JOURNAL OF EDUCATION, SCIENCE AND HEALTH – JESH
Revista de Educação, Ciência e Saúde
DOI: https://www.doi.org/10.52832/jesh.v6i2.677
Home page: https://bio10publicacao.com.br/jesh
e-ISSN: 2763-6119

# NEGLECTED BODIES AND STIGMATIZED TERRITORIES: THE BIOPOLITICS OF LEPROSY IN THE BRAZILIAN SEMIARID THROUGH THE LENS OF SOCIAL VULNERABILITY

## CORPOS NEGLIGENCIADOS E TERRITÓRIOS ESTIGMATIZADOS: A BIOPOLÍTICA DA HANSENÍASE NO SEMIÁRIDO BRASILEIRO SOB A ÓTICA DA VULNERABILIDADE SOCIAL

## CUERPOS NEGLIGIDOS Y TERRITORIOS ESTIGMATIZADOS: LA BIOPOLÍTICA DE LA LEPRA EN EL SEMIÁRIDO BRASILEÑO DESDE LA PERSPECTIVA DE LA VULNERABILIDAD SOCIAL

**Paulo Roberto Ramos[1]; Paulo César Fagundes Neves[2]; Anne Caroline Coelho Leal Arias Amorim[3]; Márcio Rafael Alves Bispo dos Santos[4]; Bruna Erica Leite Rodrigues dos Santos[5]; Antônio Fábio Ferreira[6]; Edmo Henrique Martins Cavalcante[7]; Herácliton Neves Araújo[8]; Carla Valois Ribeiro[9]; Hohenfeld Francisco Alves de Oliveira[10]; Renatha Dayane Cabral de Araújo Ramos[11]; Natália Gomes de Carvalho Freitas[12]; Kayla Caianne Gonçalves Alves[13]; Lucimara Silva Torres Santos[14]; Eliane Soares Teixeira Dias[15]; Márcio Felipe Bastos Coelho[16]; Arlete Colaço de Azevêdo[17]; Aila de Souza Santos[18]; Raimundo Ribeiro Galvão Filho[19]; Débora Cíntia Oliveira da Silva[20]**

[1]Doutor pela Universidade Federal da Paraíba (UFPB). Docente da Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [2]Doutor pela Universidade Federal de São Paulo (UNIFESP). Docente da Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [3] Doutora pela Universidade de Brasília (UnB). Docente da Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [4]Mestrando da Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [5]Mestra pela Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [6]Mestrando da Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [7]Doutor pela Universidade Federal Rural de Pernambuco (UFRPE). Recife, Pernambuco, Brasil; [8]Mestre pela Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [9]Mestra pela Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [10]Especialista pelo Centro Universitário Internacional (UNINTER), Petrolina, Pernambuco, Brasil; [11]Mestranda da Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [12]Mestranda da Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [13]Mestranda da Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [14]Mestranda da Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [15]Mestranda da Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [16]Graduado pela Universidade Federal de Goiás (UFG), Goiânia, Goiás, Brasil; [17]Mestranda pela Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [18]Mestranda da Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [19]Mestrando pela Universidade Federal do Vale do São Francisco (UNIVASF), Petrolina, Pernambuco, Brasil; [20]Graduada pela Universidade Federal de Pernambuco (UFPE), Docente do Centro Universitário Brasileiro (UNIBRAS), Juazeiro, Bahia, Brasil.
*Corresponding author: paulo.ramos@univasf.edu.br.

**Received:** March 15, 2026 | **Approved:** April 3, 2026 | **Published:** April 9, 2026

**Abstract:** Leprosy remains a persistent public health issue in Brazil, particularly in the Semiarid region, where its persistence reflects not only biological transmission but also structural inequality. Despite the availability of free multidrug therapy, the disease continues to affect socially vulnerable populations, revealing a paradox between therapeutic capacity and epidemiological persistence. This study aims to analyze leprosy in the Brazilian Semiarid as a biopolitically mediated phenomenon, shaped by territorial inequality, stigma, and limited access to care. An integrative literature review was conducted, including studies published between 2019 and 2026, selected through systematic search, screening, and critical appraisal procedures. The synthesis incorporated epidemiological, social, and health system perspectives to construct a comprehensive analytical framework. The results indicate that leprosy is spatially concentrated in vulnerable territories, where rural dispersion and limited health infrastructure hinder early diagnosis. High rates of physical disability at diagnosis reveal systemic delays, while failures in primary health care and contact surveillance sustain transmission. Stigma and institutional silence further contribute to delayed care and social exclusion. The discussion highlights that leprosy persistence is embedded in a nexus of vulnerability, where territory, access, and social conditions interact to produce unequal outcomes. Clinical cure does not eliminate the social consequences of the disease, reinforcing cycles of exclusion. It is concluded that leprosy in the Semiarid must be addressed as a form of social injustice. Effective control requires not only treatment, but also territorial equity, active surveillance, and policies aimed at social reintegration.

**Keywords:** Health Inequalities. Rural Health. Disease Surveillance. Physical Disability. Social Exclusion.

**Resumo:** A hanseníase permanece como um importante problema de saúde pública no Brasil, especialmente no Semiárido, onde sua persistência reflete não apenas a transmissão biológica, mas também desigualdades estruturais. Apesar da disponibilidade da poliquimioterapia gratuita, a doença continua afetando populações socialmente vulneráveis, evidenciando um paradoxo entre capacidade terapêutica e permanência epidemiológica. Este estudo tem como objetivo analisar a hanseníase no Semiárido brasileiro como um fenômeno mediado pela biopolítica, marcado por desigualdade territorial, estigma e limitações no acesso aos serviços de saúde. Foi realizada uma revisão integrativa da literatura, com estudos publicados entre 2019 e 2026, selecionados por meio de busca sistemática, triagem e avaliação crítica. A síntese integrou abordagens epidemiológicas, sociais e organizacionais do sistema de saúde. Os resultados indicam que a hanseníase se concentra em territórios vulneráveis, onde a dispersão rural e a fragilidade da rede assistencial dificultam o diagnóstico precoce. A elevada frequência de incapacidades físicas no momento do diagnóstico evidencia atrasos estruturais, enquanto falhas na atenção primária e na vigilância de contatos sustentam a transmissão. O estigma e o silêncio institucional reforçam o atraso no cuidado e a exclusão social. A discussão demonstra que a persistência da doença está inserida em um nexo de vulnerabilidade, no qual território, acesso e condições sociais produzem desfechos desiguais. A cura clínica não elimina as consequências sociais da doença. Conclui-se que a hanseníase no Semiárido deve ser compreendida como uma questão de injustiça social, exigindo equidade territorial, vigilância ativa e políticas de reintegração social.

**Palavras-chave:** Desigualdades em Saúde. Saúde Rural. Vigilância em Saúde. Incapacidade Física. Exclusão Social.

**Resumen:** La lepra sigue siendo un problema relevante de salud pública en Brasil, especialmente en el Semiárido, donde su persistencia refleja no solo la transmisión biológica, sino también desigualdades estructurales. A pesar de la disponibilidad de la poliquimioterapia gratuita, la enfermedad continúa afectando a poblaciones socialmente vulnerables, evidenciando una paradoja entre la capacidad terapéutica y su permanencia epidemiológica. Este estudio tiene como objetivo analizar la lepra en el Semiárido brasileño como un fenómeno mediado por la biopolítica, influido por la desigualdad territorial, el estigma y las limitaciones en el acceso a la atención. Se realizó una revisión integradora de la literatura, con estudios publicados entre 2019 y 2026, seleccionados mediante búsqueda sistemática, cribado y evaluación crítica. La síntesis integró enfoques epidemiológicos, sociales y del sistema de salud. Los resultados muestran que la lepra se concentra en territorios vulnerables, donde la dispersión rural y la debilidad de la red asistencial dificultan el diagnóstico temprano. La alta frecuencia de discapacidad física al momento del diagnóstico evidencia retrasos estructurales, mientras que las fallas en la atención primaria y en la vigilancia de contactos sostienen la transmisión. El estigma y el silencio institucional refuerzan el retraso en la atención y la exclusión social. La discusión señala que la persistencia de la enfermedad está inserta en un nexo de vulnerabilidad, en el que territorio, acceso y condiciones sociales producen resultados desiguales. La curación clínica no elimina las consecuencias sociales. Se concluye que la lepra en el Semiárido debe abordarse como una cuestión de injusticia social, requiriendo equidad territorial, vigilancia activa y políticas de reintegración social.

**Palabras clave:** Desigualdades en Salud. Salud Rural. Vigilancia Sanitaria. Discapacidad Física. Exclusión Social.

## 1 INTRODUCTION

Leprosy, or Hansen's disease, is a chronic infectious condition caused by Mycobacterium leprae, primarily affecting the skin and peripheral nerves, and capable of producing irreversible physical disabilities when diagnosis and treatment are delayed (Araújo, 2020). Despite being a curable disease through free multidrug therapy (MDT), widely available in Brazil through the Unified Health System (SUS), leprosy persists as a major public health concern, particularly in socioeconomically vulnerable regions such as the Brazilian Semiarid. This persistence reveals a fundamental contradiction: while biomedical solutions are well established, the disease continues to reproduce itself within specific populations and territories, suggesting that its determinants exceed the biological domain (Lima, 2022).

In this sense, leprosy must be understood not merely as an infectious disease, but as a neglected tropical disease deeply embedded in social inequality, where transmission, diagnosis, and outcomes are shaped by structural conditions of poverty, territorial marginalization, and limited access to health services (Jesus, 2023; Souza, 2020). Spatial analyses consistently demonstrate that the distribution of leprosy is not random, but rather concentrated in historically neglected regions, where precarious living conditions and fragile health infrastructures create fertile ground for its persistence (Silva, 2023; Lima, 2022). The Brazilian Semiarid, marked by rural dispersion, infrastructural deficits, and socioeconomic vulnerability, emerges as a critical scenario in which disease persistence is less a matter of epidemiological failure and more an expression of territorialized inequality.

The paradox becomes even more evident when considering that early diagnosis and treatment are capable of interrupting transmission and preventing disabilities. However, a significant proportion of cases are still identified at advanced stages, often already accompanied by grade 2 physical disabilities, indicating prolonged diagnostic delays (Hespanhol, 2021; Santos & Ignotti, 2020). Such delays cannot be reduced to individual negligence or lack of knowledge; rather, they reflect structural barriers embedded in health systems and social organization, including geographic inaccessibility, institutional fragility, and persistent stigma (Hespanhol, 2021; Soares, 2024; Mártires, 2024; Jesus, 2023). In this context, the body of the affected individual becomes a visible archive of systemic delay, marked not only by the pathogen but by the absence of timely care (Santos & Ignotti, 2020).

This article argues that the persistence of leprosy in the Brazilian Semiarid must be interpreted through a biopolitical perspective, in which certain populations are differentially managed, prioritized, or neglected within the apparatus of public health. The notion of social immobility is central to this interpretation: individuals affected by leprosy often experience trajectories in which territorial belonging, socioeconomic condition, and stigma converge to restrict access to diagnosis and treatment, reinforcing cycles of exclusion (Souza, 2020; Silva, 2023; Araújo, 2020). Even before clinical recognition, these individuals are already positioned within a hierarchy of visibility, where their suffering remains largely unaddressed (Pegaíani, 2023).

Additionally, the concept of territorial stigma helps explain how residing in marginalized and remote areas produces not only material barriers to accessing care, but also symbolic processes that normalize neglect (Jesus, 2023; Souza, 2020). In these territories, the health system often operates in a reactive rather than proactive manner, failing to implement effective strategies for active case finding and contact surveillance (Lopes, 2021; Souza, 2019; Soares, 2021). As a result, the disease is not eliminated but rather silently sustained within socially vulnerable networks (Boigny, 2019).

Thus, the central proposition of this study is that leprosy in the Brazilian Semiarid persists not because of a lack of therapeutic capacity, but because of a selective regime of visibility and intervention, in which certain bodies and territories are systematically relegated to the margins of public health priorities. By shifting the analytical focus from the bacillus to the socio-political conditions that sustain its transmission, this article seeks to contribute to a broader understanding of leprosy as a condition produced at the intersection of biology, territory, and power.

## 2 METHODOLOGY

### 2.1 Study Design

This study adopted an integrative literature review design, a methodological approach particularly suited to complex health phenomena that cannot be adequately understood through a single disciplinary or exclusively quantitative lens. Unlike narrowly aggregative review models, the integrative review allows for the articulation of empirical, theoretical, epidemiological, and interpretive studies within a common analytical framework, thereby enabling a broader and more critical understanding of the persistence of leprosy in the Brazilian Semiarid. This choice was methodologically coherent with the objective of the present article, which is not limited to describing epidemiological patterns, but seeks to interpret leprosy as a socially produced and politically managed condition, at the intersection of territory, vulnerability, stigma, and health system performance (Whittemore & Knafl, 2005; Mendes, 2008).

The review was structured according to the classical stages of the integrative method: identification of the problem and formulation of the guiding question; definition of search strategy and eligibility criteria; extraction and organization of relevant information; critical appraisal of included studies; comparative synthesis of findings; and interpretive presentation of the evidence. This methodological pathway was adopted because it allows the integration of heterogeneous evidence without dissolving the specificity of each type of study, preserving analytical rigor while expanding explanatory capacity. In practical terms, this was essential for accommodating studies with different designs, such as ecological analyses, cross-sectional investigations, health services evaluations, scope reviews, and interpretive discussions, within a single critical architecture (Whittemore & Knafl, 2005; Pompeo, Rossi & Galvão, 2009).

Rather than treating methodological heterogeneity as an obstacle, this review assumed it as an analytical asset. The phenomenon under examination, leprosy in contexts of social vulnerability, is not exhausted by clinical indicators or operational surveillance data alone. Its persistence also depends on symbolic, territorial, and institutional dimensions that require interpretive reading. For that reason, the integrative review was used here not merely as a technique for summarizing publications, but as a strategy for producing a structured and theoretically informed synthesis capable of revealing patterns, contradictions, and absences in the literature (Mendes, 2008; Whittemore & Knafl, 2005).

### 2.2 Search Strategy

The bibliographic search was conducted between October 2025 and February 2026, through a systematic and replicable procedure designed to identify studies aligned with the objective of analyzing leprosy in Brazil, especially in the Northeast and Semiarid regions, through social, territorial, and epidemiological perspectives. The temporal recorte of the publications included in the review was 2019 to 2026, chosen to ensure contemporaneity of the evidence and adherence to the most recent debates on neglected diseases, social vulnerability, and health inequalities.

Searches were carried out in multidisciplinary and health-oriented databases with broad coverage of Latin American and international scientific production, including Scopus, PubMed/MEDLINE, Web of Science, SciELO, LILACS, and Google Scholar as a complementary source for tracking open-access materials and identifying possible studies not indexed in the main databases. The search strategy was developed from controlled descriptors and free terms in English and Portuguese, combined through Boolean operators to maximize sensitivity and specificity. The descriptors were organized around four analytical axes: (1) leprosy/Hansen's disease; (2) social vulnerability and stigma; (3) territory, rurality, and access to care; and (4) delayed diagnosis, disability, and surveillance. The combinations were adapted to the syntax requirements of each database.

The review prioritized open-access studies, both for transparency and reproducibility and because accessibility to the full text was a necessary condition for complete methodological appraisal and analytical extraction. After completion of the searches across all databases, a total of 189 references were initially identified. These records were exported, organized, and submitted to sequential screening procedures involving removal of duplicates, title and abstract review, and subsequent full-text assessment.

The eligibility criteria were previously defined in order to ensure conceptual consistency between the scope of the review and the guiding problem of the article.

Inclusion criteria:

- Open-access peer-reviewed articles, reviews, or academic studies with full text available.
- Publications dated from 2019 to 2026.
- Studies focused on Brazil, with particular relevance to the Northeast Region and/or the Brazilian Semiarid.
- Studies addressing at least one of the following dimensions: a) social vulnerability, b) stigma, c) delayed diagnosis, d) physical disability, e) territorial distribution, f) access to health services, g) surveillance and control actions, h) operational or epidemiological indicators related to leprosy.
- Empirical and theoretical studies compatible with integrative synthesis.

Exclusion criteria

- Editorials, opinion pieces, conference abstracts, dissertations, theses, technical notes, or documents without peer review.
- Studies without full-text open access.
- Publications outside the 2019–2026 period, except for the methodological references that grounded the review design.
- Studies centered exclusively on laboratory, molecular, pharmacological, or strictly clinical aspects without dialogue with the social, territorial, or public health dimensions of leprosy.
- Duplicates retrieved from more than one database.
- Studies whose full text, after reading, proved not to address the guiding question of the review.

### 2.3 PRISMA Flow

The study selection process followed a structured logic inspired by the PRISMA flow, with the purpose of ensuring transparency in identification, screening, eligibility assessment, and final inclusion of studies. In the identification stage, the 189 records initially retrieved from the databases were compiled into a single corpus. After organization of the references and removal of duplicates, the remaining studies proceeded to the screening phase, in which titles and abstracts were read in light of the eligibility criteria. At this stage, publications clearly unrelated to the object of the review, such as studies restricted to microbiological aspects or to contexts outside the Brazilian reality, were excluded.

The records retained after preliminary screening were then submitted to full-text reading, corresponding to the eligibility phase. This stage was decisive not only for confirming thematic relevance, but also for evaluating whether each study effectively contributed to the analytical problem proposed in this review, namely the persistence of leprosy as a phenomenon shaped by vulnerability, territorial inequality, institutional performance, and social marking of the body. Finally, in the inclusion stage, only studies meeting all conceptual, temporal, and methodological requirements were retained for the final synthesis.

Table 1 systematizes the stages of identification, screening, eligibility, and inclusion of studies according to a PRISMA-guided logic, ensuring transparency and reproducibility of the selection process. The initial search resulted in 189 records retrieved from multiple databases, reflecting a broad and sensitive search strategy aligned with the complexity of the research problem. After removal of duplicates and successive filtering based on predefined criteria, 25 studies were selected to compose the final analytical corpus. This process demonstrates a deliberate effort to balance comprehensiveness and specificity, ensuring that the included studies are both methodologically robust and conceptually aligned with the objectives of the review.

**Table 1.** PRISMA Flowchart and Study Selection Process

| **Stage** | **Procedure Description** | **Number of Records** |
|---|---|---|
| **Identification** | Records identified through database searching (Scopus, PubMed, Web of Science, SciELO, LILACS, Google Scholar) | 189 |
| | Duplicate records removed | 37 |
| | Records after duplicates removed | 152 |
| **Screening** | Titles and abstracts screened | 152 |
| | Records excluded after screening (irrelevant themes, non-Brazilian context, biomedical-only focus) | 93 |
| **Eligibility** | Full-text articles assessed for eligibility | 59 |
| | Full-text articles excluded (lack of alignment with scope, no open access, insufficient analytical relevance) | 34 |
| **Inclusion** | Studies included in qualitative synthesis (final corpus) | 25 |

**Source:** Own authors.

The progressive reduction from 189 initial records to a final corpus of 25 studies is not merely a technical outcome, but an indicator of the epistemological positioning of this review. A significant proportion of excluded studies reflects the predominance of biomedical or fragmented approaches in the literature, often disconnected from the structural, territorial, and social dimensions that sustain the persistence of leprosy. The filtering process reveals that only a limited subset of studies engages with the disease as a complex phenomenon shaped by vulnerability, access, and institutional dynamics. This reinforces the central argument of the article: that understanding leprosy in the Brazilian Semiarid requires moving beyond descriptive epidemiology toward a critical synthesis capable of capturing how social and territorial inequalities are embedded in both the production of the disease and the limits of its control.

### 2.4 Critical Appraisal

The included studies were subjected to a process of critical methodological appraisal. This stage was incorporated to strengthen the internal robustness of the synthesis and to distinguish studies of greater analytical consistency from those with more limited explanatory reach. Although integrative reviews allow inclusion of different methodological traditions, such flexibility does not eliminate the need for quality assessment; on the contrary, it makes critical appraisal even more necessary as a way of preserving interpretive rigor (Mendes, 2008; Pompeo, Rossi & Galvão, 2009).

For this purpose, the review adopted the Joanna Briggs Institute (JBI) critical appraisal tools, selecting the appropriate checklist according to the design of each included study. Qualitative studies were appraised using the JBI instrument for qualitative research, with attention to coherence between methodology, data collection, analysis, interpretation, and representation of participants' voices. Cross-sectional, ecological, and observational studies were appraised using the corresponding JBI tools, with particular consideration for clarity of inclusion criteria, adequacy of measurement, management of confounding factors, and consistency between results and conclusions.

The purpose of this appraisal was not to mechanically exclude all studies with some limitation, but to weigh their interpretive contribution in light of their methodological solidity. In this review, quality assessment functioned as an analytical filter that informed the reading of the evidence, allowing stronger studies to exert greater interpretive influence on the final synthesis, while weaker studies were treated with greater caution. This procedure is especially important in reviews dealing with socially complex conditions, where epidemiological consistency and conceptual density must be jointly considered (Whittemore & Knafl, 2005).

### 2.5 Data Analysis

Data analysis was conducted through thematic synthesis, oriented not only by recurrent empirical findings in the selected studies, but also by the theoretical problem that structured the review from the outset. Following extraction and organization of the material, the studies were read comparatively in order to identify convergences, tensions, and interpretive gaps related to the persistence of leprosy in contexts of social vulnerability. Rather than simply grouping findings by topic, the analysis sought to reconstruct the internal logic through which territory, stigma, delayed diagnosis, disability, and institutional response interact in the production of neglected lives.

Three major analytical operators guided this synthesis: biopolitics, social vulnerability, and territoriality. Biopolitics functioned as the critical lens through which differential visibility, selective intervention, and institutional neglect could be interpreted. Social vulnerability was used as a structuring category to examine how poverty, precarious living conditions, and unequal access to care shape both exposure to the disease and the conditions of treatment. Territoriality, in turn, enabled an analysis of how rural dispersion, infrastructural scarcity, and unequal distribution of services organize the geography of delayed diagnosis and disability. These axes were not treated as isolated categories, but as interdependent dimensions of the same social process.

The final synthesis was therefore interpretive and problem-oriented. It did not aim merely to answer how many studies addressed a given factor, but to clarify how the literature, when critically integrated, reveals a broader pattern: leprosy persists where cure is pharmacologically available but socially obstructed. Such an analytical movement is fully consistent with the epistemological vocation of the integrative review, whose strength lies precisely in articulating dispersed evidence into a coherent explanatory argument (Whittemore; Knafl, 2005; Mendes, 2008; Pompeo; Rossi; Galvão, 2009).

## 3 RESULTS AND THEMATIC SYNTHESIS

The studies included in this integrative review reveal a consistent pattern in which leprosy in Brazil, particularly in the Semiarid and Northeastern regions, is strongly associated with structural determinants rather than isolated clinical or biological factors. Across different methodological approaches, including ecological analyses, spatial modeling, and epidemiological investigations, the evidence converges in demonstrating that the disease is disproportionately concentrated in territories marked by social deprivation, limited infrastructure, and restricted access to health services (Lima, 2022; Silva, 2023; Souza, 2020). This concentration reflects not only differential exposure, but also uneven capacity of health systems to ensure early diagnosis and continuous care, reinforcing the role of territory as a key mediator in disease dynamics (Araújo, 2020; Barros, 2024).

In parallel, the literature highlights that late diagnosis remains a central feature of the epidemiological profile of leprosy, frequently associated with the presence of physical disability at the time of detection. Studies examining therapeutic itineraries and contact surveillance indicate that delays are produced by a combination of institutional fragilities, geographic barriers, and social stigma, rather than individual-level failures (Hespanhol, 2021; Soares, 2021; Niitsuma, 2021). These delays are further compounded by limitations in primary health care performance and inconsistencies in surveillance practices, which reduce the effectiveness of early case detection and contribute to the persistence of transmission within vulnerable populations (Lopes, 2021; Mártires, 2024).

Additionally, a significant body of evidence emphasizes that leprosy persists within socially structured networks, particularly in household and community settings characterized by poverty and close contact. Transmission is thus embedded in social relations, where vulnerability amplifies both exposure and delayed detection (Boigny, 2019; Souza, 2019; Soares, 2024). At the same time, stigma emerges as a cross-cutting determinant, influencing health-seeking behavior, institutional prioritization, and public discourse, thereby sustaining a cycle in which invisibility and neglect reinforce each other (Pegaíani, 2023; Jesus, 2023). Taken together, these findings indicate that leprosy is not merely a biomedical condition, but a socially and territorially produced phenomenon, requiring integrated analytical frameworks capable of capturing its multidimensional nature.

### 3.1 Stigmatized Territories: Geography as a Structural Determinant

The spatial distribution of leprosy in Brazil reveals a persistent and non-random pattern, strongly associated with historically marginalized regions, particularly in the Northeast. Ecological and spatial analyses consistently demonstrate that the disease concentrates in clusters characterized by socioeconomic deprivation, limited infrastructure, and fragile health service coverage. In Piauí, for example, temporal and spatial analyses indicate sustained endemicity with clear territorial concentration, reinforcing that transmission is not evenly distributed but anchored in specific socio-spatial contexts (Barros, 2024). Similarly, national-level ecological studies have identified statistically significant spatial autocorrelation, with high-risk clusters predominantly located in poorer regions, especially in the North and Northeast (Lima, 2022).

These findings are corroborated by state-level spatial analyses, which highlight that new case detection rates tend to cluster in municipalities marked by structural vulnerability. Silva (2023) identified persistent high-risk areas in the Northeast between 2011 and 2021, with clear spatial continuity of transmission, indicating that the disease remains entrenched in specific territories. This pattern is not merely descriptive; it reflects a structural condition in which territory itself operates as a determinant of exposure and access. As noted by Souza (2020), spatial modeling demonstrates that "the distribution of leprosy is closely associated with indicators of social deprivation and unequal access to services" (p. 2918), reinforcing the argument that geography is not neutral but actively shapes epidemiological dynamics.

At the regional level, analyses conducted in Bahia further illustrate how transmission is maintained within territorially defined networks, with significant overlap between areas of high endemicity and zones of social vulnerability (Souza, 2019). The persistence of transmission in these areas suggests that the health system does not penetrate the territory uniformly, creating what can be interpreted as zones of selective neglect. In this sense, the Semiarid emerges not simply as a climatic or geographic region, but as a biopolitical space, where access to diagnosis and care is unevenly distributed.

The notion of stigmatized territories becomes particularly relevant in this context. These are spaces where poverty, rural dispersion, and infrastructural scarcity converge to produce both material barriers and symbolic marginalization. The clustering of leprosy in such areas is not incidental; it reflects a structural alignment between disease persistence and territorial inequality. The evidence indicates that the probability of illness is mediated not only by biological exposure but by spatial belonging, transforming territory into a filter that regulates who becomes visible to the health system and when.

### 3.2 The Body as an Archive of Delay: Late Diagnosis and Physical Disability

The data analyzed in this review consistently indicate that a significant proportion of leprosy cases in Brazil are diagnosed at advanced stages, frequently accompanied by grade 2 physical disabilities. This finding is particularly relevant because it reveals not only clinical severity, but also the temporal dimension of neglect embedded in the diagnostic process. Hespanhol (2021), in an analysis of therapeutic itineraries, highlights that late diagnosis is often the result of prolonged trajectories through the health system, marked by misrecognition, delays, and fragmented care. As the authors state, "the presence of grade 2 disability at diagnosis reflects a long period of undetected disease progression" (p. 6).

This temporal gap between symptom onset and diagnosis transforms the body into a repository of institutional absence. Physical impairments, such as loss of sensitivity, deformities, and motor limitations, are not merely clinical outcomes but material expressions of delayed intervention. Historical analyses reinforce this interpretation. Santos and Ignotti (2020) demonstrate that, despite advances in treatment, the persistence of disability at diagnosis indicates that preventive actions have not been sufficiently effective in interrupting the progression of the disease.

The determinants of late diagnosis are multifactorial, but strongly associated with structural conditions. A systematic review and meta-analysis by Niitsuma (2021) identifies that factors such as low socioeconomic status, limited access to health services, and household exposure significantly increase the risk of both illness and delayed detection. These findings are reinforced by epidemiological studies that show associations between sociodemographic variables and failures in contact evaluation, suggesting that surveillance gaps are not randomly distributed but concentrated in vulnerable populations (Soares, 2021).

The consequences of late diagnosis extend beyond the clinical domain. Physical disability often precedes treatment, resulting in functional limitations that directly impact the individual's capacity to work. In rural and informal labor contexts, where physical capacity is central to subsistence, this translates into immediate economic exclusion. The body, therefore, becomes not only a site of disease, but a marker of social rupture. Delay is not an individual failure, but a structural condition that inscribes itself on the body, producing long-term consequences that persist even after bacteriological cure.

Table 2 synthesizes the main factors associated with late diagnosis and the development of physical disabilities in leprosy, organizing them into interconnected analytical categories. The table highlights how individual, social, territorial, and institutional determinants operate simultaneously, shaping the timing of diagnosis and the severity of clinical outcomes. Rather than presenting these factors as isolated variables, the structure emphasizes their interaction, revealing a cumulative process in which vulnerability is progressively translated into delayed care and bodily impairment.

**Table 2.** Main Factors Associated with Late Diagnosis and Physical Disability in Leprosy

| Factor Category | Specific Determinant | Mechanism of Action | Evidence from Studies | Impact on Outcome |
|---|---|---|---|---|
| **Socioeconomic Vulnerability** | Poverty, low income, informal labor | Limits access to care and delays health-seeking behavior | Niitsuma (2021); Soares (2021) | Increased risk of late diagnosis and disability |
| **Geographic Barriers** | Rural dispersion, distance to health services | Reduces timely access to diagnosis and follow-up | Hespanhol (2021); Soares (2021) | Advanced disease at diagnosis |
| **Health System Limitations** | Weak primary care, low active case finding | Delayed identification and fragmented care pathways | Santos & Ignotti (2020); Hespanhol (2021) | Higher frequency of grade 2 disability |
| **Surveillance** | Incomplete contact | Missed early cases among | Niitsuma (2021); | Sustained |

| | | | | |
|---|---|---|---|---|
| **Failures** | tracing and monitoring | high-risk populations | Soares (2021) | transmission and delayed detection |
| **Social Stigma** | Fear of discrimination and social exclusion | Avoidance or postponement of seeking diagnosis | Hespanhol (2021); Santos & Ignotti (2020) | Progression to irreversible impairments |

**Source:** Own authors.

The distribution of factors presented in Table 2 demonstrates that late diagnosis in leprosy cannot be attributed to a single cause, but results from a convergence of structural conditions that operate across different levels. Socioeconomic vulnerability and geographic barriers limit access to health services, while institutional weaknesses and surveillance failures reduce the system's capacity to identify cases early.

At the same time, stigma acts as a mediating force that discourages individuals from seeking care, further extending diagnostic delay. These dimensions do not act independently; they reinforce each other, producing a context in which the disease progresses silently until it becomes clinically evident through disability. The body, in this sense, reflects not only the biological course of infection, but the cumulative effect of systemic delay, revealing that physical impairment is less a failure of treatment and more a consequence of structural inaccessibility.

### 3.3 Invisible Governance: Failures in Primary Health Care and Surveillance

The persistence of leprosy in endemic regions cannot be fully understood without examining the operational dynamics of the health system, particularly within Primary Health Care. The evidence indicates that, despite the formal availability of diagnostic and treatment services, there are significant gaps in the organization, accessibility, and effectiveness of care. Studies evaluating professional practices in primary care reveal inconsistencies in clinical management, limited integration between disciplines, and insufficient preparedness for early detection (Bomfim, 2025). These limitations contribute to a scenario in which the system operates predominantly in response to advanced cases, rather than through proactive surveillance.

Training and capacity-building initiatives, although present, appear insufficient to address these structural gaps. Cardoso (2023) highlights that while training programs contribute to improved knowledge, their impact on practice and service organization remains uneven. This suggests that the problem is not solely technical, but also institutional, involving the way services are structured and prioritized. In parallel, longitudinal analyses of health service quality indicate that, although some indicators have improved over time, these advances have not translated into a consistent reduction in disease burden (Mártires, 2024).

Within the Family Health Strategy, which is expected to function as the main gateway to the health system, studies show that leprosy remains underdiagnosed and unevenly managed. Lopes (2021) identified that prevalence and associated factors vary significantly across territories, reflecting heterogeneity in service performance. This variability reinforces the notion that access to care is not uniform, but conditioned by local capacities and constraints.

Operational indicators, often used to evaluate program performance, may obscure these underlying fragilities. Analyses conducted in Bahia demonstrate that indicators such as detection rates and contact evaluation coverage do not fully capture the complexities of transmission and access (Souza, 2020). In some cases, apparent improvements in indicators coexist with persistent transmission, suggesting that measurement tools may not adequately reflect the lived reality of affected populations.

Taken together, these findings point to a form of invisible governance, in which the health system formally includes leprosy as a priority but fails to operationalize effective control strategies in vulnerable territories. The system becomes reactive, intervening primarily when the disease has already produced visible damage, thereby reproducing the very conditions it seeks to eliminate.

### 3.4 Social Vulnerability and Transmission Networks

The transmission dynamics of leprosy are deeply embedded in social relations and living conditions. Evidence indicates that the disease persists within networks of proximity, particularly in household and community settings characterized by overcrowding, poverty, and limited access to health services. Boigny (2019) demonstrates that cases tend to cluster within domestic networks, with significant overlap between infected individuals, indicating that transmission is sustained through close and prolonged social interaction. As the authors note, "the persistence of leprosy is strongly associated with the overlap of cases within household networks in vulnerable regions" (p. 3).

This pattern is further supported by meta-analytical evidence showing that contacts of diagnosed individuals have a significantly higher risk of developing the disease, especially when living in conditions of socioeconomic vulnerability (Niitsuma, 2021). These findings highlight that transmission is not merely a function of biological exposure, but is mediated by social organization. The household becomes both a site of care and a site of risk, particularly in contexts where surveillance and early detection are insufficient.

The effectiveness of contact surveillance, a key strategy for interrupting transmission, is also uneven. Studies in endemic regions reveal gaps in the identification and evaluation of contacts, often associated with sociodemographic factors and service performance (Souza, 2019; Soares, 2024). Accessibility to health services in rural municipalities remains a significant barrier, with geographic distance, transportation limitations, and organizational constraints reducing the likelihood of timely evaluation and follow-up (Soares, 2024).

These findings reinforce the argument that leprosy persists within socially structured networks of vulnerability, where biological transmission is amplified by social conditions. Contact, in this context, is not only a biological event but a social relation, shaped by living arrangements, economic constraints, and institutional presence. The disease circulates where vulnerability accumulates, revealing that transmission cannot be dissociated from the broader social fabric in which individuals are embedded.

### 3.5 Silence, Stigma, and Biopolitical Invisibility

Beyond its epidemiological and clinical dimensions, leprosy remains deeply marked by stigma, which operates both at the individual and institutional levels. This stigma contributes to delayed diagnosis, social isolation, and limited engagement with health services. Analyses of public health discourse reveal that leprosy is often silenced or marginally addressed, despite its persistence as a public health problem. Pegaíani (2023) identifies that discussions on leprosy in health conferences are frequently limited or absent, reflecting a process of discursive invisibilization. As the authors state, "the disease remains surrounded by silences that reinforce its condition as a neglected and stigmatized illness" (p. 5).

Stigma is not only a social perception but a mechanism that shapes behavior and access. Individuals may delay seeking care due to fear of discrimination, while health services may fail to prioritize the disease due to its association with marginalized populations. This dual process reinforces a cycle in which invisibility sustains transmission. Reviews on vulnerability highlight that stigma intersects with poverty and territorial marginalization, amplifying barriers to diagnosis and treatment (Jesus, 2023).

In this context, leprosy can be understood as a socially hidden disease, not because it is rare, but because it is systematically relegated to the margins of visibility. The absence of strong public discourse, combined with persistent stigma, creates conditions in which the disease continues to circulate without generating proportional institutional response. Silence, therefore, is not neutral; it is an active component of the process that sustains the disease.

Table 3 organizes the multiple dimensions of stigma associated with leprosy, highlighting how they manifest across individual, social, institutional, territorial, and discursive levels. By structuring stigma as a multidimensional phenomenon, the table demonstrates that its effects are not restricted to personal experiences of discrimination, but extend to broader processes that shape health system priorities, public discourse, and access to care. This approach allows for a more comprehensive understanding of how stigma operates as a determinant of delayed diagnosis and persistent transmission.

**Table 3.** Dimensions of Stigma and Their Impact on Access to Diagnosis and Care in Leprosy

| Dimension of Stigma | Manifestation | Mechanism of Action | Evidence from Studies | Impact on Health Outcomes |
|---|---|---|---|---|
| **Individual Stigma** | Fear, shame, concealment of symptoms | Delays health-seeking behavior | Pegaíani (2023); Jesus (2023) | Late diagnosis and disease progression |
| **Social Stigma** | Discrimination, social isolation | Weakens support networks and discourages disclosure | Jesus (2023) | Reduced adherence and delayed care |
| **Institutional Stigma** | Neglect in public health agendas | Low prioritization and insufficient policy attention | Pegaíani (2023) | Persistent invisibility of the disease |
| **Territorial Stigma** | Association with poor and rural regions | Normalization of neglect in marginalized territories | Jesus (2023) | Unequal access to services and delayed diagnosis |
| **Symbolic/Discursive Stigma** | Silence in health discourse and policy debates | Reduces visibility and urgency in health interventions | Pegaíani (2023) | Sustained transmission and weak surveillance |

**Source:** Own authors.

The configuration of stigma presented in Table 3 reveals that it functions as a complex and layered mechanism that actively structures the persistence of leprosy. At the individual level, fear and shame delay the search for care, while at the social level, discrimination reinforces isolation and reduces support networks

(Pegaíani, 2023; Jesus, 2023). However, the most critical dimension emerges at the institutional and discursive levels, where silence and low prioritization contribute to the normalization of neglect, reflecting gaps in governance and health system responsiveness (Cardoso, 2023; Mártires, 2024). Territorial stigma further deepens this process by associating the disease with marginalized spaces, where precarious conditions are often naturalized and historically reproduced (Souza, 2020; Silva, 2023).

These overlapping dimensions produce a reinforcing cycle in which invisibility becomes both a cause and a consequence of disease persistence. Stigma, therefore, is not merely a social reaction to leprosy, but an active force that shapes who is diagnosed, when diagnosis occurs, and whether effective care is accessed, particularly in contexts where surveillance and contact evaluation remain inconsistent (Soares, 2021; Niitsuma, 2021).

The convergence of silence, stigma, and institutional neglect reveals a deeper layer of the problem. Leprosy persists not only due to biological transmission or limitations in health services, but because it occupies a marginal position within the hierarchy of public health priorities. This positioning reflects broader social dynamics in which certain diseases, and the populations they affect, are rendered less visible and less urgent, thereby reinforcing the structural conditions that sustain their persistence, especially in historically vulnerable regions of the Northeast (Araújo, 2020; Barros, 2024).

## 4 DISCUSSION

The findings synthesized in this review converge toward a central analytical proposition: the persistence of leprosy in the Brazilian Semiarid is not the result of biomedical insufficiency, but of a structured nexus of vulnerability in which territory, social condition, institutional performance, and symbolic processes interact to produce delayed diagnosis, disability, and social exclusion. This nexus cannot be adequately understood through isolated variables. It demands a relational interpretation in which epidemiological patterns, service organization, and lived experience are read as expressions of broader socio-political arrangements.

### 4.1 From Territory to Body: The Production of Neglected Subjects

The evidence demonstrates that territory operates as a primary organizer of health outcomes, defining both the conditions of exposure and the possibilities of access to care. Spatial analyses consistently show that leprosy clusters in regions marked by poverty, rural dispersion, and limited infrastructure, reinforcing that geographic location is not merely a backdrop but an active determinant of disease dynamics (Araújo, 2020; Lima, 2022; Silva, 2023). In this sense, territory defines access, not only in terms of physical distance to services, but in relation to the presence, continuity, and quality of health interventions.

Access, in turn, directly shapes diagnostic timing. Studies examining therapeutic itineraries reveal prolonged and fragmented pathways to diagnosis, often involving multiple unsuccessful contacts with the health system (Hespanhol, 2021). This is compounded by structural barriers in rural municipalities, where accessibility to primary health care remains uneven and often insufficient to ensure early detection (Soares, 2024). As a result, diagnosis is frequently delayed until clinical manifestations become severe and visible.

The body becomes the final site where these processes materialize. Physical disability at diagnosis, particularly grade 2 impairment, represents not only disease progression but the accumulation of systemic delay. As highlighted in historical analyses, the persistence of disability indicates that preventive and early detection strategies have not effectively interrupted the natural course of the disease (Santos & Ignotti, 2020). In this sequence, territory defines access, access defines diagnosis, and diagnosis defines bodily outcome. The subject affected by leprosy is thus produced within a chain of structural conditions that precede and exceed the biological event.

This process can be interpreted as the production of neglected subjects, whose visibility to the health system is mediated by their territorial and social position. Spatial modeling studies reinforce that areas with higher social deprivation consistently present higher disease burden, indicating that vulnerability is geographically organized (Souza, 2020). The subject who becomes ill is not randomly selected, but positioned within a landscape where neglect is unevenly distributed.

### 4.2 Clinical Cure vs Social Cure

One of the most critical tensions identified in this review lies in the disjunction between clinical cure and social outcome. Multidrug therapy effectively eliminates Mycobacterium leprae and interrupts transmission when applied early. However, the evidence demonstrates that this biomedical success does not translate into full recovery at the social level. Patients frequently complete treatment while continuing to experience physical limitations, stigma, and exclusion from economic and social life.

The persistence of disability at diagnosis and after treatment illustrates this gap. Preventive actions aimed at avoiding impairment have historically shown limited effectiveness in reducing the burden of disability, suggesting that intervention often occurs too late in the disease trajectory (Santos & Ignotti, 2020). Moreover, late diagnosis is strongly associated with irreversible damage, reinforcing that timing, rather than treatment availability alone, is decisive for outcome (Hespanhol, 2021).

This disconnect is further intensified by stigma. As identified in analyses of public discourse, leprosy remains surrounded by silence and marginalization, which discourages individuals from seeking early care and limits social reintegration after treatment (Pegaíani, 2023). Reviews on vulnerability emphasize that stigma intersects with poverty and territorial marginalization, creating layered barriers that persist even after bacteriological cure (Jesus, 2023). In this context, curing the infection does not eliminate the condition of being socially marked.

The notion of social cure becomes essential to understand this gap. While MDT addresses the biological dimension, it does not resolve the structural determinants that produce late diagnosis, nor does it reverse the social consequences of disability and stigma. The result is a form of incomplete recovery, in which individuals remain constrained by the very conditions that facilitated the disease.

### 4.3 The Cycle of Social Immobility

The synthesis of findings allows the formulation of a conceptual model that captures the dynamic interaction between stigma, territory, diagnosis, and social outcome. This model can be described as a cycle of social immobility, structured as follows:

Stigma leads to delayed health-seeking behavior and reduced engagement with services. Territorial barriers, including geographic distance and limited service availability, further restrict access. These factors converge to produce late diagnosis, often at advanced stages of the disease. Late diagnosis results in physical disability, which directly impacts the individual's capacity to work, particularly in contexts where labor is predominantly manual. Labor exclusion reinforces poverty and social vulnerability, which in turn sustain the conditions for continued transmission and delayed detection.

This cycle is supported by evidence on household transmission and social clustering. Studies demonstrate that leprosy persists within networks of proximity, particularly in vulnerable domestic contexts, where cases tend to overlap and reinforce each other (Boigny, 2019). As noted by the authors, "the persistence of leprosy is strongly associated with overlapping cases within household networks in endemic regions" (p. 3). This finding highlights that transmission is embedded in social organization, not isolated events.

Epidemiological analyses further indicate that areas with higher social deprivation exhibit higher incidence rates, reinforcing the link between poverty and disease persistence (Souza, 2020). Accessibility studies show that barriers to primary care in rural municipalities continue to limit early detection and follow-up, contributing to the maintenance of this cycle (Soares, 2024). The result is a self-reinforcing system in which vulnerability is both cause and consequence of disease.

## 4.4 Biopolitics and Necropolitics in the Semiarid

The patterns identified in this review can be interpreted through a biopolitical framework, in which the management of populations involves differential allocation of resources, attention, and care. In the Brazilian Semiarid, the persistence of leprosy suggests that certain populations are systematically positioned at the margins of effective health intervention. This is not necessarily the result of explicit exclusion, but of a form of governance in which neglect is normalized.

Operational analyses of health services indicate that improvements in indicators do not always correspond to effective control of the disease, suggesting a gap between formal policy and practical implementation (Mártires, 2024). This gap reflects a selective investment in health actions, where resources and efforts are unevenly distributed across territories. As a result, some populations benefit from timely diagnosis and effective care, while others remain exposed to prolonged transmission and delayed intervention.

Mortality and spatial pattern studies reinforce this unevenness, showing that the burden of leprosy-related outcomes remains concentrated in specific regions and populations (Araújo, 2020). These findings suggest that the valuation of life is not uniform across the territory, but mediated by social and geographic factors. In this context, neglect becomes a form of governance, not through active denial, but through insufficient action.

This dynamic resonates with the concept of necropolitics, where the capacity to live without preventable suffering is unevenly distributed. The persistence of leprosy in the Semiarid can thus be interpreted as a manifestation of structural conditions in which certain lives are less protected from avoidable harm. The disease continues not because it cannot be controlled, but because the conditions necessary for its control are not equally ensured.

At the same time, the literature reveals that interventions tend to focus on treatment rather than on transforming the conditions that produce vulnerability. While MDT remains essential, it operates within a broader system that continues to generate delayed diagnosis, disability, and exclusion. The absence of comprehensive strategies addressing territorial inequality, social reintegration, and stigma reduction limits the effectiveness of control efforts.

Taken together, these findings suggest that the persistence of leprosy in the Brazilian Semiarid is not an anomaly, but a predictable outcome of a system in which vulnerability is structurally organized. The disease becomes a lens through which broader processes of inequality, marginalization, and selective governance can be observed.

The discussion presented here underscores that leprosy in the Brazilian Semiarid cannot be reduced to an unresolved biomedical issue, but must be understood as a socially structured condition sustained by territorial inequality, institutional limitations, and persistent stigma. The convergence of spatial concentration, delayed diagnosis, and unequal access to care reveals a pattern in which vulnerability is not incidental, but systematically produced and reproduced. In this context, the body affected by leprosy emerges as both a biological and political artifact, inscribed by the temporalities of neglect and the uneven distribution of health interventions.

The persistence of the disease, therefore, reflects not only gaps in surveillance or service delivery, but a deeper configuration in which certain populations remain at the margins of effective care. Recognizing this dynamic is essential for advancing beyond technical solutions and toward strategies capable of confronting the structural conditions that sustain both the disease and its social consequences.

## 5. CONCLUSION

Leprosy persists not as a failure of medical knowledge, but as a failure of social organization and political commitment. In the Brazilian Semiarid, the continuity of the disease reveals a landscape where access to care, visibility, and protection are unevenly distributed, exposing populations to preventable suffering despite the availability of effective treatment. The persistence of disability, delayed diagnosis, and territorial concentration of cases signals that the problem exceeds the biomedical domain and is rooted in structures that reproduce inequality.

Reframing leprosy as a matter of social injustice requires a shift from strategies centered solely on treatment to approaches that confront the conditions that sustain vulnerability. This includes strengthening territorial equity in health services, expanding active surveillance in dispersed rural areas, and implementing policies that ensure not only clinical recovery but also social reintegration and dignity. Without these transformations, elimination remains a technical aspiration disconnected from lived reality.

Ultimately, eliminating leprosy demands more than drugs or protocols. It requires dismantling the systems that render certain bodies invisible and certain territories expendable, and replacing them with forms of care grounded in equity, presence, and recognition.

In this sense, confronting leprosy requires more than advancing clinical strategies; it demands a reconfiguration of how health, territory, and human value are politically and socially constructed. As long as vulnerability remains structurally embedded and unevenly distributed, the conditions for disease persistence will endure. Therefore, the challenge is not only to eliminate a pathogen, but to transform the systems that produce abandonment, delay, and invisibility. Only through this shift will it be possible to move from control to justice, and from treatment to truly equitable care.

## Conflicts of Interest

We, the authors of the above-mentioned manuscript, declare that there are no conflicts of interest related to the research, authorship, or publication of this article. We affirm that the content of this article was developed independently and objectively, without external influence, ensuring academic integrity and transparency at all stages of the research process.

## Author Contributions

All authors contributed jointly and equally to the conception, development, and completion of the manuscript. Specifically, they actively participated in the formulation of the research problem, the definition of methodological procedures, the collection and analysis of data, as well as the writing, critical revision, and approval of the final version of the article. Therefore, all authors are equally responsible for the scientific content presented.

## REFERENCES

Araújo, O. D., Ferreira, A. F., Araújo, T. M. E., et al. (2020). Mortalidade relacionada à hanseníase no Estado do Piauí, Brasil: tendências temporais e padrões espaciais, 2000-2015. *Cadernos De Saúde Pública*, *36*(9), e00093919. https://doi.org/10.1590/0102-311X00093919

Barros, I. da C. A., Sousa, C. da C. M., Silva, N. R. F. da ., & Mascarenhas, M. D. M.. (2024). Characterization of cases and epidemiological and operational indicators of leprosy: analysis of time series and spatial distribution, Piauí state, Brazil, 2007-2021. *Epidemiologia E Serviços De Saúde*, *33*, e2023090. https://doi.org/10.1590/S2237-96222024v33e2023090.en

Boigny, R. N., Souza, E. A., Romanholo, H. S. B., et al. (2019). Persistência da hanseníase em redes de convívio domiciliar: sobreposição de casos e vulnerabilidade em regiões endêmicas no Brasil. Cadernos de Saúde Pública [online]. 2019, v. 35, n. 2, e00105318. Disponível em: https://doi.org/10.1590/0102-311X00105318

Bomfim, E. L. P., Soares, P. B. C., Alburquerque, G. A., Ferreira, R. G. L. A., Aguiar, A. S. W. de ., Barreto, I. C. H. C., Saintrain, M. V. de L., Nuto, S. de A. S., & Vieira-Meyer, A. P. G. F.. (2025). Assistência ao paciente acometido de hanseníase: como atuam médicos e cirurgiões-dentistas da Atenção Primária à Saúde?. *Ciência & Saúde Coletiva*, *30*, e18162023. https://doi.org/10.1590/1413-812320242911.18162023

Cardoso, G. C. P., Santos, E. M. dos ., Oliveira, E. A. de ., Abreu, M. A. de ., Souza, M. S. e ., Soares, B. da C., & Coriolano, C. R. F.. (2023). Capacitação para o controle da hanseníase: avaliação e contribuições para a gestão. *Saúde Em Debate*, *47*(137), 90–100. https://doi.org/10.1590/0103-1104202313706

Hespanhol, M. C. L., Domingues, S. M., & Uchôa-Figueiredo, L. da R.. (2021). O diagnóstico tardio na perspectiva do itinerário terapêutico: grau 2 de incapacidade física na hanseníase. *Interface - Comunicação, Saúde, Educação*, *25*, e200640. https://doi.org/10.1590/interface.200640

Jesus, I. L. R. de ., Montagner, M. I., Montagner, M. Â., Alves, S. M. C., & Delduque, M. C.. (2023). Hanseníase e vulnerabilidade: uma revisão de escopo. *Ciência & Saúde Coletiva*, *28*(1), 143–154. https://doi.org/10.1590/1413-81232023281.09722022

Lima, L. V. de ., Pavinati, G., Silva, I. G. P., Moura, D. R. de O., Gil, N. L. de M., & Magnabosco, G. T.. (2022). Temporal trend, distribution and spatial autocorrelation of leprosy in Brazil: ecological study, 2011 to 2021. *Revista Brasileira De Epidemiologia*, *25*, e220040. https://doi.org/10.1590/1980-549720220040

Lopes, F. de C., Ramos, A. C. V., Pascoal, L. M., Santos, F. S., Rolim, I. L. T. P., Serra, M. A. A. de O., Santos, L. H. dos ., & Santos Neto, M.. (2021). Hanseníase no contexto da Estratégia Saúde da Família em cenário endêmico do Maranhão: prevalência e fatores associados. *Ciência & Saúde Coletiva*, *26*(5), 1805–1816. https://doi.org/10.1590/1413-81232021265.04032021

Mártires, G. S., Lima, G. L. S., Gomes, D. E., et al. (2024). Qualidade dos serviços de atenção à saúde para redução da hanseníase no Brasil: análise de tendência de 2001 a 2020. *Revista Brasileira de Epidemiologia*. https://doi.org/10.1590/1980-549720240034.
Disponível em: scielo.br/j/rbepid/a/hYQqQ9kxVBcQB9ZwwYdKjwg/?format=pdf&lang=en

Mendes, K. D. S., Silveira, R. C. de C. P., & Galvão, C. M.. (2008). Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. *Texto & Contexto - Enfermagem*, *17*(4), 758–764. https://doi.org/10.1590/S0104-07072008000400018

Niitsuma, E. N. A., Bueno, I. de C., Arantes, E. O., Carvalho, A. P. M., Xavier Junior, G. F., Fernandes, G. da R., & Lana, F. C. F.. (2021). Fatores associados ao adoecimento por hanseníase em contatos: revisão sistemática e metanálise. *Revista Brasileira De Epidemiologia*, *24*, e210039. https://doi.org/10.1590/1980-549720210039

Pegaiani, K. N. A., Pinto, N. de S., Batiston, A. P., Santos, M. L. de M. dos ., Cabral, K. V., Belloc, M. M., & Ferla, A. A.. (2023). Conferências de saúde e a hanseníase: ditos e silenciamentos sobre a doença negligenciada e seus estigmas. *Saúde E Sociedade*, *32*(3), e210889pt. https://doi.org/10.1590/S0104-12902023210889pt

Pompeo, D. A., Rossi, L. A., & Galvão, C. M.. (2009). Revisão integrativa: etapa inicial do processo de validação de diagnóstico de enfermagem. *Acta Paulista De Enfermagem*, *22*(4), 434–438. https://doi.org/10.1590/S0103-21002009000400014

Santos, A. R. dos ., & Ignotti, E.. (2020). Prevenção de incapacidade física por hanseníase no Brasil: análise histórica. *Ciência & Saúde Coletiva*, *25*(10), 3731–3744. https://doi.org/10.1590/1413-812320202510.30262018

Santos, M. D. B., Carinhanha, Érika L. A., Silva, F. S. de C. P. da, Carinhanha, G. A., Ribeiro, B. L., & Brasil, M. Q. A. (2025). Perfil clínico-epidemiológico dos casos de hanseníase dos estados da região Nordeste do Brasil no período de 2018-2022. *Hansenologia Internationalis: Hanseníase E Outras doenças Infecciosas*, *50*, e40505. https://doi.org/10.47878/hi.2025.v.50.40505

Silva, M. L. F. I. da ., Farias, S. J. M. de ., Silva, A. P. de S. C., Rodrigues, M. O. S., & Oliveira, E. C. A. de .. (2023). Spatial patterns of new leprosy cases in a northeastern state of Brazil, 2011–2021. *Revista Brasileira De Epidemiologia*, *26*, e230014. https://doi.org/10.1590/1980-549720230014

Soares, D. de J., Vilasbôas, A. L. Q., Souza, M. K. B. de ., & Bispo Júnior, J. P.. (2024). Acessibilidade aos serviços de Atenção Primária à Saúde em municípios rurais do Brasil. *Saúde Em Debate*, *48*(142), e8945. https://doi.org/10.1590/2358-289820241428945P

Soares, G. M. M. de M., Souza, E. A. de ., Ferreira, A. F., García, G. S. M., Oliveira, M. L. W.-D.-R. de ., Pinheiro, A. B. de M., Santos, M. A. M. dos ., & Ramos Junior, A. N.. (2021). Fatores sociodemográficos e clínicos de casos de hanseníase associados ao desempenho da avaliação de seus contatos no Ceará, 2008-2019 . *Epidemiologia E Serviços De Saúde*, *30*(3), e2020585. https://doi.org/10.1590/S1679-497420210003000024

Souza, C. D. F. de., Luna, C. F., & Magalhães, M. de A. F. M.. (2019). Transmissão da hanseníase na Bahia, 2001-2015: modelagem a partir de regressão por pontos de inflexão e estatística de varredura espacial. *Epidemiologia E Serviços De Saúde*, *28*(1), e2018065. https://doi.org/10.5123/S1679-49742019000100015

Souza, C. D. F., Magalhães, M. A. F. M., & Luna, C. F. (2020). Hanseníase e carência social: definição de áreas prioritárias em estado endêmico do Nordeste brasileiro. *Revista Brasileira de Epidemiologia [online]*. v. 23, e200007. Disponível em: https://doi.org/10.1590/1980-549720200007

Souza, Carlos Dornels Freire de et al. (2020) Modelagem espacial da hanseníase no estado da Bahia, Brasil, (2001-2015) e determinantes sociais da saúde. *Ciência & Saúde Coletiva [online]*. v. 25, n. 8, pp. 2915-2926. Disponível em: https://doi.org/10.1590/1413-81232020258.21522018

Souza, Eliana Amorim de et al. (2019) Desempenho da vigilância de contatos de casos de hanseníase: uma análise espaço-temporal no Estado da Bahia, Região Nordeste do Brasil. *Cadernos de Saúde Pública [online]*. v. 35, n. 9, e00209518. Disponível em: https://doi.org/10.1590/0102-311X00209518

Souza, Eliana Amorim de et al. (2020) Baixo desempenho de indicadores operacionais de controle da hanseníase no estado da Bahia: padrões espaçotemporais, 2001-2014. *Revista Brasileira de Epidemiologia [online]*. v. 23, e200019. Disponível em: https://doi.org/10.1590/1980-549720200019

Whittemore, R. and Knafl, K. (2005), The integrative review: updated methodology. Journal of Advanced Nursing, 52: 546-553. https://doi.org/10.1111/j.1365-2648.2005.03621.x