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Temporal trends and epidemiological profile of hospitalizations for migraine and other cephalalgic syndromes in Brazil from 2016 to 2025: an ecological study

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Introduction
Migraine and tension-type headache are the two most prevalent primary headache disorders and together account for more than 90% of headache complaints. Despite the availability of effective therapeutic options, underdiagnosis, self-medication, and poor adherence to preventive treatment continue to make primary headaches a significant clinical challenge. In Brazil, this issue is particularly relevant, as studies indicate that up to 72% of the population experience primary headaches within a one-year period. Therefore, understanding not only the temporal behavior of primary headache-related cases but also the epidemiological profile of the most affected populations is essential for improving disease management and healthcare planning.

Objective
To evaluate temporal trends in migraine-related hospitalizations in Brazil between 2016 and 2025 and to describe the epidemiological profile of hospitalized patients.

Methods
This ecological study analyzed temporal trends and epidemiological characteristics of hospitalizations for migraine and other headache syndromes in Brazil from 2016 to 2025. Data were obtained from the Hospital Information System of the Brazilian Unified Health System (SIH/SUS) through DATASUS. Variables included hospitalizations, sex, race/skin color, and region. Hospitalization rates were calculated using population data from the 2022 Brazilian Census. Temporal trends were assessed using Prais–Winsten regression.

Results
Between 2016 and 2025, 105,266 hospitalizations for migraine and other headache syndromes were recorded in Brazil. The national hospitalization rate increased from 4.01 to 6.21 per 100,000 inhabitants; however, the overall temporal trend remained stationary (APC=3.04%; p=0.089). Regional analysis revealed significant increasing trends in the North (APC=15.46%; p<0.001) and Midwest (APC=6.14%; p=0.029), while the remaining regions showed stationary trends. Females accounted for 66.3% of hospitalizations, with a female-to-male ratio of 1.96:1. Individuals of mixed race/skin color represented 44.6% of admissions, followed by White individuals (38.9%). The highest cumulative hospitalization rates were observed among Asian individuals (276.19/100,000 inhabitants), whereas Indigenous individuals had the lowest rates (9.04/100,000 inhabitants).

Conclusion
The findings reveal a heterogeneous pattern of migraine-related hospitalizations across Brazil. While the North and Midwest regions experienced significant increases in hospitalization rates, the remaining regions remained stable. These results may reflect regional differences in healthcare access, diagnostic capacity, and clinical management of headache disorders. Furthermore, the predominance of hospitalizations among women and individuals of mixed race/skin color reinforces the role of biological, hormonal, and sociodemographic factors in migraine occurrence.

Keywords:
Migraine disorders
Epidemiology
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