EPIDEMIOLOGICAL AND CLINICAL PROFILE OF HOSPITALIZATIONS IN THE MEDICAL CLINIC WARD OF THE CEILÂNDIA REGIONAL HOSPITAL

Allan Oliveira Macedo[1]

Amarildo Borges da Silva Oliveira[2]

Carina Brauna Leite[3]

Carolina Augusta Matos de Oliveira[4]

Gheisa Siqueira Santos[5]

Jéssica Danicki Prado Fernandes[6]

Luciana da Costa Ferreira[7]

Nábilla Neves Frota Souza[8]

Sarah Mitsue de Castro Matsuoka[9]

Thiago do Amaral Miranda[10]

Abstract: The objective of this work is to describe the quantitative and descriptive form of the profile

1 Teacher of the Specialization in Medical Clinic at the Health Sciences Teaching and Research Foundation
2 Specialist in Medical Clinic from the Health Sciences Teaching and Research Foundation
3 Specialist in Medical Clinic from the Health Sciences Teaching and Research Foundation
4 Teacher of the Specialization in Medical Clinic at the Health Sciences Teaching and Research Foundation
5 Teacher of the Specialization in Medical Clinic at the Health Sciences Teaching and Research Foundation
6 Specialist in Medical Clinic from the Health Sciences Teaching and Research Foundation
7 Teacher of the Specialization in Medical Clinic at the Health Sciences Teaching and Research Foundation
8 Teacher of the Specialization in Medical Clinic at the Health Sciences Teaching and Research Foundation
9 Specialist in Medical Clinic from the Health Sciences Teaching and Research Foundatione
10 Teacher of the Specialization in Medical Clinic at the Health Sciences Teaching and Research Foundation

of patients who were admitted to the Internal Medicine Infirmary unit of the Regional Hospital of Ceilândia in the Federal District between 01/07/2021 e 31/12/2021. The retrospective study will be carried out from the analysis of records. For a statistical analysis, the Excel® 2019 program will be used. Patients will export epidemiological data on sex, age, marital status, hometown, city of domicile, previous chronic illness, cause, and duration of immediate outcomes. It should be noted that the financial information acquired in the study can contribute to assistance and permanent education in the planning of the service.

Keywords: Chronic disease. Epidemiology. Patient Rooms. Prevalence.

INTRODUCTION

According to the Ministry of Health, the term hospitalization refers to the process of admitting patients to occupy a hospital bed for a period equal to or greater than 24 hours[1] (RENILSON REHEM, 2002). This health unit must contain a team of doctors, nurses and nursing technicians, as well as support for specialties 24 (twenty-four) hours a day and every day of the week and its main objective is to guarantee the performance of the diagnostic and therapeutic procedures necessary for the complexity of the clinical cases of the assisted population[2] (DIÁRIO OFICIAL DA UNIÃO, 2011).

The factors that increase the hospitalization rate are the most diverse, and may vary according to gender, age, diagnosis, care provided, and resources available at the institution. Length of stay is an important indicator of hospital performance and efficiency[3] (KHOSRAVIZADEH, OMID et al, 2020) and its increase culminates in an increase in hospital costs and a decrease in bed turnover, which reveals the need for increasingly complex studies in order to know the population and morbidity factors in order to increase the availability of beds, associated with better planning of the care provided to the patient during and even after hospitalization[4] (SILVA, ANA MARIA NUNES et al, 2014).

The socioeconomic, cultural and environmental conditions of a given society are the major pillars that affect the distribution of health and disease in a population[5] (PAIM, J. S., 2011). In this context, it is essential to carry out a detailed epidemiological study of the population in the city of Ceilândia – DF, the largest city in population and occupied households in the Federal District, according to the 2018 District Household Sample Survey[6] (CODEPLAN, PDAD, 2018).

Objectives

General Objective

To investigate the epidemiological and clinical profile of patients admitted to the Internal Medicine Ward unit of the Regional Hospital of Ceilândia in the Federal District, Brazil, between 07/01/2021 and 12/31/2021.

Specific Objectives

To investigate the prevalence of female and male patients, mean age, most recurrent marital status, hometown, city of residence, previous chronic diseases, cause and length of stay of patients admitted to the Internal Medicine Ward unit of the Regional Hospital of Ceilândia in the Federal District, Brazil between 07/01/2021 and 12/31/2021.

Justifications

Describing the relevant epidemiological characteristics of the community where the health unit is located in a precise and objective way, guiding the analytical strategy is a fundamental part of the process of programming public policies and predicting health financing and management[7]

(COELI, C. M., CARVALHO, M. S. and LIMA, L. D. D., 2021).

In line with the National Council of Education, through resolution CNE/CES No. 4, of November 7, 2001, this study aims to elucidate to the scientific community the epidemiological characteristics and real needs of the population of Ceilândia in the Federal District, making it possible to have a greater cost-benefit ratio in medical decisions as well as the organization of personalized intra and extra-hospital projects based on the needs of the community[8] (RESOLUTIONS CNE/CES 2001).

Knowledge of the causes of hospitalization can contribute to the formulation of public policies aimed at prioritizing actions and intervening more effectively in the hospitalization process.

Methodology

Type of study

This was a cross-sectional, descriptive and retrospective study.

Location and period

Data collection was carried out through the analysis of medical records of patients who were admitted to the Medical Clinic ward registered in the hospital system (trakcare®) between 07/01/2021 and 12/31/2021.

The analysis of the medical records was initiated after the approval of the CEP/FEPECS.

Sample

A total of 323 hospitalizations were recorded in the Medical Clinic Ward of the Regional

Hospital of Ceilândia during the study period. During the process of the eligibility protocol for the study, seven (7) patients in the sample were excluded, as they met the exclusion criteria, totaling 316 medical records analyzed (Figure 2).

Patients admitted to the Medical Clinic ward unit of the Regional Hospital of Ceilândia between 07/01/2021 and 12/31/2021 were selected. Patients under 18 years of age on the day of admission and patients who did not have medical records were excluded from the study.

Data collection

Data collection was carried out through the collection of information from the patient's medical records in the TRAKE CARE ® version 2015 system, available in the SES-DF data system. The data were tabulated in Excel® 2019 spreadsheets.

The evaluation of the participants' medical records was done by obtaining data from the electronic medical records and organizing the data in 3 different tables described in Appendix A, in which the following information was collected: gender, age, marital city, hometown, city of residence, previous chronic diseases, and cause of hospitalization.

The list of nomenclatures of the comorbidities studied, the terms considered synonymous and the classification by specialty are recorded in Appendix B. Data related to surgical, obstetric and gynecological diseases were excluded from the search.

Ethical and legal aspects

The project was submitted to the Research Ethics Committee (CEP) of the Foundation for Teaching and Research in Health Sciences (FEPECS) of the SES/DF for approval.

The secrecy and confidentiality of the data will be maintained. The research will be conducted in accordance with the ethical guidelines established by Resolution CNS/MS No. 466/20129

(RESOLUTION No. 466, OF DECEMBER 12, 2012).

Risks and Benefits

The risks involved in the research are the disclosure of personal data and breach of secrecy and confidentiality. The identification of the research participants will be coded by the research team, preserving the secrecy and confidentiality of the data collected, minimizing the ethical risk in order to maintain privacy and not cause damage from exposure. In this way, any information disclosed in a report or publication will be done in coded form.

Only the researchers had access to the source documents of the research participant. The medical records were consulted by the researchers, and the professional commitment to the absolute confidentiality of the information was ensured.

As a benefit, the study outlines a clinical-epidemiological profile of the patient who needs to be assisted by the Medical Clinic ward unit so that we can more assertively outline primary prevention and follow-up programs after hospitalizations, in addition to adapting the service offer to what is necessary to meet the population's demand during hospitalization.

Statistical analysis

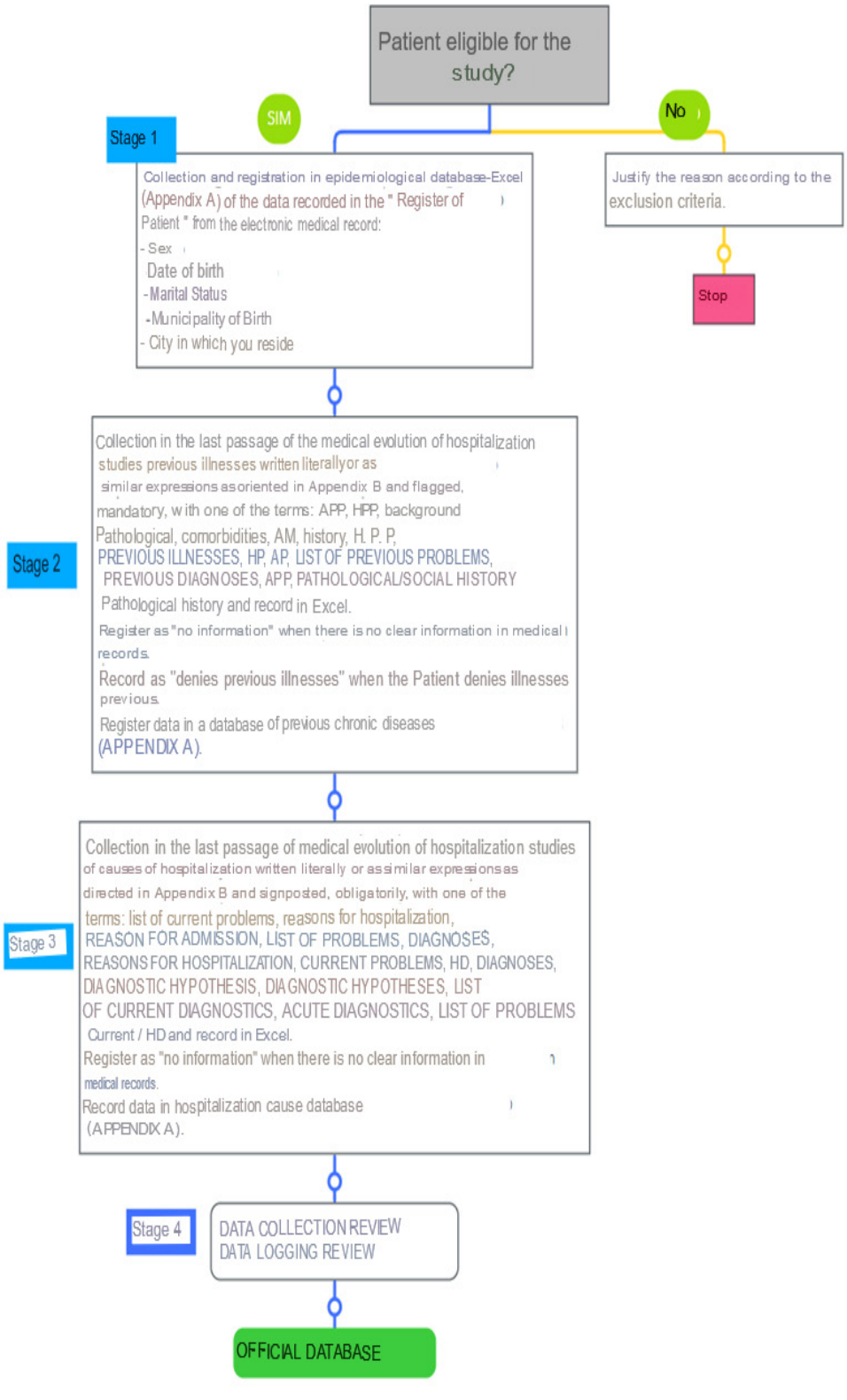
The data were analyzed using Excel® 2019 programs. The full results of all statistical analyses are described in Appendix C.

Detailed Design

The Standard Procedures Protocol of this study is presented in the following diagram (Figure

1). This describes each of the main steps of the study and serves as a support to researchers with a view to maintaining homogeneity and safety in obtaining data, as well as offering the scientific population a full view of the construction of research data collection and ensuring the reproducibility of the research.

Data collection regarding previous pathologies and causes of hospitalization follows the nomenclature standardization presented in Appendix B.


Patient eligible for the study?
SIM
No
Stage 1
Collection and registration in epidemiological database-Excel (Appendix A) of the data recorded in the " Register of Patient " from the electronic medical record:
- Sex
Date of birth
-Marital Status
-Municipality of Birth
- City in which you reside
Justify the reason according to the exclusion criteria.
Stop
Stage 2
Collection in the last passage of the medical evolution of hospitalization studies previous illnesses written literally or as similar expressions as oriented in Appendix B and flagged, mandatory, with one of the terms: APP, HPP, background Pathological, comorbidities, AM, history, H. P. P, PREVIOUS ILLNESSES, HP, AP, LIST OF PREVIOUS PROBLEMS, PREVIOUS DIAGNOSES, APP, PATHOLOGICAL/SOCIAL HISTORY
Pathological history and record in Excel.
Register as "no information" when there is no clear information in medical records.
Record as "denies previous illnesses" when the Patient denies illnesses previous.
Register data in a database of previous chronic diseases (APPENDIX A).
Stage 3
Collection in the last passage of medical evolution of hospitalization studies of causes of hospitalization written literally or as similar expressions as directed in Appendix B and signposted, obligatorily, with one of the terms: list of current problems, reasons for hospitalization, REASON FOR ADMISSION, LIST OF PROBLEMS, DIAGNOSES, REASONS FOR HOSPITALIZATION, CURRENT PROBLEMS, HD, DIAGNOSES, DIAGNOSTIC HYPOTHESIS, DIAGNOSTIC HYPOTHESES, LIST OF CURRENT DIAGNOSTICS, ACUTE DIAGNOSTICS, LIST OF PROBLEMS Current / HD and record in Excel.
Register as "no information" when there is no clear information in medical records.
Record data in hospitalization cause database (APPENDIX A).
Stage 4
DATA COLLECTION REVIEW
DATA LOGGING REVIEW
OFFICIAL DATABASE

Results

Seven hospitalizations were removed from the study among the 323 hospitalizations performed in the study period, as they met the exclusion criteria. The other medical records analyzed complied with the inclusion criteria and were not included in the exclusion criteria, as shown in Figure 2.

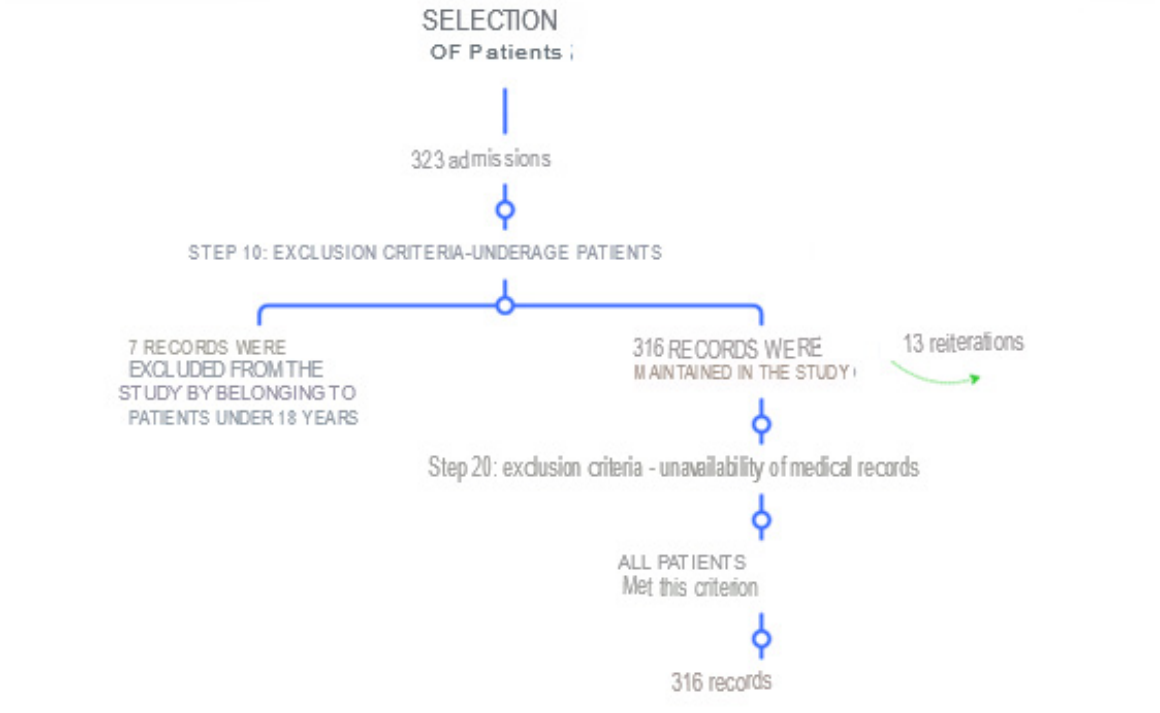


Figure 2 – patient selection flowchart

In the period studied, there was a higher proportion of female patients, totaling 163 (51.6%), while males totaled 153 (44.4%), as shown in Figure 3. Regarding marital status, most patients (26.9%) who had the information in their medical records were married (Figure 4).

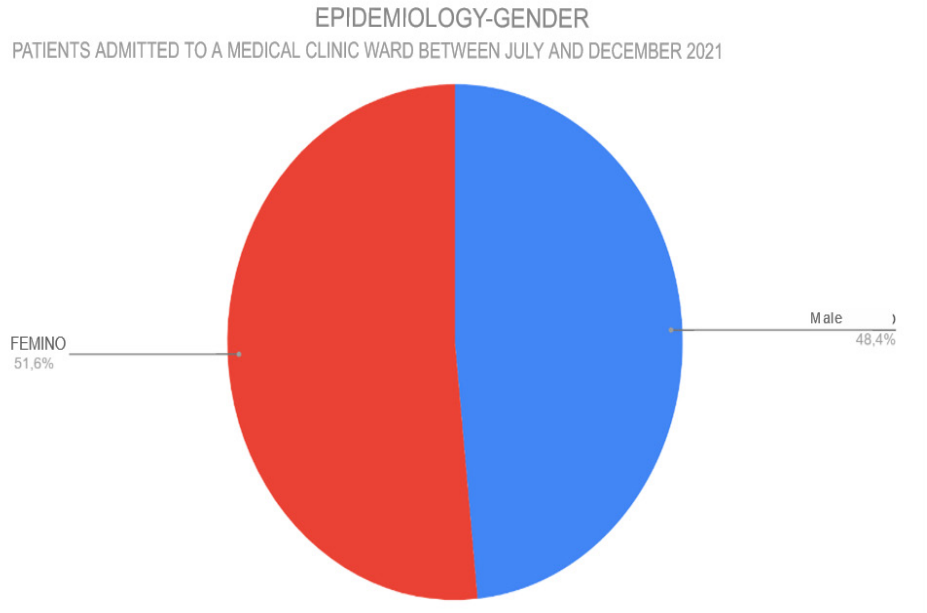


Figure 3 - Epidemiology - Sex

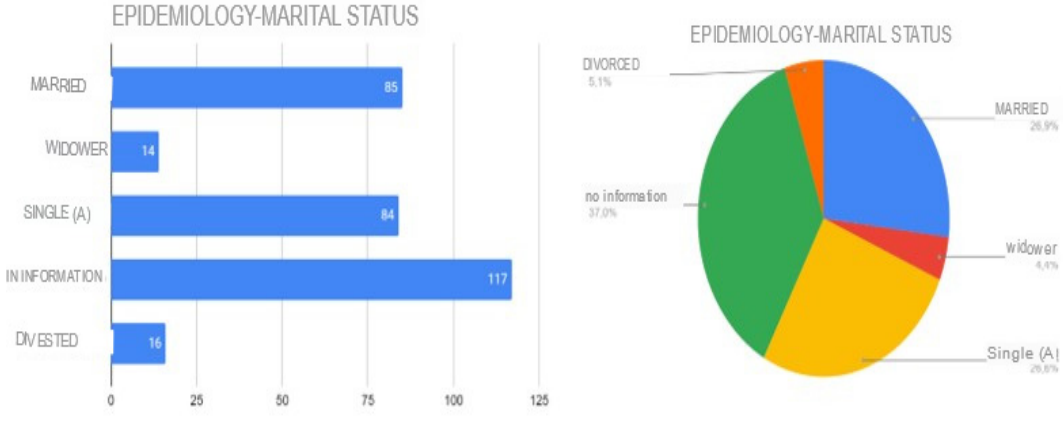


Figure 4 - Epidemiology - marital status

The mean age was 62.02 years and the median was 63 years. The minimum age of the participants was 18 years (1 occurrence) and the maximum was 96 years (1 occurrence). The most frequent age was 79 years (12 occurrences) (Table 01; Figure 5).

Most of the patients with available information were born in the Federal District, followed by

Minas Gerais and Piauí (Figure 6). Regarding the state of residence, 93% of the patients lived in the Federal District (Figure 7) and most in the city of Ceilândia (Figure 8). 100% of the patients claimed to live in the Federal District or in Goiás.

Table 1 - Epidemiology - Age on the day of hospitalization

Ages in admission	How many occurrences
18	1
20	1
21	1
23	1
24	1
25	3
26	2
27	3
29	1
31	2
32	6
33	2
35	4
36	2
38	1
39	4
40	4
41	3
42	4
43	6
44	5
45	5
46	4
47	5
48	7
49	2
50	5
51	4
52	6
53	6
54	5
55	5
56	8
57	5
58	5
59	6
60	4
61	7
62	4
63	9
64	3
565	7
66	4
67	4
68	10
69	5
70	5
71	10
72	6
73	5
74	7
75	4
76	9
77	6
78	6
79	12
80	4
81	9
82	7
83	6
84	3
85	3
86	3
87	6
88	1
89	2
90	3
91	3
93	1
94	2
96	1

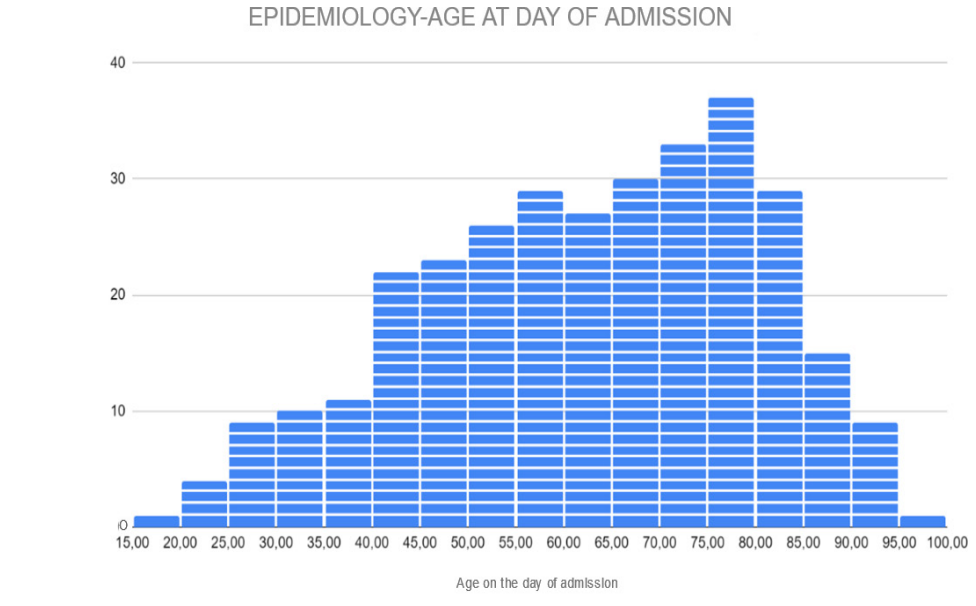


Figure 5 - Epidemiology - Age on the day of hospitalization

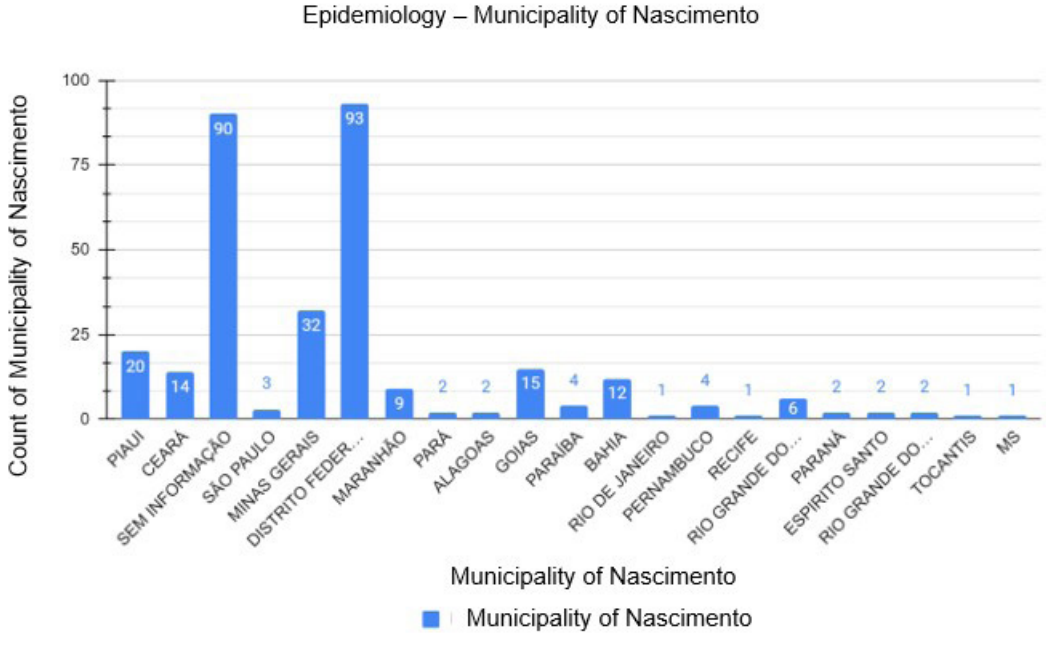


Figure 6 - Epidemiology - Municipality of Birth

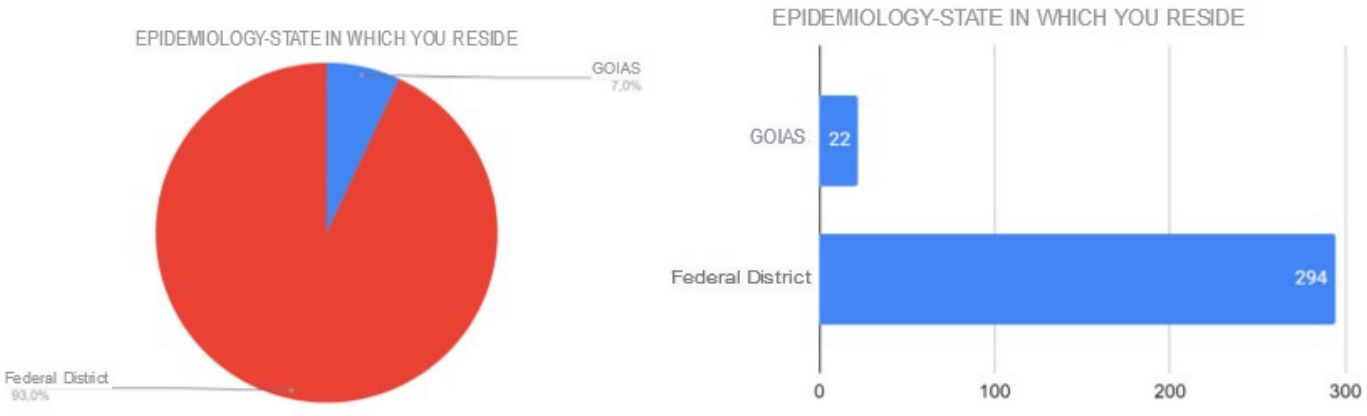


Figure 7 - Epidemiology - state in which

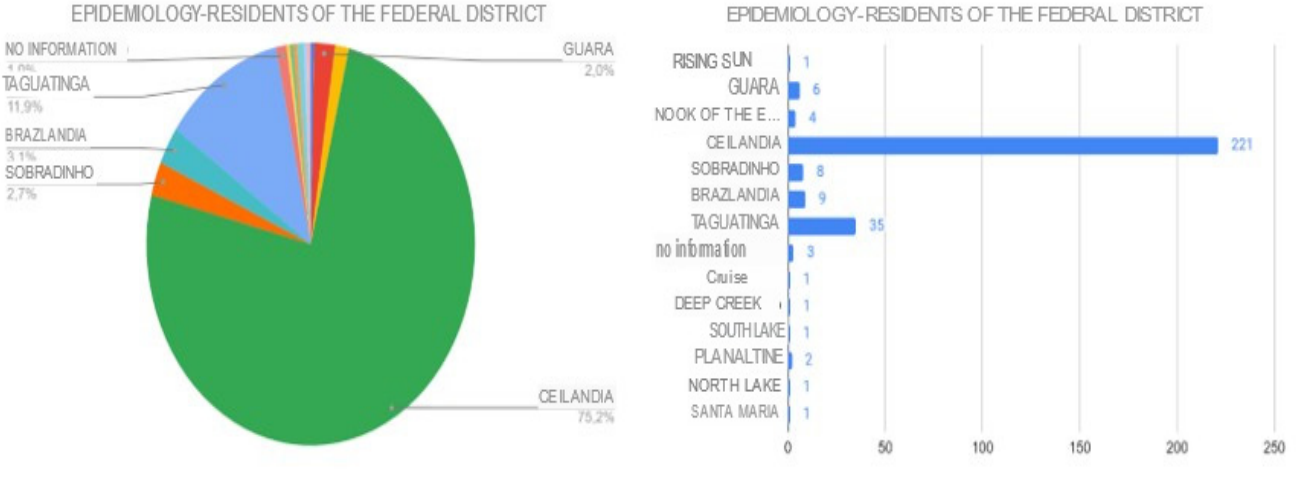
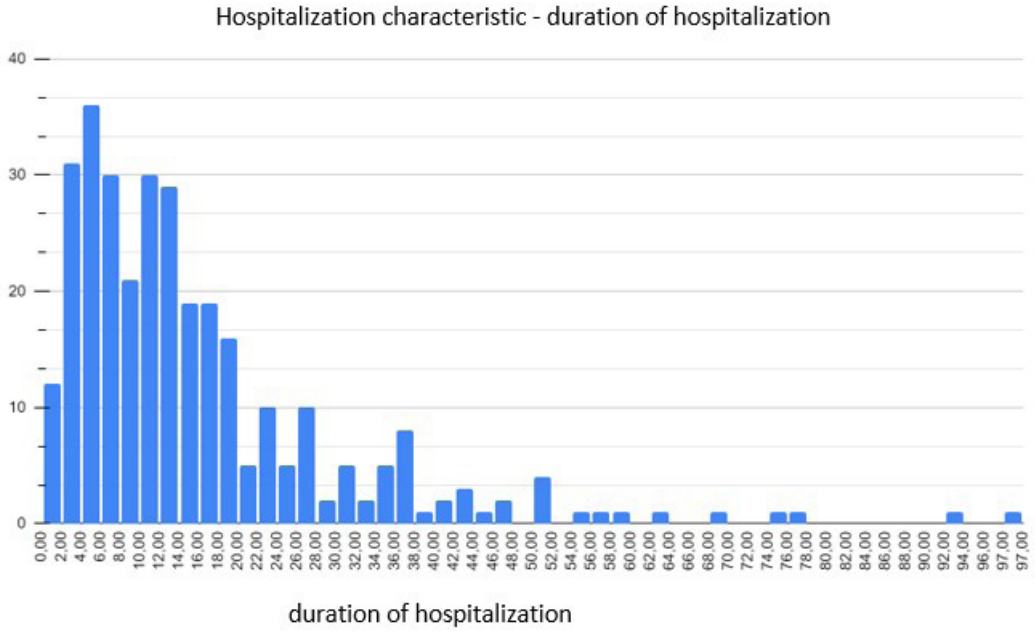


Figure 8 - Epidemiology - Residents of the Federal District

The mean duration of hospitalizations was 15.37 days, with a median of 11 days. The minimum length of hospital stay was a few hours without completing 24 hours (1 occurrence) and the maximum was 97 days (1 occurrence). 5 days of hospitalization was the most common interval in the study period (25 occurrences) (Table 1; Figure 8).

Figure 9 – Epidemiology – Length of hospital stay

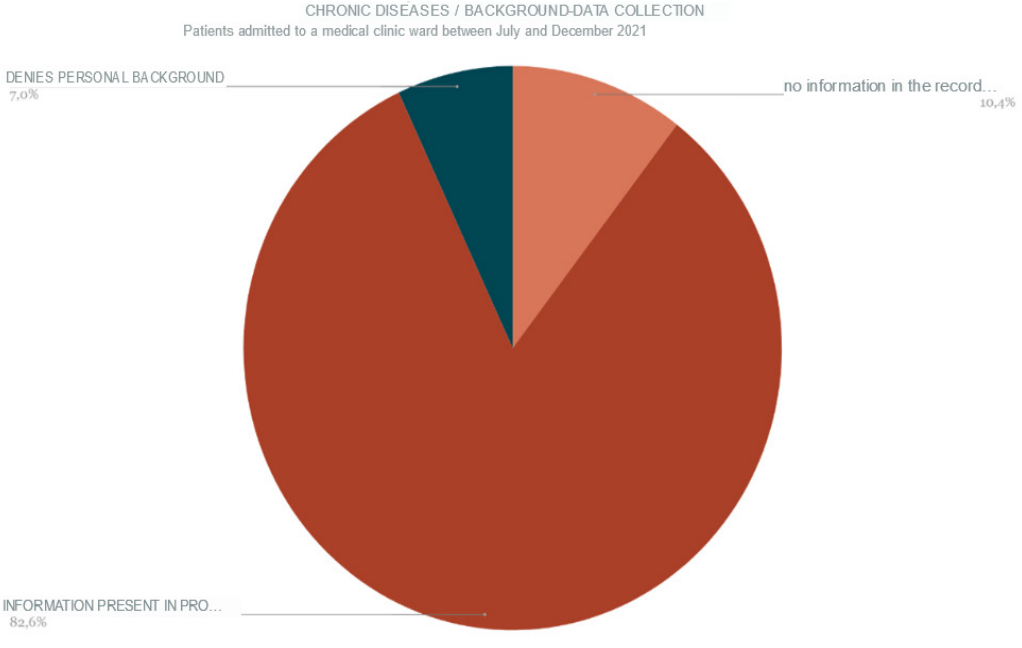


number of hospitalized days	How many occurrences
0	1
1	11
2	16
3	15
4	11
5	25
6	16
7	14
8	0
9	11
10	16
11	14
12	16
13	13
14	10
15	8
16	8
17	11
18	7
19	9
20	3
21	2
22	4
23	6
24	1
25	4
26	6

number of hospitalized days	How many occurrences
27	4
29	2
30	1
31	4
32	1
33	1
34	2
35	3
36	2
37	6
38	1
40	1
41	1
42	3
44	1
46	2
50	2
51	2
54	1
56	1
58	1
63	1
69	1
75	1
76	1
92	1
97	1

Table 2 - Epidemiology - Duration of hospitalization

The pathologies studied are recorded in Appendix B. Regarding previous and antecedent diseases, 7% of the patients denied previous hospitalizations, 10.4% did not have the information recorded in the medical records as specified in the Standard Study Procedures Protocol (Figure 01) and 82.6% of the medical records presented adequate information (Figure 10). A total of 838 occurrences were found, with cardiological, endocrinological and psychiatric diseases being the most prevalent (Figures 11 and 12).



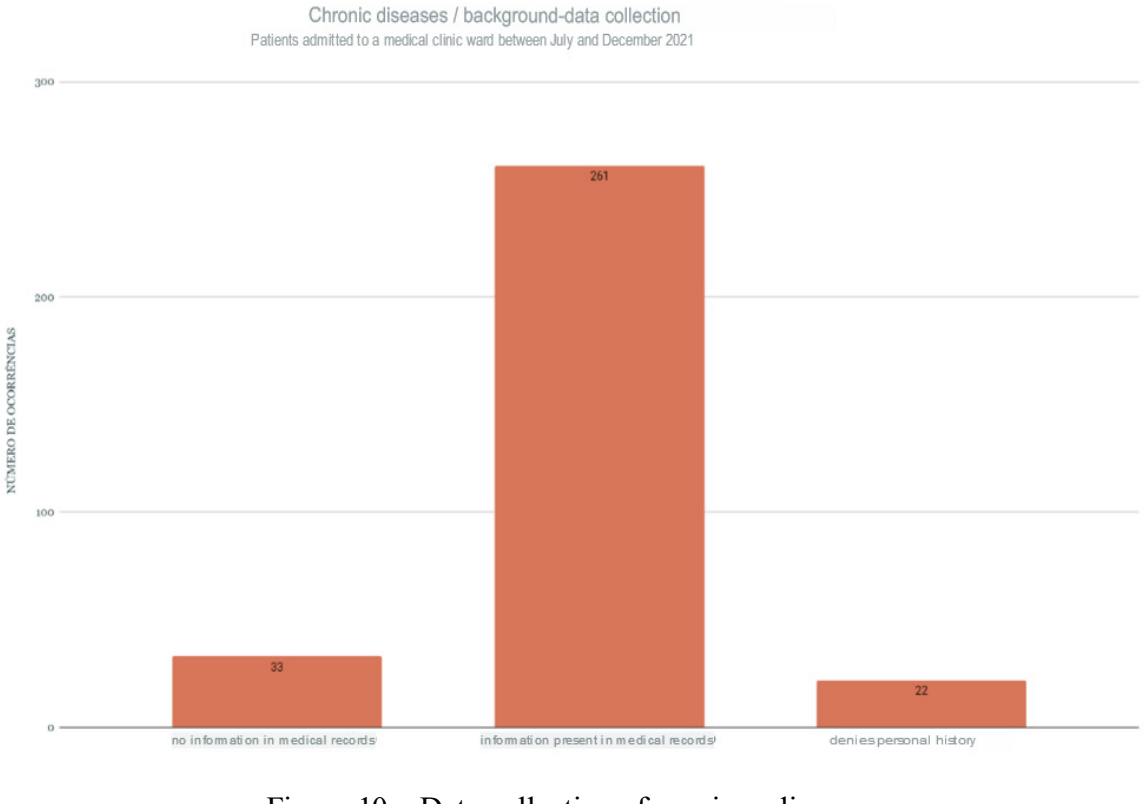


Figure 10 – Data collection of previous diseases

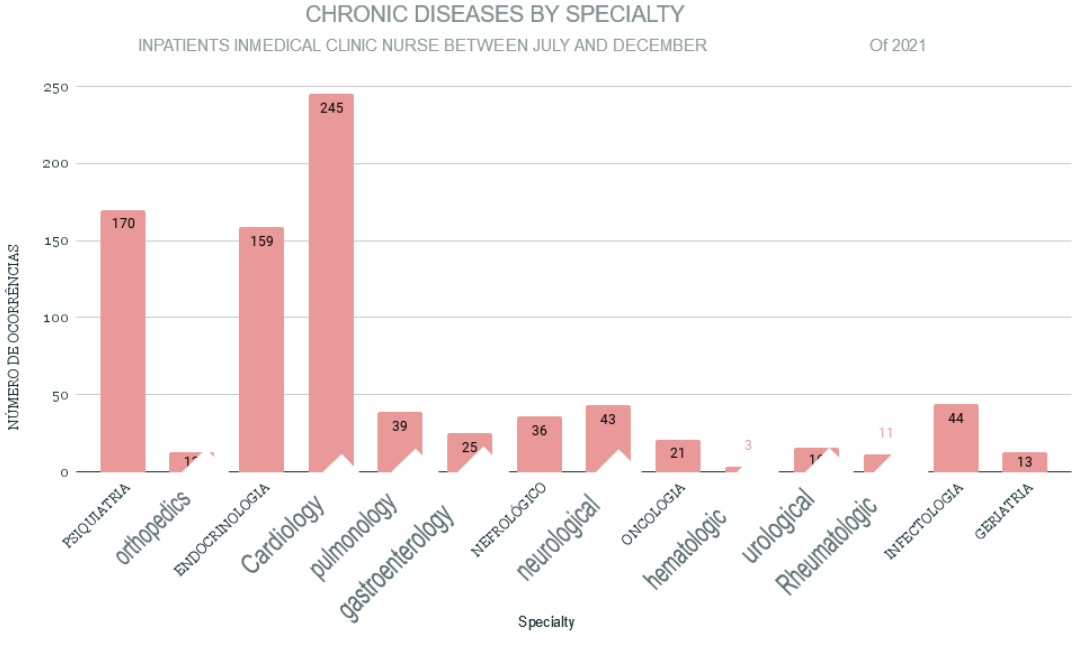


Figure 11 - Preliminary Diseases by Specialty

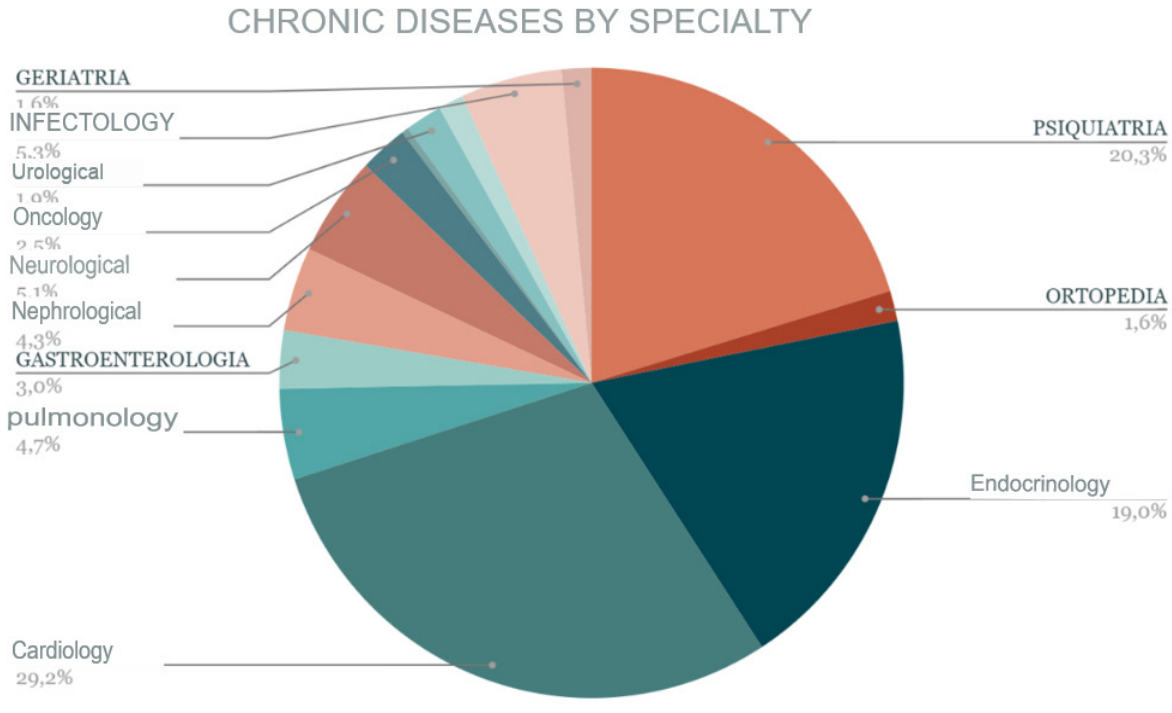


Figure 12 - Preliminary Diseases by Specialty

Arterial Hypertension, Chronic Heart Failure, and Acute Coronary Syndrome (ACS) were the most prevalent cardiac etiologies (Figures 13 and 14). Among endocrinological diseases, Diabetes Mellitus, Obesity and Dyslipidemia had a great impact (Figures 15 and 16).

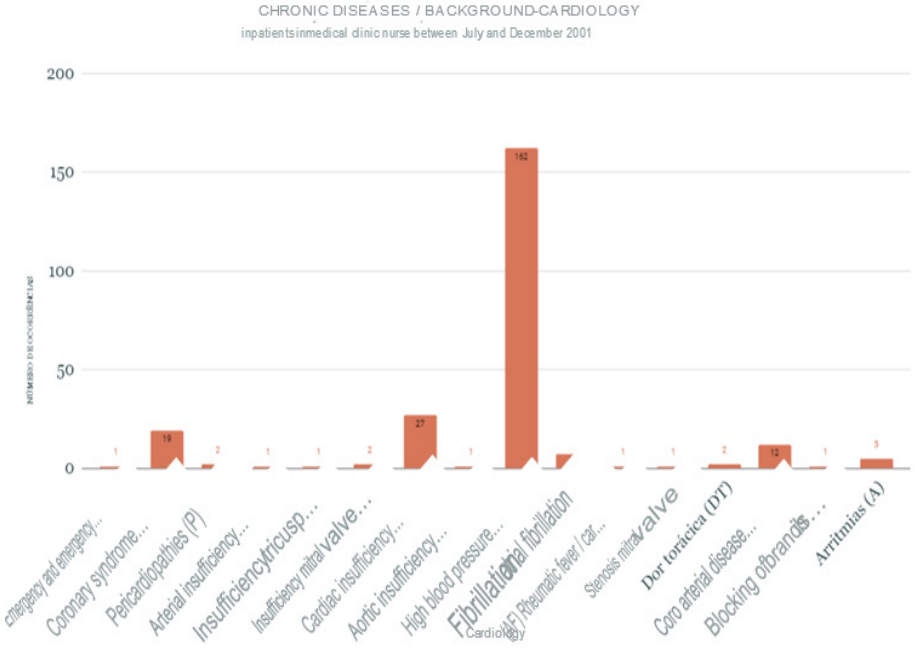


Figure 13 - Chronic Diseases - Cardiology

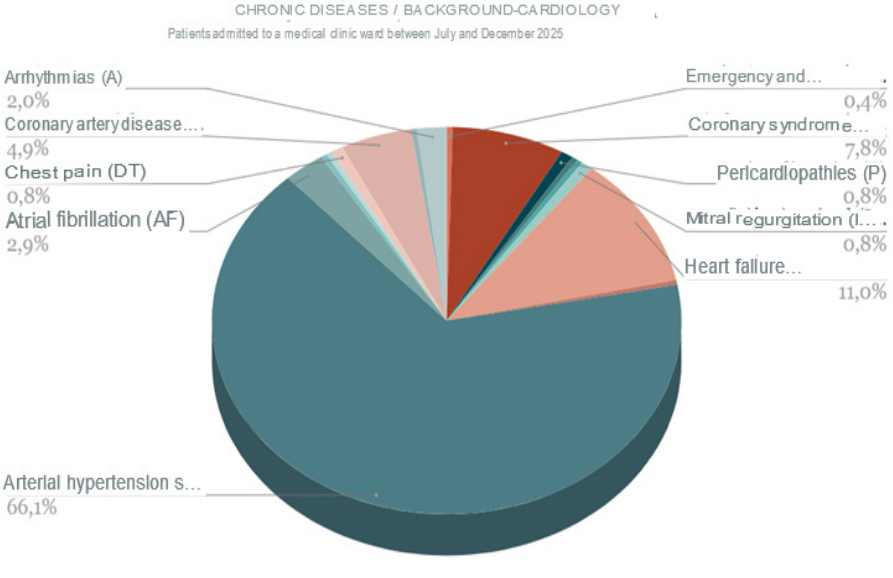


Figura 14 – Doenças Crônicas - Cardiologia

Chronic / background diseases - data collection
Patients admitted to a medical clinical ward between July and December 2021

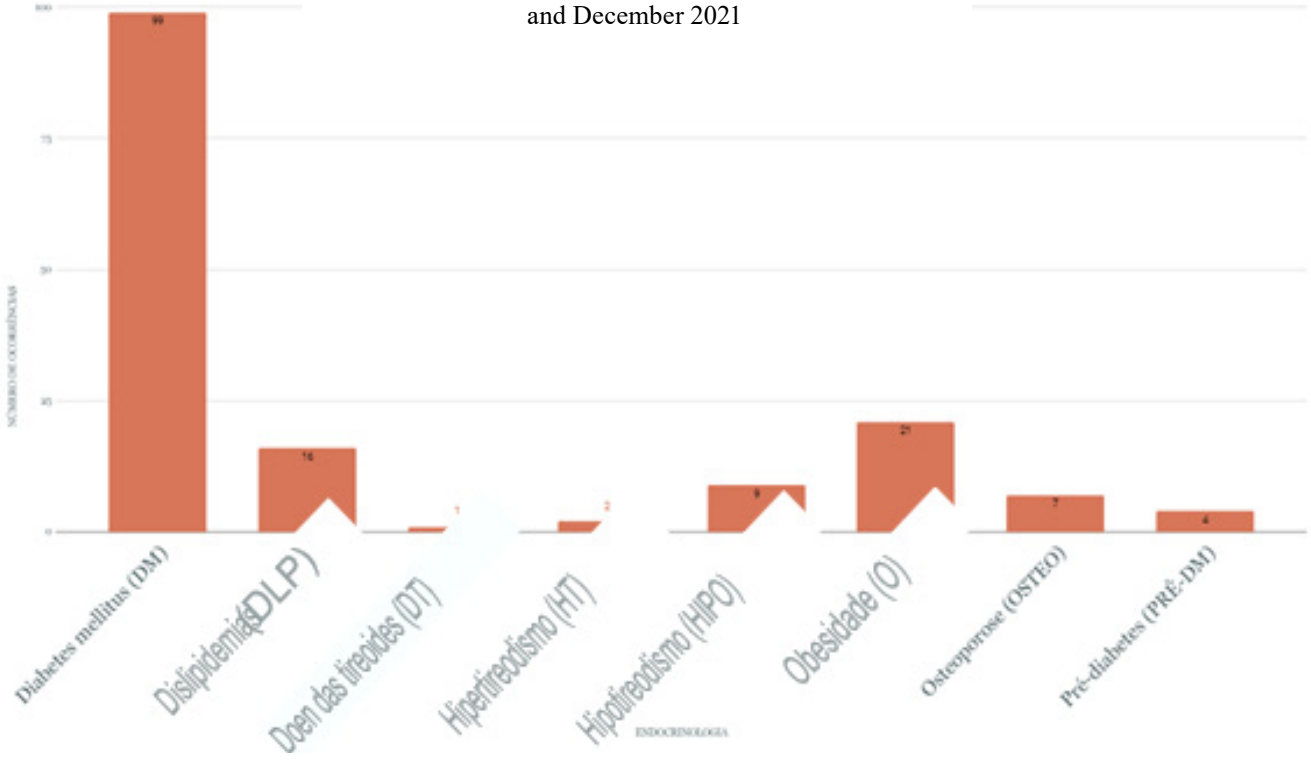


Figure 15 - Chronic Diseases - Endocrinology

Chronic / background diseases - data collection
Patients admitted to a medical clinical ward between July and December 2021

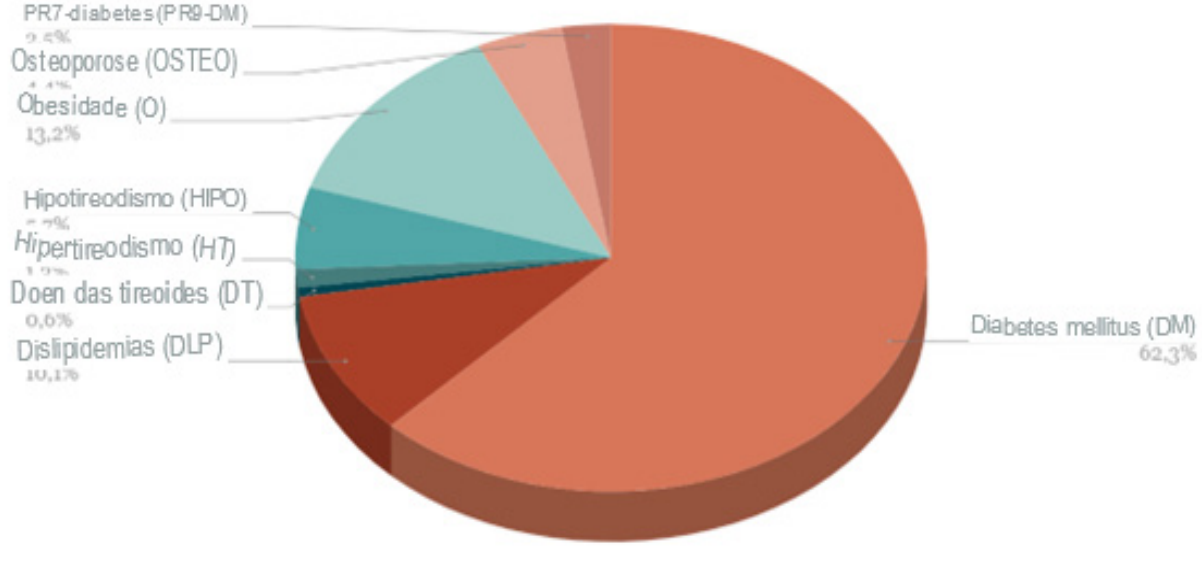


Figure 16 - Chronic Diseases - Endocrinology

Pathologies involving mental health were in second place among the previous diseases of patients hospitalized in the Medical Clinic Infirmary. The prevalence of diseases linked to substance abuse is particularly noteworthy (Figures 17 and 18).

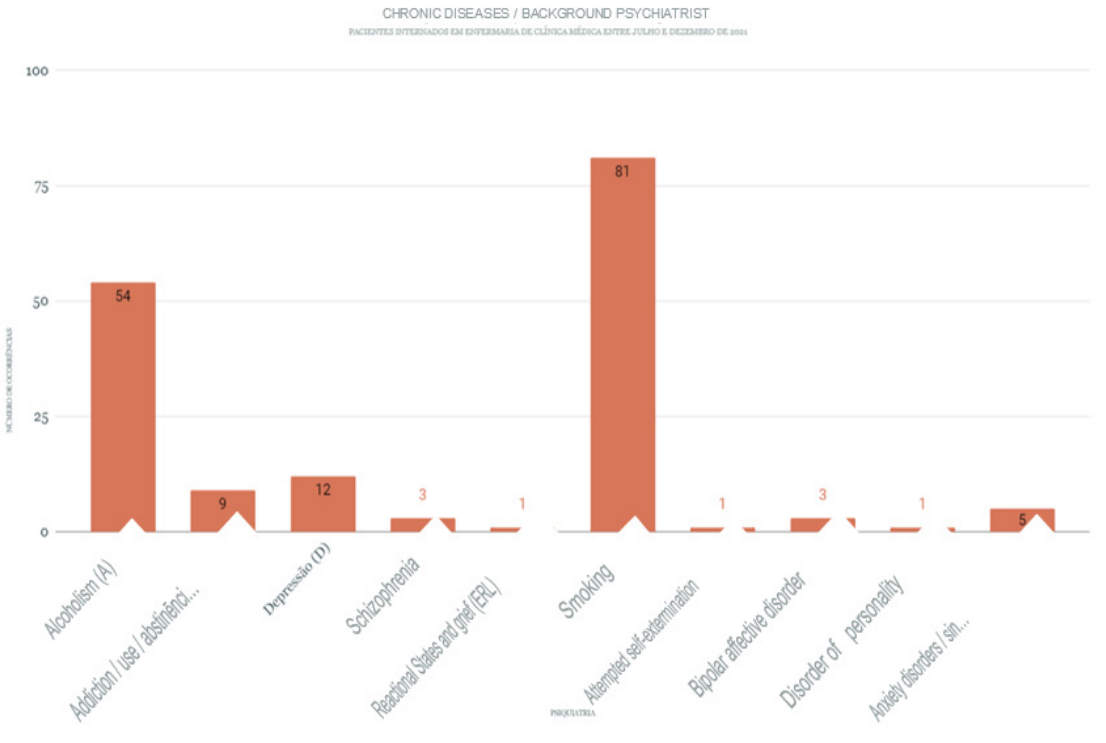


Figure 17 - Chronic Diseases - Psychiatry

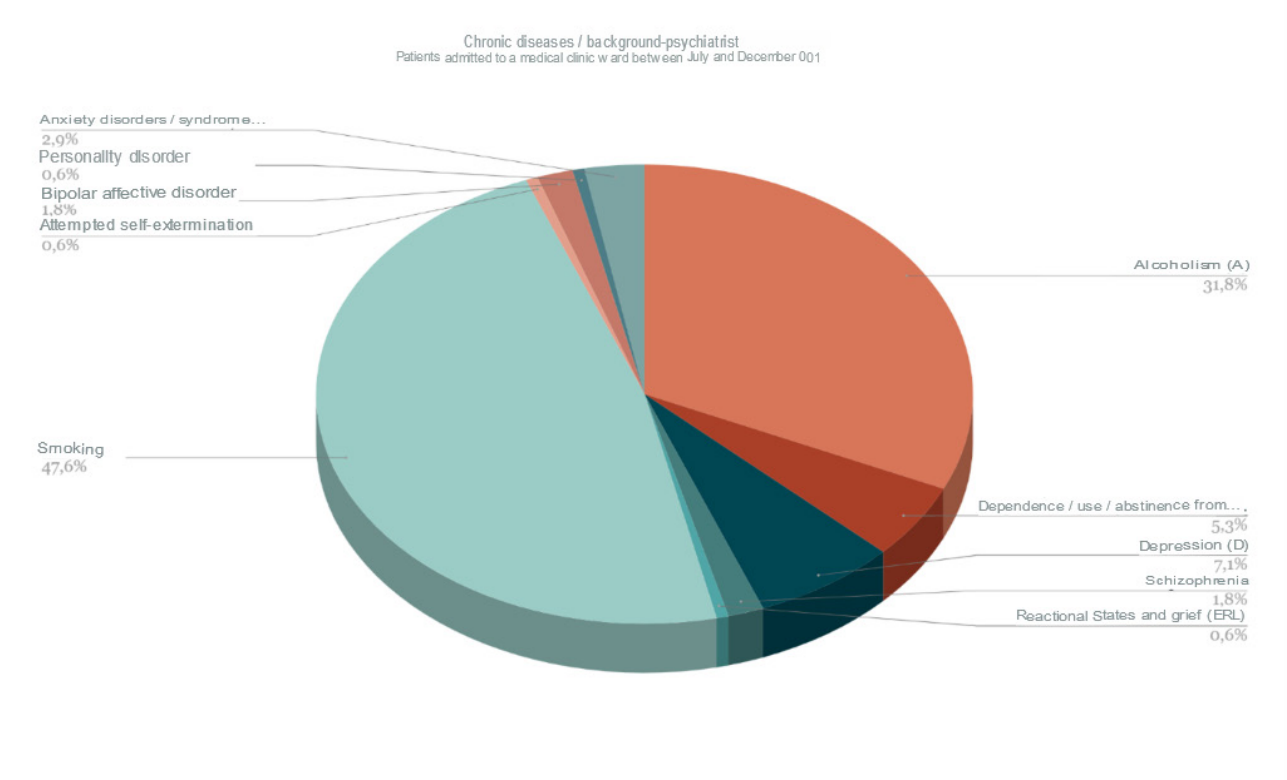


Figure 18 - Chronic Diseases - Psychiatry

Regarding the causes of hospitalization, there was no satisfactory record in 9 medical records (Figure 19). A total of 808 occurrences were found, with cardiology, infectious diseases, and nephrology being the most prevalent specialties in this category (figures 20 and 21).

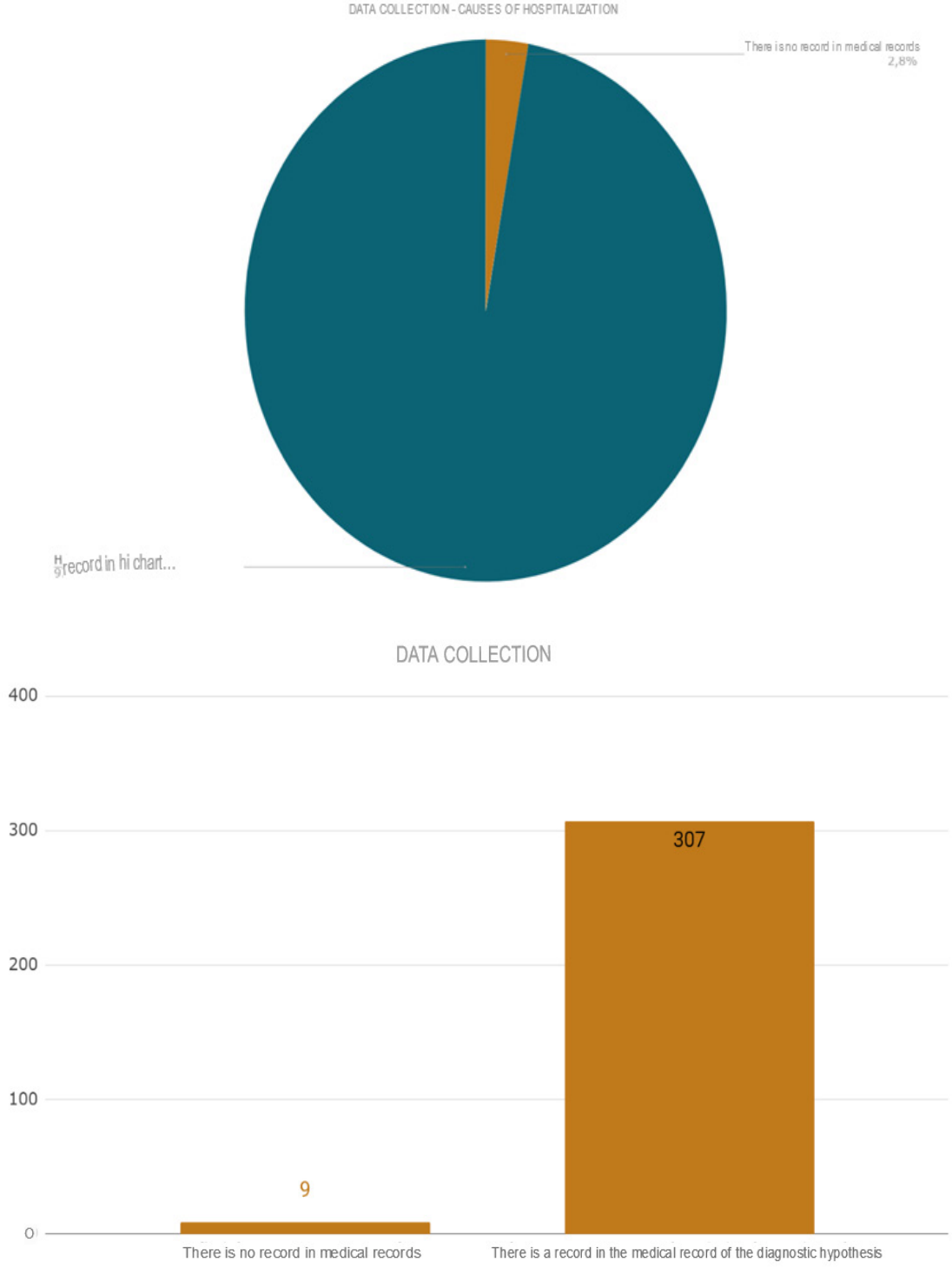


Figure 19 – Data Collection – Causes of hospitalization

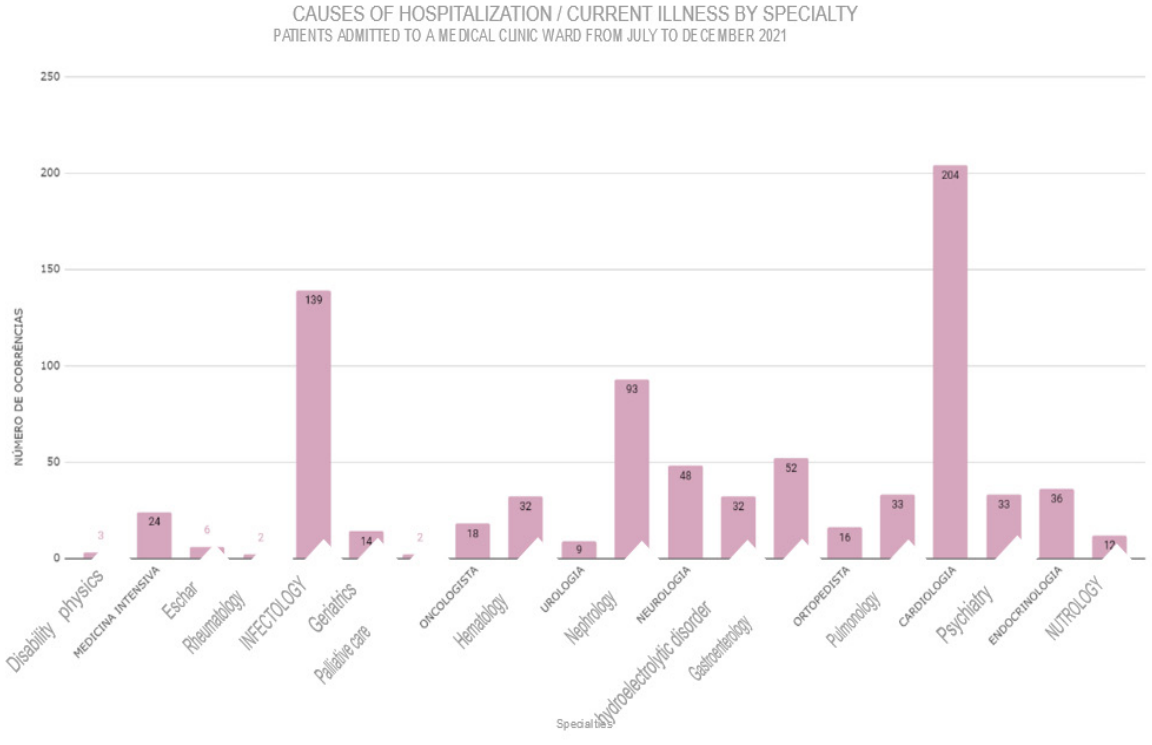


Figure 20 – Cause of hospitalization by specialty

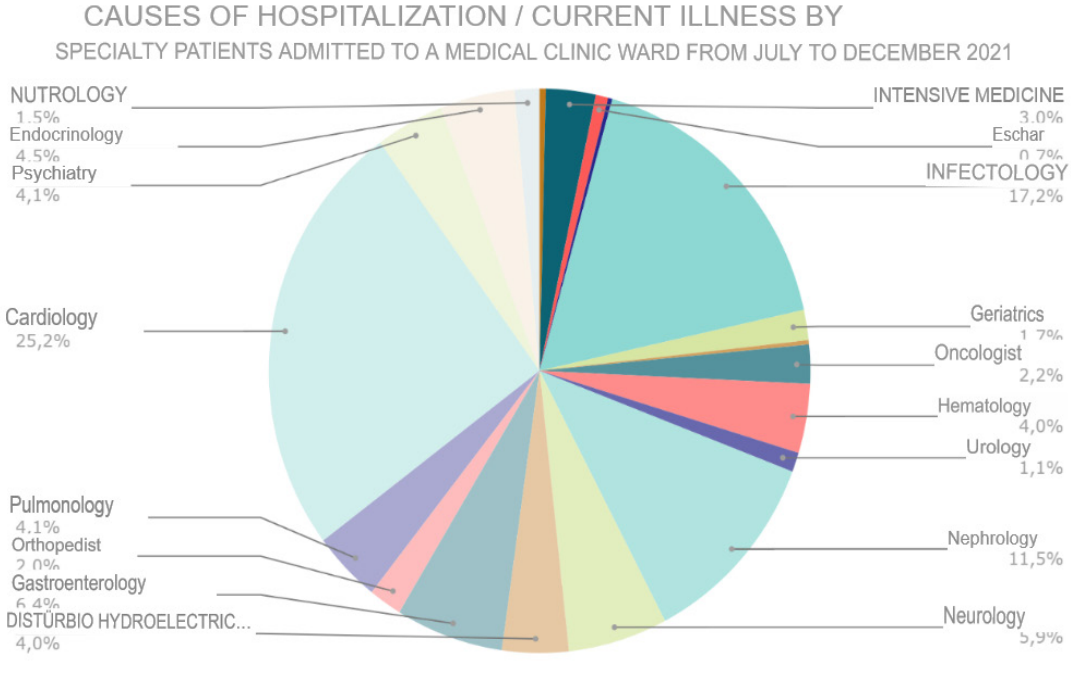


Figure 21 – Cause of hospitalization by specialty

Cardiology also appears first in relation to the causes of hospitalization. The most relevant cardiac causes were: Coronary Syndrome, Chronic Heart Failure and Systemic Arterial Hypertension (Figures 22 and 23).

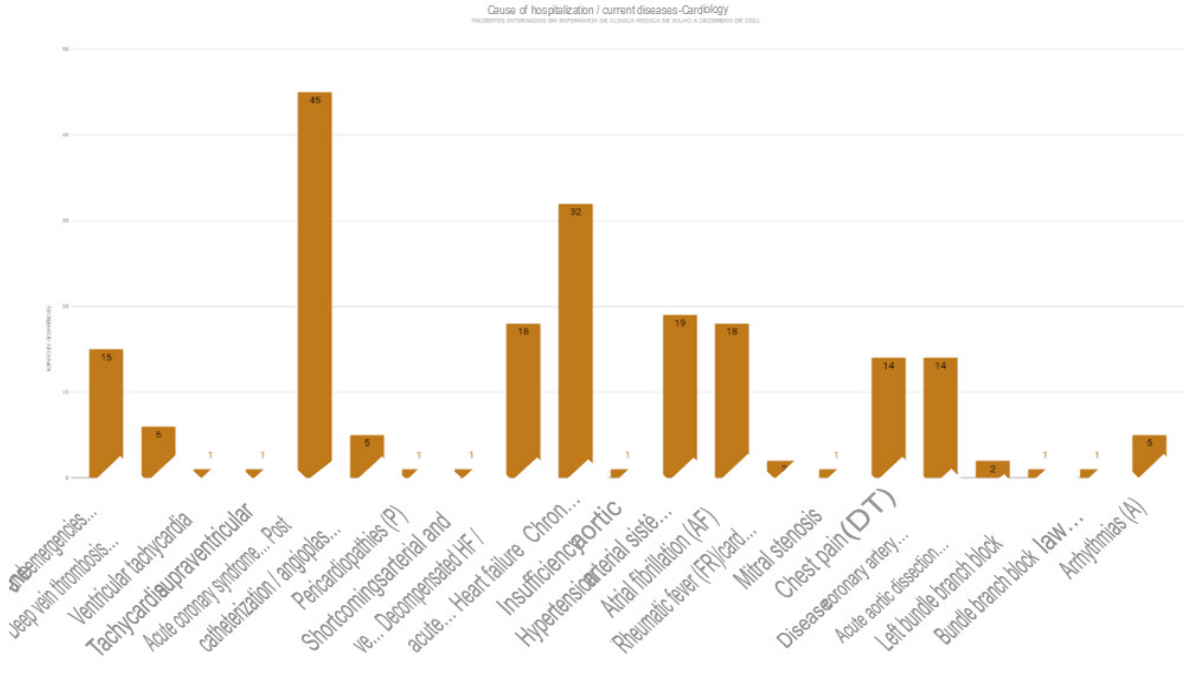


Figure 22 – Causes of Hospitalization - Cardiology

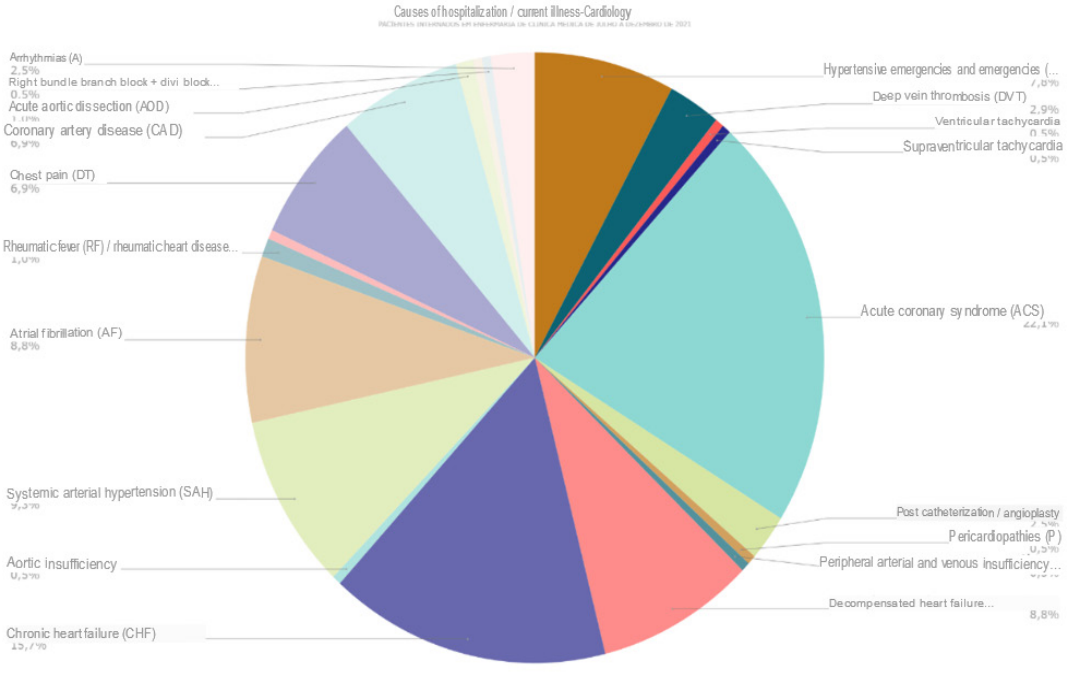


Figure 23 – Causes of Hospitalization - Cardiology

Infectious diseases appear in second place as a cause of hospitalization. Respiratory and urinary tract infections were the main etiologies (Figures 24 and 25).

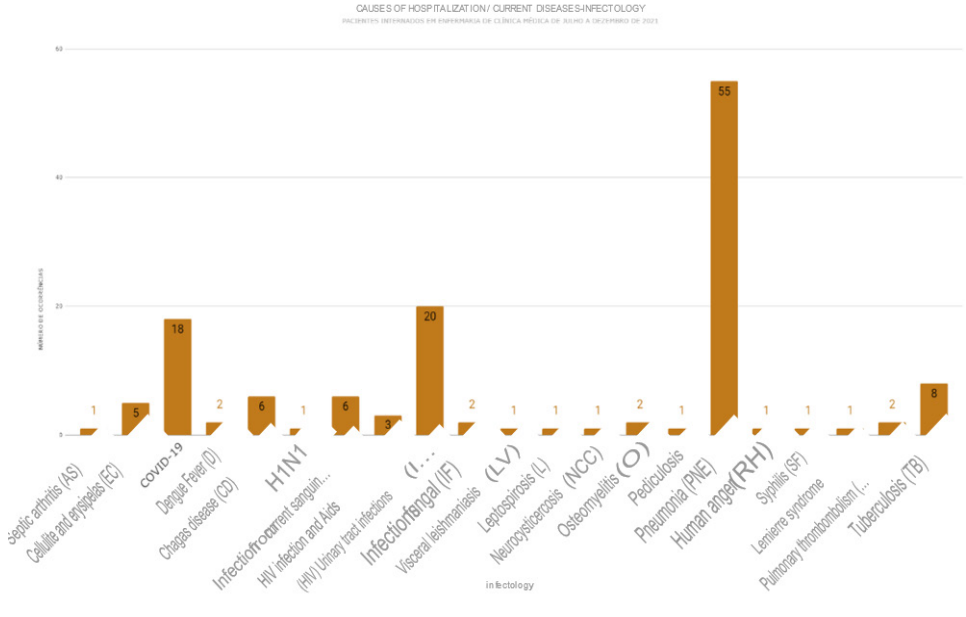


Figure 24 – Causes of Hospitalization - Infectious Diseases

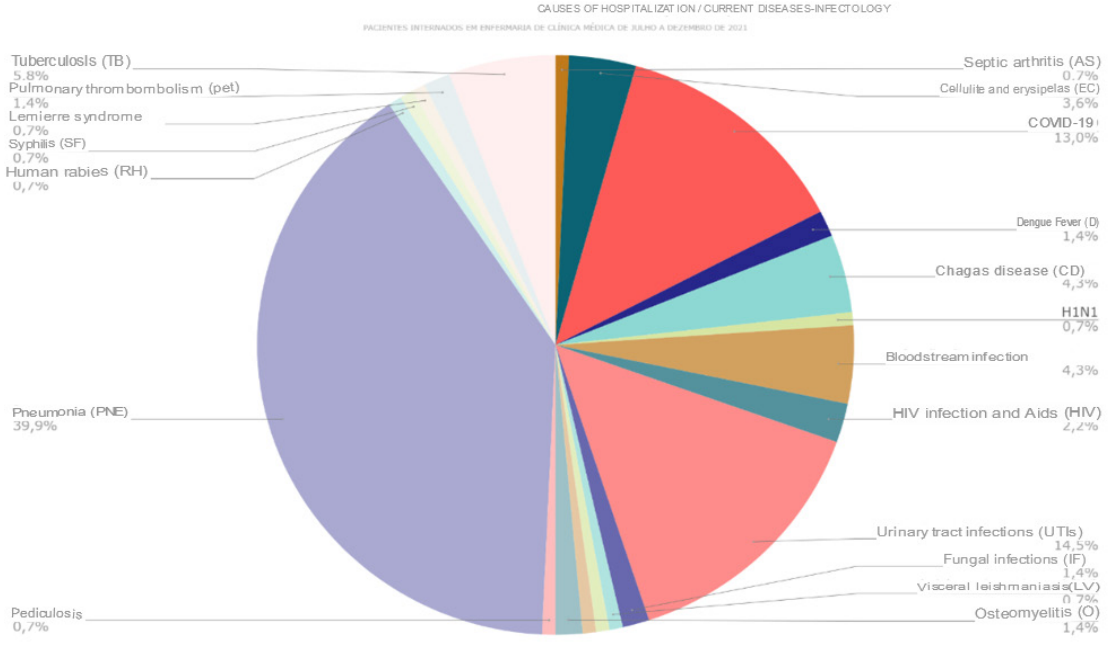


Figure 25 – Causes of Hospitalization – Infectious Diseases

Diseases that affect the urinary system ranked third, with chronic or acute chronic kidney disease being the most prevalent (Figures 26 and 27).

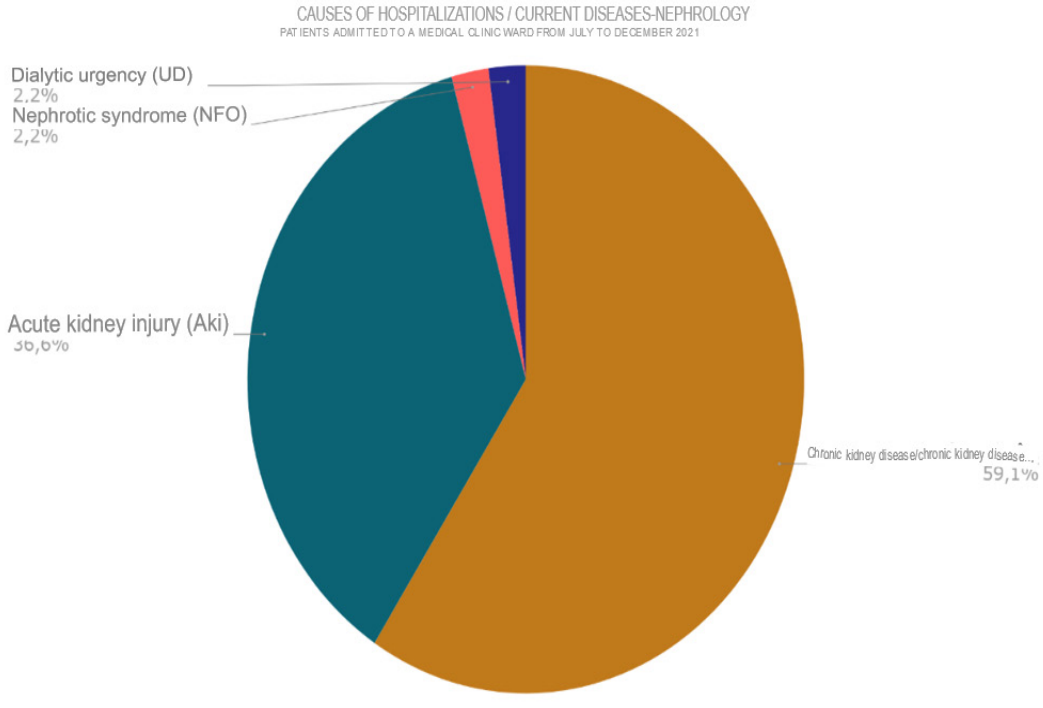


Figure 26 – Causes of Hospitalization - Nephrology

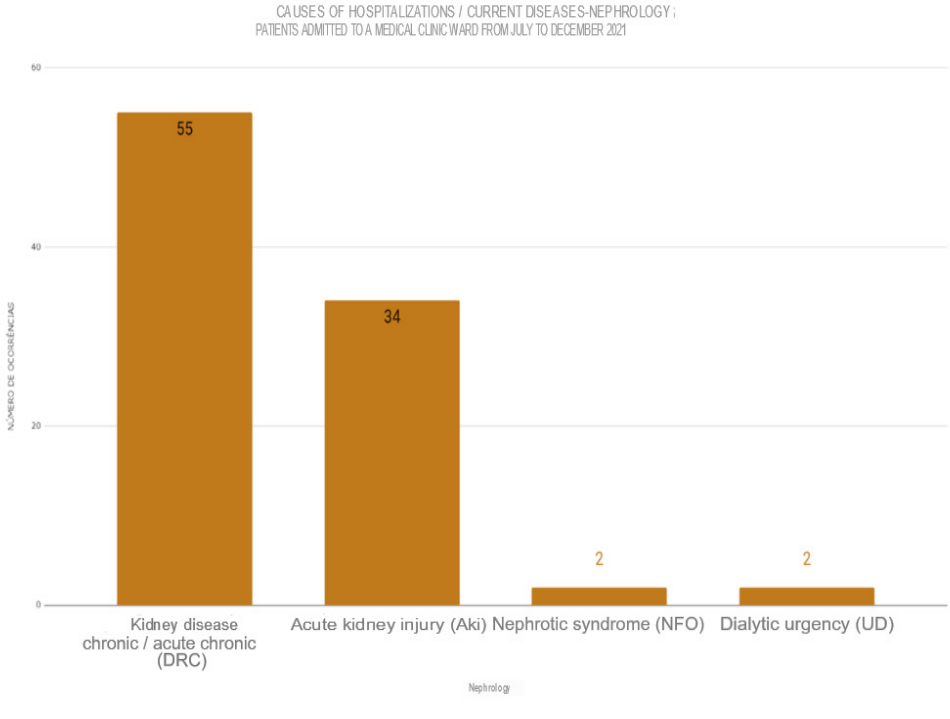


Figure 27 – Causes of Hospitalization – Nephrology

Discussion

In this study, a higher prevalence of female patients was found (51.6%). This result differs from that of Fernando Madalena Volpe and Lucimar Leão Gomes, who, in 2018, carried out the same type of study in the Internal Medicine and Surgery ward of five large hospitals in Minas Gerais. However, regarding marital status, the two studies concluded that most patients were married, followed by single, widowed, and divorced. The importance of the patient's marital status is related to the possibility of a higher risk of mortality among unmarried individuals, as recorded in the SABE Study (GOMES, MARÍLIA MIRANDA FORTE et al., 2013).

The mean age of hospitalized patients was 62 years and the elderly were responsible for 57% of hospitalizations in the period (181 hospitalizations). Silva and Menezes also obtained extremely similar results when studying the sociodemographic profile of patients admitted to a hospital in Sergipe where the population had a mean age of 61.1 years (SILVA, GLEBSON MOURA; MENEZES, GARDÊNIA GONÇALVES SANTOS, 2014). It is, therefore, a predominantly geriatric ward. Although specialized care for the elderly is an emerging priority in Brazil, little emphasis has been given to models of organization of hospital services aimed at the population of this age group12 (COELHO FILHO, JOÃO MACEDO, 2000), it is therefore necessary to pay special attention from health managers and workers regarding the possibility of adapting the physical structure (ramps, elevators, wake-up light and alarm bell) (RDC No. 283, 2005), human resources (physiotherapist, nursing, occupational therapist, pharmacist, physical educator, nutritionist, social worker, speech therapist, dentist, psychologist) and therapeutic resources during the hospitalization of these patients (BRAZILIAN SOCIETY OF GERIATRICS AND GERONTOLOGY, 2022).

During the presentation of the results of the study, it is noteworthy that, despite the prevalence of the elderly, there was no record in the medical record of polypharmacy, which is defined by the

use of five or more medications and is associated with losses and negative outcomes related to drug interaction, in this population the incipient incidence of Delirium is also notorious, which had no record in the previous clinical history and presented 10 incidences as a cause of hospitalization, being 100% in the elderly (SECOLI, SILVIA REGINA, 2010). The prevalence of delirium was 3% (10/316), a value lower than 5.7% found by Souza-Muñoz in his 2012 study, however in both studies the importance of advanced age as a risk factor for its development during hospitalization was evidenced (SOUSA-MOÑOZ, RITA LOPES DE et al., 2012).

The mean duration of hospitalizations was 15.37 days, with a median of 11 days. The result is consistent with that found by Cordeiro, who showed the average length of stay in the ward of 16 days in 2016 (CORDEIRO, RAFAELLA, LÍGIA ROQUE et al., 2016), however, it differs from that found by more recent studies, such as the one made available by Irineu and team in 2021, in which the average length of stay in the Internal Medicine Ward was 34.5 days (ALCÂNTARA JÚNIOR, IRINEU LOPES DE et al., 2021).

The factors that can increase the length of hospital stay are linked to the structure and quality of services provided by the hospital, such as cancellation or delay of surgeries and delays in the performance and delivery of diagnostic test results (ALCÂNTARA JÚNIOR, IRINEU LOPES DE, et al., 2021). Tracing these points of conflict is important since they are processes that can be corrected, suggesting the need for a reformulation of the hospital protocol so that they flow more efficiently and effectively.

Clinical and socioeconomic characteristics may also be responsible for the increase in in-hospital time, such as male gender, diabetes mellitus, family income, and schooling (BORGES, POLLYANA RUGGIO TRISTÃO; 2020) In this study, the mean in-hospital time of women was 11.68 days and that of men, 16.00 days.

Heart diseases are in first place both as previous comorbidities and as a cause of hospitalization (OLIVEIRA, GLÁUCIA MARIA MORAES DE, et al., 2021). The most prevalent chronic disease in hospitalized patients was Arterial Hypertension, which was present in 51% of hospitalizations,

a percentile much higher than the 22.8% prevalence found in patients over 18 years of age by the National Health Survey.

Not only Arterial Hypertension was a very relevant comorbidity in the study, but also its consequences such as heart failure (in second place) and Coronary Syndromes (in third place). According to SUS data, between 2008 and 2019, heart failure accounted for one-third of all clinical hospitalizations related to cardiovascular conditions and was responsible for most of the costs related to clinical hospitalizations for Cardiovascular Disease (OLIVEIRA, GLÁUCIA MARIA MORAES DE, et al., 2021).

The three most prevalent chronic diseases in the field of endocrinology are linked to Metabolic Syndrome: diabetes mellitus (99 occurrences), obesity (21 occurrences) and dyslipidemia (16 occurrences). Metabolic syndrome is considered a very important factor in the development of cardiovascular diseases and its prevalence has been growing in recent decades (BOPP, MÁRCIA; BARBIERO, SANDRA; 2009). According to data from the World Health Organization (WHO), Brazil has 44.58% of overweight adults and 12.41% of obese adults, however, there was no mention of overweight in the period studied, and the incidence of obesity in chronic diseases was 6.6%, far below the WHO estimate, which suggests that despite the clinical relevance, The record in the medical records has been lower than expected.

Psychiatric diseases were also recurrently cited as a previous disease in hospitalized patients, particularly chemical dependence, in which alcoholism and smoking accounted for more than 70% of the occurrences in Mental Health. An important limitation of this study is the imprecision of standardization of diagnostic criteria for these pathologies.

The World Health Organization (WHO) characterizes alcoholism as a set of behavioral, cognitive, and physiological phenomena that develop after repeated alcohol use, typically associated with the following symptoms: strong desire to drink, difficulty controlling consumption (not being able to stop drinking after it has started), continued use despite negative consequences, higher priority given to substance use to the detriment of other activities and obligations, increased tolerance (need for

higher doses of alcohol to achieve the same effect obtained with previously lower doses or decreasing effect with the same dose of the substance) and sometimes a state of physical withdrawal (symptoms such as sweating, tremors and anxiety when the person is without alcohol) (CISA, 2014).

Smoking is the act of consuming cigarettes or other products containing tobacco, whose drug or active ingredient is nicotine. The WHO reinforces that all forms of tobacco are harmful and there is no safe level of exposure to tobacco, its consumption should be considered and fought as a pandemic (WORLD, HEALTH ORGANIZATION, 2022).

The study regarding the most recurrent causes of hospitalization reveals that if Systemic Arterial Hypertension is the most prevalent chronic disease, its consequences are the main causes of hospitalization in the field of cardiology. Acute coronary syndrome was the most prevalent event among heart diseases, followed by heart failure.

Infectious diseases appear in second place in terms of the cause of hospitalization. Pneumonia was the most prevalent infectious disease, accounting for 55 cases, followed by urinary tract infection. It is notorious that even though it is a General Medical Clinic ward with exclusive acceptance of patients without infection by the Coronavirus, there were 18 patients whose cause of hospitalization was caused by the virus. This information is extremely important, since it draws attention to the need for a health protocol for transferring patients, even in the same health unit, with the request for screening exams during a pandemic, with a view to protecting all hospitalized patients.

Hyponatremia was the most common hydroelectrolytic disorder in hospitalized patients, followed by hyperkalemia and hypokalemia, respectively (ROCHA, PAULO NOVIS, 2011). This information is relevant because hyponatremia is associated with a series of unfavorable outcomes, such as: need for admission to the intensive care unit, prolonged and more expensive hospitalization, transfer to shelters, and mortality. Hyperkalemia, as far as it is concerned, can cause muscle weakness or paralysis, cardiac conduction abnormalities, and cardiac arrhythmias (UP TO DATE, 2022).

CONCLUSION

The public of patients in the Medical Clinic ward of the Regional Hospital of Ceilândia is composed mostly of women, the average age is 62.2 years. Most of the patients with available information are married and were born in the Federal District, followed by those from Minas Gerais and Piauí. All patients live in the Federal District or in the state of Goiás.

Cardiac, psychiatric, and endocrinological diseases were among the most prevalent chronic diseases. As for the cause of hospitalization, diseases of the cardiovascular system maintain the position of importance and infectious and nephrological diseases appear in second and third place in terms of prevalence.

Understanding the population assisted at the secondary and tertiary health levels is fundamental in the process of systematizing and guiding which resources the management should focus its efforts on primary care, making the health system more effective, democratic, humanized and equitable.

Recommendation for future work

Studies focused on the hospitalization regime of the Internal Medicine Infirmary are still very incipient in the scientific literature, especially in the population of the Federal District. This work proposes to be an inspiration and source of information for future work in the field of Internal Medicine. There is still much to explore: What comorbidities are associated with a longer hospital stay? What is the clinical profile of patients hospitalized with Acute Coronary Syndrome? What are the most prevalent causes of hospitalization in the elderly? Organizing, quantifying, and disseminating this data is the first step towards increasingly assertive decision-making.

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