas focadas na prevenção e manejo do IAM considerando os grupos mais vulneráveis.

Palavras-chave: Infarto Agudo do Miocárdio. Mortalidade. Fatores de Risco. Dados Sociodemográficos. Envelhecimento. Escolaridade.

RESUMEN

El estudio “Mortalidad por Infarto Agudo de Miocardio, Brasil (2012 a 2022)” analizó datos de DATASUS para comprender la relación entre el Infarto Agudo de Miocardio (IAM) y variables sociodemográficas, como grupo de edad, color de piel y nivel de educación. La investigación destacó que la mayoría de los casos ocurrieron en adultos de mediana edad y ancianos, lo que refuerza la asociación entre el envejecimiento y un mayor riesgo de IAM. Respecto al color de la piel, los datos no mostraron una correlación directa, aunque los subgrupos étnicos apuntan a posibles influencias genéticas. Respecto a la educación, se observó una mayor incidencia de IAM en individuos con niveles educativos más bajos, lo que sugiere los impactos de las desigualdades sociales y el acceso limitado a la información de salud. El estudio enfatiza la necesidad de políticas públicas enfocadas en la prevención y manejo del IAM, considerando a los grupos más vulnerables.

Palabras clave: Infarto Agudo de Miocardio. Mortalidad. Factores de Riesgo. Datos Sociodemográficos. Envejecimiento. Educación.

1 INTRODUCTION

Acute Myocardial Infarction (AMI) is the leading cause of death in the country. It is estimated that, in Brazil, there are 300 thousand to 400 thousand cases of heart attack per year and that for every 5 to 7 cases, there is one death. To reduce the risk of death, urgent and emergency care, in the first minutes, is essential to save a life (BRAZIL, 2024). MI occurs when the blood flow that carries oxygen to the heart is severely reduced or cut off, causing heart cells to die. This event is mainly caused by the formation of atheromatous plaques in the coronary arteries, a process known as atherosclerosis (Lopez et al., 2006).

Risk factors for these diseases include tobacco consumption, high blood pressure, inadequate diet, sedentary lifestyle, excessive alcohol consumption, environmental pollution, presence of metabolic alterations, high cholesterol, diabetes, and overweight and obesity (Siqueira, de Souza, 2020).

Cardiac conditions impose on individuals physical, social, financial, and health-related quality of life limitations. These conditions result in an economic burden and an impact on society due to health care expenditures, productivity losses resulting from employment impacts, formal and informal care costs, and loss of well-being. Circulatory diseases currently represent the greatest burden on health globally, accounting for more than 17 million deaths every year; this represents half of all deaths from non-communicable diseases (WORLD HEART FEDERATION, 2016).

The assessment of these risk factors is very important, along with the analysis of the determinants of health and social inequities. However, health promotion and prevention actions are also essential, as well as the monitoring of trends and their dynamics over the years. This identifies the regions with the highest potential risks of mortality from AMI and helps to plan public policies more effectively (Siqueira, de Souza, 2020). In this context, the objective of this study is to analyze the relationship between the occurrence of Acute Myocardial Infarction (AMI) and sociodemographic variables, including age group, skin color, and education level.

2 METHODOLOGY

The data for this study were obtained from DATASUS, a health information system maintained by the Brazilian Ministry of Health. Acute Myocardial Infarction (AMI) records were collected from 2012 to 2022.

The patients' ages were grouped into age groups for analysis, with an interval of 10 years, starting at 25 years.

The skin color categories considered were white and non-white (brown, black, yellow and indigenous), according to the classification used by DATASUS.

The patients' education was categorized into years of study, including groups with incomplete elementary school, complete elementary school, incomplete high school, complete high school, incomplete higher education, and complete higher education.

All records of patients diagnosed with Acute Myocardial Infarction within the mentioned period were selected, ensuring a representative sample for analysis.

Statistical analyses were performed using descriptive and inferential techniques. For categorical variables, bar graphs and contingency tables were used to visualize the results.

It is important to emphasize that this study is subject to limitations inherent to secondary data from DATASUS, such as possible inconsistencies or gaps in the records.

3 RESULTS AND DISCUSSIONS

The results of the analysis of DATASUS data on Acute Myocardial Infarction (AMI) from 2012 to 2022 reveal important insights into the relationship between this condition and sociodemographic variables, including age group, skin color, and education level.

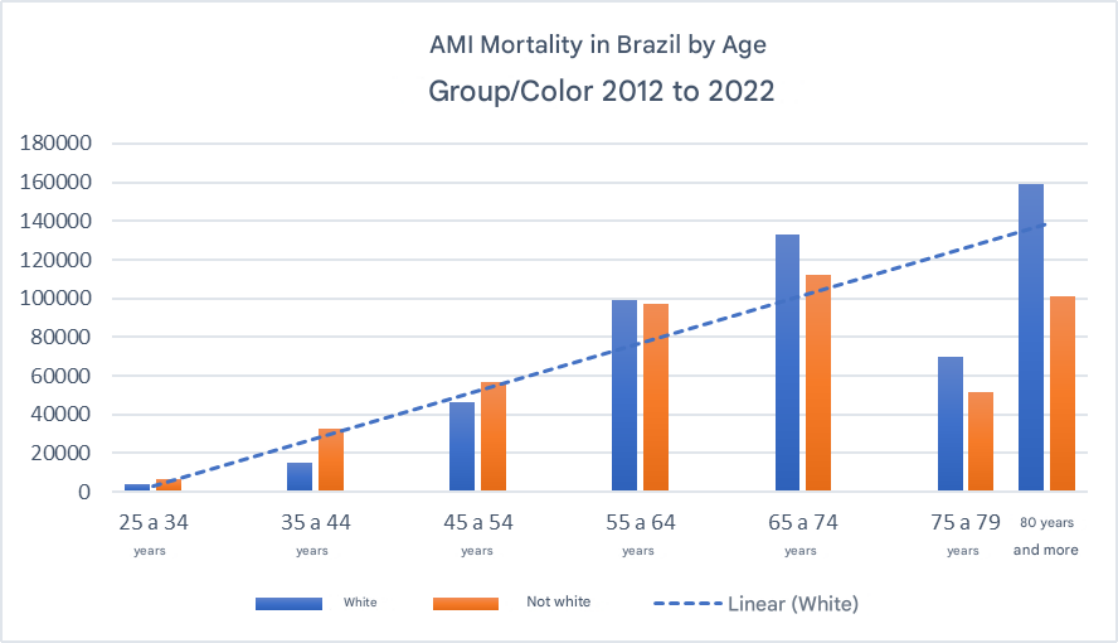
The distribution of AMI cases by age group showed a significant trend. It was observed that most cases occurred in middle-aged and elderly adults, representing the majority of recorded cases. This suggests an association between aging and increased risk of AMI, corroborating previous studies that highlight the relationship between advanced age and a higher incidence of cardiovascular events (FERREIRA et al., 2020).

Analysis by skin color revealed interesting patterns. The data show that skin color did not present a direct correlation with the occurrence of AMI. However, when specifically analyzing ethnic subgroups, such as the white population, a slightly higher proportion of

AMI cases was noted compared to non-white groups (black, indigenous, yellow, and brown). These findings point to the need to consider genetic factors in the assessment of cardiovascular risk (SANTOS et al., 2020).

Figure 1

Mortality AMI age group/skin color

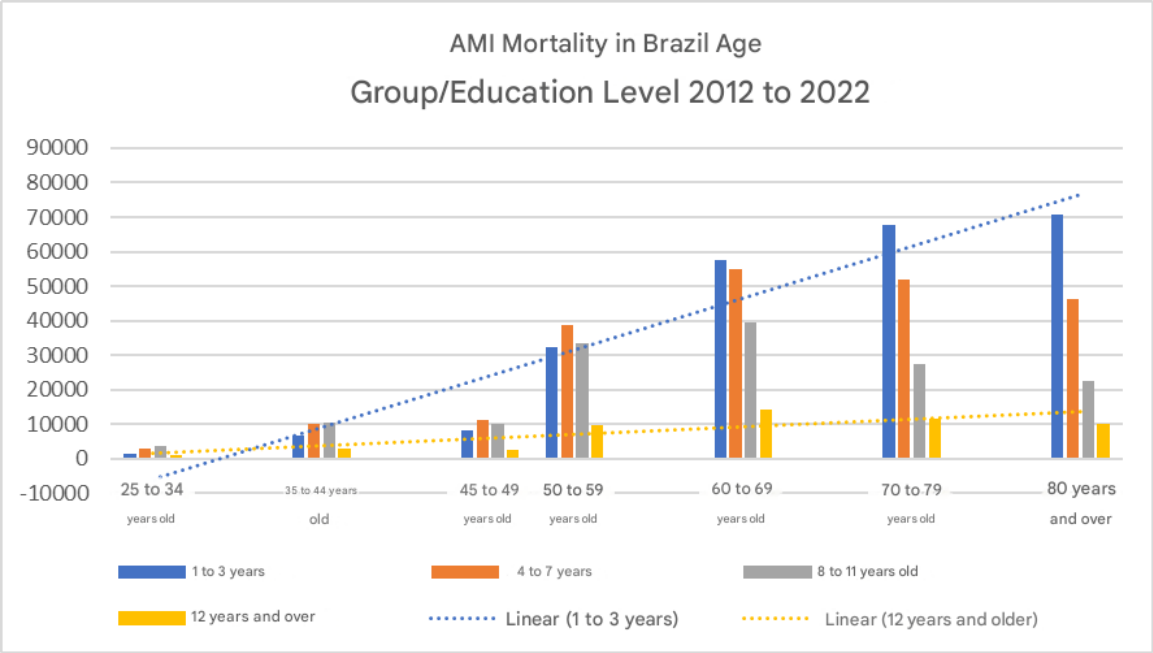


Source: Adapted from DATASUS

The relationship between education level and AMI was evidenced in the data. It was observed that patients with lower schooling, especially those with incomplete primary education or no schooling, had a higher incidence of AMI compared to those with complete secondary education or higher. This suggests a possible association between low education and cardiovascular risk factors, such as unhealthy lifestyle habits and limited access to preventive health information (SILVA et al., 2019).

Figure 2

Mortality AMI age group/schooling



Source: Adapted from DATASUS

It is important to emphasize that this study faced limitations inherent to the DATASUS data, such as possible inconsistencies or gaps in the records. In addition, the analysis did not consider other important risk factors, such as family history of cardiovascular disease, lifestyle, and access to health services. Therefore, future research should deepen these aspects for a more comprehensive understanding of the determinants of AMI (MERTINS et al., 2016).

In summary, the results of this analysis highlight the importance of considering sociodemographic variables in the assessment of the risk and incidence of AMI. This information is essential to guide public health policies and prevention strategies aimed at the most vulnerable groups.

4 CONCLUSION

This study analyzed the relationship between the occurrence of Acute Myocardial Infarction (AMI) and sociodemographic variables, including age group, skin color, and education level, using data from DATASUS from 2012 to 2022. The results highlighted a

significant association between advanced age and increased risk of AMI, underscoring the importance of promoting cardiovascular health in middle-aged and older adults. Although skin color did not show a direct correlation with the incidence of AMI, the analysis by ethnic subgroups suggests the need to consider genetic factors in the assessment of cardiovascular risk. In addition, the relationship between low education and higher incidence of AMI points to the importance of access to information and education in preventive health. This study emphasizes the ongoing need for comprehensive research to understand the determinants of AMI and guide effective public policies for the prevention and management of this serious health condition.

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