



“Post-tuberculosis financial disease”—we need to face it to eliminate tuberculosis

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In the study by Loureiro et al.,⁽¹⁾ published in this issue of the *Jornal Brasileiro de Pneumologia*, the authors studied the economic burden on the household during the follow-up of patients after tuberculosis diagnosis and treatment in five Brazilian capitals. They concluded that “participants incurred economic losses in the pre-diagnosis period and severe loss of income in the post-diagnosis period,” which resulted in unemployment and social sequelae caused by tuberculosis.

This topic is opportune since we face an increase in the number publications on post-tuberculosis lung disease (PTLD), which has become a more studied topic worldwide and has even been stimulating the formulation of consensus and guidelines. According to the First International Post-Tuberculosis Symposium conducted in South Africa, PTLTLD is defined as “evidence of chronic respiratory abnormality, with or without symptoms, attributable at least in part to previous tuberculosis.”⁽²⁾

Although the focus of studies has been directed toward physical disabilities, the “post-tuberculosis financial disease,” with its economic, social, and psychological well-being consequences, has been commonly known. However, most studies regarding financial issues related to tuberculosis address costs during pre-diagnosis, diagnosis, and treatment, leaving aside post-disease losses.^(3,4)

Poverty is usually considered a powerful determinant of tuberculosis, being its incidence and *per capita* gross domestic product inversely associated.⁽⁵⁾ It is not a coincidence that reducing extreme poverty and controlling the tuberculosis epidemic are both main aims of the United Nations Sustainable Development Goals.⁽⁶⁾

Malnutrition status and crowded, poorly ventilated housing and working environments are often associated with poverty and constitute direct risk factors for disease transmission.⁽⁷⁾ According to the results by Loureiro et al.,⁽¹⁾ the catastrophic costs induced by tuberculosis increased poverty and extreme poverty, which lead to a vicious circle that prevents us from seeing a light at the end of the tunnel.

The authors also identified an overall average cost of R\$283.84 during the pre-diagnosis period and of R\$4,161.86 during the post-diagnosis period, which involved not only the patients but also their households.⁽¹⁾ In contrast to previous studies,⁽⁴⁾ post-tuberculosis costs were almost 15 times higher than were pre-tuberculosis costs, and that was mostly attributed to non-medical direct and indirect costs, including loss of income in 60% of cases.

The structure of tuberculosis monitoring in Brazil, including the decentralization of care to basic health

care units, the strategy of active search of tuberculosis cases, and the free provision of diagnosis and treatment services by the Brazilian Unified Health Care System⁽⁸⁾ could justify the lower costs in the pre-tuberculosis period than in the post-tuberculosis period.

Although travel expenses are cited as a contributor to the economic burden related to tuberculosis, they are afforded by the Brazilian government during treatment in order to guarantee attendance at scheduled visits and improve adherence to treatment, but the lack of information on the part of patients and health care teams that assist them, along with the delay in obtaining social benefits, can jeopardize the population and enhance the increasing catastrophic costs related to tuberculosis.⁽⁹⁾

To make matters worse, according to Loureiro et al.,⁽¹⁾ 71% of patients were unemployed after having tuberculosis, compared with 41% before the disease. These data are in accordance with Meghji et al.,⁽¹⁰⁾ who also identified a decrease in paid work and in the median income one year after treatment completion when compared with the period before the onset of active tuberculosis.

The physical disability addressed by the concept of PTLTLD and its social consequences can feed a chain of financial vulnerability, and, besides the individual and households affected, society as a whole can suffer financial consequences. In cases of severe weakness that limits work capacity, disability-related retirement can be requested, which inflates the “pension bubble.” Furthermore, long-term survival of patients treated for tuberculosis is reduced, the potential years of life lost rate being approximately four times higher than in the general population.⁽¹¹⁾

For the ambitious targets of the End TB Strategy to be achieved, researchers suggest that, in addition to early diagnosis and treatment, PTLTLD should get as much attention as active tuberculosis. Moreover, to eliminate tuberculosis, structural public policies and broad actions are needed, providing PTLTLD patients access to health support, sanitation measures, social inclusion, education, housing, among others.

To face this national problem, the Brazilian Interministerial Committee for the Elimination of Tuberculosis and Other Socially Determined Diseases was established in April of 2023 by Decree No. 11,494. It comprises the Ministry of Health; Ministry of Science, Technology and Innovation; Ministry of Development and Social Assistance, Family, and Fight against Hunger; Ministry of Human Rights and Citizenship; Ministry of Education; Ministry of Racial Equality; Ministry of Integration and Regional Development; Ministry of Justice and Public Security; and Ministry of

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Indigenous Peoples. The Committee aims at promoting actions that contribute to the elimination of tuberculosis and other socially determined diseases by 2030.⁽¹²⁾

CONFLICTS OF INTEREST

None declared.

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