



Epidemiological evaluation of notified cases of tuberculosis in Minas Gerais, Brazil

Beatriz Joia Tabai^{1*}, Danilo Pereira Bispo¹

¹Federal University of Jequitinhonha and Mucuri Valleys (UFVJM), Teófilo Otoni, Minas Gerais, Brazil.

ABSTRACT

OBJECTIVE

Due to the situation of growing poverty in the state of Minas Gerais and the tuberculosis' severity, a pathology associated with poor living conditions, it is necessary to study the incidence of new cases of this pathology so that public health measures can be taken to revert this scenario. So, the objective of this study is to evaluate the incidence of notified cases of tuberculosis in the state of Minas Gerais between 2015 and 2020.

METHODS

The number of confirmed and notified cases of tuberculosis in the state of Minas Gerais from 2015 to 2020 was collected in the Information System of Notifiable Diseases of the IT department of the Brazilian Unified Health System (DATASUS), through the Tabet system. Between 2015 and 2020, 24717 new cases of tuberculosis were reported in the Brazilian state of Minas Gerais.

RESULTS

Regarding the year, 4053 occurred in 2015, 4071 in 2016, 4055 in 2017, 4214 in 2018, 4349 in 2019 and 3975 in 2020.

CONCLUSIONS

For all the foregoing, the great significance and need for attention focused on the prevention and treatment of Tuberculosis is highlighted.

DESCRIPTORS

Tuberculosis, Neglected Diseases, Epidemiology, Public Health.

Corresponding author:

Beatriz Joia Tabai.

Medical student of Federal University of Jequitinhonha and Mucuri Valleys (UFVJM), Teófilo Otoni, Minas Gerais, Brazil.

E-mail: beatrizjoiatabai@gmail.com

ORCID iD: <https://orcid.org/0000-0001-7011-5792>

Copyright: This is an open-access article distributed under the terms of the Creative Commons

Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are credited.

DOI: <https://doi.org/10.56242/globalhealth;2021;2;5;6-8>

INTRODUCTION

Tuberculosis is the leading cause of death from a single infectious agent worldwide and the leading cause of death for people living with HIV, according to the World Health Organization (WHO). In 2018, 10 million new cases of tuberculosis were estimated in the world and 1.5 million people died from this disease¹. It is strongly socially determined, having a direct relationship with poverty and social exclusion². This is because illness from tuberculosis is often linked to precarious living conditions. Thus, some population groups may present situations of greater vulnerability, such as indigenous people, deprived of liberty, homeless people or living with HIV³.

According to data from the Brazilian Institute of Geography and Statistics (IBGE), the state of Minas Gerais, Brazil, has an estimated population of 21,411,923 inhabitants in 2021, with a demographic density of 33.41 inhabitants/km². Its nominal monthly household income per capita, in 2020, was 1,314 R\$, the tenth in the country, and the Human Development Index (IDH) of 0.731 in 2010, the ninth compared to other states of the federation⁴. Regarding poverty and extreme poverty, by 2015 the poverty rate reduced in the state, from 18.1% of the population in 2012 to 16.4% in 2015, while the extremely poor went from 7.8% to 6%. Between 2016 and 2018, there was a growth of the poor and extremely poor population in Minas Gerais. In 2016 there was an increase of 38.9% in the second group, reversing the entire decline of the past period. Among the poor people, the population showed successive increases, falling again in 2019 and reaching a level below 2012. However, both lines in 2019 are higher than 2015, where they were the lowest proportions⁵.

Thus, due to the situation of growing poverty in the state of Minas Gerais and the tuberculosis' severity, a pathology associated with poor living conditions, it is necessary to study the incidence of new cases of this pathology so that public health measures can be taken to revert this scenario. So, the objective of this study is to evaluate the incidence of notified cases of tuberculosis in the state of Minas Gerais between 2015 and 2020.

METHODS

The number of confirmed and notified cases of tuberculosis in the state of Minas Gerais from 2015 to 2020 was collected in the Information System of Notifiable Diseases of the IT department of the Brazilian Unified Health System (DATASUS), through the Tabnet system, available online at: <http://tabnet.datasus.gov.br/>. The data, in addition to relating to the year, were also distributed according to age group, sex, color or race, and HIV co-infection. Color or race variables are designated according to the IBGE classification. The tabulation and descriptive analysis of the data took place using the Microsoft Excel 2017 program.

RESULTS AND DISCUSSION

Between 2015 and 2020, 24717 new cases of tuberculosis were reported in the Brazilian state of Minas Gerais. Regarding the year, 4053 occurred in 2015, 4071 in 2016, 4055 in 2017, 4214 in 2018, 4349 in 2019 and 3975 in 2020. In these six years, the rate of cases was 4119.5 with a standard deviation of 136, 69. These data show that the number of new infections is very close in each year in this state of the country, showing a difference with the trend in the incidence rate of this pathology in Brazil in the same period, as this marker decreased between 2011 and 2016, increase between 2017 and 2019 and fall in the year 2020⁶.

Males correspond to 71% and females to 29% of notifications between these years. These data agree with the incidence of

tuberculosis in Brazil between 2011 and 2019, in which 69% of new cases occurred in men⁶.

Regarding color or race, 44.8% declared themselves brown, 29.6% white, 18.5% black, 7.8% yellow, 2.3% indigenous and the others did not declare. In Brazil, we found a corresponding trend, as the black and brown race or color, from 2011 to 2019, was the one with the highest prevalence, ranging from 60.2% to 66.8% of new cases⁶.

Regarding co-infection with HIV, 67.9% had negative tests, 9.8% positive and the others had not been tested, the test result had not yet come out or they did not answer the question. Among the positive cases, there was no great variation in the number of new cases between years, with a rate of 404 with a standard deviation of 18.35. This differs from the national trend, which shows a vertiginous increase in cases of co-infection between tuberculosis and HIV between 2011 and 2019⁶.

Regarding the age range, most infections occurred between 20 and 59 years, with 36.6% between 20 and 39 years and 36.6% between 40 and 59 years. The other infections occurred 19.74% in people over 60 years old, 5.9% between 1 and 19 years old and 0.49% in children under 1 year old.

According to the global tuberculosis report released by the World Health Organization, Brazil integrates the list of 30 countries that concentrate 90% of all tuberculosis cases in the world, adding 96,000 new cases in 2019, for an incidence coefficient of 46 cases per 100,000 inhabitants, with a tendency to increase in the last 3 years. Furthermore, 11.4% of this total would have been registered in co-infection with HIV. However, among the high burden countries, Brazil was classified in the group with high levels of treatment coverage of the disease⁷.

As for the limitations of the study, it is important to emphasize that the numbers presented in this study are related to notifications made to the Surveillance of Respiratory Transmission Diseases of Chronic Conditions of the Unified Health System, which allows questioning the occurrence of underreporting cases.

CONCLUSION

For all the foregoing, the great significance and need for attention focused on the prevention and treatment of Tuberculosis is highlighted. More than improving indicators in Brazil and Minas Gerais regarding the disease, it is necessary to take care of the people, especially vulnerable populations, mitigating the negative factors in the social determination of the health-disease process.

ACKNOWLEDGEMENTS

We thank the University to which we belong and the organization of the Global Health International Congress.

REFERENCES

1. World Health Organization. Are Updated Every Year. for the Tuberculosis. 2020. 1-2 p.
2. Ministério da Saúde. Doenças de Condições Crônicas e Infecções Determinantes sociais [Internet]. 2019 [cited 2021 Oct 1]. Available from: <http://www.aids.gov.br/pt-br/determinantes-sociais>
3. Ministério da Saúde. Doenças de Condições Crônicas e Infecções Populações vulneráveis - tuberculose [Internet]. 2019. [cited 1 October 2021] Available from: <http://www.aids.gov.br/pt-br/publico-geral/tuberculose/populacoes-vulneraveis-tuberculose>

4. Instituto Brasileiro de Geografia e Estatística. Panorama Minas Gerais. [Internet]. 2021.[cited 1 October 2021] Available from: <https://cidades.ibge.gov.br/brasil/mg/panorama>
5. Fundação João Pinheiro. A dinâmica recente da pobreza e extrema pobreza em Minas Gerais [Internet]. [cited 2021 Oct 1]. Available from: <http://observatoriodesigualdades.fjp.mg.gov.br/?p=1665>
6. Brasil. Tuberculose | 2021. Bol Epidemiológico [Internet]. 2021;3(1):44. Available from: https://www.gov.br/saude/pt-br/media/pdf/2021/marco/24/boletim-tuberculose-2021_24.03
7. Ministério da Saúde. Doenças de Condições Crônicas e Infecções. Doença tem 10 milhões de novos casos no mundo em 2019; Brasil registra 96 mil ocorrências [Internet]. 2021 [cited 2021 Oct 1]. Available from: <http://www.aids.gov.br/pt-br/noticias/doenca-tem-10-milhoes-de-novos-casos-no-mundo-em-2019-brasil-registra-96-mil-ocorrencias>