



Investigation of the main causes of death of cardiovascular origin in the Brazilian female population from 2009-2019

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ABSTRACT

The evaluation of the causes of death related to cardiovascular impairment is of crucial importance to understand the challenges faced by the Brazilian female population over time. To evaluate the most prevalent causes of death in the Brazilian female population due to cardiovascular impairment by age between 2009 and 2019.

Keywords: Causes of Death, Women, Cardiovascular system.

1 INTRODUCTION

The evaluation of the causes of death related to cardiovascular impairment is of crucial importance to understand the challenges faced by the Brazilian female population over time. The understanding of these temporal and age patterns is essential to guide preventive and interventionist health policies, aiming at reducing morbidity and mortality associated with cardiovascular diseases in this portion of the population.

2 OBJECTIVE

To evaluate the most prevalent causes of death in the Brazilian female population due to cardiovascular impairment by age between 2009 and 2019.



3 METHODOLOGY

Quantitative study on causes of death, analyzing the age group 2009-2019. Data from DATASUS on "ICD-10 Deaths: IX. Diseases of the circulatory system for the female population" were used. To calculate the demographic data, data from the IBGE were used. The incidence rate of deaths by age group in the period 2009-2019 was calculated by $f = (\text{Number of deaths})/(\text{total population}) \times 100000$.

4 RESULTS

A total of 1,801,127 deaths were recorded in the period 2009-2019. A total of 67 categories were listed in Chapter IX, the most common of which were in the female population: acute myocardial infarction (ICD I21) 39,511 deaths/year, cerebrovascular accident (ICD I64) 21,935 deaths/year and heart failure (I50) 15,654 deaths/year. From 15 years of age onwards, the number of deaths was progressively higher with age for these categories. In addition, the main causes of death by age group were analyzed. It is observed that cardiomyopathies are the most prevalent cause in the female population, children and adolescents. In addition, congenital malformation is among the leading causes of death in the pediatric female population. Acute myocardial infarction appears as the most prevalent cause for all age groups from 20 years of age. It is important to note that pulmonary embolism becomes one of the main causes of death between 20 and 29 years of age (0.59 deaths per 100,000 inhabitants/year), as shown in Table 1.

Table 1 - Incidence of the main causes of death in the Brazilian female population by age group.

Age group	ICD-10 Category	Incidence per 100,000 inhabitants
0 to 4 years	I42 Cardiomiopatis	1,60
	I51 Complicating heart disease, ill-defined heart disease	0,56
5 to 9 years	I42 Cardiomiopatis	0,19
	I61 Intracerebral hemorrhage	0,12
10 to 14 years	I42 Cardiomiopatis	0,28
	I61 Intracerebral hemorrhage	0,24
15 to 19 years old	I42 Cardiomiopatis	0,37
	I21 Acute myocardial infarction	0,37
20 to 29 years old	I21 Acute myocardial infarction	0,87
	I26 Pulmonary embolism	0,59
30 to 39 years old	I21 Acute myocardial infarction	3,56



	I61 Intracerebral hemorrhage	1,85
40 to 49 years old	I21 Acute myocardial infarction	13,68
	I61 Intracerebral hemorrhage	5,48
50 to 59 years old	I21 Acute myocardial infarction	36,80
	I64 Cerebrovascular accident	12,22
60 to 69 years old	I21 Acute myocardial infarction	82,34
	I64 Cerebrovascular accident	31,83
70 to 79 years old	I21 Acute myocardial infarction	191,05
	I64 Cerebrovascular accident	106,41
80 years and over	I21 Acute myocardial infarction	487,28
	I64 Cerebrovascular accident	377,80

5 CONCLUSIONS

Based on these data, deaths from cardiovascular diseases will occur predominantly in the older age group of the population. This is due to numerous factors associated with age, such as the presence of multiple comorbidities, reduced functionality of the immune system, and reduction in vascular elasticity, increased blood pressure, hormonal changes, among others. Furthermore, the appearance of AMI in the young female population as one of the main causes of death suggests that poor diet and lack of physical activity are having an important impact on the health of the female population. In addition, it is notorious that pulmonary embolism stands out among the diseases that causes the most deaths in the female population during childbearing age (0.59 deaths/100,000 inhabitants/year). This suggests that there may be an epidemiological impact on female mortality associated with the use of oral contraceptives. It is known to the medical community that the use of contraceptives can induce a procoagulatory state and emboli formation in the pulmonary system. This evidence suggests that further studies are needed to assess the increase in female mortality associated with contraceptive use.



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