Research Article

The Relationship Between Family Support and Treatment Adherence Among Patients With Tuberculosis

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Abstract Tuberculosis is an infectious disease that requires long-term treatment and high compliance to ensure recovery. Family support is a crucial external factor that can influence patient behavior in completing the treatment regimen. This study aims to determine the relationship between family support and the level of medication adherence in tuberculosis patients at Soepardjo Roestam Regional General Hospital and Welahan 1 Community Health Center. The study used a descriptive analytical design with a *cross-sectional approach* . Data were collected through a family support questionnaire and the MMAS-8 (*Morisky Medication Adherence Scale*) questionnaire and analyzed using the *chi-square test* . The results showed that most respondents received good family support and had a high level of medication adherence. The results of the bivariate analysis showed a significant relationship between family support and medication adherence. The conclusion of this study is that optimal family support significantly increases medication adherence in tuberculosis patients, which is very important to prevent therapy failure and drug resistance.

Keywords: Family Support; Health Education; Medication Compliance; Patient Recovery; Tuberculosis Therapy.

1. Background

Tuberculosis (TB) remains a serious public health problem, both globally and nationally. This infectious disease is caused by the bacterium *Mycobacterium tuberculosis* and requires long-term treatment that must be taken regularly for six to eight months without interruption. The success of therapy is largely determined by the patient's level of compliance in taking Anti-Tuberculosis Drugs (OAT) according to applicable regulations (Ministry of Health of the Republic of Indonesia, 2022). However, the length of treatment often leads to boredom and fatigue in patients, which ultimately increases the risk of non-compliance or premature discontinuation of treatment. This condition can have serious consequences, such as the emergence of drug resistance or *Multi-Drug Resistant Tuberculosis* (MDR-TB) and failure of complete healing (Diel & Nienhaus, 2023).

Various literature studies show that adherence to treatment is not only influenced by internal individual factors but also heavily dependent on support from the immediate social environment. Without an adequate support system, patients tend to experience psychological distress and struggle to maintain consistency in long-term therapy. In this regard, family support is the most important external factor in shaping patient health behaviors. The family serves as a Medication Supervisor (PMO), not only monitoring medication consumption but also providing instrumental assistance in accessing healthcare services and emotional support that can maintain patient motivation throughout the treatment process (Tasyakurillah, 2023) .

Reviewing previous research, most studies have focused on the role of the PMO in the technical aspects of medication supervision. However, there is still a gap in research regarding the role of emotional and psychosocial family support, even though these aspects significantly influence patients' mental resilience in dealing with boredom during therapy. Several studies have

shown that even with physical supervision, non-compliance remains high due to a lack of comprehensive family involvement. Therefore, this study is urgent because it not only assesses medication supervision but also examines more comprehensively the role of family support in supporting medication adherence in tuberculosis patients in the work area of Soepardjo Roestam Regional General Hospital and Welahan 1 Community Health Center.

Based on the above explanation, this study aims to analyze the relationship between family support and treatment adherence in tuberculosis patients. This approach is expected to provide a deeper understanding of the extent to which family involvement acts as a protective factor against the risk of treatment non-adherence. The results are expected to contribute to the development of family nursing care and form the basis for consideration in formulating public health program policies to optimize the role of families as strategic partners in comprehensive tuberculosis control efforts.

2. Theoretical Study

Tuberculosis is a contagious infectious disease caused by the bacterium *Mycobacterium tuberculosis*, which primarily affects the lungs. Transmission occurs through droplets expelled by people with active pulmonary TB when coughing, sneezing, or talking. Tuberculosis remains a public health problem due to its high incidence and the need for long-term, regular, and continuous treatment. This long treatment duration often hinders patient adherence to medication (Pasaribu et al., 2023).

Tuberculosis therapy involves administering anti-tuberculosis drugs (ATDs), which must be taken for at least six months. Treatment success depends heavily on patient compliance, as ATDs must be taken according to the prescribed dosage, timing, and instructions. Non-adherence to treatment can result in inadequate bacterial elimination, prolonging the therapy period and increasing the risk of drug resistance (Pasaribu et al., 2023).

Non-compliance with tuberculosis treatment not only impacts the individual patient's condition but also poses a public health risk. Patients who do not complete their treatment still have the potential to transmit the disease to others, thus hampering tuberculosis control efforts. Therefore, adherence to treatment is a crucial component in breaking the chain of TB transmission in the community (Hardianita, 2025).

In tuberculosis treatment, family support plays a crucial role in helping patients maintain adherence. This support can include emotional support, motivation, supervision, and mentoring during long-term therapy. The family serves as a primary support system, helping patients maintain consistent medication intake despite boredom and potential side effects (Tasyakurillah, 2023).

The role of families as Medication Monitors (PMOs) has been proven to improve adherence in tuberculosis patients. Families are not only responsible for reminding patients to take their medication but also for providing psychological support to maintain their enthusiasm for completing their treatment. Continuous support can reduce the risk of patients forgetting or intentionally skipping doses (Tasyakurillah, 2023). Conversely, a lack of family support can negatively impact treatment adherence in tuberculosis patients. Patients who lack adequate attention, motivation, and supervision from their families tend to experience decreased morale and are at higher risk of discontinuing treatment prematurely. This can increase the likelihood of therapy failure and drug resistance (Rahayu et al., 2021; Warjiman et al., 2021).

Thus, the success of tuberculosis treatment is not solely determined by patient compliance, but is also greatly influenced by family support, a crucial external factor. Optimal family support can help improve treatment adherence, accelerate the healing process, and reduce the risk of transmission and drug resistance. Therefore, family involvement is integral to the success of tuberculosis treatment (Rahman et al., 2024; Tasyakurillah, 2023).

3. Research Methods

cross-sectional design. This design was chosen to examine the relationship between family support and treatment adherence in tuberculosis patients, where measurements of the independent and dependent variables were conducted simultaneously at a single data collection point (Sugiyono, 2022).

The population in this study was all tuberculosis patients undergoing treatment at Soepardjo Roestam Regional General Hospital and Welahan 1 Community Health Center in Jepara Regency. Sampling was conducted using a *purposive sampling technique*, with 63 respondents. Inclusion criteria included tuberculosis patients undergoing anti-tuberculosis drug treatment, being adults, having good communication skills, and being willing to participate as respondents. Exclusion criteria included tuberculosis patients with certain health conditions that prevented them from completing the questionnaire independently (Sugiyono, 2022).

Data collection was conducted using a structured questionnaire consisting of a family support instrument and a medication adherence instrument. The family support instrument was used to measure the level of support patients received during treatment, while medication adherence was measured using a medication adherence questionnaire previously used in previous studies. The questionnaire was completed in person with the assistance of the researcher to ensure respondents understood each statement (Gunawan et al., 2020).

Data analysis was conducted through univariate and bivariate analyses. Univariate analysis aimed to describe the characteristics of respondents and the distribution of family support and medication adherence variables. Bivariate analysis was used to examine the relationship between family support and medication adherence using the *Chi-Square test* , considering the categorical nature of the data analyzed. This study used a 95% confidence level , so the analysis results were declared significant if the probability value obtained was less than 0.05 (Sugiyono, 2022) .

4. Results And Discussion
Characteristics respondents

Respondent characteristics include age , gender, education , occupation, support family and compliance treatment of patients tuberculosis .

Table 1 Distribution Frequency Respondents Based on Age at RSMD Sorpardjo Roestam and Community Health Center Welahan 1 Jepara in September 2025 (n = 63).

Variables	n	Mean	Elementary School	Min-Max	95% CI
Age	63	41.52	15,983	16-69	37,50

The results of univariate analysis of age distribution indicate that of the 63 respondents involved in this study, the average age of respondents was 41 years, with the youngest being 16 years old and the oldest being 69 years old. The 95 percent confidence interval shows a lower limit of the average age of 37.50 years, indicating that respondents were generally in the adult age group. This relatively wide age range indicates that there is age variation among respondents, so that tuberculosis patients in this study came from various age groups with diverse characteristics. This finding is in line with the results of international studies, such as the study by Lemma Tirore et al., (2024) and in Somaliland by Ileye et al., (2025), which stated that although age can affect the physical burden and social responsibility of patients, the level of treatment adherence is more influenced by psychosocial factors, including family support, internal motivation, and patient perceptions of treatment, and is not solely determined by age factors.

Table 2 Distribution Frequency Respondents Based on Type Gender , Education, Occupation , Support Family , Efficacy Self , and Compliance Treatment at Sorpardjo Regional General Hospital Roestam and Community Health Center Welahan 1 Jepara in September 2025 (n = 63).

Characteristics	Category	Frequency (f)	Percentage (%)
Type sex	Man	44	69.8
	Woman	19	30.2
	Total		
Education	Elementary School	4	6.3
	JUNIOR HIGH SCHOOL	10	15.9
	Vocational School	6	9.5
	SENIOR HIGH SCHOOL	20	32.3
	D3/S1	22	35.5
	Total	63	
Work	Students	5	8.1
	housewife	6	9.7
	Employee	7	11.3
	Self-employed	44	71.0
	Total	63	
Support Family	No Good	15	23.8
	Good	48	76.2
	Total	63	
Compliance treatment	Low	8	12.7
	Good	55	87.3
	Total	63	

Based on the results of a study conducted at the TB Polyclinic of Soepardjo Roestam Regional General Hospital and Welahan 1 Community Health Center in Jepara, involving 63 respondents, the majority of pulmonary tuberculosis patients were male (44), while 19 were

female. This finding indicates that pulmonary TB cases in this study were more common in men. These results align with research by Febriyanti et al. (2024) and a World Health Organization (WHO, 2023) report, which states that the global burden of tuberculosis is higher in men, influenced by lifestyle habits such as smoking. Furthermore, Rakhmawati et al. (2021) explain that women tend to seek treatment more quickly due to concerns about transmitting the disease to family members.

In terms of educational attainment, the majority of respondents had a diploma or bachelor's degree, while only a small proportion had elementary school education. In theory, higher education is expected to improve patient understanding of the importance of medication adherence. However, the results of this study indicate that formal education does not always guarantee optimal medication adherence. This finding aligns with research by Suswanti et al. (2006), which found that formal education had no significant relationship with tuberculosis patient adherence to anti-tuberculosis medication.

Based on occupational characteristics, the majority of respondents were self-employed, while the smallest number were students. Most respondents worked in indoor environments, potentially increasing the risk of TB transmission due to inadequate ventilation and high social interaction. This finding aligns with research by Lee et al. (2021), which found that individuals working in high-density indoor environments have a greater risk of exposure to *Mycobacterium tuberculosis* . Furthermore, work demands can influence preventive behavior and treatment adherence, particularly among active workers.

Furthermore, the study results showed that most respondents received good family support during their treatment. This support included reminders for medication schedules, assistance with check-ups at health facilities, monitoring medication consumption, and providing motivation during therapy. This situation indicates that family involvement plays a crucial role in helping patients maintain treatment adherence. These findings align with a scientific review by Lutfian et al. (2025) , which states that family support plays a significant role in improving treatment adherence in tuberculosis patients.

In line with good family support, the majority of respondents in this study demonstrated a high level of treatment adherence. Of the 63 respondents, 55 followed their anti-tuberculosis drug therapy as scheduled, while only a small number were inconsistent. This high level of adherence reflects patients' understanding of the importance of completing therapy to achieve optimal recovery. These findings align with research by Nugiawati and Deasy (2023), which reported that regular monitoring and a supportive environment play a crucial role in improving treatment adherence. This confirms that treatment adherence is a key factor in the success of TB therapy and the prevention of drug resistance.

Bivariate analysis

Table 3 Relationship Between Support Family To Compliance Treatment Patient Tuberculosis at RSMD Sorpardjo Roestam and Community Health Center Welahan 1 Jepara in September 2025 (n = 63).

Category Support Family	Category Compliance treatment						OR	*p-value*
	Compliance Low		Compliance Good		Total			
	n	%	n	%	n	%		
Support No Good	7	46.7	8	53.3	15	100.0	4,443	0,000
Support Good	1	2.1	47	97.9	48	100.0		
Total	8	12.7	55	87.3	63	100.0		

The results of the bivariate test using *Chi-Square* showed a significant relationship between family support and treatment adherence in tuberculosis patients. Of the 63 respondents, almost all patients who received good family support showed adherence to therapy, namely 47 out of 48 people. In contrast, in patients with less family support, the proportion of non-adherence was relatively high, with 7 out of 15 respondents (46.7%) not taking their medication regularly. This difference was clearly seen compared to the group that received good family support, where only one patient (2.1%) was non-adherent.

Statistical analysis showed a p-value of 0.000, indicating a statistically significant relationship between family support and medication adherence. Furthermore, based on a 95% confidence interval, patients with poor family support had a 4.4-fold higher risk of non-adherence than those with good family support. These findings underscore the importance of family support

in maintaining patient adherence, through monitoring medication intake, assistance during check-ups, and emotional support throughout the treatment process.

The results of this study are consistent with the findings of Rokhmawati and Dewi (2023) and Simatupang et al. (2023), who stated that tuberculosis patients with good family support tend to be more compliant with therapy. However, a small proportion of patients with low family support remain compliant, likely due to internal factors such as personal motivation and patient understanding of the importance of therapy, as explained by Fitriani et al. (2024). Overall, adherence to tuberculosis treatment is influenced by the interaction between external and internal factors, with family support being a dominant factor in the success of therapy.

5. Conclusion and Suggestions

Based on The results of the study showed that most respondents were around 41 years old or in the late adult category, with the majority being male, having a diploma or bachelor's degree, and working as self-employed. These demographic characteristics provide important insights into the factors influencing treatment adherence in tuberculosis patients. Furthermore, the study also found that the majority of patients received good family support, which has been shown to play a significant role in helping them undergo OAT therapy regularly and diligently .

Statistical analysis revealed a significant relationship between family support and treatment adherence, with patients receiving good family support tending to adhere more consistently to therapy than those with less support. This confirms that the success of tuberculosis treatment is not solely determined by medical intervention but is also significantly influenced by the role of the family through supervision, mentoring, and emotional support throughout the therapy process. Therefore, family involvement is a key factor in supporting patients in completing treatment.

This study had several limitations, including the need for assistance when completing the questionnaires by some patients, the fact that some had recovered before the study was conducted, and time constraints that impacted the completeness of data collection. Therefore, it is recommended that future studies involve a larger sample size and consider additional variables to ensure more representative results and provide a basis for developing effective intervention strategies to improve adherence to tuberculosis treatment through the role of the family.

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