

Epidemiological aspects of leprosy in municipalities in the states of Bahia and Pernambuco, Brazil

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ABSTRACT

Leprosy, caused by *Mycobacterium leprae*, mainly affects the skin and nerves and is transmitted via the respiratory tract. It ranges from mild to severe, generating social stigma. Despite advances in treatment, it persists as a public health problem, especially in Brazil. This study analyzes leprosy in the PEBA Network between 2001 and 2023, showing a reduction but still a high incidence, especially in Petrolina/PE and Juazeiro/BA. Men and women are affected equally, with a higher incidence between the ages of 40 and 49 and in brown people. The high level of incomplete notification suggests underreporting and negligence in treatment, requiring government and social efforts for surveillance and control.

Keywords: Leprosy, Neglected diseases, Epidemiology, Public health.

INTRODUCTION

Leprosy, a chronic disease caused by *Mycobacterium leprae*, primarily affects the skin and peripheral nervous tissues, since its etiological agent prefers to infect macrophages, endothelial cells and Schwann cells. The upper airways are the main entry point for the bacillus into the body, especially contamination by saliva or respiratory droplets¹. The disease evolves in a variety of ways, from mild cases to severe deformities and physical disabilities, resulting in functional limitation, social seclusion, and psychological problems due to the stigmas and segregation that surround it³. Despite advances in diagnosis and treatment, leprosy persists as a relevant public health problem in some countries. Currently, Brazil ranks second globally in total number of cases, behind only India, and is classified by the WHO as a country with a high burden of the disease.

This study aims to analyze epidemiological aspects of leprosy in municipalities that make up the Interstate Health Care Network of the Middle São Francisco Valley (PEBA Network), correlating the disease with ethnicity, sex, education and age group of individuals.

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MATERIALS AND METHODS

This is an ecological, cross-sectional, and descriptive study of confirmed leprosy cases reported in the PEBA Network from January 2001 to December 2023. Data were obtained from the Notifiable Diseases Information System (SINAN), available at the Department of Informatics of the Unified Health System (DATASUS), Ministry of Health, according to the municipality of residence, the coverage area and the period studied. Subsequently, the incidence coefficients and prevalence of the disease in the study area were calculated, typed into Excel® spreadsheets, and then graphs and tables were generated for descriptive analysis, with absolute values and percentages, showing the prevalence and incidence of the findings.

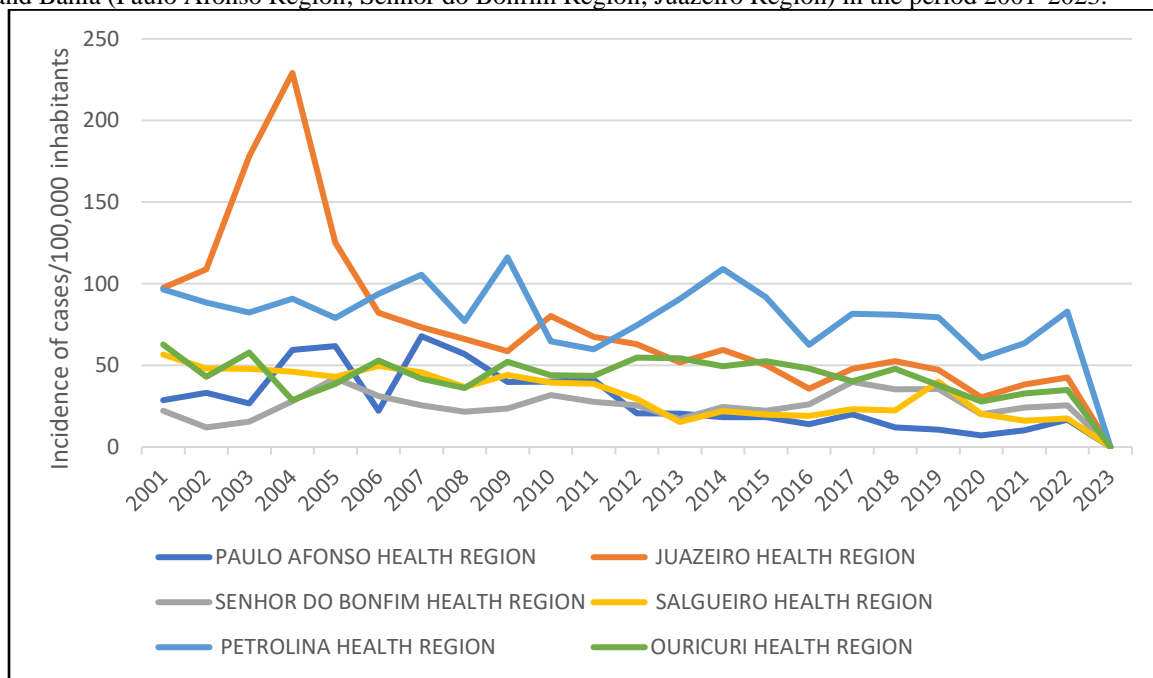
RESULTS

The PEBA Network was established in 2011 with the purpose of reorganizing services and facilitating access to medium and high complexity health care in the 53 municipalities that comprise it, distributed between the states of Bahia (BA) and Pernambuco (PE) and serving about 2 million inhabitants. In Pernambuco, the health regions of Salgueiro, Petrolina and Ouricuri belong to this network, while the health regions of Paulo Afonso, Senhor do Bonfim and Juazeiro belong to the State of Bahia.

The national panorama of leprosy reveals a significant reduction in the absolute number of cases of the disease between 2001 and 2023. Data from SINAN/DATASUS indicate that, in 2001, 50,672 cases were reported in Brazil, while in 2022 this number decreased to 26,436, with a predominance in the Northeast region (44.15%), followed by the Midwest (20.1%), North (16.73%), Southeast (15.68%) and South (3.3%) regions.

During the study period, 23,757 cases of leprosy were reported in the PEBA network, with significant numbers for the health region of Petrolina/PE, which had the highest incidence rate among the regions of Pernambuco, followed by the regions of Ouricuri and Salgueiro, respectively. The health region of Juazeiro/BA also registered a significant number of notifications, especially in 2004, when Remanso/BA registered 562 cases and Juazeiro 230 cases out of a total of 1,103 reported in the region. The municipalities of Petrolina/PE, Juazeiro/BA, and Remanso/BA had the highest number of notifications from 2001 to 2023, with 6,070, 4,029, and 1,957 cases, respectively (Figure 1).

Figure 1 - Incidence of leprosy cases by health region in the State of Pernambuco (Salgueiro Region; Petrolina Region; Ouricuri Region) and Bahia (Paulo Afonso Region; Senhor do Bonfim Region; Juazeiro Region) in the period 2001-2023.



It should be noted that the decrease in incidence occurred in all study regions (Figure 1), but even so, the number of notifications remained high. Perhaps this reduction, also observed in other epidemiological studies, is related to underreporting as a result of the COVID-19 pandemic.

Regarding the incidence and number of cases in relation to gender, the average in all regions was similar, with 48.18% of cases in men and 50.5% in women. Regarding the age group, there was a predominance of cases in individuals between 40 and 49 years old (18%), followed by the age groups of 30 to 39 years (17%), 50 to 59 years (17%), 20 to 29 years old (14%) and 60 to 69 years old (13%). In children under 1 year of age, 15 cases (0.06%) were recorded, and from 1 to 4 years of age, 70 cases (0.28%) were recorded. The disease predominated in the brown race (59.35%) in all the municipalities analyzed, followed by the white (17%) and black (13%) races, in addition to a large number of notifications with data on unknown race/white (9.3% of the total).

FINAL THOUGHTS

The interpretation of these data deserves attention, since, despite the reduction in the absolute number of cases and incidence, notifications are still much higher than in all other regions of the country, which shows the negligence regarding the implementation of measures to eradicate the pathology and provide adequate treatment. Undiagnosed and underreported cases during the period cannot be disregarded. During data collection in TABNET/DATASUS, a large number of cases were observed to be reported in an incomplete manner, with ignored/blank information, resulting, above all, from the



incomplete completion of notifications in the system, which directly impacts the real understanding of the epidemiological behavior of the disease. By understanding this information, government agencies and civil organizations will be able to direct efforts to intensify actions to surveil, control and confront infections, aiming to reduce or eliminate them, in addition to strengthening the actions of managers in the execution of their roles in society.



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