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Temporal and spatial analysis of headache prevalence in the state of Sergipe from 2014 to 2024

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Introduction

Headaches, particularly migraine, are among the leading causes of disability worldwide. When inadequately managed in primary care, they may progress to conditions requiring hospitalization, generating potentially avoidable costs and significant socioeconomic burden.

Objective

To analyze the epidemiological and temporal distribution and healthcare demand of headache hospitalizations in Sergipe between 2014 and 2024.

Methods

A cross-sectional, analytical, ecological time-series study using secondary data from SIH/SUS (TABNET/DATASUS). Hospital Admission Authorizations classified under ICD-10 codes G43 and G44 with municipality of residence in Sergipe were included, aggregated by Health Region. The following variables were analyzed: number of hospitalizations, average hospitalization cost per patient in each region, and average length of hospital stay in days. Temporal trends were assessed using simple linear regression and chi-square goodness-of-fit with expected frequencies weighted by the population proportion of each region. Prevalence rates were calculated per 100,000 inhabitants.

Results

A total of 402 hospitalizations were recorded, with a total expenditure of R$ 129,661.19. Annual state prevalence rates progressively increased from 0.59 in 2014 to 3.36 after ten years, representing a 474% growth over the series. The chi-square goodness-of-fit test confirmed a heterogeneous regional distribution (²=62.72; df=6; P<0.0001): Nossa Senhora do Socorro showed the greatest increase (+64.91%; residual=+5.05) and Itabaiana the greatest reduction (−55.28%; residual=−3.70) relative to what was expected based on the population proportion of each region. Mean annual prevalences were highest in Nossa Senhora do Socorro (2.65) and Aracaju (1.96). Significant upward trends were identified in Aracaju (R^2=0.55; P=0.009) and Itabaiana (R^2=0.40; P=0.036), although Itabaiana's absolute hospitalization volume remained below its expected share based on population size. The average cost per hospitalization was R$ 322.54 statewide, with Estância as the region with the highest unit cost (R$ 640.72). Regarding length of stay, residents of Nossa Senhora da Glória (13.3) had a mean daily length of stay 2.8 times greater than residents of Itabaiana (4.7).

Conclusion

The results suggest a progressive increase in headache hospitalizations in Sergipe, with the highest prevalence rate recorded in 2024 and a heterogeneous regional distribution across health regions. The burden in Nossa Senhora do Socorro, the high costs in Estância, and the prolonged length of stay in Nossa Senhora da Glória indicate differences in primary care demands among the regions.

Keywords:
Migraine
Headache
Hospitalization
Descriptive epidemiology
Health inequalities

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