



An Overview of Factors That Support Self-Efficacy Among Outpatient Pulmonary Tb Patients at The Dr. H. Soewondo Kendal Regional General Hospital

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Article Info :

Received:
23-08-2026
Revised:
08-09-2026
Accepted:
14-09-2026

Abstract

Pulmonary tuberculosis requires prolonged treatment, making self-efficacy an important psychological resource for maintaining treatment engagement. This study aimed to describe factors supporting self-efficacy among outpatient pulmonary TB patients at Dr. H. Soewondo Kendal Regional General Hospital. A descriptive quantitative design was applied to 88 respondents selected through purposive sampling. Data were collected using a questionnaire covering performance accomplishment, vicarious experience, verbal persuasion, and physiological information, then analyzed univariately. Respondents had a mean age of 39.86 years, and most were male (59.1%), junior high school graduates (38.6%), and private-sector workers (31.8%). Performance accomplishment was categorized as successful in 77 respondents (87.5%). High vicarious experience was reported by 38 respondents (43.2%), positive verbal persuasion by 70 respondents (79.5%), and high physiological information by 34 respondents (38.6%). These findings indicate that personal success experiences and positive interpersonal encouragement were the strongest supportive factors, while observational and physiological-emotional factors showed greater variation. Strengthening patient-centered education, family support, peer modeling, and psychosocial assistance may help sustain self-efficacy during pulmonary TB treatment. These strategies may support consistent engagement with outpatient care throughout the long-term therapeutic process.

Keywords: Self-efficacy, Pulmonary tuberculosis, Performance accomplishment, Verbal persuasion, Outpatient care.



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INTRODUCTION

Pulmonary tuberculosis (TB), caused by *Mycobacterium tuberculosis*, remains a major communicable disease that requires prolonged and structured treatment to achieve recovery and prevent continued transmission (Kementerian Kesehatan Republik Indonesia, 2022; Addo et al., 2022). Although effective anti-tuberculosis therapy is available, the length and complexity of treatment place substantial demands on patients' daily activities, emotional endurance, and commitment to care. Treatment success therefore depends not only on appropriate pharmacological management but also on patients' ability to take medication consistently, attend follow-up services, and manage difficulties arising during treatment (Lolong et al., 2023). Indonesian evidence indicates that treatment non-adherence is influenced by interacting patient, treatment, health-service, and contextual factors, emphasizing the importance of strengthening patients' psychological and behavioral resources throughout the therapeutic process (Rianto et al., 2024).

Local case-notification data used in this study show that tuberculosis notifications increased from 2,273 cases in 2023 to 2,878 cases in 2024. This increase indicates that TB continues to require sustained attention within the local health system because increased case detection must be accompanied by treatment continuity and successful treatment completion. Studies conducted in Indonesia have shown that discontinuation and non-adherence to anti-tuberculosis medication remain important challenges even after patients have entered formal treatment programs (Lolong et al., 2023; Yani et al., 2022). The increasing number of notified cases consequently reinforces the need to

examine not only the epidemiological burden of TB but also patient-level resources that may help individuals remain engaged and confident throughout long-term therapy.

Self-efficacy represents an individual's belief in his or her capacity to perform the behaviors required to manage particular situations and achieve expected health-related goals. Among patients with pulmonary TB, this belief is particularly relevant because treatment requires repeated behaviors, persistence, adaptation to physical changes, and the ability to overcome barriers over an extended period. Evidence from TB populations indicates that stronger self-efficacy is associated with better medication-taking behavior, while psychological stress may influence patients' confidence in managing their illness and treatment demands (Kurniyawan et al., 2022; Mertisa et al., 2023). Self-efficacy should therefore be understood as an important psychological resource that can support patients in maintaining motivation and commitment while completing pulmonary TB treatment.

The conceptual framework applied in this study identifies four major sources that support self-efficacy, namely performance accomplishment, vicarious experience, verbal persuasion, and physiological information. Performance accomplishment develops when patients interpret previous successful experiences, such as completing a treatment phase, consistently taking medication, or successfully overcoming treatment difficulties, as evidence of their own capability. Vicarious experience can strengthen confidence when patients observe or learn from other people with similar conditions who are able to complete TB treatment successfully, thereby demonstrating that recovery is attainable. Verbal persuasion and favorable interpretations of physical and emotional conditions may further reinforce patients' confidence through encouragement, constructive communication, psychological support, and improved ability to cope with stress during treatment (Maynard et al., 2023; Zuo et al., 2022).

Self-efficacy also develops within a social and health-service environment rather than exclusively through individual psychological processes. Family members can provide emotional encouragement, reminders, practical assistance, and continuous motivation that help patients maintain confidence and engagement with treatment, while recent evidence demonstrates an important relationship between family support and adherence among pulmonary TB patients (Alinaitwe et al., 2025; Noviana et al., 2023). Health literacy is similarly important because patients need sufficient ability to obtain, understand, and use information regarding medication schedules, disease management, and treatment consequences, with a recent systematic review demonstrating a relationship between limited health literacy and poorer TB treatment adherence (Chauhan et al., 2024). Supportive communication from health professionals and psychosocial interventions can complement these resources by helping patients manage barriers and remain actively involved in care (Maynard et al., 2023).

Psychological and emotional conditions constitute another important context for understanding self-efficacy among people undergoing TB treatment. A multi-site Indonesian study found substantial intersections between TB-related stigma, depression, reduced quality of life, and unmet psychosocial support needs, indicating that patients frequently experience burdens extending beyond the physical manifestations of the disease (Fuady et al., 2024). Emotional distress, fear of social judgment, treatment fatigue, and uncertainty about recovery may affect how patients evaluate their ability to continue treatment, whereas supportive experiences can provide a more favorable basis for maintaining confidence (Addo et al., 2022; Fuady et al., 2024). Evidence that psychological interventions can improve psychological stress and quality of life among people with pulmonary TB further supports the importance of considering physiological and emotional information when examining factors that sustain patients' self-efficacy (Zuo et al., 2022).

Existing studies have extensively examined medication adherence, family and social support, health literacy, stigma, psychological distress, and psychosocial interventions among people with TB (Chauhan et al., 2024; Fuady et al., 2024; Lolong et al., 2023; Maynard et al., 2023). These studies provide important evidence that successful TB treatment is shaped by interactions between personal capacity, social relationships, psychological conditions, therapeutic demands, and the organization of health services. The literature assembled for the present study, however, provides comparatively limited descriptive evidence that simultaneously maps performance accomplishment, vicarious experience, verbal persuasion, and physiological information among outpatient pulmonary TB patients within a specific hospital setting. This limitation creates a relevant empirical basis for

examining the four sources of self-efficacy directly among pulmonary TB outpatients at Dr. H. Soewondo Kendal Regional General Hospital.

This study therefore aims to describe the factors that support self-efficacy among outpatient pulmonary TB patients at Dr. H. Soewondo Kendal Regional General Hospital. The investigation specifically examines performance accomplishment, vicarious experience, verbal persuasion, and physiological information as four dimensions that may contribute to patients' confidence in managing the demands of pulmonary TB treatment. Mapping these factors in an outpatient population is expected to provide a more contextual understanding of the psychological and social resources available to patients without making causal claims beyond the descriptive design of the study. The findings may provide baseline evidence for developing patient-centered nursing education, family involvement, psychosocial assistance, and health-service support aimed at maintaining confidence and treatment engagement among patients with pulmonary TB (Maynard et al., 2023; Rianto et al., 2024).

RESEARCH METHODS

This study employed a descriptive quantitative design to provide an overview of factors supporting self-efficacy among outpatient pulmonary tuberculosis patients at Dr. H. Soewondo Kendal Regional General Hospital. The study involved 88 pulmonary TB outpatients selected using a purposive sampling technique according to the eligibility criteria established by the researchers. Data were collected using a questionnaire designed to assess four sources of self-efficacy, namely performance accomplishment, vicarious experience, verbal persuasion, and physiological information. The instrument had undergone validity and reliability testing, with Cronbach's alpha coefficients of 0.742 for performance accomplishment, 0.768 for vicarious experience, 0.801 for verbal persuasion, and 0.945 for physiological information, indicating acceptable to excellent internal consistency.

Data collection focused on respondents' demographic characteristics and the four factors supporting self-efficacy during pulmonary TB treatment. The demographic characteristics examined included age, sex, educational level, and occupation, while the self-efficacy-related variables were measured through the corresponding questionnaire domains. Data were analyzed using univariate descriptive analysis to summarize the distribution of respondent characteristics and each self-efficacy-supporting factor. The results were presented in the form of frequencies, percentages, and descriptive summaries to provide a clear profile of self-efficacy-supporting factors among outpatient pulmonary TB patients at Dr. H. Soewondo Kendal Regional General Hospital.

RESULTS AND DISCUSSION

Sociodemographic Characteristics of Pulmonary TB Outpatients and Their Relevance to Self-Efficacy

The sociodemographic profile of the respondents provides an important context for understanding the factors that may support self-efficacy during pulmonary tuberculosis treatment. A total of 88 pulmonary TB outpatients participated in this study, representing patients with diverse demographic, educational, and occupational backgrounds. Such characteristics are relevant because the capacity to understand treatment instructions, adapt to prolonged therapy, seek support, and maintain confidence may differ across patient groups (Lolong et al., 2023; Rianto et al., 2024). Experiences of living with TB are also shaped by social roles, daily responsibilities, and individual circumstances that influence how patients perceive and manage the demands of treatment (Addo et al., 2022).

The respondents had a mean age of 39.86 years, indicating that the study population was predominantly within the productive adult age range. Patients in this stage of life commonly face simultaneous responsibilities related to employment, household needs, social relationships, and personal health, which may influence their ability to maintain consistent treatment behavior. Leddy et al. (2022) emphasized that social determinants and everyday responsibilities can affect continuity of TB care, while treatment experiences may become more difficult when therapeutic obligations compete with routine activities. The relatively productive age profile in this study may therefore provide both motivational resources for recovery and practical challenges that require strong confidence and adaptive capacity during treatment (Addo et al., 2022).

Male respondents constituted the majority of the sample, with 52 patients (59.1%), whereas 36 respondents (40.9%) were female. This distribution indicates that men formed a larger proportion of

pulmonary TB outpatients treated in the study setting, a pattern that is also frequently reported in TB populations where differences in exposure, health-seeking behavior, work environments, and social circumstances may affect disease occurrence and treatment experience (Lolong et al., 2023). Fernandes et al. (2024) demonstrated that medication adherence among adults with pulmonary TB is influenced by multiple individual and contextual factors rather than by a single demographic characteristic. Sex should therefore be interpreted as part of a broader patient profile that interacts with social support, psychological adjustment, health literacy, and access to care rather than as an independent determinant of self-efficacy.

Educational attainment was concentrated at the junior and senior secondary school levels, with 34 respondents (38.6%) having completed junior high school and 29 respondents (33.0%) having completed senior high school. Another 19 respondents (21.6%) had elementary school education, while only 6 respondents (6.8%) had completed higher education. Health literacy is particularly relevant in this context because patients must understand the duration of treatment, medication schedules, potential adverse effects, follow-up requirements, and consequences of treatment interruption (Chauhan et al., 2024). Alfa (2023) similarly highlighted the importance of knowledge, attitudes, and patient actions in relation to medication adherence, suggesting that understandable and repeated health education may be especially important for patients with heterogeneous educational backgrounds.

Occupationally, the respondents were distributed across private-sector employees, laborers, homemakers, farmers, and students, demonstrating substantial variation in everyday social and economic circumstances. Private-sector employment was the most common category, involving 28 respondents (31.8%), followed closely by laborers with 27 respondents (30.7%), while homemakers accounted for 14 respondents (15.9%), farmers for 13 respondents (14.8%), and students for 6 respondents (6.8%). Employment conditions can influence transportation opportunities, time available for clinic attendance, financial flexibility, and the ability to integrate medication schedules into daily routines, making occupational circumstances relevant to sustained engagement in TB care (Chatterjee et al., 2024; Shringarpure et al., 2023). Social determinants therefore need to be considered alongside psychological factors when evaluating the resources that enable patients to maintain confidence throughout long-term treatment (Leddy et al., 2022).

Table 1. Distribution of Sociodemographic Characteristics of Outpatient Pulmonary TB Patients at Dr. H. Soewondo Kendal Regional General Hospital (N = 88)

Variable	Category	Frequency (f)	Percentage (%)
Sex	Male	52	59.1
	Female	36	40.9
Education	Elementary school	19	21.6
	Junior high school	34	38.6
	Senior high school	29	33.0
	Higher education	6	6.8
Occupation	Laborer	27	30.7
	Farmer	13	14.8
	Homemaker	14	15.9
	Private sector	28	31.8
	Student	6	6.8
Total		88	100.0

The distribution presented in Table 1 illustrates that the respondents were not a homogeneous patient group, and this diversity is important when interpreting the subsequent self-efficacy findings. Self-efficacy develops through interactions between personal experiences, environmental feedback, emotional responses, and opportunities to overcome treatment-related difficulties, meaning that sociodemographic circumstances can shape the context in which these mechanisms operate. Mertisa et al. (2023) reported an association between self-efficacy and medication adherence among TB patients, while Kurniyawan et al. (2022) demonstrated that psychological stress is related to self-efficacy in pulmonary TB populations. These findings indicate that demographic characteristics should not be

treated merely as descriptive variables, because they may influence the circumstances through which confidence and coping resources are developed.

The predominance of junior and senior high school education further emphasizes the need for accessible and patient-centered communication during outpatient TB care. Chauhan et al. (2024), through a systematic review and meta-analysis, identified health literacy as an important component of tuberculosis control, particularly because limited understanding can interfere with appropriate treatment-related decisions and adherence behaviors. Rianto et al. (2024) also identified multiple potential risk factors associated with non-adherence among Indonesian pulmonary TB patients, reinforcing the need for structured assessment of individual barriers rather than assuming that all patients respond similarly to standard information. Effective education delivered in simple, repeated, and context-sensitive formats may consequently strengthen patients' understanding of treatment and support the verbal persuasion component of self-efficacy.

Occupational diversity may also influence the extent to which patients receive or can utilize social support during therapy. Patients employed in private-sector jobs or manual labor may face work schedules, income pressures, or limited flexibility in attending outpatient services, whereas patients who do not work outside the home may experience different patterns of dependency and family involvement. Chatterjee et al. (2024) demonstrated the substantial potential need for social support among people with TB, while Adisa and Durojaye (2025) identified relationships among social support, coping mechanisms, and treatment adherence in patients receiving drug-sensitive TB treatment. Family support is similarly associated with treatment adherence among pulmonary TB patients, showing that interpersonal resources may help patients manage barriers arising from employment and other daily responsibilities (Alinaitwe et al., 2025).

Psychosocial circumstances must also be considered when interpreting the characteristics of this outpatient population because demographic and socioeconomic pressures can coexist with stigma, anxiety, depression, and uncertainty about recovery. Fuady et al. (2023) demonstrated that TB-related stigma represents a measurable and culturally relevant issue within the Indonesian context, while Fuady et al. (2024) further showed that stigma, depression, reduced quality of life, and psychosocial support needs are interconnected among people with TB in Indonesia. Pradhan et al. (2022) similarly identified important relationships among perceived stigma, internalized stigma, depression, and treatment adherence in pulmonary TB patients. Psychological burden may therefore weaken patients' confidence in managing treatment demands, whereas supportive social and clinical environments may help preserve self-efficacy even when patients experience substantial emotional or social pressure (Panda et al., 2024).

The sociodemographic findings indicate that the 88 respondents represent a predominantly productive-age population, with more men than women, mainly secondary-level education, and a large proportion engaged in private-sector or manual work. These characteristics form the social setting in which performance accomplishment, vicarious experience, verbal persuasion, and physiological information are experienced during pulmonary TB treatment. Quality of life, treatment experience, emotional adaptation, and perceived ability to cope with illness are closely interconnected in TB populations, suggesting that self-efficacy should be interpreted within the patients' broader lived circumstances rather than as an isolated psychological construct (Quarcoopome & Tornu, 2022; Tornu & Quarcoopome, 2022). The present demographic profile therefore provides an essential foundation for interpreting the specific self-efficacy-supporting factors examined in the subsequent analyses, particularly the patients' successful treatment experiences and their observation of others who have successfully managed TB therapy (Zuo et al., 2022).

Performance Accomplishment and Vicarious Experience as Experiential Sources of Self-Efficacy

Performance accomplishment represents one of the most direct experiential foundations through which patients develop confidence in their ability to manage pulmonary tuberculosis treatment. The findings showed that 77 of the 88 respondents (87.5%) were classified as having successful performance accomplishment, whereas only 11 respondents (12.5%) were categorized as unsuccessful. This distribution indicates that most patients had accumulated positive experiences during treatment, such as maintaining medication routines, completing previous stages of therapy, attending scheduled follow-up visits, or perceiving improvement in their health condition. Positive

treatment experiences are important because successful engagement with therapy can reinforce patients' perceptions that they are capable of overcoming difficulties associated with prolonged TB care (Addo et al., 2022; Mertisa et al., 2023).

The high proportion of successful performance accomplishment suggests that most respondents had already acquired concrete evidence of their own ability to cope with treatment-related demands. Repeated success in performing recommended health behaviors can strengthen patients' confidence in maintaining similar behaviors when new challenges emerge during subsequent phases of treatment. Mertisa et al. (2023) reported that self-efficacy was related to medication adherence among patients with tuberculosis, indicating that confidence in one's own ability may contribute to greater persistence in following therapeutic recommendations. Experiences of successfully completing routine treatment activities may therefore function not merely as past events but as psychological resources that patients can draw upon throughout the remaining treatment period.

Successful personal experience is particularly relevant in pulmonary TB because treatment frequently involves repeated behavioral demands over an extended period. Patients may need to manage adverse effects, maintain medication schedules despite work or family responsibilities, attend health services regularly, and tolerate uncertainty regarding the speed of recovery. Shringarpure et al. (2023) demonstrated that adherence to TB treatment is shaped by patients' lived experiences, social environments, treatment burdens, and their ability to negotiate everyday obstacles. Each successfully managed obstacle can consequently contribute to stronger perceived capability and make future treatment challenges appear more manageable.

A smaller proportion of respondents, comprising 11 patients (12.5%), remained in the unsuccessful performance accomplishment category. This group is clinically important because unsuccessful experiences may include difficulty maintaining treatment routines, previous interruption, perceived treatment failure, persistent symptoms, or inability to cope effectively with barriers encountered during therapy. Lippincott et al. (2022) emphasized that changes in social and healthcare conditions can disrupt tuberculosis treatment adherence, while Lolong et al. (2023) identified multiple reasons for non-adherence among pulmonary TB patients in Indonesia. Negative treatment experiences may therefore undermine patients' confidence unless they are counterbalanced by appropriate education, encouragement, problem-solving assistance, and positive reinforcement from healthcare professionals and family members.

The second experiential source examined in this study was vicarious experience, referring to the development of confidence through observing or learning from the experiences of other people who face similar health challenges. Among the respondents, 38 patients (43.2%) were classified in the high vicarious experience category, 29 (33.0%) in the moderate category, and 21 (23.9%) in the low category. These findings show that approximately three-quarters of respondents had at least moderate opportunities to derive confidence from observing the experiences of others. Learning from patients who have successfully completed TB treatment can provide practical examples of coping strategies and demonstrate that recovery is achievable when treatment is followed consistently (Maynard et al., 2023).

Table 2. Distribution of Experiential Factors Supporting Self-Efficacy Among Outpatient Pulmonary TB Patients at Dr. H. Soewondo Kendal Regional General Hospital (N = 88)

Self-Efficacy Factor	Category	Frequency (f)	Percentage (%)
Performance accomplishment	Unsuccessful	11	12.5
	Successful	77	87.5
	Total	88	100.0
Vicarious experience	Low	21	23.9
	Moderate	29	33.0
	High	38	43.2
	Total	88	100.0

The pattern presented in Table 2 indicates that performance accomplishment was more uniformly positive than vicarious experience. Almost nine out of ten respondents reported successful personal experience, whereas fewer than half were categorized as having high vicarious experience,

suggesting that direct personal success may have been more consistently available than exposure to successful peer models. Patients attending outpatient services may have limited opportunities for sustained interaction with other individuals undergoing the same treatment, particularly when clinical encounters are brief and focused primarily on medication or routine examinations. Peer-based support and structured opportunities to exchange recovery experiences could therefore complement existing personal strengths by increasing patients' access to positive role models during treatment (Maynard et al., 2023; Lutfian et al., 2025).

Vicarious experience can be particularly influential when patients observe individuals whom they perceive as similar to themselves successfully completing treatment. Recovery stories from family members, neighbors, peers, or fellow TB patients may reduce uncertainty and allow patients to visualize a realistic pathway from diagnosis to treatment completion. Psychosocial support interventions are relevant in this process because they can create opportunities for patients to receive encouragement, share experiences, and normalize difficulties encountered during treatment (Maynard et al., 2023). Such interactions may strengthen self-efficacy by converting another person's success into evidence that similar outcomes can also be achieved by the observing patient.

The presence of 21 respondents (23.9%) in the low vicarious experience category indicates that not all patients benefited equally from observing successful treatment experiences. Limited contact with other TB patients, fear of disclosure, tuberculosis-related stigma, or social isolation may reduce opportunities for individuals to learn through observation and peer interaction. Fuady et al. (2023) showed that tuberculosis-related stigma remains a relevant issue in Indonesia, while Fuady et al. (2024) identified relationships between stigma, depression, quality of life, and psychosocial support needs among people with TB. When patients avoid discussing their illness because of anticipated social judgment, they may lose access to potentially beneficial peer models and supportive interpersonal experiences that could reinforce confidence.

Performance accomplishment and vicarious experience appear to operate as complementary rather than competing sources of self-efficacy. Direct success provides patients with personal evidence that they can cope with treatment, whereas observing others offers additional reassurance when patients encounter unfamiliar problems or temporarily doubt their own capabilities. Interventions using patient-centered digital or interpersonal support may facilitate both mechanisms by helping patients monitor successful treatment behaviors while also exposing them to encouragement and examples from others (Iribarren et al., 2022; Ridho et al., 2022). Digital adherence technologies and structured support systems should nevertheless be viewed as facilitators rather than substitutes for personalized communication because the effectiveness of such approaches depends on patients' access, acceptability, and individual treatment circumstances.

These findings have practical implications for outpatient nursing care because the strong performance accomplishment observed among respondents can be actively reinforced during follow-up encounters. Healthcare professionals can help patients identify specific achievements, such as completing an intensive treatment phase, maintaining medication schedules, improving symptoms, or successfully dealing with adverse effects, thereby making positive experiences more visible and meaningful. Patients with limited vicarious experience may benefit from appropriately designed peer-support activities, patient education sessions, or recovery narratives that provide credible examples of successful TB treatment without compromising confidentiality. Strengthening both personal mastery and observational learning may ultimately help patients maintain confidence, treatment engagement, and adaptive coping throughout the prolonged course of pulmonary TB therapy (Yani et al., 2022; Zuo et al., 2022).

Verbal Persuasion and Physiological Information as Psychosocial Sources of Self-Efficacy

Verbal persuasion and physiological information represent two complementary sources of self-efficacy that reflect how pulmonary TB patients interpret external encouragement and their own physical and emotional conditions during treatment. Unlike performance accomplishment and vicarious experience, which are primarily grounded in direct or observational experiences, these two factors emphasize interpersonal communication and patients' interpretations of bodily and psychological responses. Their relevance is particularly important in long-term tuberculosis therapy because patients may experience treatment fatigue, anxiety, physical discomfort, social stigma, and uncertainty regarding recovery (Fuady et al., 2024; Panda et al., 2024). Supportive communication

and favorable interpretations of health changes may therefore strengthen confidence and help patients remain engaged in treatment despite persistent therapeutic demands.

The original data showed that verbal persuasion was predominantly positive among the respondents. A total of 70 respondents (79.5%) were categorized as receiving positive verbal persuasion, whereas 18 respondents (20.5%) were categorized as receiving negative verbal persuasion. This finding indicates that most pulmonary TB outpatients received encouragement, motivation, advice, or positive information from people within their social and healthcare environments during treatment. Family members, healthcare professionals, peers, and other significant individuals may provide such encouragement, thereby reinforcing patients' perceptions that they are capable of completing treatment successfully (Alinaitwe et al., 2025; Lutfian et al., 2025).

Family involvement constitutes an important component of verbal persuasion because family members commonly interact with patients throughout the entire course of outpatient treatment. Encouragement to take medication regularly, reminders regarding clinical appointments, reassurance when symptoms persist, and expressions of confidence in the possibility of recovery may collectively strengthen patients' psychological resilience. Noviana et al. (2023) demonstrated that family support is closely related to medication adherence among patients with multidrug-resistant tuberculosis, while Alinaitwe et al. (2025) similarly reported an association between family support and treatment adherence among pulmonary TB patients. Consistent interpersonal support can therefore function as an external source of confidence that helps patients sustain self-efficacy when their personal motivation temporarily declines.

Healthcare professionals also contribute substantially to verbal persuasion through education, therapeutic communication, counseling, and reinforcement delivered during outpatient encounters. Clear explanations regarding medication schedules, treatment duration, expected therapeutic progress, adverse effects, and strategies for overcoming barriers can reduce uncertainty and strengthen patients' perceived capacity to manage their treatment. Ardiana et al. (2021) emphasized the value of intervention models designed to improve adherence among patients with tuberculosis, while Endalamaw et al. (2022) demonstrated that patients' satisfaction with healthcare services is an important dimension of TB care. Constructive communication from nurses and other health professionals may consequently strengthen self-efficacy by transforming medical information into practical encouragement and manageable treatment expectations.

Psychosocial and technology-supported interventions may further expand opportunities for verbal encouragement beyond conventional face-to-face consultations. Digital treatment-support tools can deliver reminders, feedback, educational messages, and patient-centered communication that reinforce daily treatment behavior, particularly for individuals who have limited contact with healthcare personnel between scheduled visits (Iribarren et al., 2022; Ridho et al., 2022). Liu et al. (2023) demonstrated that digital adherence technologies can support tuberculosis treatment outcomes, while Musiimenta et al. (2024) reported the feasibility and acceptability of technology-supported adherence approaches among people living with TB. Such interventions should complement rather than replace interpersonal support because patients' emotional concerns and treatment difficulties often require individualized communication and reassurance.

Table 4. Distribution of Verbal Persuasion Among Outpatient Pulmonary TB Patients at Dr. H. Soewondo Kendal Regional General Hospital (N = 80)

Category	Frequency (f)	Percentage (%)
Negative	18	20.5
Positive	70	79.5
Total	88	100.0

The predominance of positive verbal persuasion shown in Table 4 suggests that the social environment surrounding most respondents provided a relatively supportive foundation for maintaining confidence during treatment. Nevertheless, the 18 respondents who experienced negative verbal persuasion remain important because discouraging communication, criticism, misinformation, social rejection, or insufficient encouragement may weaken confidence and increase perceived

treatment burden. Tuberculosis-related stigma can restrict communication and social interaction, potentially reducing patients' willingness to seek encouragement from family members, peers, or healthcare providers (Fuady et al., 2023; Pradhan et al., 2022). Strengthening patient-centered communication and reducing stigmatizing responses should therefore remain integral to outpatient nursing care, particularly for patients who demonstrate limited social support or emotional vulnerability.

Physiological information represented the second factor examined in this subsection and reflected patients' evaluation of their physical and emotional responses during pulmonary TB treatment. The original findings showed that 34 respondents (38.6%) were classified in the high category, 30 respondents (34.1%) in the moderate category, and 24 respondents (27.3%) in the low category. This distribution demonstrates greater variation than that observed for verbal persuasion because fewer than half of the respondents reported highly favorable physiological information. Physical symptoms, medication-related discomfort, fatigue, sleep disturbance, anxiety, emotional stress, and perceptions of bodily improvement may all influence how patients evaluate their capacity to continue treatment (Quarcoopome & Tornu, 2022; Wang et al., 2024).

Table 5. Distribution of Physiological Information Among Outpatient Pulmonary TB Patients at Dr. H. Soewondo Kendal Regional General Hospital (N = 86)

Category	Frequency (f)	Percentage (%)
Low	24	27.3
Moderate	30	34.1
High	34	38.6
Total	88	100.0

The distribution in Table 5 indicates that physiological and emotional experiences were less uniformly positive than verbal support among the respondents. Patients who perceive improvements in breathing, appetite, energy, sleep, or other TB-related symptoms may interpret these changes as evidence that treatment is effective and that they are capable of continuing therapy, thereby strengthening self-efficacy. In contrast, persistent symptoms, medication-related burden, anxiety, and psychological distress may be interpreted as signs of limited personal capacity and can undermine confidence if adequate support is unavailable (Panda et al., 2024; Wang et al., 2024). Zuo et al. (2022) demonstrated that psychological interventions can improve stress and quality of life among patients with pulmonary TB, supporting the importance of addressing both physical and emotional experiences during treatment.

Psychological conditions are particularly relevant because tuberculosis can generate distress that extends beyond physical symptoms. Fuady et al. (2024) identified interrelationships among stigma, depression, quality of life, and psychosocial support needs among people with tuberculosis in Indonesia, while Pradhan et al. (2022) reported associations involving stigma, depression, and treatment adherence. Reduced quality of life may further alter how patients interpret their physical condition and their capacity to cope with treatment, as demonstrated by research examining health-related quality of life among people living with TB (Quarcoopome & Tornu, 2022; Tornu & Quarcoopome, 2022). Psychological assessment and emotional support are therefore relevant components of self-efficacy-oriented nursing care, particularly for patients whose physiological information falls within the low or moderate categories.

The contrast between positive verbal persuasion in 79.5% of respondents and high physiological information in only 38.6% provides an important interpretation of the overall findings. External encouragement appears to be relatively strong in this outpatient population, whereas internal interpretations of physical and emotional conditions remain more heterogeneous, suggesting that receiving encouragement does not automatically eliminate physical discomfort or psychological burden. Psychosocial interventions may be most effective when communication, emotional support, symptom management, and practical treatment assistance are integrated rather than implemented independently (Maynard et al., 2023). Patient-centered strategies should consequently reinforce positive messages while simultaneously helping patients recognize treatment progress, manage

symptoms, and reinterpret temporary physical or emotional difficulties as manageable components of the recovery process.

Taken together, performance accomplishment, vicarious experience, verbal persuasion, and physiological information demonstrate that self-efficacy among pulmonary TB outpatients is supported by a combination of personal, interpersonal, physical, emotional, and healthcare-related experiences. The findings suggest that outpatient nursing interventions should preserve successful treatment experiences, provide credible peer examples, strengthen family and professional encouragement, and assist patients in managing adverse physical and emotional responses. Digital adherence technologies, psychosocial support, health education, and individualized communication may provide complementary mechanisms for sustaining these sources of confidence, although they should remain responsive to patients' social circumstances and individual treatment barriers (Areas Lisboa Netto et al., 2024; Kafie et al., 2024; Maynard et al., 2023). Strengthening these interconnected sources of self-efficacy may ultimately contribute to more sustained engagement with pulmonary TB treatment and provide a practical foundation for patient-centered outpatient care at Dr. H. Soewondo Kendal Regional General Hospital.

CONCLUSION

The findings indicate that self-efficacy among outpatient pulmonary TB patients at Dr. H. Soewondo Kendal Regional General Hospital is supported by several interrelated experiential, social, and physiological factors. Performance accomplishment emerged as the most prominent factor, with 77 respondents (87.5%) categorized as successful, while 38 respondents (43.2%) reported high vicarious experience. Positive verbal persuasion was identified in 70 respondents (79.5%), demonstrating the important role of encouragement and support from family members, healthcare professionals, and the surrounding environment. Physiological information was categorized as high in 34 respondents (38.6%), indicating that patients' interpretations of their physical and emotional conditions also contribute to confidence during long-term tuberculosis treatment.

These findings emphasize that strengthening self-efficacy requires an integrated approach that reinforces successful treatment experiences, provides positive peer examples, enhances supportive communication, and assists patients in managing physical and emotional responses throughout therapy. Healthcare professionals should maintain patient-centered education, therapeutic communication, family involvement, and psychosocial support during outpatient care. Peer-support mechanisms may also be developed to enable patients to learn from individuals who have successfully completed treatment. Such strategies may help patients sustain confidence, adapt to treatment-related challenges, and remain engaged in pulmonary TB treatment until completion.

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