REVISTA PREVENÇÃO DE INFECÇÃO E SAÚDE (REPIS)

Original

Hospital Institutions of Elderly Persons in the Public System in the State of Piauí in 2017

Internações Hospitalares de Idosos no Sistema Público no Estado do Piauí em 2017

Hospitalizaciones de Ancianos en Hospitales Públicos de el Estado do Piauí en 2017

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ABSTRACT

Objective: to characterize the profile of hospital admissions of the elderly in the public system of Piauí in the year 2017. **Methodology**: cross-sectional and retrospective study, based on the data available in the Information System on Morbidity of the Ministry of Health in the page of the Department of Information Technology of SUS (DATASUS). **Results**: The elderly were in the age group of 80 years or older, were male and 24.7% had diseases of the circulatory system. The main cause of mortality was diseases of the respiratory system, with 12 (25%) deaths. Floriano's macroregion was where 45% of cases of hospitalization occurred. **Conclusion**: Educational and preventive actions should be implemented through health care policies, with the aim of limiting the social inequalities of care coverage to the populations of macro regions, in order to interrupt the cycle of gravity of the causes of the circulatory and respiratory system in the elderly

Keywords: Elderly; Epidemiology; Morbidity.

RESUMO

Objetivo: caracterizar o perfil das internações hospitalares de idosos no sistema público do Piauí no ano de 2017. **Metodologia:** estudo transversal e retrospectivo, com base nos dados disponíveis no Sistema de Informações sobre Morbidade do Ministério da Saúde na página do Departamento de Informática do SUS (DATASUS). **Resultados:** Os idosos estavam na faixa etária dos 80 anos ou mais, eram do sexo masculino e 24,7% tinham doenças do aparelho circulatório. A principal causa de mortalidade foi às doenças do aparelho respiratório, com 12 (25%) óbitos. A macrorregião de Floriano foi onde ocorreram 45% dos casos de internação no Estado. **Conclusão:** As ações educativas e preventivas devem ser implementadas por meio de políticas de assistência à saúde, com o intuito de limitar as desigualdades sociais de cobertura assistencial às populações das macrorregiões, a fim de interromper o ciclo de gravidade das causas do aparelho circulatório e respiratório em idosos.

Descritores: Idoso; Epidemiologia; Morbidade.

RESUMÉN

Objetivo: caracterizar el perfil de las internaciones hospitalarias de ancianos en el sistema público de Piauí en el año 2017. **Metodología**: estudio transversal y retrospectivo, con base en los datos disponibles en el Sistema de Información sobre Morbilidad del Ministerio de Salud en la página del Departamento de Informática del SUS (DATASUS). **Resultados**: Los ancianos estaban en el rango de edad de los 80 años o más, eran del sexo masculino y el 24,7% tenían enfermedades del aparato circulatorio. La principal causa de mortalidad fue a las enfermedades del aparato respiratorio, con 12 (25%) muertes. La macrorregión de Floriano fue donde ocurrieron el 45% de los casos de internación. **Conclusión**: Acciones educativas y preventivas deben ser implementadas por medio de políticas de asistencia a la salud, con el propósito de limitar las desigualdades sociales de cobertura asistencial a las poblaciones de las macrorregiones, a fin de interrumpir el ciclo de gravedad de las causas del aparato circulatorio y respiratorio en ancianos.

Descriptores: Anciano; Epidemiología; Morbilidad.

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INTRODUCTION

Aging is a natural, gradual and continuous process that begins at birth and extends through all phases of life. Increasingly, the scientific community has discussed the concept of aging since life expectancy is in increasing evolution. These discussions aim to promote and disseminate the idea that aging in a healthy way, without debilitating pathologies, physical, social or psychological incapacities, is possible, being even the focus of policies and programs directed to the elderly[1].

In Brazil, the Statute of the Elderly (Law no. 10741/2003) considers the elderly to be 60 years of age or older. In the last census, the Brazilian Institute of Geography and Statistics (IBGE) found that Brazilians are aging more and that they already total 15 million elderly, corresponding to 8.3% of the total Brazilian population. Among these 15 million elderly people, a significant number of older people with a longer life expectancy, around 30 thousand people aged 100 or over, and a feminization of the aging population in the country are also observed. This growth of the elderly population has been provoking a new and challenging phenomenon, especially for authorities dealing directly with public health[2].

In this sense, age is one of the most prominent factors when it comes to quality of life. However, aging causes a change in social policies, especially in health, since the larger and more complex comorbidities are related to the aging of the human being. Consequently, the hospitalization rates of the elderly in public hospitals consume 38% of total hospital expenses[3].

Therefore, the quality of health services has been the subject of debates and studies of health professionals and public managers, who need to offer a reliable service, with quality and reduced costs. The implementation of specific and differentiated care has been the great differential in the recovery of the patient in the most varied types and degrees of pathology and its instabilities[4].

Nursing professionals in hospital institutions play an important role in the preparation of the infrastructure for the safe and effective accomplishment of medical and nursing procedures, as well as assistance actions, orientation and preventive education aimed at self-care and facilitating the social reintegration of the elderly patient[5].

Thus, it is of paramount importance that the Nursing team is aware of the profile of the elderly patient admitted to hospitals, since this portion of users has their own needs and peculiarities. In addition, it should be emphasized that variables such as age, sex, hospitalization time, chronic diseases and the patient's history directly influence the type of care and attention that Nursing should have with this patient, as well as the length of stay in the hospital institution[6].

Based on the above, the study aims to characterize the profile of hospital admissions of the elderly in the public system of Piauí, in the year 2017.

METHODS

Cross-sectional and retrospective research. The databases of the Morbidity Information System of

the Ministry of Health were used on the DATASUS page of the Executive Secretariat of the Ministry of Health on hospital admissions for the elderly in the public system of Piauí in 2017.

The Piauí is located in the Northeast region and has a population, according to the 2010 IBGE census, of 3,188,360 inhabitants, with an estimate of 3,194,718 in 2014. It has 224 municipalities whose capital, Teresina, corresponds to the most populous city in the State, with 814,230 inhabitants. Other cities in the state, which also have a large population concentration, are the municipalities that make up the macro-regions of health: Parnaíba, Floriano, Picos, São Raimundo Nonato and Bom Jesus[7].

The data were collected in March and April 2018. The eligibility criteria considered for the study sample were: age 60 years or older, the State of Piauí as the patient's place of residence and hospitalization occurred in the year 2017. Thus, the population for this study totaled 47,501 elderly.

The variables collected for the study were: gender; age group (60 to 69 years, 70 to 79 years and 80 years or more); Main diagnosis of hospitalization according to the International Classification of Diseases (ICD-10) - Circulatory system, Respiratory system, Infectious/Parasitic, Digestive tract, Poisoning/External causes, Neoplasm (tumors), Genitourinary tract, Endocrine-nutritional/Metabolic and others; macro-region and the mortality rate.

The dataset for the analysis was selected and obtained through the TABNET application from its checkboxes (row, column, and content). Data were analyzed by means of absolute frequency and percentages and were presented in tables and graphs.

Ethical and legal aspects were addressed by Resolution No. 510 of April 7, 2016, which addresses the ethical specificities of research in the human and social sciences and others that use methodologies specific to these areas. It refers, in a single paragraph, that they will not be registered or evaluated by the CEP / CONEP system, since they were based on a public domain database, available in DATASUS, without identification data. The study was waived by the Ethics and Research Committee and the signing of the Informed Consent Term (TCLE)[8].

RESULTS

In 2017, there were 47,501 hospitalizations of people aged 60 years and over in the public system of Piauí.

Table 1 shows the number and proportion of hospitalizations among the elderly according to the International Classification of Diseases (ICD-10), Piauí, 2017. In general, diseases related to the circulatory system (24.4%), respiratory system (15.4%), infectious/parasitic diseases (12.8%) and diseases related to the digestive system (10.1%) were the most frequent causes of hospitalizations of the elderly. A similar pattern of prevalence of these diseases is also observed when considering age-specific ranges among elderly patients.

Table 1: Number and Percentage of Hospitalizations of the Elderly. According to the the International Classification of Diseases (ICD-10), Piauí, 2017.

CID-10	Frequency (n)	Percentage (%)
Circulatory system	11601	24.4
Respiratory system	7305	15.4
Infectious/Parasitic	6092	12.8
Digestive system	4805	10.1
Poisoning/External causes	3815	8.0
Neoplasms (tumors)	3594	7.6
Genitourinary system	3042	6.4
Endocrinonutricional/Metabolic	2930	6.2
Others	4317	9.1
Total	**47501**	**100.0**

Table 2 shows the number and percentage of hospitalizations of elderly people by age group according to the International Classification of Diseases (ICD-10), Piauí, 2017. Considering the age range of 60 to 69 years, diseases related to the circulatory system (21.5%), digestive tract (12.1%), infectious/parasitic (12.0%), respiratory system (11.7%) and neoplasms (10.5%) were the most common causes of hospitalization.

At the age of 70 to 79 years, there is a higher prevalence of diseases related to the circulatory system (26.2%), respiratory system (14.8%), infectious/parasitic (13.2%) and digestive tract (10, 4%).

Finally, in the age group of 80 years and older, diseases related to the circulatory system (26.6%), respiratory system (21.9%) and infectious/parasitic diseases (13.6%) were the most common causes of seniors' hospitalization.

Table 2: Number and percentage of hospitalizations of elderly people by age group. According to the International Classification of Diseases (ICD-10), Piauí, 2017.

CID-10	60-69 years		70-79 yeays		80+ years	
	N	%	N	%	N	%
Circulatory system	4062	21.5	4308	26.2	3231	26.6
Respiratory system	2282	12.1	1710	10.4	813	6.7
Infectious/Parasitic	2266	12.0	2176	13.2	1650	13.6
Digestive system	2218	11.7	2430	14.8	2657	21.9
Poisoning/External causes	1974	10.5	1254	7.6	366	3.0
Neoplasms (tumors)	1758	9.3	1179	7.2	878	7.2
Genitourinary system	1292	6.8	1049	6.4	701	5.8

Endocrinonutricional/Metabolic	1142	6.0	1003	6.1	785	6.5
Others	1884	10.0	1355	8.2	1078	8.9
Total	**18878**	**100.0**	**16464**	**100.0**	**12159**	**100.0**

Table 3 shows the number and percentage of hospitalizations of elderly people by sex according to the International Classification of Diseases (ICD-10), Piauí, 2017. It is observed that diseases related to the circulatory system (24.7%), respiratory system (14.9%), infectious/parasitic (11.2%) and digestive tract (10.7%) were the most frequent among elderly male patients. While diseases related to the circulatory system (24.2%), respiratory tract (15.9%), infectious/parasitic diseases (14.4%), digestive tract (9.6%) were, in this order, the most frequent among elderly female patients (with the same prevalence pattern already identified in the case of elderly male patients).

Table 3: Number and Percentage of Hospitalizations of the Elderly by Sex. Second chapters of the International Classification of Diseases (ICD-10), Piauí, 2017.

CID-10	**Male**		**Female**	
	N	**%**	**N**	**%**
Circulatory system	5774	24.7	5827	24.2
Respiratory system	3475	14.9	3830	15.9
Infectious/Parasitic	2628	11.2	3464	14.4
Digestive system	2495	10.7	2310	9.6
Poisoning/External causes	1867	8.0	1948	8.1
Neoplasms (tumors)	1872	8.0	1722	7.1
Genitourinary system	1220	5.2	1710	7.1
Endocrinonutricional/Metabolic	1772	7.6	1270	5.3
Others	2271	9.7	2046	8.5
Total	**23374**	**100.0**	**24127**	**100.0**

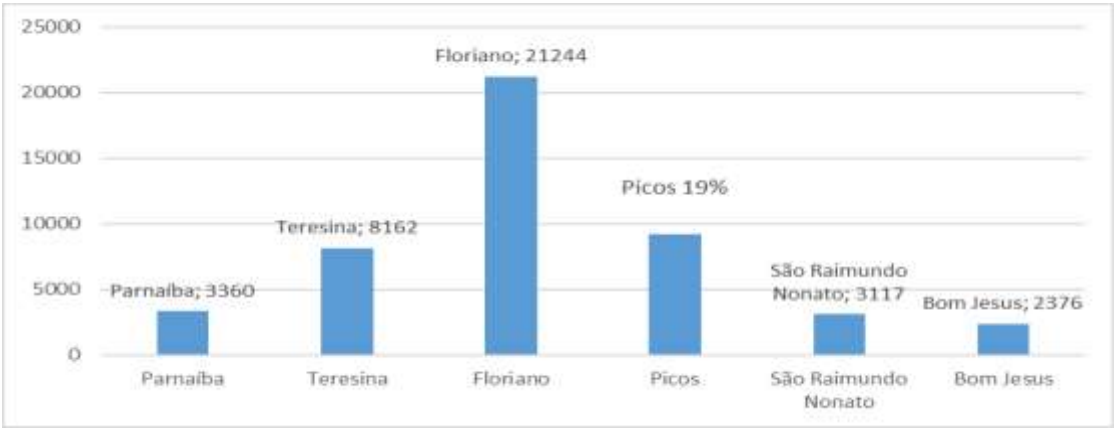
Table 4 shows the number of hospitalizations and the mortality rate of the elderly according to the International Classification of Diseases (ICD-10) chapters, Piauí, 2017. It is observed that the mortality rate among hospitalized elderly people for the year 2017 was 7,78. It is noted that diseases related to the respiratory system (12.25), neoplasias (10.55) and circulatory system (8.79) had the highest mortality rates, even higher than the overall mortality rate.

Table 4: Number of Hospitalizations and Mortality Rate of the Elderly. According to the International Classification of Diseases (ICD-10), Piauí, 2017.

CID-10	Hospitalizations	Mortality rate
Circulatory system	7305	12.25
Respiratory system	3594	10.55
Infectious/Parasitic	11601	8.79
Digestive system	4805	7.16
Poisoning/External causes	3042	5.52
Neoplasms (tumors)	6092	5.33
Genitourinary system	3815	4.43
Endocrinonutricional/Metabolic	2930	4.33
Others	4317	6.3
Total	**47501**	**7.78**

Figure 1 shows the distribution of hospitalizations of the elderly according to the Macroregion of Health of the State of Piauí, 2017. It is observed that of the 47,501 hospitalizations occurred in 2017, 45% corresponded to the elderly coming from the Macroregion of Floriano; 19%, of Picos; 17%, from Teresina; 7%, from Parnaíba; 7% of São Raimundo Nonato and 5% belonged to the Macroregion of Bom Jesus.

Figure 1: Distribution of Hospitalizations of the Elderly According to the Macroregion of Health of the State of Piauí, 2017.



DISCUSSION

The World Health Organization (WHO) says that chronic noncommunicable diseases (CNCDs) - mainly cardiovascular disease (CVD), cancer and chronic respiratory diseases - are the leading causes of death. The socioeconomic impact is increasing and considered a problem for the world public health, especially among the causes

of hospitalizations in Brazil, since aging tends to very rapidly its age structure and increasing the proportion of and the life expectancy of the brazilian people[9].

The first results revealed in this research corroborate the affirmative above since there was a predominance of hospitalizations of elderly people due to diseases of the circulatory system.

Research carried out in Paraná showed that, considering the socioeconomic and demographic particularities, the main demand of the elderly is mainly centered on the use of services due to circulatory and respiratory diseases[10-11].

The first results revealed in this research corroborate the affirmative above since there was a predominance of hospitalizations of elderly people due to diseases of the circulatory system.

Another article that evaluated the profile of the hospitalizations of the elderly in the scope of SUS showed numbers equivalent to those found here, since he concluded that in the period from 2008 to 2011, in the Health Region of Paraná. 773,483 hospitalizations occurred in individuals aged 60 years or more, with circulatory diseases being the most frequent among the elderly, accounting for 29.9% of hospitalizations in the 70-79 age group[12].

Researchers from New Zealand concluded that the elderly have a higher prevalence of circulatory diseases because of some risk factors. There are micro and macrocellular modifications that occur due to aging predisposing to the emergence of diseases of the cardiovascular and respiratory systems increase the incidence of CVD that is changing associated with a diet rich in saturated fats, sugars and sedentarism[13].

Table 2 shows that the percentages of hospitalizations for diseases of the circulatory system increase in older patients. The explanation for such finding was shown in a study conducted at the University of Maryland School of Medicine, where researchers concluded that the fragility syndrome, characterized by loss of muscle mass present mainly in very elderly individuals, is associated with increased of chronic diseases such as those of the circulatory and respiratory systems[14].

As for the hospitalization by sex, some peculiarities are perceived. Diseases of the circulatory system are still the main reason in both sexes, however, with a slightly higher percentage among men, followed by diseases of the respiratory system. In this case, in this research, women have a higher percentage.

Equivalent results were found in studies that stated that such numbers are due to differences in behavior between the sexes. Men have more risky behavioral factors (overweight, smoking, abusive consumption of alcoholic beverages), forming a peculiar stereotype of masculinity in which man poses himself as immune to danger, strong in coping with risks and as a being who does not need health care because he never gets sick[10,15].

The diseases that led to the highest mortality rate among the elderly were those of the respiratory system. This result is different since the major cause of hospitalization is diseases of the circulatory system.

These numbers also differ from those reported in a study conducted in São Paulo where the main cause of mortality in people over 60 years was due to diseases of the circulatory system. Other works carried out in 2009 and 2013, with mortality rates in the elderly in Brazil, showed that the highest prevalence are cardiovascular diseases followed by neoplastic diseases[16].

Some hypotheses for this result are the fact that the time of hospitalization of these patients, since the clinical comorbidities, are an important risk factor for higher mortality, and in this study the most commonly present were cognitive-behavioral disorders, which occurred in 28.3% of patients followed by respiratory insufficiency or infection that occurred in 14.9% of the cases during the hospital stay[17].

The result shown in figure 1 shows that, in Piauí, there are differences in concentration in the elderly in the Floriorano and Picos macro-regions. It should be noted that these macroregions have a total of 3.7% and 6%, respectively, of the total population of the State, that is, the municipalities above have a small population. Even so, they have high elderly hospitalization rates[18].

Recently published works ensure that growth in hospitalization rates in inner cities is multivariate, ranging from the failure of the government in these cities with the precariousness of basic care to a greater supply of hospital beds insured or contracted by SUS as compared to other regions of the State over the period[19].

The main limitation of the present study is the short time to characterize hospital admissions of the elderly in the public system. Thus, it is recommended that individual and collective educational and preventive actions be implemented through health care policies, with the aim of limiting the social inequalities of health care coverage to populations in the macro-regions of Piauí, in order to interrupt the cycle of the causes of the circulatory and respiratory systems in the elderly, thus improving the prognosis of cure and the reduction of hospitalizations for this same cause.

CONCLUSION

It is observed through the analysis of the data on the profile of hospital admissions of the elderly in the public system in the State of Piauí in 2017, the main causes that led to hospitalization were diseases of the circulatory system and increase more in older patients in the male sex , but in relation to mortality rates the main cause was diseases of the respiratory system. Regarding the distribution, according to the Macroregion of Health of the State, Floriano's population has a small population and, even so, they have high elderly hospitalization rates.

The results were consistent with other studies, expanding the need to create a routine of critical use of data from this health information system as a source for planning and monitoring health actions directed at the elderly population in Brazil.

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The authors declare no conflicts of interest

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