Headache Medicine

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Impact of the COVID-19 pandemic on hospitalizations for migraine and headache syndromes in Brazil (2016–2026)

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Introduction
Migraine and other cephalic pain syndromes represent a leading cause of neurological disability worldwide and account for a significant proportion of hospitalizations within Brazil's Public Health System (SUS). The COVID-19 pandemic imposed severe disruptions on hospital care, with headache reported in approximately 50% of acutely infected patients. Cytokine storm responses may exacerbate migraine pathophysiology, while post-COVID syndrome contributes to persistent neurological symptoms, potentially amplifying long-term hospital demand.

Objective
To analyze temporal trends and the impact of the COVID-19 pandemic on hospitalizations for migraine and cephalic pain syndromes in Brazil from 2016 to 2026, stratified by year, age group, sex, and race/ethnicity.

Methods
Descriptive epidemiological study with an ecological time-series design. Data were obtained from the Hospital Information System of the SUS (SIH/SUS), available at the DATASUS portal, covering January 2016 to March 2026. Hospitalizations coded under the ICD-10 Morbidity List for "Migraine and other cephalic pain syndromes" were included and stratified by year of care, age group (age bands 1 and 2), sex, and race/ethnicity. Descriptive statistics and interannual percentage variation were calculated.

Results
A total of 108,751 hospitalizations were recorded over the study period. Annual admissions increased from 8,142 in 2016 to a pre-pandemic peak of 12,120 in 2019 (+48.9%). In 2020, hospitalizations fell sharply to 8,688 (−28.3%), with a further decline to 8,511 in 2021 (−2.0%). Progressive recovery was observed from 2022 (10,406; +22.3%) through 2025, which recorded the highest annual count of the entire series (13,285; +11.7% vs. 2024). Female patients accounted for 66.3% of all hospitalizations (72,156 vs. 36,595 male). The 20–39 age group represented 35.6% of total cases (38,729). By race/ethnicity, pardo individuals comprised 44.8% (48,728), followed by white (42,364; 39.0%). Partial 2026 data (n=2,362) suggest continued growth.

Conclusion
The COVID-19 pandemic caused a marked 28.3% reduction in SUS hospitalizations for migraine in 2020–2021, likely reflecting restricted hospital access and care reorganization. Full recovery occurred by 2022–2023, and 2025 surpassed all prior years, possibly due to pent-up demand, post-COVID neurological sequelae, and expanded specialized care capacity. The consistent female predominance and concentration in the 20–49 age group reinforce the socioeconomic burden of migraine. Continuous epidemiological surveillance of headache-related hospitalizations is warranted, particularly in the context of long-COVID neurological manifestations.

Keywords:
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