

**Review**

**Improving Medication Adherence of Pulmonary Tuberculosis Patients with Health Coaching: Scoping Review**

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**ABSTRACT**

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**Background:** One of the most important ways to ensure the success of tuberculosis treatment is to increase patient adherence to treatment to prevent infection, achieve a cure, and avoid drug resistance, recurrence, and death. The purpose of the literature review is to determine the importance of health coaching in improving treatment adherence in pulmonary tuberculosis patients.


**Methods:** The stage of Scoping Review is to select journals by taking into account the year of publication and full text. Furthermore, articles and journals that are considered less relevant are excluded. Literature was obtained from 6 pertinent articles on Google Scholar, Indonesia One Search, DOAJ, and Garuda, with the keywords Health Coaching, Medication Adherence, and Tuberculosis.


**Results:** After a review of the selected articles, the results of Health Coaching show that it has a good impact on improving medication adherence in pulmonary tuberculosis patients.

**Conclusion:** Health coaching is effective in improving medication adherence among pulmonary tuberculosis patients. By equipping patients with the necessary knowledge, skills, and confidence, health coaching enhances self-management, supports better treatment outcomes, and helps prevent drug resistance, recurrence, and mortality.

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**Introduction**

Pulmonary tuberculosis is a significant global health problem. It is the cause of health problems among millions of people each year and now occupies the second leading cause of death from infectious diseases worldwide (Supriatun & Insani, 2021a). Pulmonary tuberculosis is an infection caused by Mycobacterium Tuberculosis germs, which generally

attack the lungs and partially attack outside the lungs, such as lymph nodes, skin, intestines/ digestive tract, brain membranes, and so on. This organism is commonly also referred to as Acid Resistant Balli (Sazali et al., 2023). World Health Organization data states that half of the world's population is affected by this disease, mostly in developing countries. In 2019, there were 10 million



cases of pulmonary tuberculosis incidents, which is equivalent to 120 cases per 100,000 people. In Indonesia, the number of pulmonary tuberculosis cases was 568,987 cases in 2019 ([Kemenkes RI, 2021](#))—a number of instances. Pulmonary tuberculosis can result in decreased endurance and physical weakness, resulting in limitations in carrying out daily activities. This results in an average loss of 3-4 months of working time, which results in an annual loss of income of around 20-30%. In addition to being economically harmful, pulmonary tuberculosis can have an impact on social life, create stigma, and even lead to social isolation ([Hidayat et al., 2020](#)).

Tuberculosis patients diagnosed with tuberculosis mainly only focus on the treatment procedures carried out, while in terms of prevention, it is still less considered. Treatment procedures are quite long and must be routinely a concern for tuberculosis patients in order to be able to achieve these targets. In fact, understanding the dangers of tuberculosis that can be transmitted also needs to be understood by tuberculosis patients ([Pradipta et al., 2020](#)). This requires support from health workers for tuberculosis patients and families so that they have initiative and enthusiasm in understanding the habits that can be a source of tuberculosis infection and the efforts that families can make to prevent mycobacterium tuberculosis from living in the patients and family's residence ([Putri et al., 2023](#)). Tuberculosis patients have an understanding of tuberculosis prevention obtained from various sources of information. Most tuberculosis patients receive information on preventing tuberculosis transmission from health workers who provide direction to

tuberculosis treatment programs. Some others obtain information by independently searching for information through internet search sources or book references. Tuberculosis patients need support from health workers to always guide them in various prevention and treatment efforts for a long time ([Sartika et al., 2019](#)).

Various factors determine success in carrying out health promotion strategies, one of which is health coaching: The role of technology in the process of implementing health coaching ([Hanif et al., 2020](#)). What is meant by technology in health coaching is that every method/method, technique, and media is planned to be applied based on the principles adopted in health coaching and communication principles. Health coaching is one of the nursing interventions with a strategy in the form of mentoring patients, providing opportunities for patients to determine what they want to achieve and determine solutions to achieve goals in the treatment program they are undergoing ([Nofriati et al., 2023](#)). Tuberculosis patients need assistance in understanding the therapy program they undergo. This is because patients still do not understand the dangers of tuberculosis, how to do treatment regularly, and how to transmit it to others. Nurses or health workers can do the application of health coaching to help tuberculosis patients during the treatment period ([Tülüce & Kutlutürkan, 2018](#)). Tuberculosis patients can identify the things they need, including understanding tuberculosis, prevention that can be done, and the use of appropriate health services. Several studies have shown the effectiveness of using health coaching methods in

improving medication adherence in pulmonary tuberculosis patients ([Wahyudin et al., 2021](#)).

## Methods

This article adopts a scoping review methodology guided by the PCC (Population, Concept, Context) framework to summarize and analyze previous research on topics related to pulmonary tuberculosis. The PCC framework ensures a structured approach by focusing on the Population (pulmonary tuberculosis patients), the Concept (health coaching and medication adherence), and the Context (managing tuberculosis treatment).

The scoping review method enables a comprehensive exploration of existing literature, identifying key concepts, evidence gaps, and future research opportunities. The literature search was conducted independently by the authors, focusing on relevant and appropriate studies to include in this review. Sources were retrieved from reputable databases, including Google Scholar, Indonesia One Search, DOAJ, and Garuda. The search process took place from April 10, 2024, to April 20, 2024, using predetermined keywords: "Health Coaching,"

"Medication Adherence," and "Tuberculosis."

Each author played a distinct role in conducting this scoping review. The first author led the literature search process and identified relevant articles for inclusion. The second author evaluated the quality and relevance of the articles, ensuring alignment with the research objectives. The third author analyzed and synthesized the key findings from the selected studies, highlighting core discussions and critical points.

Additionally, the authors mapped the data to identify key themes, trends, and evidence gaps across the selected articles. This mapping process facilitated a comprehensive understanding of the topic and ensured a systematic organization of the findings. To validate the analysis and interpretations, discussions were conducted with experts in the fields of pulmonary tuberculosis and health coaching. Their insights further enriched the review, providing deeper context and strengthening the study's conclusions. A total of seven journals and articles were identified, reviewed, and analyzed collaboratively to produce an organized overview supporting the objectives of this study.

## Results

The results of the article search are then reviewed and identified according to the variables used. Then, the feasibility test and obtained seven journals were selected through the specified criteria. The references used were obtained from journals in Google Scholar, Indonesia One Search, DOAJ, and Garuda.

Table 1. Characteristic Study

Title, Author, and Year	Research Results
The effect of health coaching on treatment adherence, self-efficacy, and quality of life in	After health coaching intervention, self-efficacy scale general score, and St. George Respiratory Questionnaire, total scores were found to be



Title, Author, and Year	Research Results
<p>patients with chronic obstructive pulmonary disease. Author: (<a href="#">Tülüce &amp; Kutlutürkan</a>, 2018)</p>	<p>statistically significantly different between the 2 groups in interaction values. There was a significant difference in the 8-Item Morisky Adherence Scale scores for the degree of treatment adherence between the groups.</p>
<p>Health Coaching Implementation on Improving Tuberculosis Prevention Behaviors in Tegal Regency. Author: (<a href="#">Supriatun &amp; Insani</a>, 2021a)</p>	<p>Health coaching can improve tuberculosis prevention behavior in tuberculosis patients undergoing treatment.</p>
<p>Individual Coaching on Self-Efficacy, Control and Medication Adherence in Patients with Tuberculosis. Author: (<a href="#">Sukartini et al.</a>, 2020)</p>	<p>The individual coaching method affects self-efficacy, the prevention of infection behavior, and the adherence to TB treatment as well as the suppression of infection and dropping out of the TB treatment.</p>
<p>How does Health Coaching Improve the Self-efficacy of Patients with Chronic Respiratory Disease? Scoping Review. Author: (<a href="#">Nofriati et al.</a>, 2023)</p>	<p>Health coaching to be able to change patient behavior, influence a healthier lifestyle and be able to manage their chronic diseases.</p>
<p>The Effect of Health Coaching-based Health Belief Model on Preventing the Pulmonary Tuberculosis Transmission at Puskesmas Karang Taliwang and Ampenan West Nusa Tenggara. Author: (<a href="#">Hanif et al.</a>, 2020)</p>	<p>The results showed that health coaching was to improve adherence to the prevention of infection (<math>p &lt; 0,001</math>). Health coaching based on the Health Belief Model had a positive effect on preventing infection transmission.</p>
<p>Pemberdayaan Keluarga dengan Pendekatan Health Coaching pada Keluarga Sadar dan Siaga Tuberculosis Paru di Wilayah Kerja Puskesmas Payo Selincah. Author: (<a href="#">Sari et al.</a>, 2022)</p>	<p>Empowering the Saiga family with the Health Coaching method and health education for families is effective in increasing knowledge and ability to treat and prevent pulmonary TB transmission. Primary Health Care should optimize the TB TOSS program and mentor with WhatsApp groups so that it will break the pulmonary chain. TB spread in the family. And improve recovery for patients with pulmonary TB.</p>
<p>The Influence of Health Counseling on Family Knowledge about Recovery of Pulmonary TB Patients in The Working Area of Puskesmas Burau. Author: (<a href="#">Lolo &amp; S</a>, 2019)</p>	<p>From the analysis, it can be interpreted that <math>H_a</math> is accepted and <math>H_0</math> rejected or there was an effect of health counseling on family knowledge about recovery of pulmonary TB patients. The research suggests that the health center should keep improving the health counseling routines that have been conducted and modify the counseling method so that TB patients and families are not saturated with the provision of information about pulmonary TB.</p>

## Discussion

Various literature studies obtained and analyzed by critical thinking state that the provision of health coaching interventions can significantly improve medication adherence in patients with pulmonary tuberculosis. Health coaching can be provided using various media and

approaches, with the press being able to increase adherence scores in taking medication in tuberculosis patients ([Hanif et al.](#), 2020). With the provision of health coaching for someone who lives a long life, more experience, broader knowledge, more profound expertise, and better wisdom can be gained when making decisions about his

actions. In the context of drug therapy, patient adherence is the degree of congruence between the dose taken and the dose of the drug prescribed. Therefore, the adherence measure presents a comparison between the two events: the patient's history of taking the medication and how the medication should be taken. Adherence is a multidimensional phenomenon determined by five interrelated dimensions, namely patient factors, therapeutic factors, health factors, environmental factors, and socioeconomic factors. All of these factors are important in influencing compliance, so no influence is more potent than any other factor ([Nastiti et al., 2024](#)).

Health coaching interventions can be achieved by approaching not only giving advice, teaching, or giving orders but also helping someone, supporting, and advocating. Health coaching interventions are provided through home visits ([Eom & Lee, 2017](#)). Factors that influence adherence in pulmonary tuberculosis patients are knowledge, trust, attitude, support of health workers, and so on. To achieve improved adherence based on the results of the literature review in pulmonary tuberculosis patients, a health coaching intervention is given, which aims to help patients identify, understand, and prioritize improving the health behavior of pulmonary tuberculosis patients. In addition, it assists patients in making decisions, planning, initiating, and maintaining health behaviors. The process of changing compliance during health coaching is inseparable from psychological barriers so that it can increase predisposing factors, including knowledge, beliefs, values, and attitudes. If predisposing factors increase, it will affect medication adherence in pulmonary tuberculosis patients ([Sari et al., 2022](#)).

In this literature review, pulmonary tuberculosis patients who have good self-

confidence and good knowledge about preventing transmission will have a positive attitude and are manifested by positive actions after being given health coaching because it will make pulmonary tuberculosis patients aware of the importance of self-confidence, prevention of transmission and adherence to taking medication in pulmonary tuberculosis patients and automatically positive actions will be carried out into habits ([Tülüce & Kutlutürkan, 2018](#)). Increased adherence to taking medication can suppress transmission of pulmonary tuberculosis and reduce dropout rates in pulmonary tuberculosis patients undergoing treatment ([Nastiti et al., 2024](#)). So, from the explanation above, Health Coaching has a vital role in improving medication adherence or taking medication in pulmonary tuberculosis patients.

## Conclusion

Health coaching plays a critical role in improving medication adherence among pulmonary tuberculosis patients. By providing patients with the knowledge, skills, tools, and confidence needed for self-management, health coaching enables them to participate in their treatment and achieve their health goals actively. The findings from the reviewed literature highlight the positive impact of health coaching in enhancing adherence, thereby contributing to better treatment outcomes, preventing drug resistance, reducing recurrence rates, and ultimately decreasing mortality. This underscores the importance of incorporating health coaching programs as a supportive strategy in managing chronic diseases like tuberculosis.

## Authors Contributions

Throughout the process of conducting this literature review, each author made significant contributions: one author

conceptualized the study scope, developed search strategies, and performed systematic literature searches across multiple databases; another author critically appraised the selected literature, synthesized key findings, and identified thematic patterns and research gaps; while a third author meticulously drafted and revised the manuscript, ensuring alignment with research objectives, and incorporating feedback from co-authors.

### Conflicts of Interest

No conflict of interest.

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