LEPROSY IN BRAZIL: HISTORICAL TRAJECTORY, ADVANCES, AND EPIDEMIOLOGICAL CHALLENGES IN THE CONTEXT OF SOCIAL INEQUALITIES

HANSENÍASE NO BRASIL: TRAJETÓRIA HISTÓRICA, AVANÇOS E DESAFIOS EPIDEMIOLÓGICOS NO CONTEXTO DAS DESIGUALDADES SOCIAIS

LA ENFERMEDAD DE HANSEN EN BRASIL: TRAYECTORIA HISTÓRICA, AVANCES Y DESAFÍOS EPIDEMIOLÓGICOS EN EL CONTEXTO DE LAS DESIGUALDADES SOCIALES

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ABSTRACT

Leprosy, an infectious disease caused by Mycobacterium leprae, has a complex historical trajectory in Brazil, characterized by the juxtaposition of scientific advances, social stigma, and public policies. The objective of this work was to analyze the historical and epidemiological trajectory of leprosy in Brazil, relating it to social determinants and public health policies. A narrative review of national and international literature obtained from scientific databases was conducted. It was evidenced that, despite the reduction in prevalence, endemic foci persist in the North and Northeast regions, associated with socioeconomic vulnerabilities and failures in early detection. From compulsory isolation in leper colonies to the incorporation of multidrug therapy and the integration of the disease into the Unified Health System (SUS), the history of leprosy reflects social, medical, and political transformations. Thus, the eradication of leprosy depends on the integration of intersectoral actions, health education, and addressing social inequalities; therefore, strategies to reduce stigma are important to recognize the psychosocial dimension of the illness.

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Keywords: Hansen's Disease. Public Health. Social Stigma. Social Inequality.

RESUMO

A hanseníase, patologia infectocontagiosa causada pelo Mycobacterium leprae, apresenta uma trajetória histórica complexa no Brasil, caracterizada pela justaposição entre avanços científicos, estigma social e políticas públicas. O objetivo deste trabalho foi analisar a trajetória histórica e epidemiológica da hanseníase no Brasil, relacionando-a com determinantes sociais e políticas públicas de saúde. Foi realizada uma revisão narrativa de literatura nacional e internacional obtida em bases científicas. Evidenciou-se que, apesar da redução na prevalência, persistem focos endêmicos nas regiões Norte e Nordeste, associados a vulnerabilidades socioeconômicas e falhas na detecção precoce, desde o isolamento compulsório em hospitais-colônia até a incorporação da poliquimioterapia e a integração da doença ao Sistema Único de Saúde (SUS), a história da hanseníase reflete transformações sociais, médicas e políticas. Dessa forma, a erradicação da hanseníase depende da integração entre ações intersetoriais, educação em saúde e enfrentamento das desigualdades sociais, assim, estratégias para a redução do estigma são importantes para reconhecer a dimensão psicossocial do adoecimento.

Palavras-chave: Doença de Hansen. Saúde Pública. Estigma Social. Desigualdade Social.

RESUMEN

La enfermedad de Hansen, una patología infectocontagiosa causada por Mycobacterium leprae, presenta una trayectoria histórica compleja en Brasil, caracterizada por la superposición entre avances científicos, estigma social y políticas públicas. El objetivo de este trabajo fue analizar la trayectoria histórica y epidemiológica de la enfermedad de Hansen en Brasil, relacionándola con los determinantes sociales y las políticas públicas de salud. Se realizó una revisión narrativa de la literatura nacional e internacional obtenida en bases científicas. Se evidenció que, a pesar de la reducción de la prevalencia, persisten focos endémicos en las regiones Norte y Nordeste, asociados a vulnerabilidades socioeconómicas y fallas en la detección precoz. Desde el aislamiento compulsorio en los hospitales-colonia hasta la incorporación de la poliquimioterapia y la integración de la enfermedad al Sistema Único de Salud (SUS), la historia de la enfermedad de Hansen refleja transformaciones sociales, médicas y políticas. De esta forma, la erradicación de la enfermedad depende de la integración entre acciones intersectoriales, educación en salud y el enfrentamiento de las desigualdades sociales. Asimismo, las estrategias para la reducción del estigma son esenciales para reconocer la dimensión psicosocial del proceso de enfermar.

Palabras clave: Enfermedad de Hansen. Salud Pública. Estigma Social. Desigualdad Social.

1 HISTORICAL CONTEXT OF LEPROSY

1.1 IN THE WORLD

Leprosy is a pathology known since ancient times, being dated to more than three or four thousand years ago in India, China and Japan. In ancient Egypt, cases of the disease were discovered on a papyrus, around four thousand three hundred years before Christ (BRASIL, 1960). Evidence suggests that the disease was introduced into the region during the arrival of the Portuguese conquerors, especially those from the island of Madeira, may have facilitated the emergence of the endemic (MONTEIRO, 1987). However, it is known that the disease was already present on the African continent, which raises the possibility that the slave trade contributed to the spread of the disease in countries such as Brazil.

1.2 IN BRAZIL

In Brazil in the fifteenth century, the first cases of leprosy patients were European immigrants, so endemic foci of the disease emerged that followed various points along the coast. The first cases of the disease were reported in the year 1600, in the city of Rio de Janeiro, and years later, a place was created to house patients (BRASIL, 1989). In 1740, the first Medical Conference was held, aiming at the prophylaxis of leprosy (ARAÚJO, 1946).

Leprosy spread throughout the interior of Brazil, being carried by the bandeirantes, and gave rise to other foci that needed attention, giving rise to the "asylums for lepers" (BRASIL, 1960). The State of Bahia, in 1789, had three thousand patients, while in Belém do Pará, the "Hospice of the Lazarus" was founded in 1815. In Maranhão, there were, since 1826, "leper villages" and, in São Paulo, the Hospital dos Morféticos was created in 1805 (BRASIL, 1960). From São Paulo, the infection would have accompanied the bandeirantes to Minas Gerais, Mato Grosso and Goiás. Relations with Belém, Santarém and Manaus were intense at that time because of the development of trade (Araújo, 1933).

In 1741, doctors from the Portuguese court drafted the first regulation to combat leprosy in Brazil (VELLOSO and ANDRADE, 2002). After the first cases in Rio de Janeiro, other foci of the disease were identified, mainly in Bahia and Pará (Yamanouchi et al, 1993). According to the Ministry of Health (Brasil, 1989), this fact led the authorities of the time to request measures from Portugal. Institutional reactions to the disease, shaped by both religious and scientific beliefs, have been transformed as Brazil has undergone transitions in its social, economic, and health organization (SOUZA, 2011). In the beginning, the disease was approached with a strong religious influence, being considered as a divine punishment, resulting in great stigmatization and social segregation.

1.3 THE EMERGENCE OF PUBLIC POLICIES

In the eighteenth and nineteenth centuries, with urbanization in Brazilian cities, the first public initiatives began to emerge to address the issue, although in a disorganized way and focused predominantly on the removal of those affected by the disease (SOUZA, 2011). From the end of the nineteenth century, leprosy began to be seen in a more scientific way, motivated by the identification of *Mycobacterium leprae* by Armauer Hansen in 1873. However, the stigma persisted and health authorities in Brazil instituted forced isolation, a practice that required individuals diagnosed to live in remote colonies, called leprosaria or colony hospitals. This system was consolidated in the first decades of the twentieth century, especially during the Vargas government, when the Brazilian government intensified its public health policies aimed at centralization and sanitary control (CUNHA, 2000).

With the emergence of new therapies, especially from the 40s, when sulfone began to be used, the isolation model was increasingly contested. In the following decades, the introduction of multidrug therapy (MDT), which was officially recognized by the World Health Organization (WHO) in 1981, completely transformed treatment, enabling an effective cure of the disease (BRASIL, 2016). In Brazil, public health policies have also undergone advances since the promulgation of the 1988 Constitution and the formation of the Unified Health System (SUS), a process of deinstitutionalization of patients and the integration of leprosy into the basic health system began. Initiatives to raise awareness in health, early diagnosis and the fight against stigma have begun to strengthen, although there are still challenges, especially in areas of greater social vulnerability. (WHO, 2023).

2 THE PUBLIC HEALTH CONTEXT FOR LEPROSY

Leprosy is a chronic contagious infectious pathology caused by *Mycobacterium leprae*, curable and of compulsory notification, which attacks the skin, mucous membranes and nerves. In addition, it has a polymorphic and disabling characteristic, despite its reduced pathogenic power motivated by the pathogen (AZEVEDO, 2021).

The analysis of the available literature on leprosy in Brazil reveals a series of crucial aspects related to the epidemiological evolution of the disease, the effectiveness of the public policies implemented, and the social impact faced by patients. Although it has been observed that Brazil has made significant progress in controlling the disease in recent decades, leprosy continues to be a public health challenge, reflecting the persistence of social inequalities and the need for more effective strategies. Epidemiological data show that Brazil still has a significant burden of the disease, being one of the countries with the highest number of new cases diagnosed annually (NIITSUMA, 2021).

The narrative of leprosy in Brazil is characterized by an intense interconnection between scientificity, social stigma and government actions. From the first reports of the disease during the colonial era, including the severe mandatory isolation measures in the nineteenth and twentieth centuries, to the current approaches to control and eliminate the disease, the history of leprosy illustrates not only the advances in medicine, but also the social, cultural, and political changes that occurred in the country (ANDRADE, 2019). Formerly called leprosy, leprosy has generated fear and social exclusion for centuries.

In 1883, in Sabará, Minas Gerais, a hospital for Lazarus was built, which still operates today under the name of Hospital Cristiano Machado (BRASIL, 1960). For a period, care for leprosy patients was more tied to public charity than to public power, since the creation of asylums was a measure that depended on private institutions. (BRAZIL, 1960). In 1912, in the State of São Paulo, they proposed that the isolation of patients should be in colony asylums, since a study was carried out at the time that found that the fight against leprosy depended on the isolation of patients and that the number of cases of the disease was increasing.

According to the Leprosy Prophylaxis Commission, in 1915, actions to combat leprosy were based on the mandatory notification of the sick person and direct contacts, the census and mandatory isolation at home. There was also a ban on breastfeeding for the children of "lepers" and the removal of newborns for special preventoria (MAURANO, 1939).

2.1 LEPROSY ELIMINATION PLAN

The National Department of Public Health was created in 1920 to include the disease in health regulations, which are subject to compulsory notification. This department created the Inspectorate for the Prophylaxis of Leprosy and Venereal Diseases, whose main activity was to disseminate information about the real situation of leprosy in the country. In 1991, the Ministry of Health adopted MDT as the only leprosy treatment scheme in Brazil. In 1992, the fixed dose was adopted in the routine of health services. In the same year, the World Health Organization approved, at its 44th World Health Assembly, the Leprosy Elimination Plan, with the objective of the global elimination of the disease as a Public Health problem by the year 2000. The Elimination Plan consisted of intensive detection of cases, epidemiological surveillance, care for disabilities and treatment with multidrug therapy (VELLOSO and ANDRADE, 2002).

In 1995, Brazil, through the Ministry of Health and all the states, developed its Leprosy Elimination Plan, establishing the goal of reducing the prevalence to less than one patient per 10,000 inhabitants, through timely diagnosis and the application of MDT/WHO in all cases. (VELLOSO and ANDRADE, 2002). In 1998, the Federal Government published the "Avanza Brasil" Program, intensifying preventive and health promotion actions. Showing the commitment to expanding and decentralizing care for leprosy patients to reduce its incidence.

According to the Epidemiological Bulletin of Leprosy of the Ministry of Health, despite the drop in the prevalence rate in recent years, Brazil continues to be the country with the highest rate of detection of new cases among endemic countries, such as India and Indonesia. This situation is more aggravating in the North and Northeast regions, where the prevalence of the disease is significantly higher compared to other regions (PINHEIRO, 2019). The geographic trend indicates that socioeconomic inequalities are determining factors in the course and perpetuation of the disease, as areas with a higher poverty rate, lack of basic sanitation, and less access to health have high rates of leprosy compared to other places (LIMA, 2020).

3 MICROBIOLOGICAL AND CLINICAL CHARACTERISTICS

Mycobacterium leprae is shaped like a straight rod that stains red by fuccina and does not bleach by alcohol, thus being called acid-resistant alcohol. It is an obligate intracellular bacillus of macrophages and has a predilection for skin cells and peripheral nerves, called Shwann cells. The main route of elimination of bacilli is through the upper respiratory route, with the respiratory tract being the most likely route of entry, thus, untreated bacillary humans are considered the only source of infection (LIMA et al, 2019).

The indeterminate form is the initial stage of leprosy, the skin lesions present hypochromic spots, with minimal reduction in thermal, painful and tactile sensitivity. At this stage, the immune system has not yet been able to fight the bacillus. With the presence of bacilli reduced, detection in laboratory analysis becomes minimal. In tuberculoid leprosy (TT), the immune system is already capable of developing a response to the bacillus, restricting its multiplication. Skin lesions have defined borders, erythematous plaques, and areas with paresthesia. The presence of bacilli is reduced or non-existent, and is classified as paucibacillary. Borderline leprosy (BL) represents a transition between the tuberculoid and lepromatoid forms.

Virchowian leprosy is the most widespread form of the disease, which can compromise the nose and kidneys, and can progress to neuritis and erythema nodosum on the skin. Nerve damage occurs, leading to significant sensory and motor loss. The amount of bacilli is higher than the tuberculoid form, but the immune response is even more reduced, facilitating the multiplication of bacilli, being classified as multibacillary due to the high bacterial load.

(MAYMONE, 2020). Patients have macules, papules and nodules, which can spread throughout the body.

The most severe and widespread form of leprosy is BL, as the bacillus does not achieve an efficient response against the immune system, which results in its uncontrolled multiplication. Patients exhibit skin lesions, such as plaques, nodules, and generalized infiltrations, which can lead to the characteristic "leonine" appearance. The bacterial load is high and the disease can spread to other organs, such as the eyes, nose, liver and kidneys. The lepromatous type is the most transmissible, presenting a high risk of severe disabilities and deformities. (MANOJ, 2024)

3.1 DIAGNOSIS AND TREATMENT

Early diagnosis is essential to prevent the progression of the disease and its consequences, such as deformities and long-lasting physical limitations (MUNGROO, 2020). The diagnosis of leprosy is eminently clinical and is carried out through the study of skin lesions and neurological involvement (AVELLEIRA et al, 2017). It is necessary to perform a dermatoneurological examination to examine skin lesions, perform tests to assess thermal, painful, and tactile sensitivity, palpation of peripheral nerves to detect thickening and pain, assess weakness in limbs, and investigate a history of contact with diagnosed patients (HUANG, 2024).

In addition to clinical analysis, sputum smear microscopy helps to confirm the diagnosis for multibacillary forms, and is performed by collecting samples from earlobes, elbows, and scraping of skin lesions (BELOTTI, 2021). For treatment, multidrug therapy (MDT) with the drugs dapsone, clofazimine and rifampicin is the curative plan for leprosy, recommended by the WHO and indicated by the Ministry of Health. Treatment takes into account the active identification of the patient: paucibacillary, multibacillary, and infantile or adult (DUO FILHO et al, 2021).

The paucibacillary patient will take the supervised dose of rifampicin once a month and dapsone daily. The multibacillary patient will take the supervised dose of Rifampicin, Dapsone and Clofazimine once a month, and at home will take Dapsone and Clofazimine for twelve months. As a result, the treatment interrupts transmission in a few days, cures the disease, and prevents its progression to deformities (BRASIL, 2018).

3.2 LEPROSY AND THE SUS

In Brazil, the health system's response goes beyond treatment with multidrug therapy (MDT), also including intersectoral initiatives that include education, rehabilitation, and social reintegration of patients. (JESUS, 2023).

MDT, adopted by the Unified Health System (SUS) as the treatment of choice for leprosy, has been shown to be effective in controlling the disease, curing and reducing transmissibility. Adherence to treatment remains a challenge, because although MDT is free and widely distributed by the SUS, stigma related to the disease occurs, due to social prejudice or difficulty in accessing health units in remote areas (BARROS, 2019).

According to the Ministry of Health, about 30% of diagnosed cases are compromised at the time of diagnosis, which reflects failures in the early approach, especially in more remote and hard-to-reach areas of the country. It is essential that health education be implemented for the teams in the Family Health Units, with the objective of informing about the signs and symptoms of Leprosy, the importance of treatment; encourage treatment adherence as well as inform treatment sites; in addition to providing guidance on self-care measures. (BRAZIL, 2017).

4 FINAL CONSIDERATIONS:

Leprosy in Brazil remains a public health problem that began decades ago, although it has made significant progress in combating the disease, recent epidemiological data and the persistence of endemic foci denounce that such progress has been insufficient to break the deep social inequalities that sustain the transmission of the disease. It involves not only issues of diagnosis and therapy, but also social and cultural elements that make the eradication of the disease a challenge, public health strategies, despite the incorporation of effective technologies such as multidrug therapy, still come up against weaknesses such as the fragmentation of primary care, the absence of integrated policies to combat poverty and the neglect of the psychosocial dimension of illness. It is essential to combine intersectoral public health strategies with educational and social initiatives aimed at reducing stigma and improving access to health, in order to advance in the control of the disease in the country and reduce the inequities that favor its perpetuation.

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