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Average length of hospital stay for migraine and other headache syndromes in the SUS by region of Brazil: a time-series analysis from 2015 to 2024

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Introduction
Headache is a very common symptom in healthcare settings, and may result from causes such as migraine, tension-type headache and infections. In Brazil, the prevalence of headache in the general population is estimated to range between 43% and 93%. In severe cases, headache is a relevant cause of emergency care and hospital admission, generating considerable demand on the Unified Health System (SUS). Given the regional inequalities in the provision of health services in Brazil, it is relevant to investigate whether the length of hospital stay for headache differs across regions of the country over time.

Objective
To analyze the average length of hospital stay for headache by region of Brazil in the SUS between 2015 and 2024.

Method
A descriptive epidemiological time-series study was conducted using data from the Hospital Information System of the SUS (SIH/SUS), made available by the Department of Informatics of the SUS (DATASUS). All hospital admissions recorded with a diagnosis of migraine and other cephalic pain syndromes were analyzed for the period 2015 to 2024, stratified by geographic region of Brazil.

Results
Over the 2015–2024 period, the national average length of hospital stay for migraine and other headache syndromes was 4.0 days. The North and Northeast regions recorded the highest averages for the period, at 4.8 and 4.9 days respectively, while the Midwest (2.9 days) and South (3.1 days) regions registered the lowest values. The Southeast region held an intermediate position, with a mean of 3.7 days. Regarding temporal trends, the North reached 5.7 days in 2020, the highest mean recorded in the entire period analyzed, and closed the series with an average of 4.7 days in 2024. The Northeast showed modest variation between 4.5 and 4.9 days throughout the series, with the exception of 2022 and 2023, which reached 5.2 and 5.6 days respectively. The Southeast demonstrated stability over the years, fluctuating between 3.4 and 3.9 days. The South region saw a reduction in mean days from 2015 to 2024, falling from 3.5 to 3.1 days. The Midwest recorded the largest cumulative reduction in the period, declining from 3.2 days in 2015 to 2.3 days in 2022, the lowest value recorded across the entire series.

Conclusion
The data reveal marked regional inequality in the length of hospital stay for headache in the SUS throughout the study period, with the North and Northeast regions presenting averages substantially higher than those of other regions. This disparity may reflect reduced access to specialized outpatient services in these regions, resulting in delayed and more complex hospitalizations. On the other hand, the downward trend in length of stay observed in the South and Midwest regions over the series suggests a possible improvement in care resolution in these areas. Taken together, these findings highlight the need to expand access to specialized headache care and treatment in regions with the longest lengths of stay.

Keywords:
Migraine
Headache
Brazil
Hospital stay
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