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Mortality Profile of Elderly Women in a Brazilian Northeast State

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Abstract:

This study aimed to outline the profile of elderly women who died from preventable causes in a Brazilian Northeast State from 2011 to 2020. This is an ecological time series research on mortality from preventable causes in elderly women living in the state of Alagoas, from 2011 to 2020. Data were collected in July 2022, in the Health Information Base of the Department of Informatics of the Unified Health System. In the period studied, 51,932 deaths were reported among the elderly aged between 60 and 74 years, of which 37,339 (71.9%) were clearly avoidable deaths (excluding deaths from ill-defined causes and those that are not clearly preventable). Of the number of preventable deaths, 16,933 (45.3%) were female. The data found show that the largest number of deaths the elderly had the age group between 70 and 74 years, were brown, 24.6% were married, in 35% of cases were an ignored topic, as well as in education, where 47.2% had ignored completion and 4,846 had no schooling. Thus, it is evident the need to work on health education of women in all life cycles, aimed at promoting and preventing health for healthy aging.

Keywords: aged; mortality; quality of life; aging; nursing.

INTRODUCTION

In recent decades, Brazil has experienced an increase in average life expectancy, which unlike developed countries, happens in an accelerated way, causing transformations in social policies (DUQUE LEAL; MARQUES and ESKINAZI, 2012).

In this context, in the year 2060, the percentage of the population aged 65 years or shall be 25.5% (58.2 million), while in 2018, this proportion was 9.2% (19.2

million), thus demonstrating a growing aging over the years, requiring effective and professional public policies to contribute to the quality of life of this population (BRAZILIAN INSTITUTE OF GEOGRAPHY AND STATISTICS, 2018).

Population aging is a phenomenon related to the change in the age structure of the population and happens in the long term. Depending on this, the increase in longevity or life expectancy. Aging, especially sustainably, generates high costs. The increase in life expectancy of the elderly in Brazil requires the Government to implement public policies that meet the needs of this group, especially the health needs and quality of life (FELIX, 2022).

Quality of life is the predominant dimension of active aging, and even if health conditions are highlighted, they are far from addressing only the aspects related to health services. Active aging is also not restricted to the scope of health-promoting behaviors; it also takes into account environmental and personal factors that will interact with health conditions and quality of life (AZEVEDO; RISCADO and MAIA, 2022).

According to the World Health Organization (2002), the term active refers to continuous participation in social, economic, cultural, spiritual and civic life, that is, it goes far beyond the possibility of being physically and professionally active. Active aging is defined as a process of optimizing opportunities for health, participation and safety, for improving the quality of life as people age (AZEVEDO; RISCADO and MAIA, 2022).

Like Brazil, the northeastern region has for some time experienced a rapid increase in the elderly population; presenting a complex and factors that are strongly associated with unfavorable living conditions that further intensify the vulnerability of this population (PERREIRA; JESUS AND MARTINS, 2020).

The previous questions arose the need to know the main causes of mortality that affected the elderly, registered in the Mortality Information System (SIM). Thus, the question arose: *What is the profile of deaths in elderly women from causes that could be avoided in a state of the Brazilian Northeast?* Thus, the objective is to trace the profile of the elderly women who died from preventable causes, from 2011 to 2020.

METHOD

This is a time series study on mortality from preventable causes in elderly women living in the state of Alagoas, from 2011 to 2020. Data on deaths were obtained from the SIM and data on the population, by sex and age group, were obtained from the Brazilian Institute of Geography and Statistics (IBGE).

Data were collected from SIM, in July 2022, in the database of Health Information of the Department of Informatics of the Unified Health System (DATASUS), provided by the Ministry of Health of Brazil. The information contained in the SIM comes from death certificates.

The variables studied were: number of deaths in elderly women per year (2011-2020), age group (60 to 64 years, 65 to 69 years, 70 to 74 years), color/race (white, black, brown, yellow and indigenous), schooling (none, 1 to 3 years, 4 to 7 years, 8 to 11

years, 12 years or more) and marital status (single, married, widowed, separated judicially and other).

Data regarding the cause of death were collected, classified according to the codes of the 10th Revision of the International Statistical Classification of Diseases and Health-Related Problems (ICD-10). Moreover, for the classification of preventable deaths, the "Brazilian List of Causes of Preventable Deaths" was used for the population aged 5 to 74 years.

The list of preventable/reducible causes of death uses five subgroups, according to the type of health intervention based on the technology available by the UHS:

1. Immunoprevention actions (subgroup 1);
2. Health promotion actions, adequate prevention, control and attention to infectious diseases (subgroup 2);
3. Adequate actions for health promotion, prevention, control and attention to non-communicable diseases (subgroup 3);
4. Action for prevention, control and attention to the causes of maternal death (subgroup 4);
5. Intersectoral and health promotion actions, prevention and adequate attention to external causes (accidents and violence) (subgroup 5).

After data collection, they were tabulated in a spreadsheet using Microsoft Excel and then the absolute and relative frequencies were calculated. The following formula was used to calculate the mortality rate per year:

Number of deaths from preventable causes in elderly women aged between 60 and 74 years in Alagoas	x 1.000
Population of elderly women between 60 and 74 years old residing in Alagoas	

This study followed the ethical recommendations of research, and the Informed Consent Form (ICF) was not necessary, since secondary data, available on the official website of the Ministry of Health, were used, whose information does not identify individuals.

RESULTS

In the period from 2011 to 2020, 51,932 deaths of the elderly aged between 60 and 74 years were reported, of which 37,339 (71.9%) are clearly avoidable causes (excluding those of ill-defined causes and those that were not clearly avoidable). Of the number of deaths classified as clearly avoidable, 16,933 (45.3%) were female.

Regarding the number of deaths at the extremes of the study period, it was observed that in 2011 1,507 (8.9%) were reported, and in 2020, 1,846 deaths (10.9%), the highest number recorded in 2019 and the lowest in 2012. Regarding the mortality rate per 1,000 elderly, the average was 13 deaths/1,000. The highest mortality rate corresponds to the year 2015, with 13.8 deaths for every 1,000 elderly women (Table 1).

Table 1: Absolute (n), relative (%) number and mortality rate in elderly women in the state of Alagoas, in the period 2011-2020. Alagoas, Brazil, 2022.

YEAR	N	%	POPULATION	RATE
2020	1,846	10.9%	150,770	12.2
2019	1,998	11.8%	145,492	13.7
2018	1,738	10.3%	140,492	12.3
2017	1,834	10.8%	135,725	13.5
2016	1,796	10.6%	131,124	13.6
2015	1,752	10.3%	126,631	13.8
2014	1,544	9.1%	122,270	12.6
2013	1,512	8.9%	118,043	12.8
2012	1,406	8.3%	113,983	12.3
2011	1,507	8.9%	110,146	13.6
Total	16,933	100.0%	1,294,676	13.0

Source: Mortality Information System-SIM.
Brazilian Institute of Geography and Statistics (IBGE).

As for sociodemographic variables, in relation to the age group, the highest frequency of deaths was in elderly women aged between 70 and 74 years (38.3%). Concerning color/race, most of the elderly women were brown (56.3) and had low education. Regarding marital status, 24.6% were married (Table 2).

Table 2: Absolute (n) and relative (%) number of deaths from preventable causes in elderly women living in the state of Alagoas, in the period 2011-2020, according to sociodemographic variables. Alagoas, Brazil, 2022.

Variables	N	%
Age group		
60 - 64 years	4,784	28.3
65 - 69 years	5,668	33.5
70 - 74 years	6,481	38.3
Color/race		
White	3,405	20.1
Black	787	4.6
Yellow	49	0.3
Brown	9,531	56.3
Indigenous	37	0.2
Ignored	3,124	18.4
Education		
None	4,846	28.6
1 - 3 years	2,098	12.4
4 - 7 years	1,080	6.4
8 - 11 years	637	3.8
12 years or more	288	1.7
Ignored	7,984	47.2
Marital status		
Single	2,680	15.8
Married	4,163	24.6
Widowed	3,335	19.7
Separated judicially	553	3.3
Other	277	1.6
Ignored	5,925	35.0

Source: Mortality Information System-SIM.
Brazilian Institute of Geography and Statistics (IBGE).

Regarding the cause of death according to ICD chapter 10, the main causes of death are described in the following chapters: diseases of the circulatory system; endocrine, nutritional and metabolic diseases; and neoplasms (Table 3).

Table 3: Absolute (n) and relative (%) number of deaths from preventable causes in elderly women residing in the state of Alagoas, in the period 2011-2020, according to the cause of death according to the chapter of the 10th Revision of the International Classification of Diseases. Alagoas, Brazil, 2022.

ICD chapter 10	N	%
I. Some infectious and parasitic diseases	965	5.7%
II. Neoplasms (tumors)	2,099	12.4%
IV. Nutritional and metabolic endocrine disorders	3,271	19.3%
V. Mental and behavioral disorders	24	0.1%
IV. Nervous system diseases	18	0.1%
IX. Circulatory system diseases	7,495	44.3%
X. Diseases of the respiratory system	1,987	11.7%
XI. Digestive system diseases	336	2.0%
XII. Skin and subcutaneous tissue diseases	47	0.3%
XIV. Diseases of the genitourinary system	240	1.4%
XX. External causes of morbidity and mortality	451	2.7%
Total	16,933	100.0%

Source: Mortality Information System-SIM.
Brazilian Institute of Geography and Statistics (IBGE).

With regard to the causes of preventable deaths according to UHS interventions, the following percentages are observed: Group 1- Reducible by immunoprevention actions (0.02%); Group 2- Reducible by appropriate actions of health promotion, prevention, control and care for infectious diseases (13.4%); Group 3- Reducible by appropriate actions of health promotion, prevention, control and care for non-communicable diseases (83.7%); Group 4- Reducible by appropriate intersectoral actions of health promotion, prevention and attention to external causes (2.67%).
Regarding the basic causes in each group mentioned above, in group 1, the causes were: miliary tuberculosis (n = 1) and acute hepatitis b (n = 2). The causes of the other groups are shown in table 4.

Table 4: Absolute (n) and relative (%) number of deaths from preventable causes in elderly women residing in the state of Alagoas, from 2011 to 2020, according to preventable causes. Alagoas, Brazil, 2022.

Avoidable causes	N	%
Reduces actions prom prev and care of infec		
Tuberculosis of respiratory tract, other organs and sequelae	63	2.7%
Intestinal infectious diseases	147	6.4%
Human immunodeficiency virus diseases	21	0.9%
Viral hepatitis (except acute hepatitis B)	19	0.8%
Inflammatory diseases female pelvic organs	9	0.4%
Other infections	443	19.3%
Acute rheumatic fever and chronic rheumatic heart disease	54	2.4%
Respiratory infections including pneumonia and influenza	1,105	48.2%
Skin and subcutaneous tissue infections	47	2.1%
Other notifiable diseases	271	11.8%
Unspecified localized urinary tract infection	113	4.9%
Total	2,292	100.0%
Reduces actions prom prev against noncom dis		

Lip malig neopl skin malig melanoma other skin	31	0.2%
Liver bile ducts intrahepatic malig neopl	264	1.9%
Malignant neoplasm of stomach	133	0.9%
Colon rectosigmoid junction rectum anus malig neopl	207	1.5%
Malignant neoplasm mouth pharynx and larynx	123	0.9%
Malignant neoplasm of the esophagus	68	0.5%
Malignant neoplasm trachea bronchi lungs	467	3.3%
Malignant neoplasm of the breast	468	3.3%
Malignant neoplasm of the cervix	257	1.8%
Malignant neoplasm of thyroid gland	18	0.1%
Lymphoid and myeloid leukemia and Hodgkin's disease	63	0.4%
Thyrotoxicosis hypothyroidism and iodine deficiency	15	0.1%
Diabetes mellitus	3,188	22.5%
Obesity	68	0.5%
Alcoholic psychosis and other alcohol disorders	67	0.5%
Epilepsy and status epilepticus	16	0.1%
Hypertensive diseases except secondary hypert	1,629	11.5%
Ischemic heart diseases	2,532	17.8%
Atherosclerosis	17	0.1%
Cardiac insufficiency	557	3.9%
Cerebrovascular diseases	2,706	19.1%
Chronic lower airway diseases and pulmonary edema	824	5.8%
Gastrojejunal peptic duodenal gastric ulcers	42	0.3%
Acute appendicitis	11	0.1%
Lung diseases due to external agents	58	0.4%
Paralytic ileus and obstr intest hernias without hernia	115	0.8%
Gallbladder and bile duct disorders	125	0.9%
Chronic kidney failure	118	0.8%
Total	14,187	100.0%
Reduces actions prom prev of external causes		
Transport accidents	130	28.8%
Falls	148	32.8%
Accidental drowning and submersion	12	2.7%
Exposure to smoke, fire and flames	6	1.3%
Acid poisoning exposure to harmful substances	1	0.2%
Intentionally self-harm	26	5.8%
Aggression	41	9.1%
Iatrogenic causes	53	11.8%
Adv incid therap diagnoses assoc w medic carelessn	1	0.2%
Exposure to inanimate mechanical forces	2	0.4%
Exposure to animated mechanical forces	2	0.4%
Other accidental breathing hazards	16	3.5%
Exposures to electrical radiation temperat press extreme	6	1.3%
Acid exposure to other and unspecified factors	1	0.2%
Events whose intent is undetermined	6	1.3%
Total	451	100.0%

Source: Mortality Information System-SIM.
Brazilian Institute of Geography and Statistics (IBGE).

DISCUSSION

The data found show that the largest number of deaths occurred with the elderly aged between 70 and 74 years, were brown, 24.6% were married, in 35% of cases was an unknown topic, as well as in education, where 47.2% had ignored completion and 4,846 had no schooling. In equivalence to these findings, Francisco et al. (2021) presented in

their research the number of 146 deaths in elderly women aged 70 years or more, and as associated pathologies, heart diseases, hypertension, diabetes and lung diseases.

The present study also showed that the causes of deaths with progressive increase were those classified in group 3, which are those that could have been reduced by actions of health promotion, prevention, control and care for noncommunicable diseases, with 83.7% of cases; in this group are neoplasms, diabetes mellitus, obesity, hypertension, heart failure, cerebrovascular diseases, among others, which are described in table 4.

All causes could have had a less aggressive impact on health if they had the culture of quality of life and health promotion, as public policies value.

Some deaths could have been reducible by intersectoral actions and health promotion, prevention and adequate attention to external causes accidents and violence is worrisome and may be associated with living conditions that affect the state of health as a whole (GONSAGA et al. 2012).

A research published in 2019 noted that the impact of health promotion and prevention actions are positive when properly implemented by the health system, and can be noted by reducing cases of deaths from preventable causes; however, these rates are still considered high, especially for noncommunicable diseases and external causes, being themes that are sensitive to change (SALTARELLI et al., 2019).

When we think of preventable causes, we can associate the conditions of promotion and prevention to health, and this is linked to the proper monitoring of noncommunicable diseases, early and adequate treatment of communicable diseases, use of immunobiologicals, changes in life habits (SOUZA; SIVIERO, 2020).

Seeking to make a comparison with a study that evaluated quality of life of the elderly, there is a predominance of the elderly female population; in relation to the most affected pathologies, there is emphasis on hypertension, diabetes and cardiovascular diseases, data that corroborate those found in this research, and the presence of one or more diseases are contributing factors to weaken the elderly (PEREIRA, NOGUEIRA and SILVA, 2015).

Contributing to the data of this study, the research carried out by Ribeiro et al. (2020) when analyzing the profile and temporal trend of mortality in the elderly population of the state of Acre, Brazil, also found that, among the main causes of death in the elderly, were diseases of the circulatory system, respiratory and neoplasms.

Concerning the group of external factors, it is possible to observe greater prominence for falls, with 148 cases. In a research carried out with a group of elderly women who practice physical activity and with a group of sedentary women, the group that does not present a history of falling, thus acting as a preventive factor in the risk of falls, and as is known, it is a health promotion activity (XAVIER; TRINDADE, 2018).

As for the risk of falls in the elderly, both sexes have this possibility. However, when we think of elderly women, they are more prone to fall and the aggravations arising from the fall itself, fact that can be explained by the reduction of estrogen levels with advancing age, muscle strength, either by loss of muscle mass or physical inactivity, in addition to long-term drug treatment for chronic noncommunicable diseases, which may contribute to the loss of balance (TIENSOLI et al., 2019).

Evidence highlights that the risk of falls in the elderly, involving the household are considered constant, but are modifiable conditions, when implemented preventive measures and guidelines to prevent falls, in addition to an environment conducive to the elderly inhabit (SANTOS et al., 2021)

For Santos and colleagues (2021), the structure of the household that the elderly woman lives in may present sources of threats to integrity and risk to life, such as carpet, lighting, steps, slippery floor, among others. In this sense, the elderly person may express expectation or fears related to a fall or consequences that may arise, directly impacting their consciousness about their home.

CONCLUSION

Given what was evidenced in this research, it can be seen that most of the elderly living in the state of Alagoas died from causes that could have been avoided or that were neglected. There was a predominance of cases of prevalent diseases such as hypertension and heart disease, diabetes and neoplasms, in addition to events involving the fall in the elderly population.

It is possible to observe the need to work on health promotion and prevention to women in all cycles of their lives, aiming at a healthy aging. Since this information is essential for us to verify the inequalities within the age group and the study region, it is also possible to trace the main health demands of the study population, taking into account the issues presented.

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