REFACS

Hospital admissions for the elderly in the extreme north of Brazil

Internações hospitalares em idosos no extremo Norte do Brasil

Ingresos hospitalarios en ancianos en el extremo Norte de Brasil

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This study aims to analyze the main causes of hospital admissions in the elderly population in the state of Roraima in 2019. This is a descriptive study, with a quantitative approach, using the database of the Hospital Information System of the Unified Health System. The highest frequency of hospitalization was of males (59.9%). The main causes of hospitalizations between women and men were similar, however, there was an inversion of the order of some causes. In both genders, diseases of the circulatory system and of the respiratory system were the most frequent, as their occurrence increases with age. These results can assist in health strategies and actions aimed at the elderly population, with attention to the management of chronic diseases that represent a long-term challenge.
Descriptors: Hospitalization; Public Health; Aged.

O objetivo deste estudo foi analisar as principais causas das internações hospitalares em idosos no estado de Roraima no ano de 2019. Trata-se de um estudo descritivo, de abordagem quantitativa, utilizando a base de dados do Sistema de Informações Hospitalares do Sistema Único de Saúde. A maior frequência de hospitalização foi do gênero masculino (59,9%). As principais causas das internações entre mulheres e homens foram semelhantes contudo, houve a inversão da ordem de algumas causas. Em ambos os gêneros, as doenças do aparelho circulatório e as do aparelho respiratório foram as mais frequentes, aumentando sua ocorrência com o avanço da idade. Estes resultados podem auxiliar nas estratégias e ações em saúde direcionada a população idosa, com atenção ao manejo das doenças crônicas que representam um desafio a longo prazo.
Descritores: Hospitalização; Saúde Pública; Idoso.

El objetivo de este estudio fue analizar las principales causas de ingresos hospitalarios en ancianos del estado de Roraima en 2019. Se trata de un estudio descriptivo, de enfoque cuantitativo, que utiliza la base de datos del Sistema de Informaciones Hospitalarias del Sistema Único de Salud. La mayor frecuencia de hospitalización fue la de los hombres (59,9%). Las principales causas de los ingresos entre mujeres y hombres fueron similares, sin embargo, hubo una inversión del orden de algunas causas. En ambos sexos, las enfermedades del sistema circulatorio y del sistema respiratorio fueron las más frecuentes, aumentando su incidencia con la edad. Estos resultados pueden ayudar en las estrategias y acciones de salud dirigidas a la población anciana, con atención a la gestión de las enfermedades crónicas que representan un desafío a largo plazo.
Descriptores: Hospitalización; Salud Pública; Anciano.

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INTRODUCTION

The phenomenon of population aging is one of the major concerns of countries in relation to health services, as well as in social and economic aspects[1]. Aging may involve a gradual reduction in functional capacity, as well as an increased susceptibility to conditions that require greater hospital care[2]. The demographic transition requires a change in the global focus and the preparation of health systems for the needs of a growing elderly population[1]. Health promotion and adoption of healthier lifestyle habits are important strategies to minimize risks and improve the quality of life of the elderly[2,3].

Aging is one of the factors in the increase in the prevalence of chronic non-communicable diseases (NCDs), which often require longer treatment periods[1,4]. In developing countries, NCDs can coexist with infectious diseases, disproportionately affecting elderly people in an unfavorable socioeconomic situation[5]. Among the chronic diseases that can affect the elderly, cardiovascular diseases represent one of the main causes of hospital admissions and disabilities[1,6].

The demographic transition and epidemiological profile of the population are heterogeneous in Brazil, as well as inequalities in relation to access and the quality of health services[4,7]. The North and Northeast regions are still in the initial or intermediate stage of aging. They show low socioeconomic indicators and the lowest mortality rates due to chronic non-communicable diseases[7], but persistence of infectious diseases and a slight but progressive increase in chronic and degenerative diseases among the elderly[8].

Hospitalizations among the elderly can reflect the frequency of the most serious diseases, being useful to characterize the health of the elderly[3]. Knowing the causes allows directing health actions for this population, which can assist in understanding health, disease and age in the aging process. Thus, the objective of this study was to analyze the main causes of hospitalizations in the elderly in the state of Roraima in 2019.

METHOD

This is a descriptive study, with a quantitative approach, with secondary data, analysis of the database of the Department of Informatics of the Unified Health System (DATASUS), of the Ministry of Health, made available through the electronic address, www.datasus.saude.br. The database was collected from the SUS Hospital Information System (SIH/SUS), which originates from Hospitalization Authorizations (AIH). After selecting the files, they were transferred to the TAB for Windows tabulation program - TabWin, and these files were accessed and analyzed in January 2020.

According to IBGE[9] (*Instituto de Geografia e Estatística*) data, the estimated population of Roraima for the year 2019 was 605,761 inhabitants, of which 66% live in the capital Boa Vista, and where 89.37% of the total hospital admissions in the state were concentrated (SIH/SUS).

The database was selected by Federation Unit (Roraima) and year/month of processing (January to December 2019). To describe the frequency of the causes of hospital admissions in the elderly, the following variables were used: Chapters of the International Classification of Diseases (ICD-10), Age group (60 to 69 years, 70 to 79 years and 80 years or more) and Gender (male and female). Frequencies of causes according to ICD-10 below 5% of total hospitalizations by sex were grouped in the category Other causes.

The data obtained were performed in TabWin and analyzed using descriptive statistics, the frequencies and percentages of hospitalizations were calculated and presented in the form of tables. The data collected are in the public domain, made available electronically by the Ministry of Health and without identifying the research participants. Thus, this study did not require appreciation and approval by the Research Ethics Committee.

RESULTS

The total number of hospitalizations in Roraima in 2019 was 44,236, of which 4,909 were elderly, which represented 11.1% of the total. Regarding gender, men had a higher frequency of hospitalization, representing 59.05% of the total. The age group between 60 and 69 years was the most prevalent, followed by 70 to 79 years in both genders. The main causes of hospitalization in the elderly according to ICD-10, by age group and by gender are shown in Table 1 (female) and Table 2 (male).

It was observed that the main causes of hospital admissions were similar between women and men, however there was an inversion of the order of some causes. In both genders, the two most frequent causes were diseases of the circulatory system and diseases of the respiratory system, increasing the occurrence according to advancing age. For women, the third cause of hospitalization was that of diseases of the genitourinary system, being more prevalent in the age group between 60 and 69 years, followed by endocrine, nutritional and metabolic diseases, being more prevalent in the age group between 60 and 79 years. For men, the third cause of hospitalization was diseases of the digestive system, being more prevalent in the age group between 60 and 69 years, followed by diseases of the genitourinary system, being more prevalent in the age group above 70 years. Injuries, poisoning and consequences of external causes were the fifth cause of hospitalization in both.

Table 1. Hospitalizations according to ICD - 10, elderly women treated in the Unified Health System. Roraima, Brazil. 2019.

Chapter ICD – 10	Female							
	Total		60 to 69		70 to 79		80 or more	
	n	%	n	%	n	%	n	%
Total	2010	100.0	897	100.0	665	100.0	448	100.0
IX. Diseases of the circulatory system	372	18.51	140	15.61	128	19.25	104	23.21
X. Diseases of the respiratory system	329	16.37	107	11.93	107	16.09	115	25.67
XIV. Diseases of the genitourinary system	228	11.34	128	14.27	62	9.32	38	8.48
IV. Endocrine, nutritional and metabolic diseases	194	9.65	104	11.59	69	10.38	21	4.69
XIX. Injury, poisoning and certain other consequences of external causes	165	8.21	70	7.80	54	8.12	41	9.15
XI. Diseases of the digestive system	157	7.81	84	9.36	49	7.37	24	5.36
II. Neoplasms	148	7.36	81	9.03	47	7.07	20	4.46
XXI. Contact with health services	127	6.32	65	7.25	36	5.41	26	5.80
I. Certain infectious and parasitic diseases	102	5.07	33	3.68	47	7.07	22	4.91
Other causes	188	9.36	85	9.48	66	9.92	37	8.27

Source: SIH/SUS, DATASUS

Table 2. Hospitalizations according to ICD - 10, elderly men treated in the Unified Health System. Roraima, Brazil. 2019.

Capítulo CID – 10	Male							
	Total		60 to 69		70 to 79		80 or more	
	n	%	n	%	n	%	N	%
Total	2899	99.98	1430	99.99	984	99.99	485	100.00
IX. Diseases of the circulatory system	544	18.77	260	18.18	184	18.70	100	20.62
X. Diseases of the respiratory system	492	16.97	181	12.66	204	20.73	107	22.06
XI. Diseases of the digestive system	294	10.14	174	12.17	94	9.55	26	5.36
XIV. Diseases of the genitourinary system	262	9.04	99	6.92	105	10.67	58	11.96
XIX. Injury, poisoning and certain other consequences of external causes	230	7.93	142	9.93	51	5.18	37	7.63
II. Neoplasms	219	7.55	119	8.32	76	7.72	24	4.95
IV. Endocrine, nutritional and metabolic diseases	189	6.52	110	7.69	60	6.10	19	3.92
XXI. Contact with health services	187	6.45	90	6.29	63	6.40	34	7.01
I. Certain infectious and parasitic diseases	163	5.62	74	5.17	54	5.49	35	7.22
Other causes	319	10.99	181	12.66	93	9.45	45	9.27

Source: SIH/SUS, DATASUS

DISCUSSION

It is observed that the frequency of hospitalizations in the elderly was higher among men. This data corroborates some studies that show that after obstetric hospitalizations, the rate of hospitalizations for men becomes higher than that for women[3]. There is evidence that the demand for primary care is significantly higher among women. In general, men go to the hospital when there is greater severity in their health and they have less healthy lifestyle habits[2]. It is suggested that health education strategies should be reinforced for men, for a review of practices, as they represented the majority of hospitalizations analyzed.

In the Northern region, between 2005 and 2015, the highest hospitalization rates among the elderly were due to diseases of the circulatory system, followed by diseases of the respiratory system[8]. When analyzing the data recorded at SIH/SUS, in Roraima, between 2015 and 2019, similar results were observed. The two main causes of hospitalizations in both genders corroborate this study and is in agreement with the results of other studies on hospitalization among the elderly in Brazil[2,6,10].

The frequency of hospitalizations for circulatory and respiratory causes increased with advancing age in both genders. Among the main causes of hospitalization in the elderly is heart failure and pneumonia, and the average costs are higher in men, suggesting a greater severity of the disease[3]. Physiological aging, inadequate lifestyle habits and a greater presence of chronic and degenerative diseases suggest greater vulnerability in these age groups[5,7]. Respiratory diseases present at older ages have higher incidence of hospitalization, with higher vulnerability in the presence of pneumonia, which makes vaccination campaigns relevant in this population[4,10].

Cardiovascular diseases and diabetes have complications and comorbidities that require greater use of medications and generally more frequent hospitalizations[4]. A study carried out in the elderly showed a strong association between increased functional disability and the presence of NCDs, such as heart disease and diabetes[11]. The greater the severity of complications from diabetes, the greater the risk of mortality[12].

Among hospitalizations for endocrine, nutritional and metabolic diseases, a higher frequency of codes related to diabetes mellitus was observed (Chapter IV, E10-E14). This data should be monitored annually, as an increase in hospitalization rates for diabetes has already been demonstrated in the Northern region of Brazil, with higher rates of hospitalization among women, however with an increasing trend only among men[4].

The data obtained by SIH/SUS showed that deaths among the elderly that occurred in Roraima in the period of 2019 represented 48.70% of the total. The main causes of these deaths were diseases of the respiratory system followed by the circulatory system and neoplasms. When observing the data on deaths among elderly people in Roraima registered in the Mortality Information System (MIS) from 2014 to 2017, the main causes were diseases of the circulatory system, neoplasms, followed by endocrine, nutritional and metabolic diseases[4].

Diseases of the circulatory system represented 30.85% of total deaths among elderly people from 2014 to 2017. These results demonstrate the presence of chronic diseases among the main causes of mortality, which corroborates with data on the increase in mortality from NCDs, with aging as one of the important factors for this prevalence[4]. However, it is known that adequate health care can reduce mortality among the elderly due to cardiac complications[6].

Arterial hypertension has been the main risk factor related to the global disease burden. Unhealthy behaviors such as physical inactivity and inadequate diet contribute to this prevalence[13]. A study carried out in Tanzania show that the main causes of hospitalizations in the elderly were arterial hypertension, heart attack and heart failure, indicating a rise in NCDs in this population[14].

Research on hospital morbidity in the elderly in Brazil demonstrated the prevalence of circulatory diseases, the reduction of infectious and parasitic diseases and an indication of an increase in neoplasms[10]. Another study signaled the growth of chronic diseases among the

elderly in the Northern region[8]. A study estimated that the average costs in health services are 5.5 times higher in the elderly with multiple chronic conditions, when compared to elderly people without these conditions[1].

Roraima has lower percentages of elderly people, when compared to the national average[9]. However, the management of chronic diseases in this population represents a challenge to health services in the long term and requires attention due to its complexity. Other no less important concerns are falls and fractures, violence and mental health, which negatively impact the quality of life of these elderly people.

The profile of hospitalizations may reflect the difficulties of health services, especially primary care in identifying the most vulnerable elderly, but it also reflects on investments and access to health, the educational level, cultural aspects and socioeconomic conditions of a place. Awareness-raising actions and campaigns for the adoption of self-care and active aging should be valued, as ways of preventing and reducing hospitalizations of this population.

CONCLUSION

The highest frequency of hospitalization was male (59.9%). The main causes of hospitalizations between women and men were similar, however there was an inversion of the order of some causes. In both genders, diseases of the circulatory system and those of the respiratory system were the most frequent, increasing their occurrence with advancing age. These results can assist in health strategies and actions aimed at the elderly population, with attention to the management of chronic diseases that represent a long-term challenge.

As Brazil has great territorial extension and regional differences, the use of only national averages can hide a local reality. It is important that the data are disaggregated, adapting to the characteristics of the target population and the analyzed location. Due to the scarcity of data and the need to know the situation of the state of Roraima in a more current scenario, the situation of the year 2019 was presented, being the starting point for more robust analyzes on this topic.

Future research must be carried out, since in this study, only the percentage frequencies of each age group were used in relation to the total number of records, and hospitalization rates were not calculated. Despite the limitations inherent in the use of secondary databases, their use and interpretation is relevant and must be taken into account in the assessment of the situation and in the annual monitoring of hospital admissions in the elderly.

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CONTRIBUTIONS
Gina Borghetti participated in the design of the study and its design, data collection and analysis, writing and review.