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#### TITLE

**SPATIAL DISTRIBUTION AND TEMPORAL TRENDS OF HOSPITALIZATION AND MORTALITY RATES DUE TO SCHISTOSOMIASIS IN THE STATES OF ALAGOAS, PERNAMBUCO, AND SERGIPE, BETWEEN 2013 AND 2022**

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#### ABSTRACT

**Introduction:** Schistosomiasis mansoni is a parasitic disease caused by the digenetic trematode *Schistosoma mansoni*. Its transmission is directly associated with poor socio-environmental conditions, such as lack of basic sanitation and exposure to contaminated water. **Objective:** To analyze the spatial distribution and temporal trends of hospitalization and mortality rates due to schistosomiasis mansoni in Alagoas (AL), Pernambuco (PE), and Sergipe (SE) between 2013 and 2022. **Methodology:** This is an ecological time series study using secondary data obtained from the Hospital Information System (SIH) and the Mortality Information System (SIM), referring to hospitalizations and mortality due to schistosomiasis in the states of AL, PE, and SE, between 2013 and 2022. For trend analysis, we used segmented linear regression to obtain the annual percentage change (APC) rates, calculated for each time segment, and the average annual percentage change (AAPC) rates, calculated for the full period when more than one inflection point was significant. We considered the 95% Confidence Interval (95% CI) and significance of 5% ( $p < 0.05$ ). Crude rates were calculated for each municipality with hospitalizations and mortality from the disease, in addition, spatial distribution maps were generated to identify areas with the highest concentration of hospitalizations and deaths from the disease. **Results:** Between 2013 and 2022, 471 hospitalizations and 2,239 deaths from schistosomiasis were recorded in the states analyzed. When the data were examined by state, PE stood out with the highest number of hospitalizations, totaling 362 (76.86%), and deaths, which reached 1,497 (66.86%) in the state. When analyzing the temporal trend of hospitalization rates, the three states studied showed stable trends throughout the period (AL: APC = 0.7; 95% CI: -13.6 to 17.4; p-value = 0.917; PE: APC = -2.4; 95% CI: -8.5 to 4.2; p-value = 0.425; and SE: APC = 7.8; 95% CI: -1.3 to 17.6; p-value = 0.086). When analyzing the mortality rate, between 2018 and 2022, PE showed a statistically significant decline (APC = -15.2; 95% CI: -21 to -7.9; p-value = 0.003), while AL and SE remained stable.

Regarding the spatial distribution of hospitalizations, the highest rates were distributed in the three states, while the highest mortality rates were found in AL and SE. **Conclusion:** Our study demonstrated stability in the rates of hospitalizations due to schistosomiasis in the three states analyzed. However, although the state of PE had the highest number of hospitalizations and deaths due to the disease, mortality rates due to schistosomiasis in the state have decreased in recent years. The spatial analysis also revealed high rates of hospitalizations and mortality due to the disease, reinforcing the importance of maintaining control actions for the disease, especially in areas endemic to the disease.

#### KEYWORDS

Schistosoma mansoni; Epidemiological Indicators; Public Health.

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