

Adherence and abandonment to tuberculosis treatment: a literature review

Adesão e abandono ao tratamento da tuberculose: uma revisão de literatura

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ABSTRACT

Although tuberculosis is a disease known worldwide for its impact on the population, there are currently a number of factors that lead to a lack of adherence and withdrawal from treatment. In view of the need to report on these factors, the aim was to analyze the causes that reflect the lack of adherence to tuberculosis treatment. This is an integrative review, in which the search for papers was carried out through the following databases: MEDLINE, LILACS, BDNF, SciELO, using the keywords “tuberculosis”, “adherence to treatment”, “treatment dropout”, with the help of the Boolean operators “AND” and “OR”. The following inclusion criteria were adopted: papers in Portuguese and English, whose theme has relevance to the proposed subject, in temporal cut between the years 2011-2021. The results showed that socio-economic and socio-cultural factors have the greatest influence on the non-adherence to treatment. Low level of education, as well as access to information, is present in the population characterized as treatment dropouts. This means that health education needs to be intensified in order to reduce the number of uninformed people, as well as the applicability of public policies that aim to meet the needs of those affected by these factors. A limiting factor of this study is the scarcity of studies in the area aligned with methodological ways of analyzing the object of study.

Keywords: Medication adherence. Treatment dropout. Tuberculosis.

RESUMO

A tuberculose, embora seja uma doença mundialmente conhecida pelos seus impactos na população, atualmente, encontram-se diversos fatores que ocasionam falta de adesão e desistência da continuidade ao tratamento. Tendo em vista a necessidade de relatar tais fatores, objetivou-se analisar as causas que refletem a ausência de adesão ao tratamento da tuberculose. Trata-se de uma revisão integrativa, em que a busca de artigos foi executada por meio das bases de dados: MEDLINE, LILACS, BDNF, SciELO, usando os descritores “tuberculose”, “adesão ao tratamento”, “desistência ao tratamento”, com o auxílio dos operadores booleanos “AND” e “OR”. Os seguintes critérios de inclusão foram adotados: artigos em português e em inglês, cujo tema tem relevância ao assunto proposto, em corte temporal entre os anos de 2011-2021. Por meio dos resultados fornecidos, constatou-se que fatores socioeconômicos e socioculturais são pontos que mais influenciam à falta de adesão ao tratamento. A baixa escolaridade, como também o acesso à informação, está presente na população caracterizada como desistente do tratamento. Dessa forma, faz-se necessário trabalho de intensificação na educação em saúde para que se possa reduzir o número na população desinformada, bem como a aplicabilidade de políticas públicas que visem a suprir as necessidades daqueles afetados por esses fatores. Como fator limitante deste estudo, aponta-se a escassez de estudos na área alinhados às formas metodológicas de analisar o objeto de estudo.

Palavras-chave: Adesão ao medicamento. Desistência ao tratamento. Tuberculose.

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INTRODUCTION

Although tuberculosis (TB) is an ancient disease that can be treated and cured, it is still a problem for the world population. According to data from the Brazilian Ministry of Health (MS, as per its Portuguese acronym), around ten million people developed the disease worldwide in 2019, and 1.2 million of these died. Brazil does not differ from such characteristics, being among the 30 countries with the highest numbers of TB diagnoses and co-infections, registering 66.819 new cases in 2020 (Brazil, 2021).

Consequently, many countries still have a decadent health infrastructure and low strength when it comes to health work. These characteristics have a significant impact on the process of diagnosing the disease, thus leading to inadequate treatment (Pan American Health Organization [PAHO], 2019). In developed countries, 80% of those infected with TB are in the age group between 15 and 59 years old, that is, it mainly affects the economically active population, influencing the economy of these countries and, mainly, the income of families. Thus, it is associated with a disease related to poverty and social exclusion, carrying stigmas and stereotypes (Rossetto, Maffaccioli, Rocha, Oliveira & Serrant, 2011).

In the quest for greater success in the treatment of this pathology, the WHO reports that health professionals must welcome the patients throughout the process, from diagnosis to discharge, in a humanized way, so that they can create a bond with these patients, with a view to enhancing their adherence to treatment. This bridge must be built in such a way as to promote welcoming (Brazil, 2019).

The dynamics of applying the therapy exist throughout the national territory, through the exclusive supply by the Brazilian Unified Health System (SUS, as per its Portuguese acronym), aiming to control the disease, with a goal of 85% of cure and an abandonment rate of less than 5% (Brazil, 2020). One of the major problems in terms of reducing these rates is still treatment abandonment, which, according to the Brazilian Ministry of Health (Brazil, 2011), is caused by not showing up after 30 days from the date set for return.

According to the epidemiological bulletin, in 2019, treatment abandonment was found in 12% of patients diagnosed with laboratory-proven sensitive TB. Accordingly, it is presented as a proportion twice as high as that predicted by the World Health Organization (WHO) (Soares, Amaral, Zacarias & Ribeiro, 2017). The related common causes surround extrinsic and intrinsic factors, such as socioeconomic conditions, which are directly linked to the successful treatment, since the more precarious the conditions, the greater the therapeutic abandonment (Viana et al., 2018).

Therefore, with the constant high rates of TB, one of the diseases that cause the most deaths around the

world, and the persistent number of abandonment cases, it is extremely important to report on the factors that lead to treatment abandonment and non-adherence. Accordingly, it enables an analysis that helps in the formulation of health policies aimed at reducing the spread of the disease. Therefore, the objective of this study was to analyze the factors that reflect non-adherence to tuberculosis treatment through a literature review of the last ten years.

MATERIALS AND METHODS

It is an integrative review, carried out by compiling data through a bibliographic search, thus providing a more comprehensive view of the subject and enhancing the contribution to theory development (Souza, Silva & Carvalho, 2010). This method is one of the most complete ways of starting studies. It is usually divided into six stages, the first of which is the preparation of a question, which guides how the studies to be included in the research will be selected.

Through the second stage, the search for sampling in the literature is carried out. In the third, the data referring to its field of research is collected. By entering the fourth stage, the analysis of these data takes place. In the fifth, the results found are included. The sixth stage brings this compilation of results through a discussion that aims to expand the knowledge on the part of the reader and facilitate the search for new literatures, and new visions before diverse topics (Pompeo, Rossi & Galvão, 2009).

In view of the above, the following guiding question was prepared: “What are the factors that lead to non-adherence to tuberculosis treatment in Brazil?”.

Table 1

Description of the PICO strategy. São Luís, MA, Brazil, 2022.

Acronym	Definition	Description
P	Population	Patients with tuberculosis.
I	Intervention	Health actions.
C	Control or comparison	Application of health education.
O	Outcomes	The role of nursing in care.

Source: The authors.

In order to carry out this study, literary information was collected by searching the Virtual Health Library (VHL), using the following databases: Scientific Electronic Library Online (SciELO), Latin American and Caribbean Health Sciences Literature (LILACS), *Base de Dados da Enfermagem* (BDENF) and Medical Literature Analysis and Retrieval System online (MEDLINE). The following descriptors were used to search for the papers: “Tuberculosis”, “TB treatment adherence” and “Treatment dropout”, using the Boolean operators “AND” and “OR”.

The works were then selected using the following

inclusion criteria: manuscripts published in Portuguese, English or Spanish; which complied with the theme of this review, within the time frame of the last ten years, whose results meet the objectives of this study. Bibliographic review studies, studies not available in full, reviews, repeated texts, opinion essays and repeated texts were excluded. The search strategy developed in this database was assisted by a specialized librarian, who matched the Boolean operators. In addition, the papers were read in full by two collaborators, analyzing titles, abstracts and objectives; and, in cases of discrepancy, a third party was consulted.

Thus, the flowchart was used to present the results of the evaluated papers using the URSI method. The proposal described by Melnyk and Fineout-Overholt (2005) was adopted to analyze the research design and classify the level of scientific evidence in the papers. Accordingly, the methodological strictness of the selected study, its objective, result and outcome were verified.

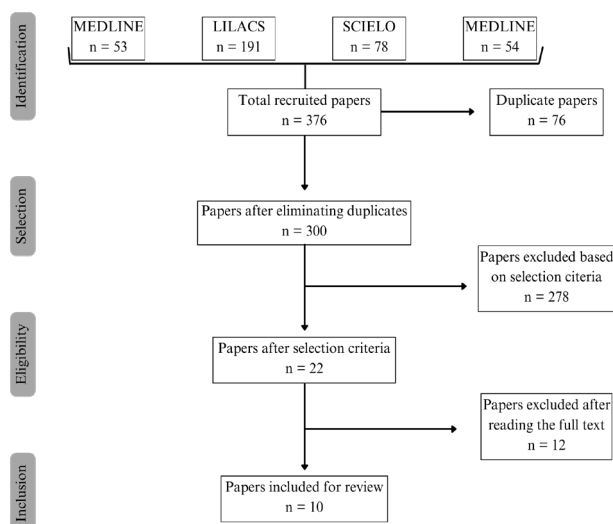
The data extracted from the selected studies were then transcribed into a validated instrument, which was adapted to meet the objectives of the study (Ursi & Gavão, 2006). The instrument contains variables of interest to the research, and its items are: paper title, publication journal, authors, study country, publication year, study design, evidence level and main results.

RESULTS AND DISCUSSION

The electronic search of the consulted databases (BDENF=53, LILACS=191, SciELO=78, MEDLINE=54) yielded 376 papers. After reading the titles and abstracts, 354 publications were eliminated. Of these, 76 were duplicates and 278 were inappropriate and did not fit the pre-established criteria for this study. A total of 22 papers were selected for a full content analysis. Of these, ten made up the final sample. In order to visualize the selection of papers, recommendations were used through a flowchart.

Figure 1

Flowchart of the studies selected for this review.



Source: The authors.

According to the evidence level, unanimously, all the selected papers fit into level VI, that is, papers with an observational, analytical and non-experimental methodology, with a significant proportion of qualitative studies, having nine, and only one quantitative study. Thus, the results are limited due to the methodological approach of the findings.

The compilation of the analyzed papers consists of ten studies, being nine qualitative and one quantitative. The sample described in Table 2 shows the papers organized according to author, journal, country/year, study design/evidence level and the main presented results.

The results show that the factors for non-adherence to tuberculosis treatment are the same as those that tend to lead to abandonment, that is, socioeconomic factors and low level of education. They also describe the profile of patients affected by resistance to adherence or treatment dropout, being male, aged between 15 and 39 years. Thus, the objectives of this review have been met by pointing out the importance of health professionals in terms of welcoming these individuals, as a way of minimizing the dropout rates.

Tuberculosis is an ancient disease known worldwide, with a high number of infected people, causing various population problems. It is a disease that is very prevalent in the most vulnerable populations and those with very marked socioeconomic characteristics, yet there is already a treatment and a cure. Accordingly, it raises a number of questions about how it can be reduced, given that it still has a high number of cases worldwide.

Characteristics of patients who do not adhere to or abandon TB treatment

Initially, the male gender has a greater tendency to give up and/or not adhere to treatment (Abreu & Figueiredo, 2013; Silva et al., 2014; Soares et al., 2017). This result corroborates the findings of Lemos et al. (2020), when conducting a quantitative, descriptive and cross-sectional study in a Primary Health Care Unit in the city of Belém-PA. The aforementioned researchers assert that the male population had a higher dropout rate, with 29%, compared to 11% of the female population. This scenario is associated with the lack of health care culturally perpetuated by men (Lima et al., 2021).

Furthermore, by analyzing the age group that showed the highest prevalence of abandonment, it was found that it is between 15 and 39 years old, a phase in which these people are economically active (Abreu & Figueiredo, 2013; Silva et al., 2014; Macedo, Oliveira, Pereira & Assunção, 2017; Soares et al., 2017).

Table 2

Bibliographic survey in the LILACS, SciELO, MEDLINE and BDNF databases.

Reference (Authors)	Publication journal	Country/Year	Study design/Evidence level	Main results
Rocha and Adorno	Saúde e Sociedade	Brazil, 2012.	Qualitative/Level VI	It was observed that service professionals characterized some patients as prone to abandonment, but did not consider the different ways of life of these patients, thus making it difficult to form a professional-patient bond.
Sousa, Luna, Silva and Pinheiro	Texto Contexto Enfermagem	Brazil, 2012.	Qualitative/Level VI	It was reported that health services were not comprehensive, requiring better training of professional teams to deal with abandonment.
Wendling, Modena and Schall	Revista Gaúcha de Enfermagem	Brazil, 2012.	Qualitative/Level VI	It was reported that there are difficulties in terms of carrying out treatment due to socioeconomic aspects, lifestyle, consumption of alcohol and illicit drugs.
Abreu and Figueiredo	Revista Baiana de Saúde Pública.	Brazil, 2013.	Quantitative/Level VI	It reports that the risk factors for abandoning treatment are: male gender, age 15 or over and previous history of tuberculosis treatment.
Silva, Moura and Caldas	Caderno de Saúde Pública	Brazil, 2014.	Qualitative/Level VI	It presents the relationship of treatment dropout: age group between 20 and 39 years old, education level between one and eight years, illiteracy, alcoholism and mental illness.
Chirinos, Meirelles and Bousfield	Revista Gaúcha de Enfermagem	Brazil, 2015.	Qualitative/Level VI	It reports that treatment causes suffering for patients and this leads to abandonment.
Torres and Herrera	Revista Chilena de Enfermedades Respiratorias	Chile, 2015.	Qualitative/Level VI	It can be seen that most cases of treatment abandonment are related to patient factors, such as: substance abuse, feeling well, and job instability.
Sá et al.	Revista Sociedade Brasileira de Clínica Médica	Brazil, 2017.	Qualitative/Level VI	It lists the factors that motivated patients to abandon treatment: improvement of symptoms after starting the treatment, use of illicit drugs, lack of knowledge about the disease, use of alcohol and lack of income for transportation.
Soares et al.	Epidemiologia e Serviços de Saúde	Brazil, 2017.	Qualitative/Level VI	It points out that the characteristics present in the portion referring to the treatment dropout group are in men aged 20-39 years old, with incomplete primary education and in Afro-descendants.
Sousa et al.	Revista da Escola de Enfermagem da USP	Brazil, 2021.	Qualitative/Level VI	It reports that the prevalence of dropout is higher among people living in rural areas, alcoholics and TB-HIV co-infected patients.

Source: The authors.

This scenario is similar to the results found by Cécílio et al. (2021) in their research on the tendency of tuberculosis mortality in the state of Paraná. According to these authors, this has serious financial consequences for the family, since this age group is responsible for income in many Brazilian realities. Consequently, it has a direct impact on the economy (Furlan & Marcon, 2017).

It is also worth pointing out the influence of low education and illiteracy on the course of treatment. The high rates of these factors lead to a lack of adherence to it, pointed out as intensifiers of this scenario (Silva et al., 2014; Sá et al., 2017; Soares et al., 2017). Therefore, in quantitative studies, these results stood out as the most prevalent variable associated with therapeutic

abandonment. Therefore, by thinking about ways of acting to reverse this situation, the main effective measure revolves around seeking greater investment in education, from childhood to adulthood.

In this regard, Ferreira, Siqueira, Orfão e Bonfim (2021) points to education as a transformative tool, so that, endowed with knowledge, the individual becomes an autonomous subject in making crucial decisions to improve the quality of life. Since the act of presenting patients with the devices necessary for their cure without first preparing their field of knowledge, although with the intention of amplifying the frontiers of knowledge, it does not reduce the numbers related to therapeutic dropout.

Factors that lead to treatment non-adherence

Among the various factors presented in the sample of this study, patients with TB-HIV co-infection remain one of the factors that slow down the reduction in abandonment rates (Sousa et al., 2012; Alves et al., 2021; Sousa et al., 2021). These same findings were found by Marques et al. (2019) in an epidemiological study carried out in the Brazilian Northeast about tuberculosis-HIV co-infection, also pointing out that the states of Paraíba, Sergipe and Pernambuco have higher percentages of confection, and these are targets of public policies, as well as educational actions aimed at keeping the patient until the end of treatment.

In continuity, socioeconomic factors do not go unnoticed (Sousa et al., 2012; Sá et al., 2017), since the patient needs a financial cost to maintain a healthy diet, travel to hospital and to acquire medicines when they are in short supply by public agencies. Hence, the low family income pushes the person to give up on treatment. Associated with schooling, it turns out to be a significant variable for dropout, because it can be seen that the family income is also one of the main pillars for a good therapeutic evolution and a good prognosis (Berra et al., 2020).

Following this line of thought, Santos, Rocha e Soares (2019) state that low income increases social vulnerability, as well as the need for basic supplies for adequate nutrition, in such a way that the individual feels coerced by the material means available, to conclude that there are no effective instruments for good treatment, resulting in giving up.

Moreover, patients belonging to groups such as alcoholics, drug users and carriers of mental illnesses deserve special attention and individualized monitoring (Sousa et al., 2012; Silva et al., 2014; Torres & Herrera, 2015; Sá et al., 2017), since they are five times more likely not to continue treatment, especially in males. This creates a social vulnerability that makes it difficult to control the disease. In addition, these patients have a compromised ability to understand the importance of treatment, in such a way that the care provided by professionals is fragmented (Justo et al., 2018).

In a study on the perception of nursing professionals about tuberculosis treatment in a city in the state of Amazonas, the resistance of users of alcohol and other drugs to accept medication was portrayed, as well as the lack of attendance at scheduled appointments (Sousa, Araújo & Lopes, 2021). Alcoholism and illicit drugs inhibit the effect of medications, thus compromising treatment. Even so, users become more prone to TB due to the low immunity caused by addiction (Macedo et al., 2021).

In addition, studies show that this strong association is more significant with tobacco consumption, due to the presence of nicotine, which has been shown to be a factor in the reactivation of the disease in cases considered closed, as it decreases the resistance on the part of the carrier, promoting alveolar alterations and increasing the risk of bacterial persistence (Nunes, Sousa, Costa, Filgueiras & Almeida, 2020; Silva, Santos, Vieira, Queiroz & Naka, 2022).

Furthermore, the high number of adverse effects caused by the drugs leads patients to be very reluctant to continue using them (Chirinos et al., 2015; Torres & Herrera, 2015). Despite fighting the disease, the therapeutic effect also has serious gastrointestinal implications, so the pain caused culminates in patients giving up the medication. Among the most common adverse effects are gastric intolerances, skin rashes, nausea and vomiting, which are always linked to the nutritional status of the patient (Mendes et al., 2021).

The importance of monitoring by a health professional

The present study shows the importance of the multiprofessional team, as it helps with the difficulties faced by patients during treatment, mainly through education and health promotion (Rocha & Adorno, 2012; Wendling et al., 2012). Furthermore, assistance based on a relationship of trust between professional and patient is of paramount importance for monitoring, since poor reception endorses the increase in abandonment rates, in accordance with the studies of Paz et al. (2012), when studying the effectiveness of TB in a sample of 588 patients in the city of Belém-PA.

Therefore, professional training aimed at therapeutic listening, eliminating authoritarianism and considering the subjectivity and emotions of each patient, makes treatment effective and resolute. In this way, it provides the necessary means to reduce treatment non-adherence, thus building a relationship of trust and reciprocity. In continuity, taking medications is a bad experience due to the side effects, so the health team must embrace these mishaps, which is the result of training the team (Chirinos et al., 2015; Silva, Mello & Figueiredo, 2017).

The continuing education of health teams is seen as a defining aspect of this phenomenon, and is a precursor

to the therapeutic improvement offered to patients. A trained team is necessary in order to be able to deal with the mishaps that can lead patients to giving up on treatment. Forming ties and bonds is related to health care practices, with aim to the patient's attention and care (Santos et al., 2022).

CONCLUSION

Through this study, it was found that there are the most variable factors that reflect the abandonment of tuberculosis treatment, among them socioeconomic aspects (low income, illiteracy), gender and age group (male, between 15 and 45 years old), alcoholism and poor training of the health professionals responsible for welcoming the patient.

It was also verified that adequate monitoring of the patient by the team of professionals makes a difference to the progress of the treatment. The better trained the team members, the more successful they will be in terms of reducing abandonment, since this assistance is more complex in relation to other chronic illnesses. With the searches found, there was a limitation in finding studies that sought to highlight the importance of closer contact with the patient, in order to understand it from the user's own point of view.

Health care based on trust and reciprocity complies

with the humanized care recommended by the guidelines of the Brazilian Unified Health System. In this way, this scenario contributes both to the patient's material conditions and to the reduction of high rates of treatment abandonment.

As a limiting factor for this research, the scarcity of studies in the area with other methodological approaches is pointed out, whose theme would be treated in different ways. Based on the results exposed, it is intended to contribute to the formulation of public policies, as well as professional improvement in the face of resolute health care.

COMPETING INTERESTS

The authors declare that there are no conflicts of interest.

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AUTHOR CONTRIBUTIONS

Conceptualization: F. B. A. A., C. S. R., F. C. S. G., M. S. M. S. Formal analysis: C. S. R., M. A. S. M., F. P. S. L., P. L. Q. Methodology: C. S. R., N. C. D. N., I. S. G. S. Project administration: F. B. A. A. Supervision: F. B. A. A. Writing the initial draft: A. S. V. C., F. B. A. A. Revision and editing of writing: F. B. A. A.

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