

# Humanization of nursing care for people with tuberculosis: Bibliometric Study

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## Abstract

**Objective:** To analyze the scientific production on tuberculosis and the humanization of nursing care. **Methods:** Bibliometric, descriptive quantitative study, carried out in the Web Of Science database with a time frame from January 2010 to July 2021. The laws of lotka and zipf were applied and the analysis occurred with the aid of vosviewer software. **Results:** We recovered 309 scientific productions on tuberculosis and the humanization of nursing care, the majority published in 2019, with the predominance of the English language. According to lotka law among the 1,381 authors who publish on the subject, 276 (20%) are responsible for 30.3% of productivity, but only eight have a total strength of co-authorship bond. Through zipf's law, 761 keywords with a predominance of "tuberculosis" and "nursing" were found. The Countries united states of America (USA) (25%) and Brazil (22%) have the highest number of publications on the theme addressed here. **Conclusion:** There is a tendency to increase in publications on tuberculosis, however, little is studied about humanization aimed at the treatment of people who experience this disease. More evidence should be produced in this context because the end of tuberculosis depends on the implementation of what is contained in the global strategy plan, regarding the intensification pillar of research and innovation. Such actions will contribute to the execution of more humanized practices of the care of the nursing professional, reflecting on the success of the treatment of people suffering from tuberculosis.

**Keywords:** Tuberculosis; Nursing; Nursing care; Public health nursing; Humanization of care.

## 1 Introduction

Tuberculosis (TB) is considered an infectious, preventable, curable disease and a serious public health problem that worsened further after the COVID-19 pandemic [1]. Worldwide, about ten million people developed TB and 1.2 million died from this disease, corresponding to approximately 28,000 people getting sick each day and around 4,000 people who lose their lives daily due to the presence of TB [2].

Against this backdrop, the World Health Organization (WHO) created four basic principles and three strategic pillars to collaborate with the end of TB. The principles are Administration and government responsibility with TB monitoring and evaluation; Strong union between civil society organizations and the community; Promotion of human rights, ethics, and equity; Adaptation of strategy and goals at the level of each country, with global collaboration. The pillars correspond to Prevention and integrated care

centered on the person with TB; Bold policies and support system; Intensification of research and innovation [2].

The principle "Protection and promotion of human rights, ethics and equity" and the pillars "Prevention and care integrated and patient-centered" and "Intensification of research and innovation", point to the need for more qualified care, centered on the human being and respect for their rights, since TB is a stigmatized and discriminated disease that causes psychosocial repercussions, therefore, research on this theme is a means of contributing to better care practices in the treatment of users suffering from TB [3].

Health professionals recognize that their care actions directed at people who experience TB should mitigate the emotional impact caused by the diagnosis, contributing to the improvement of the clinical picture and treatment adhering to the patient, family, and community involvement. These actions are consistent with the attitude of humanizing which provides different ways of caring, producing health for all involved, considering the subjectivities and singularities of each human being [4,5].

Thus, humanistic, or non-humanistic attitudes, permeated by the relational nature of nurses who care for people with TB, can mobilize affections and behaviors that will allow approximation or removal of patients [6]. Treatment abandonment can generate a series of problems that culminate in the re-entry into the notification system, resistance to medications, disease proliferation, and/or higher expenditures of the public health system [7].

The professional nurse stands out for being the protagonist in promoting actions to care for people with TB, providing care optimization, successful treatment, strengthening the bond and relationship of trust between professionals, people with TB, and their families [8-12]. However, this relationship is based on care based on the biomedical model, which is concerned with eliminating symptoms and curing the disease, leaving aside biopsychosocial issues [13].

Thus, humanization is a fundamental characteristic of practices taken care of people with TB, however, there are still few studies produced on this content, which may justify the difficulty in eliminating the disease, because the intensification in the realization of research and innovation from the identification of the priorities of each site is a need to eradicate epidemic [13,14].

In this context, the following question was raised: What is the profile of scientific production on the humanization of nursing care for people with TB? To answer the question, the objective was to analyze the scientific production on TB and the humanization of nursing care.

## **2 Method**

It is a Bibliometric study, descriptive quantitative approach based on lotka and zipf law. The first refers to scientific productivity in which few researchers produce much in a given area while many produce little. The second relates to the distribution and frequency of words in a text, where a small number of words are used much more often [15].

The research was carried out in the Web of Science (WOS) database, using a search string from the PICo strategy, an acronym for patient (P), intervention (I), and context (Co). The following keywords found in the Descriptors in Health Sciences (DeCS) were selected: "tuberculosis" "infection, Mycobacterium

tuberculosis" "infections, Mycobacterium tuberculosis" "koch disease" "koch's disease" "mycobacterium tuberculosis infection" mycobacterium tuberculosis infections" "nursing" "humanization care" "humanization". All publications, published in any language, were included in the time frame from January 2010 to July 2021.

The data exported from WOS was organized in an excel spreadsheet, contributing to detailed information on the documents that addressed the theme of this study, as well as to the application of lotka and zipf laws. We analyzed the variables number of articles published per year and languages most present in publications and with the help of vosviewer software, a bibliometric analysis program. Was created clusters, i.e., groupings between authors, keywords, and countries.

### 3. Results and discussion

We found 309 scientific productions focused on TB and humanization of nursing care, published between 2010 and July 2021. The largest number was in 2019 (10.7%) while the lowest was in 2010 (4.8%) with little discrepancy between the years 2015 to 2020. It was found that the most present language in the publications was in English (91.6%) followed by the Portuguese (5%).

Based on the analysis by lotka law, among the 1,381 authors who published on the theme TB and humanization in nursing care, 276 (20%) are responsible for 30.3% of productivity. Of the 276, only eight presented the highest total strength of co-authorship bonds (Figure 1). These were distributed in two clusters, each with four authors. The cluster in red composed by the authors Pedro Fredemir Palha, Laís Mara Caetano da Silva, Fernando Mitano and Amélia Nunes Sicsu. The green with the authors Tereza Cristina Scatena Villa, Lenilde Duarte de Sá, Lúcia Marina Scatena and Antônio Ruffino-Neto.

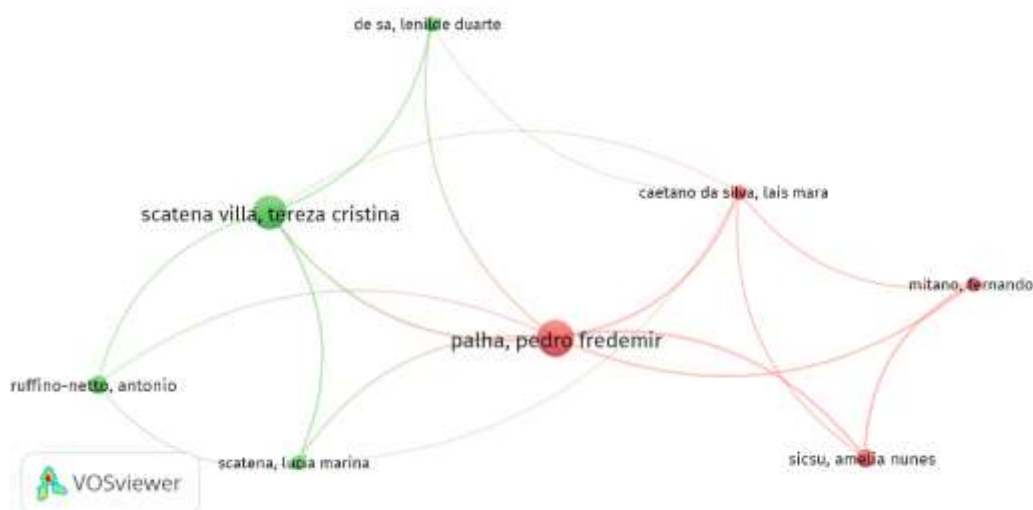


Figure 1. Cocitation map of the authors

By the law of zipf, 761 keywords were found. Six words (17.5%) in the trivial zone, 148 (35.74%) in the interesting zone, and 607 (46.76%) in the noise zone. From this total, 30 keywords were selected from those indexed at least five times in the articles (Figure 2). These were distributed in seven clusters.

The first consists of eight words (elderly, HIV, latent tuberculosis, latent tuberculosis infection, nursing care, nursing homes, pneumonia, tuberculin skin test), the second with five (diagnosis, health care workers, knowledge, prevention, tuberculosis), third with five (acquired immunodeficiency syndrome, community health nursing, health services, public health, pulmonary tuberculosis), fourth with four (adherence, health education, nursing, transmission), fifth with four (health services accessibility, medication adherence, primary health care, public health nursing) sixth with three (history of nursing, infection control, occupational health) and the seventh with one (epidemiology).

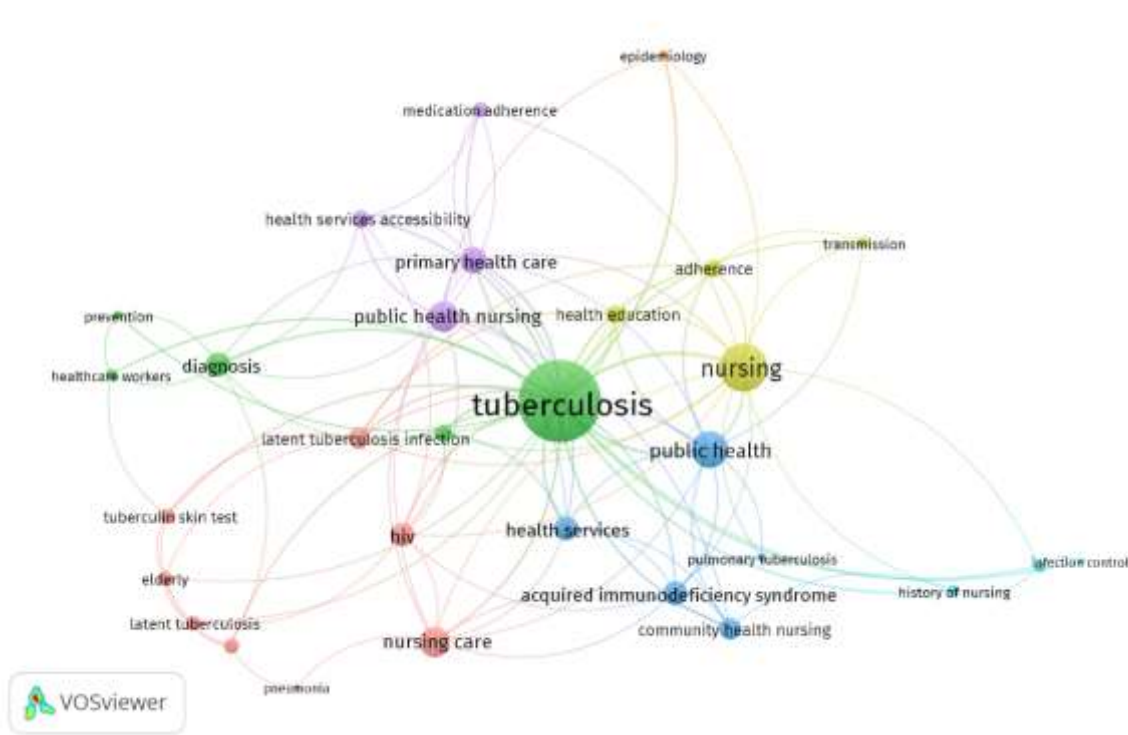


Figure 2. Map of keywords

When analyzing the countries with the highest number of publications, the United States of America (USA) (25%) and Brazil (22%) were found. In the network of relations (Figure 3) the countries were divided into six clusters. The first with five items (Belgium, Denmark, Germany, Italy, Spain), second with four (Brazil, Canada, England, and India), third with three (Australia, Indonesia, Thailandia), fourth with two (Colombia, Mexico), fifth two (Japan and USA) and sixth with one (South Africa).

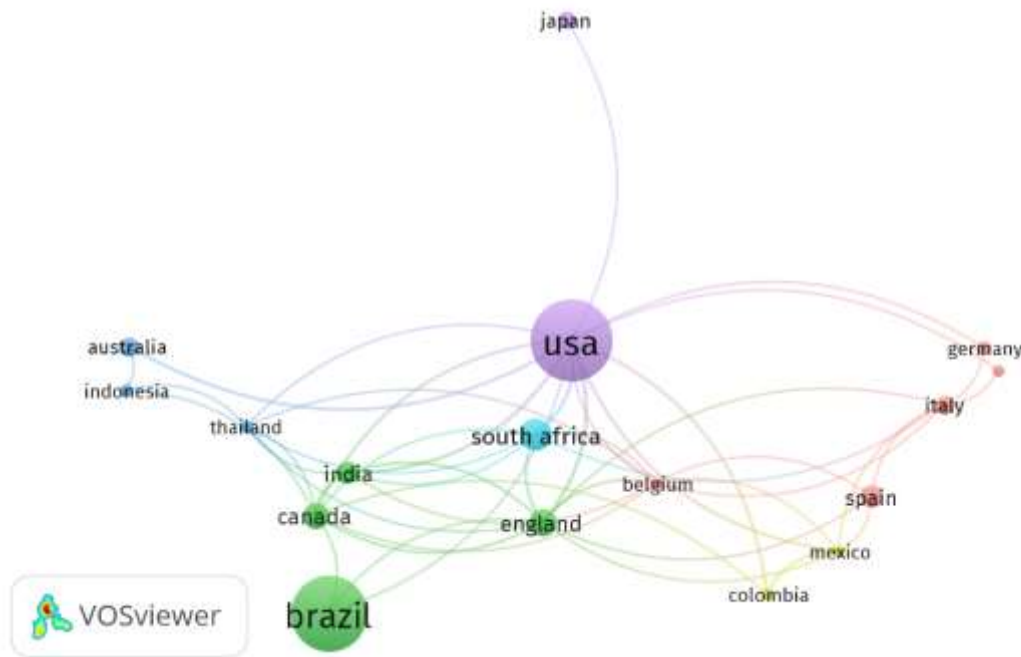


Figure 3. Correlation map of countries

The publicações related to the theme TB and humanization of nursing care showed an increase followed by a fall between the years 2010 to 2014. However, from 2015 to 2020 it was found that over the years there was an increase in the number of publications while until July 2021 a total of 12 articles were produced. With the creation of the global strategy for the end of tuberculosis approved in 2014 by the World Health Assembly (AMS), there was the incentive to research TB, which may have contributed to the expansion of publications from the year 2015. In this sense, research and innovation are encouraged with the aim of contributing to the end of TB, since the disease is a public health problem in several underdeveloped countries [16].

Thus, it is important that scientific productions on the humanization of care for people with TB continue to be published in a wide range, because the ways of producing health should be based on a humanized practice during the daily life of professional nurses who, even in the face of the weaknesses of health services, can contribute to favorable outcomes of TB cases [10,13].

In this study, English was the predominant language in publications, showing the need for the academic and scientific community to appropriate this language to deepen the theme discussed in this work and disseminate new information, since it is one of the most spoken and used languages in the field of science.

In the analysis of the authors (Figure 1) Pedro Fredemir Palha and Tereza Cristina Scatena Villa are the most prolific contributor to three or more articles. According to lotka law Palha published 12 articles while Scatena published 11, both are the main contributors to the development of other works. Frequent network publications make authors more references in a given area of study. However, it is inferable that although Amelia Nunes Sicsu presents six publications and Lais Mara Caetano da Silva five, there is a greater probability of this becoming an authority, because his bond is strong with Palha and is becoming

increasingly strengthened with Scatena.

The publication in networks is an important strategy to achieve TB control because the creation of a scientific network can contribute to the elaboration of scientific manuscripts of excellence and favor the quality of care [14]. Therefore, because it is the world-renowned thematic TB, it is necessary to have more quality research developed in a network linking TB and the humanization of nursing care.

Since 2015, Brazil has been part of the national TB research plan, serving as a pilot country for the implementation of the intensified pillar of research and innovation. From then on, with the creation of REDE-TB, efforts are made to contribute through research with the elimination of TB [17]. It is expected that the formation of such a network will be efficient to expand knowledge to the national and international scope.

The main keywords used in the research (Figure 2), instruct scholars on which approaches the published studies are working, helping to project future productions in the area of this study. The analysis by zipf law presented in the trivial zone the following words with the total number of times presented in the publications: tuberculosis (129 times), nursing (38 times), public health nursing (17times), public Health (16 times), nursing care (15 times) and primary health care (12 times).

It is emphasized that the word that most closely approached humanization, human, was in the interesting zone appearing twice among the scientific productions. In a statement, this content needs to be more discussed in the field of TB, because in addition to being a public health policy in Brazil (HumanizaSUS), nursing care practices focused on the human being affected by TB are still incipient. Therefore, the search for this theme through research needs to be strengthened, because care when humanized facilitates the control and elimination of the disease, providing the individual with human dignity, success in the treatment and cure of the disease [18].

In the network (Figure 2) the word tuberculosis has a strong interrelation to the word nursing, diagnosis, and health care. By zipf's law, nursing is the second most used word in productions, indicating that TB and humanization are contents very closely linked to nursing. It is inferred that this is an essential category for TB control since it is the protagonist profession of care actions for people who are debilitated.

Care practices based on responsibility are a new modality in which the intervention should be user-centered, reflecting on numerous benefits, especially on the effectiveness of TB control [12]. However, what is observed in several studies is that the lack of adequate guidance on the disease, the fear of contagion in the professional-patient relationship, and discrimination reflect on the distancing of people affected by TB, harming the control of the disease and promoting the continuity of the transmission chain [4,6,19].

As for the countries that publish the most on the theme of this study, the USA is precedent to Brazil. In the analysis (Figure 3) Brazil is related to Canada, England, and the USA in publications, while the leader in joint productions in the USA, interconnected to 13 countries among the 15 that have already produced some production on the subject. It is observed that the USA and Canada, despite being countries with a low incidence of TB, help in the publication of countries with high incidence. Even in a systematic review of the literature conducted only among countries with a low incidence of TB, the USA continues to lead in the number of publications [20].

In a review study of scientific production in Latin America on TB, Brazil is the country with the highest number of publications, but when we analyze networked productions (Figure 3) the country is

among the least published with other countries. International collaborations are fundamental factors to increase the quantity and quality of scientific productions, contributing to the promotion of better clinical and public health initiatives [18].

## **5 Conclusion**

The study identified that even with the search for an international reference database in high-quality journals, publications on the humanization of nursing care for people with TB are reduced. However, the bibliometric analysis of the network of authors showed that links are being increasingly strengthened to produce new publications on the subject.

The bibliometric indicator of the keywords presented TB as the main subject among the studies, indicating that little is sought about the humanization of care during TB treatment, which may be impairing the control of the disease because the professional-patient relationship is fundamental for the success of treatment.

The predominance of publications was by the USA since it is characteristic of this country to invest in research. However, in this study, Brazil had only 3% fewer publications when compared to the USA, showing that more incentive is needed to carry out Brazilian research on the subject discussed here since TB is a public health problem present in underdeveloped countries. However, the country must have more publications on the network so that the productions become of quality.

It is emphasized the relevance in conducting more studies in an international network on the subject to contribute with evidence that qualifies the practices of nursing professionals reflecting on positive results in the treatment of people who experience TB.

## **References**

- 1- Brazil. Ministry of Health. "National Plan for the end of tuberculosis as a public health problem. Strategy for 2021-2025", Brasilia (DF), 2021.
- 2- World Health Organization (WHO). Global Tuberculosis Report 2020. Geneva: WHO, 2020.
- 3- Pan American Health Organization (PAHO). "Human rights, citizenship and tuberculosis from the perspective of Brazilian legislation", Brasília (DF): PAHO, 2015.
- 4- H.P.M. Cecilio, I.H. Higarashi, S.S. Marcon, "Opinion of health professionals on tuberculosis control services", Acta Paulista de Enfermagem, 2015, pp. 19-25. DOI: <https://doi.org/10.1590/1982-0194201500005>
- 5- Brazil. Ministry of Health. "Department of Health Care. National Humanization Policy", Brasilia, 2013.

- 6- I.L.A. Rodrigues, M.C.S. Motta, M.A. Ferreira, "Social representations of tuberculosis by nurses", *Revista Brasileira de Enfermagem*, 2016, pp. 532-537. DOI: <https://doi.org/10.1590/0034-7167.2016690316i>
- 7- T.A.D. Santos, M.M.F. Martins, "Profile of cases of re-entry after abandonment of tuberculosis treatment in Salvador", *Cadernos Saúde Coletiva*, Bahia, Brazil, 2018, pp. 233-240. DOI: <https://doi.org/10.1590/1414-462X201800030235>
- 8- A.D.F.A. Costa, A.M.F. Gomes, A.F.C. Fernandes, L.M.S.D. Silva, L.P. Barbosa, P.D.S. Aquino. "Professional health promotion skills in the care of tuberculosis patients", *Revista Brasileira de Enfermagem*, 2020, pp. 1-7. DOI: <https://doi.org/10.1590/0034-7167-2018-0943>
- 9- R.C.D.A. Temoteo, J.B.L.D. Carvalho, A.L.B.D.C. Lira, M.A.D. Lima, Y.G.D. Sousa. "Nursing in the treatment of tuberculosis and health technologies in the context of primary care", *Anna Nery School*, 2019, pp. 1-6. DOI: <https://doi.org/10.1590/2177-9465-EAN-2018-0321>
- 10- E.F.D.O. Cavalcante, D.M.G.V.D. Silva. "The commitment of nurses to care for the person with tuberculosis", *Text & Context-Nursing*, 2016, pp. 1-10. DOI: <https://doi.org/10.1590/0104-07072016003930015>
- 11- T.M.R. Guimarães, C.T. Amorim, F.M. da Silva Ferreira, E.F.F. Barbosa, C.E.L. Farias, B.S. Lopes. "Nursing Care to a Patient Having Pulmonary Tuberculosis Disease and Comorbidities: Case Report", *Research Journal Care is Fundamental Online*, 2018, pp. 683-689. DOI: <https://doi.org/10.9789/2175-5361.2018.v10i3.683-689>
- 12- F. Li, C. Liu C, M. Jiang, S. Wu. "Application of responsibility-based nursing in patients with both DM and PTB", *American Journal of Translational Research*, 2021, pp. 5011-5018.
- 13- L.P. Rêgo, F.F. Cunha, I.L.A. Rodrigues, L.M.V. Nogueira, N.C.O. Andrade. "Humanized nursing care for people sick with tuberculosis: integrative review 2002–2012", *Revista Baiana de Saúde Pública*, 2014, pp. 738-759. DOI: <https://doi.org/10.5327/Z0100-0233-2014380300018>
- 14- D.R. Silva, G.B. Migliori, F.C.D.Q. Mello. "Tuberculosis Series", *Journal Brasileiro de Pneumologia*, 2019, pp. 1-2. DOI: <https://doi.org/10.1590/1806-3713/e20190064>
- 15- C.A. Araújo. "Bibliometry: historical evolution and current issues", *In question*, 2006, pp. 11-32.
- 16- Brazil. Ministry of Health. "Manual of Recommendations for Tuberculosis Control in Brazil", Brasília (DF), 2019.



- 17- A.N. Sicsú, R.I.C. Gonzales, F. Mitano, L.D.O. Sousa, L.M.C.D. Silva, J.G.D.A. Ballesteros, P.F. Palha. "Nursing practices centered on individuals with tuberculosis: interface with democracy", *Revista Brasileira de Enfermagem*, 2019, pp. 1219-1225. DOI: <https://doi.org/10.1590/0034-7167-2017-0380>
- 18- G.B. Migliori, R. Centis, L. D'ambrosio, D.R. Silva, A. Rendon. "International collaboration between medical societies is an effective way to increase the production of articles on tuberculosis in Latin America," *Jornal Brasileiro de Pulmonology*, 2019, pp. 1-11. DOI: <https://doi.org/10.1590/1806-3713/e20180420>
- 19- N.E.C. Chirinos, B.H.S. Meirelles, A.B.S. Bousfield. "The relationship between the social representations of health professionals and people with tuberculosis with treatment abandonment", *Text & Context-Nursing*, 2017, pp. 1-8. DOI: <https://doi.org/10.1590/0104-07072017005650015>
- 20- S. van de Berg, N. Jansen-Aaldring, G. de Vries, S. van den Hof. "Patient support for tuberculosis patients in low-incidence countries: A systematic review", *PloS one*, 2018, pp. 1-24. DOI: <https://doi.org/10.1371/journal.pone.0205433>

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