

Hospital morbidity of internations by clinical emergency

Morbidade hospitalar das internações por urgências clínicas

Tâmara Ingrid de Oliveira¹ 

Edilson Leite de Moura² 

Douglas Leite Leal Moura³ 

Ana Caroline Melo dos Santos⁴ 

Karol Fireman de Farias⁵ 

^{1-3,5}Universidade Federal de Alagoas (Maceió). Alagoas, Brazil. tamaraoliveira346@gmail.com, edilsonleite17@hotmail.com, douglasllmoura@gmail.com, karolfireman@hotmail.com

⁴Corresponding author. Universidade Federal de Alagoas (Maceió). Alagoas, Brazil. anamelodossantos1105@gmail.com

ABSTRACT | OBJECTIVE: To analyze the epidemiological profile of hospital admissions due to clinical emergencies in adults. **METHOD:** Descriptive, retrospective study with a quantitative approach. Data were obtained from the SUS Department of Informatics (DATASUS) from the SUS Hospital Morbidity group (SIH/SUS), between January 2014 and December 2018. Descriptive statistics were used for data analysis. **RESULTS:** This study revealed that men are hospitalized mainly for diseases of the digestive system and some infectious and parasitic diseases (56.83%), while the hospitalization of women was caused, a priori, by diseases of the genitourinary system (84.4%), followed by neoplasms (76.9%). As for age groups, it was identified that individuals aged 50 to 59 years had the highest number of hospitalizations (27.1%). Furthermore, during the analyzed period, there was a greater number of hospitalizations in the spring for all the studied disease groups. **CONCLUSIONS:** Diseases of the digestive system and some infectious and parasitic diseases were the main causes of hospitalization in men, while diseases of the genitourinary system and neoplasms affected more women.

KEYWORDS: Information system. Adult Health. Morbidity. Hospitalization.

RESUMO | OBJETIVO: Analisar o perfil epidemiológico das internações hospitalares por urgências clínicas em adultos. **MÉTODO:** Estudo descritivo, retrospectivo, com abordagem quantitativa. Os dados foram obtidos a partir do Departamento de Informática do SUS (DATASUS) oriundos do grupo Morbidade Hospitalar do SUS (SIH/SUS), entre janeiro de 2014 a dezembro de 2018. Para análise dos dados utilizou-se a estatística descritiva. **RESULTADOS:** Esse estudo revelou que os homens são internados, principalmente, por doenças do aparelho digestivo e algumas doenças infecciosas e parasitárias (56,83%), enquanto que a internação das mulheres foi ocasionada, a priori, por doenças do aparelho geniturinário (84,4%), seguido de neoplasias (76,9%). Quanto aos grupos etários, identificou-se que indivíduos com idades de 50 a 59 anos tiveram o maior número de internações (27,1%). Ademais, durante o período analisado, observou-se um maior número de internações na primavera em se tratando de todos os grupos de doenças estudados. **CONCLUSÕES:** As doenças do aparelho digestivo e algumas doenças infecciosas e parasitárias foram as principais causas de hospitalização em homens, enquanto que doenças do aparelho geniturinário e neoplasias acometeram mais as mulheres.

PALAVRAS-CHAVE: Sistema de informação. Saúde do Adulto. Morbidade. Hospitalização.

Introduction

The disordered growth of cities and socioeconomic changes have influenced the growing demand for emergency care in hospital services. Emergency care is an important component of health care and addresses considerable health problems, with or without potential risk of death, requiring the individual to be quickly assisted.¹

Similar to other regions of Brazil, in recent decades, Alagoas has shown an important increase in chronic-degenerative diseases and injuries caused by external causes. Associated with this profile, the state maintains infectious, parasitic, respiratory and digestive diseases in the disease panorama, and as the main causes of hospitalization diarrhea and gastroenteritis of infectious origin and other intestinal infectious diseases.²⁻⁴

Health care in Brazil is characterized by a hospital-centered health care model, and this has been insufficient to overcome current health challenges, demonstrating difficulties in the constitution of a unified and integrated system. The hospital environments meet in view of the need to perform emergency care prioritizing speed and focused on the main complaint of the patient. This format comes from a system of pyramidal health care model adopted by counties since the 90's. It is also important to consider that the population uses emergency services, because they gather greater resources such as diversified exams, medicines, medical consultations, nursing care and hospitalizations, made available immediately, providing more security in the perception of the assisted individual.²

Some factors that try to explain the reasons that lead patients to choose to access emergency and urgency care services include: limited access or confidence in primary care; self-perceived urgency by the patient; convenience; opinions of family, friends or other health professionals.⁵⁻⁷ Such information is important to assess the demands of the health system and to obtain a better understanding of the different needs of the emergency and urgency care system and the characteristics of the patients attended.⁵

The organization and reorganization of health services, from the perspective of Primary Care (that absorbs the greatest demand), decentralizing hospital care, requires strategies based in

information about what types of care the emergency networks have received, in order to outline more effective measures focused on the profile of each population. This knowledge becomes necessary to develop preventive policies, direct the training of workers, provide the unit with adequate human and material resources and facilitate articulation with other health services.⁸

Tracing the epidemiological profile of hospital care is fundamental for understanding the health of the population, as it contributes to the elaboration of criteria for decision-making in health care and greater qualification of human resources. Thus, this study aimed to analyze the epidemiological profile of adult hospitalizations due to clinical emergencies.

Method

This is a descriptive, retrospective study with a quantitative approach. Epidemiological data were obtained from the Departamento de Informática do SUS – DATASUS (Department of Informatics of the SUS) from the Morbidade Hospitalar do SUS – SIH/SUS (Hospital Morbidity group of the SUS) by place of hospitalization between January 2014 and December 2018.

Data on patients treated at a reference hospital for clinical care of high complexity located in the municipality of Arapiraca - AL were included. The study population consisted of adult patients of both sexes aged between 20 and 59 years treated, according to the distribution by the DATASUS system. We used month and year of hospitalization, the age (years) expressed by age group, gender, seasonality and the Chapter of the ICD-10 that motivated the hospitalization of adults, such data were accessed by availability for collection in August 2019.

In this study, the following chapters of ICD-10 were selected based on clinical diseases that present: Chapter I. Some infectious and parasitic diseases; Chapter II. Neoplasms (tumors); Chapter IV. Endocrine, nutritional and metabolic diseases; Chapter IX. Diseases of the circulatory system; Chapter X. Diseases of the respiratory system; Chapter XI. Diseases of the digestive tract; Chapter XII. Diseases of the skin and subcutaneous tissue and Chapter XIV. Diseases of the genitourinary system.

In the statistical analysis, the absolute values, relative frequencies and p values of the chi-square test were presented, considering $p < 0.05$ values as significant. The tabulation of the data, referring to hospitalizations, was performed through the help of the Microsoft Excel 2013 program. After that, the data was transported to the Statistical Package for the Social Sciences (SPSS) version 25.0 for Windows program.

In this study, secondary data from the DATASUS in the public domain were used, thus without referrals and approval by the Ethics and Research Committee.

Results

Between 2014 and 2018, 5,700 individuals aged between 20 and 59 years were hospitalized, where a higher frequency of digestive tract diseases (41.2%) was observed, followed by some infectious and parasitic diseases (16%) (Table 1).

Table 1. Hospitalizations of adults by clinical emergency room according to chapters of ICD-10 between 2014 and 2018. Arapiraca (2019)

Chapter ICD-10	n	%
I. Some infectious and parasitic diseases	923	16,1
II. Neoplasms (tumors)	217	3,8
IV. Nutritional and metabolic endocrine diseases	164	2,8
IX. Diseases of the circulatory system	879	15,4
X. Diseases of the respiratory system	446	7,8
XI. Diseases of the digestive tract	2349	41,2
XII. Skin and subcutaneous tissue diseases	136	2,3
XIV. Diseases of the genitourinary system	586	10,2
Total	5700	100

Source: SIH-SUS/Datasus (2019).

Of the total of 5,700 hospitalized individuals, 2,940 (51.5%) were female. When the comparison between the sexes was analyzed, there was a higher occurrence of hospitalizations among men due to infectious and parasitic diseases (54.1%), nutritional and metabolic endocrine diseases (52.4%) and diseases of the digestive tract (56.8%). While in women neoplasms (76.9%) and diseases of the circulatory system (50.1%) predominated. Statistically significant differences were observed for chapters II - neoplasms ($p=0.000$); XI - diseases of the digestive tract ($p=0.000$); XII – diseases of the skin and subcutaneous tissue ($p=0.010$); and XIV - diseases of the genitourinary system ($p=0.000$) (Table 2).

It is also noteworthy that among the groups of causes of hospitalizations studied, males were affected mainly by diseases of the digestive tract and some infectious and parasitic diseases, whereas, in relation to females, diseases of the genitourinary system and neoplasms were the most frequent groups of causes (values in table 1).

Table 2. Hospital admissions of adults by clinical emergency room according to chapters of the ICD-10 and sex between 2014 and 2018. Arapiraca (2019)

Chapter ICD-10	Sex				p*
	M		F		
	n	%	N	%	
I. Some infectious and parasitic diseases	499	54,1	424	45,9	0,15
II. Neoplasms (tumors)	50	23,1	167	76,9	0,001
IV. Nutritional and metabolic endocrine diseases	86	52,4	78	47,5	0,532
IX. Diseases of the circulatory system	438	49,8	441	50,1	0,919
X. Diseases of the respiratory system	208	46,6	238	53,3	0,155
XI. Diseases of the digestive tract	1335	56,8	1014	43,1	0,001
XII. Skin and subcutaneous tissue diseases	53	38,9	83	61,1	0,010
XIV. Diseases of the genitourinary system	91	15,5	495	84,4	0,001

*Chi-square p-value.
Source: SIH-SUS/Datasus (2019).

The distribution of hospitalizations by age group was higher in individuals aged 50 to 59 years (28.1%), mainly affected by diseases of the digestive tract (31.4%) and diseases of the circulatory system (30%), followed by the age group 40 to 49 years equally affected by diseases of the digestive tract (39.3%) and diseases of the circulatory system (16.5%). Subsequently, the age groups from 30 to 39 years old present individuals affected, a priori, by diseases of the digestive tract (49.1%) and diseases of the genitourinary system (13.9%) and, finally, the age group from 20 to 29 years present individuals affected by diseases of the digestive tract (53.4%) and diseases of the genitourinary system (16.5%) (Table 3).

Table 3. Hospital admissions of adults by clinical emergency room according to chapters of the ICD-10 and age group between the years 2014 to 2018. Arapiraca (2019)

Chapter ICD-10	Age group in years							
	20 to 29		30 to 39		40 to 49		50 to 59	
	n	%	n	%	n	%	n	%
I. Some infectious and parasitic diseases	150	12,1	167	12,8	232	16,2	212	13,7
II. Neoplasms (tumors)	37	3,0	49	3,8	88	6,1	43	2,7
IV. Nutritional and metabolic endocrine diseases	14	1,1	17	1,3	48	3,3	85	5,5
IX. Diseases of the circulatory system	56	4,5	122	9,3	236	16,5	465	30,0
X. Diseases of the respiratory system	70	5,6	88	6,7	105	7,3	183	11,8
XI. Diseases of the digestive tract	662	53,4	638	49,1	563	39,3	486	31,4
XII. Skin and subcutaneous tissue diseases	45	3,6	36	2,8	25	1,7	30	1,9
XIV. Diseases of the genitourinary system	205	16,5	181	13,9	132	9,2	41	2,6
Total	1230	100,0	1298	100,0	1429	100,0	1545	100,0

Source: SIH-SUS/Datasus (2019).

After the analysis was performed considering the seasonality profile, the data revealed differences between the four seasons, in which a predominant percentage was identified in the total number of hospitalizations in the spring (26.4%) (Table 4).

Table 4. Hospital admissions of adults by clinical urgencies according to chapters of the ICD-10 and by season between the years 2014 to 2018. Arapiraca (2019)

Chapters of the ICD-10	Summer		Autumn		Winter		Spring	
	n	%	N	%	N	%	n	%
I. Some infectious and parasitic diseases	210	13,9	224	15,9	252	17,1	225	14,9
II. Neoplasms (tumors)	46	3,3	55	3,9	66	4,4	49	3,2
IV. Nutritional and metabolic endocrine diseases	45	3,3	42	2,9	41	2,7	118	7,8
IX. Diseases of the circulatory system	199	14,6	203	14,4	233	15,8	237	15,7
X. Diseases of the respiratory system	93	6,8	116	8,2	133	9	101	6,6
XI. Diseases of the digestive tract	587	43,2	576	41	583	39,7	590	39,1
XII. Skin and subcutaneous tissue diseases	32	2,3	36	2,5	30	2	38	2,5
XIV. Diseases of the genitourinary system	146	10,7	150	10,6	130	8,8	150	9,9

Source: SIH-SUS/Datasus (2019).

Discussion

Brazil has marked regional differences, especially in the health area, where most of them mirror their Human Development Index (HDI).⁹ This indicator is directly related to the social situation of each region. In the case of Alagoas, IDHs (0.631) is one of the worst in the country, making the organization of services even more complex in the face of the growing demands for health care.³

In recent decades, the Arapiraca region has, in a disorganized way, expanded the urban perimeter and it, consequently, changed habits associated with the type of work activity and the new social context.¹⁰ According to IBGE (2015) the number of men and women are proportional in this region. This fact reinforces that the illness profile is not a reflection of the gender difference. Thus, it is understood that urbanization has boosted the increase in hospitalizations for injuries, poisoning, circulatory and digestive system disease, and homicide mortality, cerebrovascular diseases and diabetes mellitus.³

The progressive increase in hospital admissions is a signal to understand the demand in the health system, regarding the need to provide public policies that act in the planning of strategies. These actions need to be optimized for care and high cost reduction considering the profile of hospital admissions.¹¹⁻¹² A progressive increase in male hospitalizations, also looking at the frequent occurrence of digestive tract diseases and infectious and parasitic diseases, and this profile may be a reflection of socioeconomic status and basic sanitation.⁶

In the present study, there was a higher frequency of emergency care for neoplasms in females. The etiology of malignant neoplasms is complex, however, some factors involved in carcinogenesis are widely known, among them long-term exposure to carcinogens, which are the factors of external causes, with high potential for interaction and alteration of the genetic structure of cells.⁷ In systematic review was evidenced that, 48.8% of eligible women had some current or previous morbidity, among which neoplasia (17.6%) was the second most reported.

In an estimate of the incidence of cancer in Brazil performed by INCA⁷, in the biennium 2018-2019, the most frequent neoplasms in women in the Northeast are, first, breast cancer (40.3/100,000), secondly, cervical cancer (20.4/100,000) and, third, colon and rectum cancer (9.5/100,000).

Data from this study demonstrate the presence of diseases of the digestive tract that was more frequent in the male population. This data was similarly found in men from São Paulo, evidencing an association between alcohol abuse and deaths from diseases of the digestive tract. Of the hospitalizations, alcoholic diseases of the liver, other diseases of the liver, gastric and duodenal ulcer and pancreatitis were the most frequent.¹³ In another study on alcohol abuse and dependence conducted in Jequié - BA, the prevalence of alcohol abuse was 34.9% among men, thus suggesting an inadequate quality of life pattern that may lead to future pathologies, especially those of the digestive system.¹⁰

In this study, skin diseases were more frequent in the female population. In the literature, a defined pattern was not identified regarding the difference between the sexes in term of the number of hospitalizations. However, it is necessary to point out the association of these with the work because there is a greater exposure of the individual to biological, physical, chemical or mechanical agents that directly reach the integument, contributing to the production of diseases.¹⁴⁻¹⁵

According to our study, genitourinary system diseases were more frequent in females. Urinary tract infections (UTI) are the most common bacterial infections among genitourinary system diseases and, although they affect men and women, it is more common in women. About 50% of women will be affected in their useful life and having UTIs a resistance character, these conditions are a public health problem.¹⁶

Data also reveal that chronological aging is a critical moment for the female genitourinary tract, providing an increased risk of diseases. This is due to the inconstancy of circulating estradiol levels in the

premenopausal, menopause and postmenopausal periods, directly impacting the quality of life of women.¹⁷

Regarding the age group most affected by hospitalizations, this study has identified as 50 to 59 years old, differently from the research by Gomes et al.¹⁴ on the profile of hospital admissions in Brazil, which detects, as the predominant age group, 20 to 29 years old. On the other hand, diseases of the circulatory system were more frequent in the older age groups, thus, in line with the aspects of mortality in adults due to diseases of the circulatory system, where it is possible to observe a pattern of growth in the number of mortality due to diseases of the circulatory system at the ages of 40 years or older.¹⁸

As for endocrine, nutritional and metabolic diseases, they demonstrated high significant frequency in spring, when compared to the summer, autumn and winter. Seasonality, light and dark cycles influence not only plants, but also human health. In winter/spring, spikes in stress hormones occur and influence the antiphase between the pituitary and stress hormones. Such trophic effects of hormones create a circuit in which the functional masses of the glands change throughout the year and can drag annual signals. The evidence emphasizes that the hormonal peak, in winter-spring, alters human reproduction, metabolism, growth and adaptation to stress, a fact that bases the influence of these changes on endocrine, metabolic and nutritional diseases.¹⁹

Evidences showed that a higher incidence in the months of higher sun exposure, spring, regarding the increase in the frequency of hospitalizations due to psychiatric disorders.²⁰ According to these diseases, they are related to metabolic and hormonal alterations such as metabolic syndrome, diabetes mellitus and obesity and to the modification of biological rhythms such as appetite and stress and their respective endocrine regulators.²¹

Regarding respiratory diseases, it was identified that the highest number of hospitalizations occurred in winter. Seasonality of hospitalizations of pilgrims in Juazeiro (CE), reveals the increase in the number

of hospitalizations for respiratory diseases in the months where lower temperatures are recorded.¹⁸ The context of mass events, agglomeration of people for a long period of time with poor hygiene conditions favors a higher occurrence of respiratory diseases and transmission of pathogens.¹⁹

The World Organization of Gastroenterology states that, in the United States, there is a prevalence of approximately 20 digestive disorders, where 69% of the patients studied reported that in the previous three months, they had at least one of these disorders. It is notepoint that there is a positive proportion of growth between low level of education and complaints of digestive disorders. In western countries, about 30% of the adult population is affected by digestive disorders, with abdominal pain and constipation predominant as frequent causes. Weight gain and lifestyle changes, observed especially in the urban population, favor the emergence of these diseases.²⁰

Infectious and parasitic diseases are a serious public health problem, especially in third world countries. They have a high mortality rate because they are responsible for causing a series of organic damages such as chronic diarrhea, anemia, malnutrition, contributing to the impairment of the patient's physical and intellectual development. The prevalence of these diseases is related to populations submitted to poor hygiene and sanitation conditions.²²

For nursing, studies addressing the investigation of the morbidity profile of hospital emergencies can contribute to the organization of services and to the analysis of the health situation of a particular region. The data generate the potential to promote results and enable important changes for the management of services, in the search for quality in emergency care.

Among the limitations of this study is the system with clustered data and the large number of ignored and incomplete records. Another aspect that should be considered is that it is not possible to delimit the main pathologies of hospitalizations of patients during the period studied.

Conclusions

The results of this study reveal that men are hospitalized mainly for diseases of the digestive tract and some infectious and parasitic diseases, while the hospitalization of women was caused by diseases of the genitourinary system, followed by neoplasms. In view of these groups of causes studied in relation to males and females, some significant associations were found, suggesting a further study on the relationship between living conditions, factors and determinants in the health-disease process that occur in hospitalizations, aiming at promoting quality and safe care.

Regarding age groups, it was identified that individuals aged 50 and 59 years old had the highest number of hospitalizations and, among the age groups studied, a higher prevalence of diseases of the digestive tract was found. However, it is necessary to pay attention to the training of health teams with regard to conditions sensitive to primary care, in order to carry out actions based on strengthening strategies for health promotion and prevention, thus suggesting the development of innovative studies alluding to the care and self-care of individuals affected by these diseases and promoting knowledge about access to health services.

Conflicts of interest

No financial, legal or political conflict involving third parties (government, companies and private foundations, etc.) has been declared for any aspect of the work submitted (including, but not limited to grants and financing, participation in advisory board, study design, manuscript preparation, statistical analysis, etc.).

Authors' contributions

Oliveira TI held his TCC, which gave basis for the article. She worked on research planning and data collection, as well as data analysis and writing of the article. Moura EL, Santos ACM and Farias KF are advisors of the work and supported in the planning of the study, in the data collection, in addition to in the analysis of the data and in the writing of the article. Moura DLL contributed to the planning of the research and data collection in the field, as well as in the analysis of the data and in the writing of the article.

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