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Analysis of public health actions: a study on tuberculosis in Brazil

Análisis de las acciones de salud pública: un estudio sobre la tuberculosis en Brasil

Análise das ações em saúde pública: um estudo sobre a tuberculose no Brasil

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Abstract

This study aimed to investigate the panorama of public health actions for tuberculosis management in Brazil. A descriptive and critical reflection study was carried out using articles collected from the SciELO and PubMed databases from 1999 to 2023. The results showed that some primary care professionals and services have great merit in detecting disease cases. However, several regions pointed out bureaucratic, financial, and social issues, making disease control still a challenge. Based on the analysis, it was possible to highlight the importance of basic health units in terms of continuing education and early diagnosis, in addition to ensuring correct treatment of the disease. It can also be inferred that although existing policies are well described, they present obstacles in their implementation, reiterating the importance of an engaged multidisciplinary team. Finally, improving the approach to tuberculosis in the country with an educational focus becomes significant for better control of the disease in the country.

Descriptors: Tuberculosis; Diagnosis; Control; Public Health Surveillance; Collective Health.

Resumén

El objetivo fue investigar el panorama de las acciones de salud pública para el manejo de la tuberculosis en Brasil. Se realizó un estudio descriptivo y de reflexión crítica, utilizando artículos recopilados de las bases de datos SciELO y PubMed, de 1999 a 2023. Como resultado, se demostró que algunos profesionales y servicios de atención primaria tienen gran mérito en la detección de casos de la enfermedad. Sin embargo, varias regiones señalaron problemas burocráticos, financieros y sociales que hacen que el control de la enfermedad siga siendo un desafío. A partir del análisis, fue posible resaltar la importancia de las unidades básicas de salud en términos de educación continua y diagnóstico precoz, además de garantizar el correcto tratamiento de la enfermedad. También se puede inferir que si bien las políticas existentes están bien descritas, presentan obstáculos en su implementación, reiterando la relevancia de un equipo multidisciplinario comprometido. Finalmente, mejorar el abordaje de la tuberculosis en el país con un enfoque educativo cobra importancia para un mejor control de la enfermedad en el país.

Descriptores: Tuberculosis; Diagnóstico; Control; Vigilancia de la Salud Pública; Salud Pública.

Resumo

Objetivou-se investigar o panorama das ações em saúde pública para o manejo da tuberculose no Brasil. Foi realizado um estudo de reflexão de caráter descritivo e crítico, por meio de artigos coletados nas bases SciELO e PubMed, de 1999 até 2023. Como resultado foi evidenciado que alguns profissionais e serviços da atenção básica têm grande mérito na detecção de casos da doença. Entretanto, diversas regiões apontaram questões burocráticas, financeiras e sociais, tornando o controle da doença ainda um desafio. A partir da análise, foi possível destacar a importância das unidades básicas de saúde no que se refere à educação continuada e o diagnóstico precoce, além de garantir o tratamento correto da moléstia. Também, pode-se inferir que apesar das políticas existentes serem bem descritas, essas apresentam empecilhos na execução reiterando a relevância da equipe multiprofissional engajada. Por fim, o aprimoramento na abordagem da tuberculose no país com enfoque educativo, torna-se significativo para melhor controle da doença no país.

Descritores: Tuberculose; Diagnóstico; Controle; Vigilância em Saúde Pública; Saúde Coletiva.

Introduction

The establishment of the Unified Health System (SUS) in Brazil in 1988 established healthcare as a universal right, granted by the State to all citizens. However, health problems still plague the country, which has implemented public health policies to try to eradicate them. Tuberculosis (TB) is a major public health problem and was declared a global health emergency by the World Health Organization (WHO) in 1993. The first Brazilian action against the disease was implemented in 1996 through the Emergency Plan for Tuberculosis Control by the CNPS and Funasa, to expand treatment coverage for the disease in municipalities. Since the 2000s, the Ministry of Health has implemented several plans and resolutions to intensify control and formalize the need for screening and treatment of the disease, with emphasis on the National Plan to End Tuberculosis, which was drawn up during the World Health Assembly in 2014 and contains 3 main pillars: prevention and care, policies and support system, and support in research and innovations, which, in short, aim to eliminate tuberculosis in Brazil by 2035[1].

Tuberculosis is an infectious and transmissible disease, of compulsory notification, characterized by a chronic granulomatous necrotizing infection, which is triggered by the etiological agent Mycobacterium tuberculosis, also known as Koch's Bacillus/BAAR. Its transmission occurs mainly through the inhalation of aerosolized particles; thus, dissemination can occur through coughing, sneezing, or saliva. Although the lungs are the main organs affected, the disease manifests clinically in multiple organs and regions such as lymph nodes, pleura, bones, and joints. The signs and symptoms depend on the affected area; however, they can generally include cough, afternoon fever, night sweats, and weight loss. Therefore, early diagnosis is essential to better control and reduce the spread of the disease in the population. There are several tests for the diagnosis of tuberculosis offered by the SUS, these being molecular and imaging exams such as chest x-ray, rapid molecular test (TRM-TB), culture, and bacilloscopy. It is worth noting that the culture with the presence of the bacillus in sputum or tissue is the gold standard for diagnosis, however, the simple method of direct bacilloscopy is the most used in the country[2].

Although there are high incidence and mortality rates, tuberculosis can be cured. The regimen is based on a combination of drugs: Rifampicin, Isoniazid, Pyrazinamide, and Ethambutol (RIPE). The gradual implementation of the new regimen called “3HP” for latent infection is based on taking isoniazid and Rifapentine weekly for three months, which among its advantages stands out due to the optimization of treatment time[3]. Even with several public policies, this disease is still one of the main health problems in Brazil that needs to be solved. The disease notification profile in the country is quite heterogeneous, with the states with the highest records in 2021 being Amazonas, Rio de Janeiro, and Roraima. In the same year, 68,271 new cases of TB were reported and in 2020, possibly due to the COVID-19 pandemic that saturated health services and systems, the country was among the 15 countries that reduced TB notifications by 93% worldwide[4].

Despite the cure and treatments that reinforce patient care, there are still several obstacles, such as: treatment abandonment, the critical period during the pandemic, socioeconomic conflicts, and cultural stigmas, factors that persist over the years and have made it difficult to eliminate tuberculosis in the country to this day[5]. Thus, health education is essential, since inequalities and health conditions complicate the implementation of adherence programs. Because of the issues raised, this study proposed to investigate public health actions for the management of tuberculosis in Brazil to understand the educational strategies implemented by health professionals regarding TB prevention and to study the profile of patients affected by the disease in different regions of the country.

Methodology

A reflective literature review was conducted by analyzing articles that address the performance of public health actions in tuberculosis. The study was based on the National Library of Medicine (PubMed) and Scientific Electronic Library Online (SciELO) databases. Scientific articles indexed in the databases described above that followed the inclusion and exclusion criteria listed below were analyzed. This research exempted, under Resolution No. 466 of December 12, 2012, of the National Health Council, the submission and approval of these projects by Ethics and Research Committees (CEP) as well as the use of Free and Informed Consent Forms (FIC).

To select scientific articles for further analysis, the following inclusion criteria were considered: management of the performance of public health surveillance and control actions for tuberculosis; all forms of tuberculosis, clinical and laboratory diagnosis, and treatment, with only publications dated from January 1999 to January 2023 being filtered. The start of data collection marks the year of the launch of the National Tuberculosis Control Plan, which also includes studies that discuss the Brazilian national scenario and studies in individuals over 18 years of age. The exclusion criteria provide the grounds for the eligibility of materials to be analyzed. Therefore, articles related to the following topics were not considered: pregnant women, children under 18 years of age, experiments and case reports in animals, clinical cases and case reports, studies on tuberculosis surveillance in other countries, and, finally, studies that associate tuberculosis with pathologies other than HIV.

The data were collected from the SciELO and PubMed platforms using the Health Sciences Descriptors (DeCS) and Medical Subject Headings (MeSH), in both Portuguese and English. The descriptors used were: “Tuberculose”, “Diagnóstico”, “Controle”, “Vigilância em Saúde Pública”, “Tuberculosis”, “Diagnose”, “Control” e “Public Health Surveillance”. The data were analyzed in a theoretical-reflexive way using Bardin's content analysis technique[6], which is divided into three fundamental phases, a pre-analysis was carried out, which consisted of organizing the articles through a floating reading and selecting the

documents. Afterward, the collected material was explored organized, and numbered in a Microsoft Excel® table, with the following data: author of the article, title, year of publication, research method, place of publication, and language. After exhaustive reading, the content was categorized and classified into themes. Then, the results obtained were interpreted and selected as valid based on the inclusion and exclusion criteria listed above, and inferences, interpretations, and analyses were proposed based on theoretical references from studies in other countries and health policies on tuberculosis.

Results and Discussion

The research of the articles was carried out after the meticulous application of the inclusion and exclusion criteria, resulting in the selection of eighty-four (84) studies on public health actions for tuberculosis in Brazil. These studies were divided into three thematic categories to better elucidate the findings: Challenge in the preparation of professionals, Social deprivation, and Brazilian panorama.

Challenges in professional preparation

Given that surveillance is responsible for monitoring adverse health events, through prevention and control goals from a multidisciplinary team, all health professionals must have a high level of knowledge about tuberculosis and work cooperatively to manage the disease.

In the articles, it was noted that the polarization of commitment of only part of the team reflects on the tuberculosis actions of the other members. Some of the articles considered did not highlight any specific professional group, indicating heterogeneity of actions in the different professions, in different situations in the Brazilian scenario[7]. This variability can be seen in the article "Nurses' perceptions about care management and its intervening factors for tuberculosis control", which reinforces that nurses' knowledge about tuberculosis could have been strengthened[8].

Despite the conclusions of the aforementioned article, a 2011 study found positive results regarding the participation of these professionals, with nurses proving to be active and engaged in controlling information. However, this study noted low adherence to educational activities among physicians and nursing assistants, partly explained by the limited time they spent in the services. This turnover creates an overload on the team and fragmentation of care, which possibly implies a lack of preparation, training, and support for patients by professionals. Although the National Plan recommends home visits and DOT, the study showed resistance on the part of professionals in their implementation, with little supervision and few educational activities for patients, family members, and the community. Thus, self-care and actions related to adherence to treatment do not appear to be present in the work routine of PHC teams[9].

In this regard, a study conducted in Rio de Janeiro in 2013 and 2014 resulted in significant data on the turnover of team members among UBS. The research found that professionals working in Family Health Strategy (ESF) teams have lower rates of leaving the service compared to those who are not part of the teams. At the same time, when analyzed academically, professionals with degrees tend to leave the service earlier compared to those without degrees, which may affect the quality of care provided and deserved by the population[10].

A survey carried out in 2016 in Rio de Janeiro reinforced this situation, through a form where positive points such as the proactivity of a certain professional group, as seen in the previous study, were highlighted[11]. The lack of preparation on the part of health professionals is a recurring factor in other studies[12-14]. The National Plan shows that the presence of these professionals is essential for objectives such as strengthening surveillance actions and expanding treatment coverage, such as preventing new cases, from occurring, in addition to constant training actions[1].

In a 2013 study, a survey that interviewed Epidemiological Surveillance Service Technicians, General Directors, and other sectors included in the management of Health Districts in João Pessoa pointed to a great deal of fuss regarding the knowledge of managers about basic actions against Tuberculosis. The misinformation about the existence of TDO and contradictory discourses about the definitions of basic strategies for the disease, which refers to active search and which refers to active search and disregard for the importance of filling out monthly bulletins and monitoring books[15].

Social deprivation

In Brazil and in other countries, such as Argentina and Peru, studies have shown that support programs, whether financial or social, have a direct influence on the clinical evolution of tuberculosis. The profile of the disease in Brazil appears to be influenced by the economic situation of the population, which reinforces the effective implementation of current projects. Proactively designing new options and Bills with applicable benefits that encompass a wider profile of affected patients or encouraging the adoption of a Singular Therapeutic Project, identifying patients eligible for CadÚnico aid registration, are actions that, when led by health teams, benefit patients[16-18].

Another study showed that the lack of information among professionals related to financial assistance to patients, such as benefits and incentives for patients, was one of the variables with the worst performance, which was reflected in the low participation and community involvement with tuberculosis found in the studies. The weakening of the relationship with the patient is a situation that requires change in the units, since welcoming is an incentive for the patient to continue treatment[1].

Brazilian panorama

When we analyze the epidemiological panorama of tuberculosis by region in Brazil, we find significant numerical variability in each location, requiring individualization of proposals. The highest prevalence rates are found in the North, Amazon, and Acre, and the Southeast, Rio de Janeiro. In terms of mortality, Pernambuco is added as a region with high mortality rates. Because of this reality, scenarios were

created to guide managers and professionals, containing indications on how to apply the goals in their respective municipalities, and highlighting priority areas for care[1].

Two studies covering different municipalities and regions of the country, from different periods, point out above all the inefficiency of the initiatives, emphasizing that despite the knowledge about the deficiencies in tuberculosis care, the practice does not seem to be close to achieving the goals described in these guides. Within the analysis from 2001 to 2003, the inadequate installation of DOT was the greatest criticism[19], and in a more current perspective from 2015 to 2018, the incidence of cases and notification of deaths was high, in addition to the non-compliance with support programs for people with HIV and Tuberculosis and lack of resources in smaller municipalities[20].

The Brazilian scenario indicates a high prevalence of the disease in the pulmonary form and males. Studies from São Paulo and Manaus have shown that men's low demand for health services has kept them as the most prevalent sex for years[21,22]. The reluctance of this group appears to be linked to social gender roles, such as invulnerability, association of the female figure with self-care, discomfort, and fear of exposure during consultation[23].

Regarding race, the predominant incidence of brown and black people, combined with discrimination and unhealthy housing conditions, directly influences the rates of illness among this population, as reaffirmed in articles in the Southeast and Northeast. In Alagoas, a 10-year follow-up of more than 200 patients showed that 77.09% of those interviewed were brown or black, male, and had a low level of education[21,24,25]. The educational level was also used in these articles to characterize the sick patients, many participants declared not having completed elementary school, with some reports of less than eight years of academic education[21,25].

Regarding the age group, which agrees with the literature and the studies analyzed, in the Brazilian regions, tuberculosis affects more socioeconomically active individuals, between 16 and 64 years old. Despite this, the highest number of cases in children and adolescents aged 0-14 in 2022 reported in the Bulletin stands out[26].

This scenario of commitment in the first decade of life leads to the association of negative remnants during the COVID-19 pandemic regarding actions against tuberculosis, a perspective reinforced by the unsatisfactory results in the vaccination coverage, in the country as a whole, of BCG in 2021, being marked as the lowest in the last decade[27] and problems in treating contacts of infected family members[21,25,28,29].

Regarding the characteristics of patients, the 2023 Tuberculosis Epidemiological Bulletin outlines a profile of involvement without major changes in relation to recent years, and the studies analyzed in the present work reaffirm the population design of the last government survey[26]. When recorded by self-declared race, the government bulletin data shows a decrease in the number of white patients and no major fluctuation in the incidence of the Indigenous population. Black and brown individuals, on the other hand, have a higher number of notifications, as do males[26].

The Southeast region was the only one to achieve one of the goals proposed by the United Nations in the Millennium Development Goals (MDGs). On the other hand, the descriptive study of the "Contingent Action Project to Combat Tuberculosis in Belo Horizonte" was the only one that revealed an improvement in the panorama of 2013, with success in the articulation with other levels of care, organization of units and records, opposing most of the studies previously cited[30].

Primary Health Care (PHC) coverage in the North region appears to be precarious when compared to other regions of the country, as reported in an article. Furthermore, it has a lower concentration of health professionals, which ends up delaying the diagnosis of new TB cases and increasing the transmission of the disease. These factors may explain the high incidence rates in this area[31]. However, another study that analyzed disease incidence data from 2000 to 2004 showed that Roraima was the only Brazilian state to reach the 85% cure target established by the WHO[32].

The Amazon is among the states considered most vulnerable to tuberculosis. In addition to its vast territory, the state is home to a significant portion of one of the groups most susceptible to the disease: the indigenous population. An ecological study from 1997 to 2006 indicated that a significant portion of the disease reports included indigenous people, recording around 40 cases per 100,000 inhabitants in Brazil as a whole[33]. A study and interviews conducted in the villages of Rondônia between 2009 and 2011 gathered the opinions of 52 indigenous people about access to and effectiveness of tuberculosis diagnosis. As expected, many issues were related to isolation and local access, both for the entry of professionals into the villages and for the exit of the people[34-36].

When we move on to other regions of Brazil, the Northeast, Central-West and South, a smaller number of articles met the inclusion criteria for this study. The information collected remains similar, but even in the face of difficulties and necessary improvements, the care scenario still shows much room for improvement, especially in units with professionals engaged in control initiatives[37].

Some studies covering long periods in Alagoas[25], Ceará[28,] and Maranhão[38] support the diagnostic, therapeutic, operational, and social difficulties. The southern part of the country is the region where the analyses present more satisfactory results, with an increase in the number of requests for bacilloscopy compared to previous years, a reduction in the number of treatment abandonments, and greater professional training, despite sharing some barriers with the other states[39-41]. The panorama of the South of the country, especially Paraná[42] and Rio Grande do Sul[28,43], reveals a repetitive issue with the incompleteness of records in addition to unequal distribution between cities in meeting the goals, also seen in Santa Catarina[44].

The Brazilian Center, in relation to Mato Grosso, points to some improvements after the implementation of the Family Health Program in 2000, such as a reduction in the incidence of the disease, however, several flaws are

shown, an example of which is the inefficiency of the TDO in improving abandonment rates[45,46]. Goiás and the Federal District, on the other hand, point to a special situation of low adherence to treatment and limited accuracy of notification data. Furthermore, the study indicates that there was an 18% decrease in the incidence of TB, possibly due to the implementation of the PNCT[47]. However, according to the WHO, 208,000 people living with HIV died from TB in 2019[1]. It is essential to implement multidisciplinary care that includes medical and psychological assistance, legal support, social services, referrals to other specialties, and support structures such as non-governmental organizations for co-infected populations. The article "Mortality, TB/HIV co-infection, and treatment dropout: predictors of tuberculosis prognosis in Recife, Pernambuco State, Brazil" suggests reducing the decentralization advocated by the public health system. According to the authors, this makes healthcare more difficult and expensive, directly discouraging adherence to treatment for the disease, since the structure of the health system is not capable of monitoring and verifying cases of abandonment or irregular use of medication[48].

The articles show that directing health actions and defining priority municipalities through criteria that address the magnitude of co-infection in the areas of prophylaxis, diagnosis, and treatment, is a strategy that optimizes available resources and promotes greater care for a given population at risk[45]. Also, early detection of HIV is an excellent weapon against tuberculosis, given that HIV is the most potent activating factor of the disease, which makes Antiretroviral Therapy (ART) the most important protective factor against the development of co-infection. In addition to early detection and treatment adherence, it is necessary to consider the difficulty of incorporating tuberculin tests and prophylactic treatment for TB into clinical practice, which implies the demand for ensuring effective logistics for the acquisition and distribution of tests and medication. Likewise, it is up to health professionals and administrative domains to promote welcoming, respect for the needs of patients, privacy, prompt care, and social assistance[48].

Final Considerations

From the analysis of the literature, it is possible to infer that tuberculosis is highly prevalent in the Brazilian population and its profile of involvement, in general in the country, corroborates studies conducted in recent years. The Brazilian scenario appears to have a high prevalence of the disease in the pulmonary form, in males, in brown and black individuals who are targets of discrimination, and residents of unhealthy areas, in addition to a majority of economically active populations aged 16-64. Furthermore, there is significant numerical variability between regions of the country, which may require some individualization of proposals for certain regions and populations by including groups that are not eligible for vulnerability. Furthermore, the inadequate operationalization of TOD by health professionals appears to be a point of greatest criticism among the studies analyzed.

Given the above, it is worth highlighting the social determinants of health, already recognized by the PNCT, which influences the prevalence of the disease and must be considered to ensure integrated care. The economic situation of the disease in the country can influence its profile of involvement and reinforce the implementation of the current PNCT protection projects, considering that reception is an incentive for the patient. Thus, improving how professionals working in basic health units learn about continuing education for the population is essential to encourage and promote early diagnosis of the bacillus, in addition to improving adherence to correct and effective treatment of the disease. The Brazilian scenario reiterates the importance of a multidisciplinary team engaged in care that understands the functions to be performed by each member of the team, since the overload and fragmentation of care result in a lack of preparation, training, and reception. Therefore, the work of professionals becomes essential to strengthen surveillance actions and increase treatment coverage and prevention of new cases recommended by the PNCT.

Finally, the shortcomings in the operationalization of the PNCT for patients with Mycobacterium tuberculosis discussed throughout the dissertation must be addressed to reduce the spread and contagion of the disease in the country, even though it has benefits and aims to reduce tuberculosis throughout Brazil, covering numerous problems of the disease. Therefore, improving the approach to disease with an educational focus, especially for health professionals, becomes extremely relevant for a better and more effective effect of the policies proposed by the PNCT.

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