



## Epidemiological Analysis of Migraine Hospitalizations in Barbalha, Ceará: A Notable Regional Disparity

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### Introduction

Migraine is a neurological condition characterized by intense, throbbing headaches that can be accompanied by symptoms such as nausea, vomiting, sensitivity to light, and sound. It represents a significant challenge to the quality of life of affected individuals, as it is the most common cause of neurological disability related to headaches worldwide, as well as one of the leading reasons for medical consultations worldwide. In the Brazilian context, migraine is not only a health concern but also has substantial social and economic implications. The burden of migraine extends beyond physical pain, negatively impacting work performance, family relationships, and the mental health of those affected. Understanding the incidence and associated factors of migraine in different regions of Brazil is crucial for developing effective prevention and treatment strategies. This study aims to analyze the incidence of migraine in Barbalha, a city in the south of Ceará located in the Cariri region, and this city was responsible for over 69% of migraine-related hospitalizations in the state of Ceará. Objective: To analyze the epidemiological characteristics of hospitalizations for migraine and other headache syndromes between 2020 and 2022 in the state of Ceará and the city of Barbalha, CE.

### Methods

A cross-sectional, analytical study with a quantitative approach, covering a sample of 2,817 individuals hospitalized due to migraine and other headache syndromes (ICD-10 G43 and G44) in the state of Ceará between January 2020 and December 2022, using data from the Brazilian Unified Health System Hospital Information System (SIH/SUS). The variables analyzed included year of hospitalization, number of hospitalizations, municipality, age group, gender, total cost, type of care, average length of stay, and mortality rate.

### Results

The total number of hospitalizations for migraine in the state of Ceará during the period 2020-2022 was 2817 cases. Of these, 53.75% (1514) were female and 43.25% (1303) were male. However, some municipalities in the state stood out among the total hospitalizations, with Fortaleza accounting for 13.52% (381) of cases and, especially, Barbalha with 69.40% (1955). In this regard, Barbalha, despite being only the 17th most populous city in the state, leads in migraine-related hospitalizations in Ceará. In this municipality, men represented 51.25% (1002) and women 48.75% (953). Regarding the type of care, 19.33% (241) were elective, while 87.67% (1714) were emergency care during this three-year period. In terms of the years analyzed, there were 609 in 2020, 756 in 2021 and 590 in 2022. When analyzing the age group of patients, the four most prevalent groups were 30 to 39 years (280), 40 to 49 years (343), 50 to 59 years (314), and 60 to 69 years (283). Regarding the average length of stay in days, it was 6.9 days. Additionally, in Barbalha, the analyzed hospitalization service cost a total of 2.741.385,05 Brazilian Reais in the period 2020-2022, while in Fortaleza, it cost 201.473,06 in the same period.

### Conclusion

With the collected data, it is possible to observe a significant regional distortion in the data, as despite the municipality of Barbalha representing less than 1% of the total population of the state of Ceará, it accounts for over 69% of the statewide migraine hospitalization cases, along with a high proportion of emergency hospitalizations. Expenses for this type of hospitalization in the municipality represented 90.6% of the total expenditure in the state. However, due to the depth and detail of the data available in DATASUS, many of the data suffer from deficient sampling and may be biased, potentially requiring further explanation and necessitating more longitudinal studies to understand the reasons for this distortion. Furthermore, there is a prominent need for future in-depth studies to understand the reason for the high prevalence of migraine and other headache syndromes in this specific region.

**Keywords:** Migraine; Ceará; Barbalha; Cariri; Epidemiology.