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Migraine hospitalization rates in Brazil compared to selected neurological conditions: an epidemiological analysis of the last 10 years (2016–2025)

Luna Matos Capocci[1], Anna Beatryz Leite de Santana Menezes[1], Clara Nolasco Pinto Monteiro[1], Herculano Ramirez Floro Alonso[2], Larissa Karla Santos de Santana Alves[1], Laryssa Raphaely Vieira da Silva[1], Mariana Tenório da Silva[1], Raphael Caldas Lourenço[1], Richelly Beatryz Alves de Vasconcelos[1], Ana Letícia Amorim de Albuquerque[2]

[1]Federal University of Alagoas, Maceió, Alagoas, Brazil
[2]CESMAC University Center, Maceió, Alagoas, Brazil

Luna Matos Capocci
luna.capocci@famed.ufal.br

Introduction
Migraine is a neurological disorder characterized by throbbing and recurring headaches that affects approximately 15.2% of Brazilians. It is predominantly managed through outpatient follow-up, but in severe or prolonged cases, hospitalization may be necessary. A comparative analysis of migraine hospitalization rates allows for the identification of epidemiological patterns and provides an understanding of the relationship between outpatient management and hospital utilization.

Objective
To analyze regional trends and the epidemiological profile of hospitalizations due to migraine compared to stroke and epilepsy in Brazil from 2016 to 2025.

Methods
This is an ecological, descriptive, and retrospective study conducted using secondary data extracted from the Hospital Information System of the Brazilian Unified Health System (SIH/SUS) and made available by the Department of Informatics of the Unified Health System (DATASUS). Records for migraine (ICD-10: G43), stroke (ICD-10: I60–I69), and epilepsy (ICD-10: G40) were analyzed over a 10-year period (2016–2025) in Brazil. The variables analyzed included hospitalization rates across conditions, proportion of hospitalizations, and mean length of stay compared across Brazilian regions.

Results
A total of 105,704 migraine hospitalizations were recorded, accounting for 4.39% of selected neurological admissions, with a national rate of 5.05/100,000 inhabitants, significantly lower than epilepsy (27.89) and stroke (82.25). Regional disparities were marked, with the South presenting the highest rate (9.00/100,000), followed by the Northeast (5.51), North (4.62), Centro-Oeste (3.76), and Southeast (3.72), likely reflecting differences in diagnostic infrastructure rather than true disease burden. The mean length of stay for migraine was 3.96 days, shorter than epilepsy (6.12) and stroke (7.34). Notable regional variation persisted, as the Northeast recorded the longest stay (4.90 days) despite an intermediate admission rate, suggesting delayed presentation or limited access to abortive therapies, while the South combined its highest rate with the shortest stay (3.11 days), indicating efficient in-hospital management. Total migraine-attributable hospital days reached 418,550, compared to 3,570,559 for epilepsy and 12,617,726 for stroke.

Conclusion
Despite lower hospitalization rates than stroke and epilepsy, migraine remains an important cause of hospital utilization in Brazil. The regional disparities identified suggest differences in healthcare access and disease management, reinforcing the need for stronger preventive strategies, optimized outpatient care, and regionally tailored interventions to reduce potentially avoidable hospitalizations.

Keywords:
Migraine disorders
Hospitalization
Stroke
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Health inequalities

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