

Review

Health Coaching in Improving Drug Adherence in Pulmonary Tuberculosis Patients: A Systematic Review

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ABSTRACT

Background: Treatment adherence is a key factor in the success of pulmonary tuberculosis therapy. Several studies have shown that health coaching-based interventions effectively improve medication adherence in pulmonary tuberculosis patients. **Aims:** This study aimed to conduct a systematic review to assess the impact of health coaching on improving medication adherence in patients with pulmonary tuberculosis.


Methods: This research article employs a systematic review design, utilizing the standard PRISMA approach to conduct a comprehensive analysis. The databases used for this systematic review include Google Scholar, ScienceDirect, and PubMed. Articles were systematically searched from 2019 to 2024 using a combination of keywords such as "hemodialysis," "guided imagery," "anxiety," and "patients in hospitals." The search included articles written in both English and Indonesian.

Results: Health coaching is efficacious in improving medication adherence in pulmonary tuberculosis patients. In addition, this intervention can also enhance patient knowledge and attitudes in preventing tuberculosis transmission.

Conclusion: Thus, health coaching is a promising strategy to improve medication adherence and preventive behavior in pulmonary tuberculosis patients.

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
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Introduction

Pulmonary tuberculosis (TB) is a chronic infectious disease caused by *Mycobacterium tuberculosis*, which leads to the formation of granulomas in the affected lung tissue. Despite advancements in medicine, TB remains one of the leading global causes of death. A primary challenge in managing pulmonary TB is patient non-adherence to treatment, which is frequently attributed to the lengthy duration of

therapy and the delayed onset of visible results, leading to patient fatigue and burnout. Patient compliance, including taking medication, preventing transmission, and maintaining nutritional intake, is the key to therapy success. Non-compliance can lead to drug resistance, treatment failure, decreased quality of life, and death (Sukartini et al., 2020).

In 2022, the World Health Organization (WHO) reported that the



majority of pulmonary tuberculosis (TB) cases occurred in Southeast Asia, followed by Africa (23%) and the Western Pacific (18%). Approximately 87% of global TB cases were concentrated in 30 high-burden countries, with over two-thirds of these cases originating from Bangladesh, China, the Democratic Republic of the Congo, India, Nigeria, Pakistan, and the Philippines. In Indonesia, pulmonary TB cases exceeded 724,000 in 2022 and rose to 809,000 in 2023, surpassing the pre-pandemic average of under 600,000 cases annually ([Kemenkes RI, 2023](#)).

Compliance with taking pulmonary tuberculosis medication is essential. If treatment is not carried out regularly and on schedule, TB germ immunity to Anti-Tuberculosis Drugs (OAT), known as *Multi-Drug Resistance* (MDR), can occur. This non-compliance increases the rate of treatment failure and the risk of decreased quality of life, illness, and death. In addition, patients with pulmonary TB with Acid-Resistant Bacilli (BTA) resistant to standard treatment can potentially transmit resistant germs in the community ([Nabillah et al., 2022](#)).

Medication adherence is a crucial factor in controlling the incidence of pulmonary tuberculosis. Some of the factors that influence this compliance include the patient's motivation to recover, the necessary lifestyle changes, the perception of the severity of the disease, the belief in the benefits of treatment, the difficulty of understanding and undergoing specific actions, the severity of the disease or the complexity of the therapy, the side effects of the medication, cultural beliefs that hinder compliance, and the level of satisfaction and quality of the relationship with the healthcare provider ([Putra & Sari, 2020](#)).

Compliance is an essential key to supporting healthy living behaviors. Pulmonary TB treatment will be effective if

patients undergo therapy with discipline. Preventive efforts are needed to stop the development of the disease from getting worse and prevent complications, one of which is by maintaining regularity in taking drugs. This compliance has a positive impact on the success of treatment. During therapy, pulmonary TB patients face adaptive responses to their physical, psychosocial, social, and environmental health, which is essential to measuring quality of life. The use of anti-TB drugs can affect the quality of life, both through physical impacts and psychosocial problems that arise during therapy. Therefore, measuring quality of life is essential in understanding the overall effect of pulmonary TB treatment ([Putri et al., 2023](#)).

Although tuberculosis treatment has high effectiveness, the cure rate is still not optimal. This is mainly due to the patient's non-compliance in following the rules and duration of therapy, which is often influenced by the low level of public knowledge. To improve medication adherence in pulmonary TB patients, nursing interventions such as health education, *health coaching*, the implementation of the DOTS (Directly Observed Treatment Shortcourse) strategy, and support from family are needed. Although the potential benefits of *health coaching* have been widely recognized in various health conditions, few systematic studies have explored this approach's effectiveness in improving TB patients' treatment adherence ([Sukartini et al., 2020](#)). Therefore, this study aims to systematically review the existing evidence on the role of health coaching in improving treatment adherence in pulmonary tuberculosis (TB) patients. The findings of this review are expected to provide a clearer understanding of the effectiveness and application of health coaching in TB

management and serve as a foundation for developing more comprehensive and evidence-based intervention strategies.

Methods

Study Design

This research article employs a systematic review design, utilizing the standard PRISMA approach to conduct a thorough and structured analysis.

Eligibility Criteria

This article uses the PICO (Population, Intervention, Comparison, Outcome) method to determine inclusion and exclusion criteria in a randomized review of various studies. Here are the criteria used:

Criteria	Inclusion	Exclusion
Population	Pulmonary Tuberculosis Patients	Apart from Pulmonary Tuberculosis Patients
Intervention	<i>Health Coaching</i>	-
Comparison	Do not use comparison factors.	-
Outcomes	Drug Adherence	-
Study design and type of publication	All research designs	Systematic review
Year of publication	2019-2024	< 2019
Language	English and Indonesia	-

Search Strategy

The databases used for this systematic review include Google Scholar, Science Direct, and PubMed. A systematic search for articles was conducted covering the period from 2019 to 2024, using keywords such as "Pulmonary Tuberculosis Patients," "Health Coaching," "Drug Adherence," and "Patients in Hospitals." The search was focused on articles published in both English and Indonesian.

Study Selection and Synthesis

The feasibility study of the articles was conducted by reviewing full-text articles. Those deemed relevant and appropriate were included in this review. The process and outcomes of the article selection are presented in the PRISMA diagram, including 8 high-quality articles.

Results

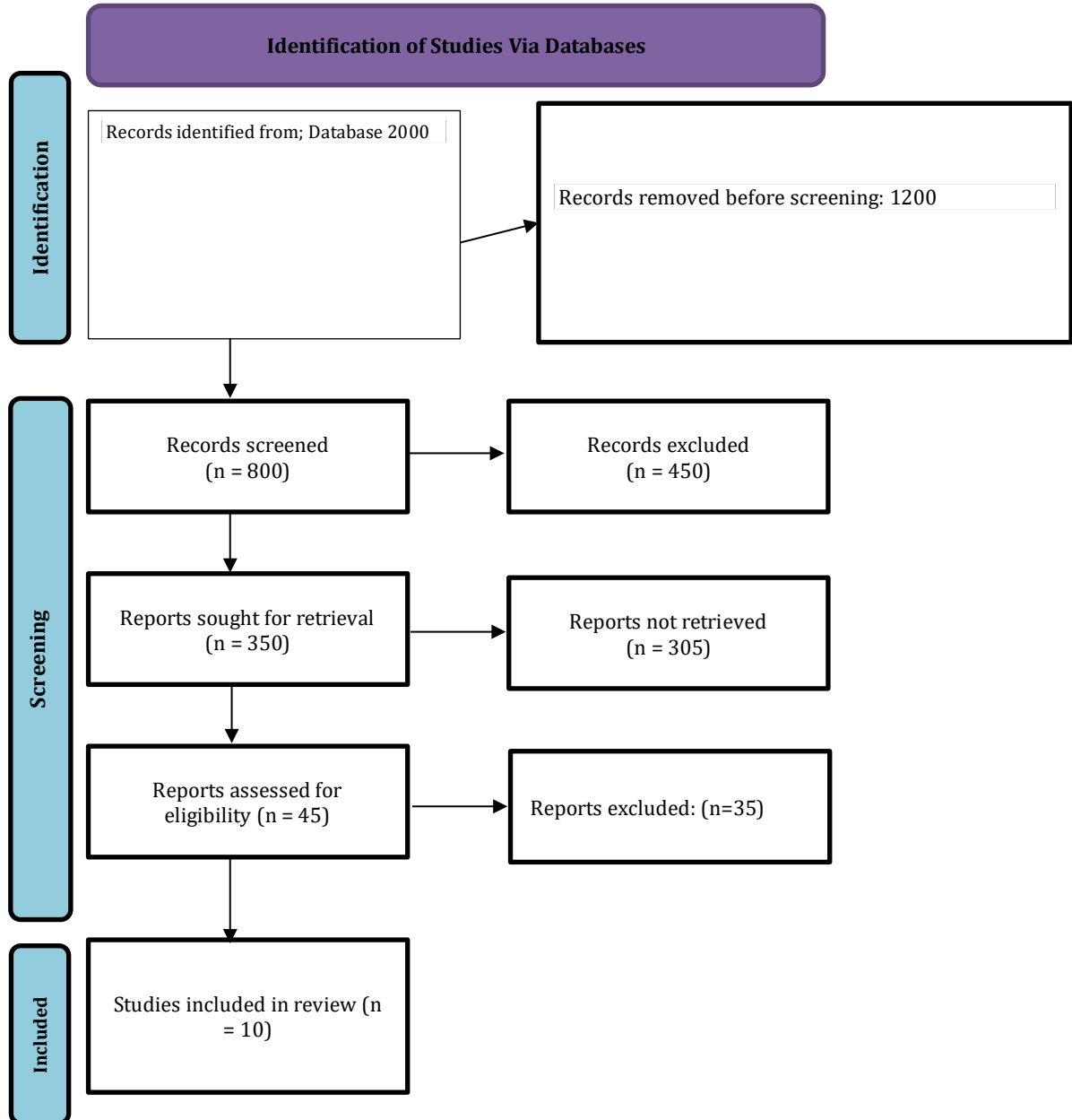


Figure 1. Flowchart PRISMA

Here are the results of a systematic review of the 8 best articles along with their research results:

No	Title, Author and Year of Publication	Research Results
1	The Effect of Health Coaching on Self Help Groups on Self Efficacy and Compliance with the Treatment Program for Pulmonary Tuberculosis Patients in Sukabumi City. (Wahyudin et al., 2021)	The results of the multivariate analysis indicated that health coaching was the most significant factor influencing both self-efficacy and adherence to the treatment program, with odds ratios (OR) of 28.9 and 6, respectively. Based on these findings, it is recommended that healthcare institutions implement health coaching as an additional intervention for self-help groups of pulmonary tuberculosis patients to support and enhance self-efficacy and treatment adherence throughout their care
2	Individual Coaching on Self-Efficacy, Control and Medication Adherence in Patients with Tuberculosis (Sukartini et al., 2020)	Individual coaching enhances self-efficacy, control, and medication adherence in patients with tuberculosis.
3	Model Theory of Planned Behavior to Improve Adherence to Treatment and the Quality of Life in Tuberculosis Patients (Putra & Sari, 2020)	The Theory of Planned Behavior Model Improves Medication Adherence and Quality of Life in Tuberculosis Patients.
4	Educational Intervention Based on Theory of Planned Behavior to Improve Compliance with Treatment, Nutrition, and Prevention of Transmission in Tuberculosis Patients. (Auditama et al., 2021)	Educational interventions or coaching based on Theory Of Planned Behavior have been proven to have an influence in improving tuberculosis, SN, PBC, intention, treatment adherence, nutrition adherence, and transmission prevention compliance.
5	Family Empowerment with a Health Coaching Approach to Conscious and Alert Families for Pulmonary Tuberculosis in the Working Area of the Payo Selincah Health Center (Sari et al., 2022)	Empowering Sasiga families through the Health Coaching method and health education has proven effective in increasing knowledge and improving the ability to treat and prevent the transmission of pulmonary tuberculosis. The PKM should optimize the TOSS tuberculosis program and provide support through the Wag's group to break the transmission chain of pulmonary tuberculosis within families and enhance recovery for patients.

No	Title, Author and Year of Publication	Research Results
6	Increasing Drug Adherence in Pulmonary Tuberculosis Patients Using Health Coaching-based Health Education Increasing Drug Adherence in Pulmonary Tuberculosis Patients Using Health Coaching-based Health Education (Mantouw & Puspitasari, 2024)	Providing Health Coaching-based Health Education Improves Drug Adherence in Pulmonary Tuberculosis Patients
7	The Effect of Health Coaching Based on the Health Belief Model on Increasing Self-efficacy and Medication Adherence in Pulmonary TB Patients at BBKPM Makassar (Nofriati, 2020)	Providing Health Coaching Improves Drug Adherence in Pulmonary Tuberculosis Patients
8	The Effect of Health Coaching on Self Help Groups on Self Efficacy and Compliance with Pulmonary TB Patient Treatment Programs in Sukabumi City (Wahyudin et al., 2021)	The results of the statistical test indicated a significant difference in the impact of health coaching on self-efficacy and adherence to treatment programs between pulmonary tuberculosis patients who received health coaching interventions in self-help groups and those who did not, in Sukabumi City.

Discussion

Pulmonary tuberculosis (TB) is one of the global health problems that still causes high morbidity and mortality rates. Patient adherence to treatment is a key factor in achieving recovery from TB, but the problem of non-adherence to treatment remains a major challenge in the management of this disease. Non-adherence to TB treatment can lead to drug resistance, disease recurrence, and increased mortality. Therefore, a more holistic approach and support patients in undergoing treatment consistently is urgently needed. One of the methods that is starting to be widely applied is *health coaching* ([Tülüce & Kutlutürkan, 2018](#)).

Health coaching is an approach that involves interaction between a patient and a trained health coach to help patients improve their health, manage diseases, and make lifestyle-related decisions. The main

goal of *health coaching* is to empower patients so that they can be more active in the process of treatment and management of their own health. In the context of pulmonary tuberculosis, *health coaching* can focus on increasing patient knowledge about the importance of adherence to treatment, overcoming psychosocial barriers, and motivating patients to maintain a lifestyle that supports recovery ([Supriatun & Insani, 2021](#)).

In pulmonary tuberculosis patients, the biggest challenges in treatment adherence are the long duration of treatment, the side effects of medications, as well as psychosocial problems such as anxiety, social stigma, and uncertainty about recovery. *Health coaching* can be a solution to overcome this challenge by providing ongoing emotional support and education to patients. One strategy that can be implemented is to build open

communication between patients and healthcare providers. *Health coaching* allows patients to discuss their concerns regarding medication and get a clear explanation of the side effects and the importance of continuing treatment. In addition, a health coach can help patients plan practical ways to stay on top of their medication schedule, for example by keeping track of their medication schedule or using reminders ([Mutudin et al., 2024](#)).

Some studies suggest that *health coaching* can improve adherence to treatment in a variety of health conditions, including pulmonary TB. By providing individualized and personalized support, *health coaching* can increase patient motivation, reduce anxiety, and overcome fears that may arise during treatment. This approach also helps patients feel more valued and understood, which in turn increases their sense of responsibility towards their own health. In addition, *health coaching* not only focuses on the physical aspects of treatment, but also considers psychosocial factors that can affect compliance, such as social stigma against people with TB and lack of social support. By addressing these issues, *health coaching* can create sustainable behavior change and reduce the barriers patients face in undergoing treatment. Some techniques that can be applied in *health coaching* to improve adherence to TB treatment include: **Education and Empowerment, Motivational Approach, Positive Reinforcement and Monitoring and Evaluation** ([Mantouw & Puspitasari, 2024](#)).

Health coaching can be an effective strategy in improving medication adherence in pulmonary tuberculosis patients. By providing holistic support, including education, motivation, and attention to psychosocial barriers, *health coaching* helps patients to be more active in managing their health, improve medication

adherence, and ultimately improve recovery rates. Therefore, the application of *health coaching* in the treatment of pulmonary TB can be an innovative and evidence-based approach to improve treatment outcomes and patients' quality of life.

Conclusion

Health coaching has been shown to be effective in improving medication adherence in pulmonary tuberculosis patients. A study showed that after being given health coaching-based health education, medication adherence in pulmonary tuberculosis patients increased. In addition, health coaching interventions also play a role in improving patient self-care. Another study showed that in the intervention group that received health coaching, there was an increase in medication adherence and measures to prevent the transmission of pulmonary tuberculosis, while in the control group there was no similar increase. Thus, health coaching is an effective strategy in improving medication adherence and preventive behavior in pulmonary tuberculosis patients. Widespread implementation of health coaching can be an important strategy in the global effort to control and eradicate pulmonary tuberculosis.

Authors Contributions

The authors' collective contributions to this literature review are integral to its scholarly rigor and depth: one author conceptualized the study framework, developed inclusion criteria, and conducted primary literature searches; another author critically evaluated the quality and relevance of selected sources, synthesized findings, and identified theoretical implications; while a third author meticulously structured the manuscript, integrated diverse viewpoints,

and ensured coherence and readability of the narrative.

Conflicts of Interest

There is no conflict of interest

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