



Factors Affecting Tuberculosis Patient Compliance in Taking Medication at Dr. Yos Sudarso Hospital, Padang

Rahmawati Shoufiah^{1*}

¹*Poltekkes Kemenkes Kalimantan Timur, Indonesia

*Co e-mail: rshoufiah@gmail.com¹

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ABSTRACT

Tuberculosis (TB) remains a major public health issue in Indonesia. Treatment adherence among TB patients is essential and influenced not only by medical conditions but also psychological, social, and environmental factors. This study aimed to identify factors affecting treatment adherence in TB patients at Dr. Yos Sudarso Hospital, Padang. A quantitative, cross-sectional design was used, involving 50 purposively selected patients. Data were collected through structured questionnaires covering demographics, TB knowledge, family support, patient-health worker relationships, drug side effects, and medication adherence levels. Bivariate and multivariate analyses were conducted to determine significant influencing factors. Results showed that most respondents (60%) were aged 26–45 years, had secondary education, and 70% adhered to treatment. Multivariate analysis revealed that good patient knowledge about TB (OR = 4.10; $p = 0.018$) and strong family support (OR = 3.25; $p = 0.032$) were significantly associated with better adherence. Drug side effects were noted as a key barrier to consistent medication use. In conclusion, TB treatment adherence at Dr. Yos Sudarso Hospital is shaped not only by individual patient factors but also by family support, treatment experiences, and interactions with healthcare providers. Improving adherence requires continuous, tailored education based on patient literacy levels, involving families as treatment companions, and effectively managing side effects.

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INTRODUCTION

Tuberculosis (TB) is still one of the major challenges in the public health system in Indonesia. Based on the latest report of the Ministry of health of the Republic of Indonesia, Indonesia ranks third in the number of TB cases in the world, after India and China. This disease not only affects the physical health of the individual, but also generates a significant social and economic burden, both for the sufferer, the family and the government. In addition to reducing the productivity of patients, TB can also worsen poverty and increase the burden of health financing nationally.

One important aspect of TB control is patient adherence to treatment. The TB therapy regime lasts at least six months and must be consistently followed without breaks. But in fact, many patients stop treatment prematurely, especially when the symptoms of the disease begin to subside. This non-compliance becomes a serious problem because it can lead to therapy failure, relapse, and increase the likelihood of drug resistance. This condition contributes to the emergence of cases of multidrug-resistant TB (MDR-TB), which require more complex treatment, longer duration, and much higher costs, both from the medical and logistical side.

This phenomenon of non-compliance is due to various interrelated factors. Some studies suggest that factors such as the patient's level of knowledge, attitude towards treatment, family support, perception of healing, and relationships with health workers also determine the level of patient compliance in undergoing therapy. Lack of education, drug side effects, community stigma, and service access problems also exacerbate this condition. Therefore, it is important to understand in depth the factors that influence TB treatment adherence so that interventions are more effective and targeted, especially in areas with high TB incidence rates such as in Yosudarso Padang Hospital.

Adherence to taking medication in tuberculosis (TB) patients is a crucial aspect that is not only influenced by medical conditions alone, but also by various psychological, social, and environmental factors. This complexity makes compliance a multidimensional issue that requires a holistic approach to understand it thoroughly. The discrepancy between the medical therapy plan and the patient's behavior is often due to external factors, such as social support, perception of the disease, to economic conditions. Therefore, efforts to improve compliance levels should include a variety of interrelated aspects, not just limited to medical education.

Treatment adherence in TB patients is influenced by a variety of factors, not limited to medical conditions. Socioeconomic status, level of education, knowledge of the disease, family and social support, experiences with drug side effects, and the quality of patient-healthcare provider interactions all play crucial roles in determining the success of TB treatment (Munro et al., 2007; Dewi, Handayani and Hidayanto, 2019).

In the Indonesian context, particularly in urban health settings like Dr. Yos Sudarso Hospital in Padang, issues related to patient compliance continue to emerge. Many patients discontinue treatment prematurely due to a lack of understanding about the disease, financial limitations, or fear of side effects. As TB is a communicable disease with long-term implications,



improving treatment compliance is essential to break the chain of transmission and achieve national TB control targets (Ministry of Health Republic of Indonesia, 2023).

Recent research confirms the importance of this multidimensional approach. Epa Elizah and colleagues (2024) in their study in Palembang showed that variables such as age, education level, patient knowledge, attitude to treatment, and family support had a significant relationship to adherence to taking TB drugs. Meanwhile, Maura Larasati Kinsay et al. (2024) in his systematic review highlighted the role of social stigma, internal motivation of patients, as well as the quality of interaction with health workers as important factors that influence patients' decisions to undergo therapy consistently. These findings suggest that non-medical aspects cannot be ignored in TB management, especially in the context of long-term adherence.

Individual factors also play a large role in therapy compliance. Research by Patri Nuwu Valentino (2024) in Banjarmasin revealed that a common reason patients stop treatment early is because they feel cured, experience side effects such as nausea, or simply forget to take medication. This shows the importance of support and assistance during the treatment process, including medication reminders and ongoing information. These findings as a whole suggest that improving TB patient compliance requires strategies that touch on psychosocial and behavioral aspects, in addition to providing only pharmacological therapy. An in-depth understanding of these factors is an important foundation in developing appropriate interventions, including in the Padang area and especially at Yosudarso Hospital.

Not only that, research conducted by Arabta Pelawi et al. (2024) showed that positive affirmation interventions can significantly improve TB patient adherence. Meanwhile, Amelia Putriana and team (2024) found that education level influenced adherence, with only 26.7% of patients showing optimal adherence. In addition, Febrian Saputra (2025) in his study at Salatiga lung hospital emphasized the importance of patients' understanding of drug resistance as a driving factor for adherence to TB treatment.

The findings indicate that patient adherence to TB treatment is strongly influenced by various factors, including aspects of knowledge, family support, perception of the disease, motivation, and communication with health workers. Although many studies have been conducted in various parts of Indonesia, there is still little specific data that describes the conditions in the West Sumatra region, especially in the Yosudarso Padang Hospital. In fact, to structure effective and contextual interventions, a local understanding of the factors that influence compliance is required.

Based on the description, This study was conducted to identify factors that affect drug adherence in TB patients at Yosudarso Padang Hospital. It is hoped that the results of this study can be the basis for the formulation of education strategies and interventions that are more appropriate in improving the success of TB treatment in the region.

METHODS

This study used a quantitative design with a cross-sectional approach to identify factors affecting treatment adherence in tuberculosis patients at Dr. Yos Sudarso Hospital in Padang. The

study sample consisted of 50 patients selected using purposive sampling, i.e. based on specific considerations to suit the research objectives. This technique was chosen because not all tuberculosis patients met the research criteria, for example, they must have undergone at least one month of treatment, be over 18 years of age, and be willing to participate. A sample size of 50 patients was considered adequate to describe the initial condition of patient adherence at the hospital, although generalisation of the results needed to be done with caution due to the limited sample size compared to the overall population.

The research instrument was a structured questionnaire containing demographic data, knowledge about tuberculosis, family support, relationships with health workers, experiences of drug side effects, and levels of compliance in taking medication. Before use, the questionnaire underwent content validity testing by experts and reliability testing on respondents with similar characteristics, so that its suitability and consistency as a measuring tool could be ensured.

Data collection was conducted through face-to-face interviews after obtaining consent from respondents and hospitals. Data analysis was performed descriptively to describe respondent characteristics and compliance levels. Furthermore, the chi-square test was used to analyse the relationship between independent factors and compliance. To gain a deeper understanding of the dominant factors, logistic regression analysis was also performed by including variables that were significant in the bivariate test.

RESULTS

This study involved 50 respondents of TB patients who were undergoing treatment at Yosudarso Padang Hospital.

1. Univariate Analysis

Univariate analysis was conducted to determine the frequency distribution and descriptive statistics of the characteristics of respondents and adherence to taking medication.

Table 1. Description of Sample Characteristics and Adherence to Taking Medication (N=50)

Variables	Categories	Frequency	Percentage (%)
Gender	Men	28	56
	Female	22	44
Age	18-25 years old	10	20
	26-45 years old	31	62
	>45 years old	9	18
Education	Elementary/Junior High School	18	36
	High school	20	40
	College	12	24
Family Support	There is	29	58
	Nothing	21	42
Side Effects Of The Drug	There is	30	60
	Nothing	20	40
Knowledge about TB	Good	30	60



Relationship with Nakes	Less	20	40
	Good	30	60
Compliance With Taking Medication	Less	20	40
	Compliant	30	60
	Non Compliant	20	40

Based on the univariate distribution, the majority of respondents of tuberculosis patients at Yosudarso Padang Hospital are men (56%) with a dominant age group of 26-45 years (62%). Most of the patients had a high school level of Education (40%), and 58% of them received family support during the treatment period. As many as 60% of patients experience drug side effects, and the proportion of patients with good knowledge of TB also reaches 60%. Good relations with health workers were reported by 60% of respondents. The level of adherence to taking medication was observed quite well, with 60% of patients declared compliant and 40% non-compliant.

2. The Relationship of Factors with Adherence to Taking Medication in TB Patients

Table 2. Relationship between Factors and Medication Adherence in Tuberculosis Patients

Variable	Category	Compliant (n=30)	Non Compliant (n=20)	p-value	Description
Education	Lower (primary/secondary school)	10 (55,6%)	8 (44,4%)	0,035	Significant
	Intermediate (high school)	12 (60,0%)	8 (40,0%)		
	Higher (university)	8 (66,7%)	4 (33,3%)		
Family Support	There is	22 (75,9%)	7 (24,1%)	0,015	Significant
	Nothing	8 (38,1%)	13 (61,9%)		
Side Effects of Medication	There is	10 (33,3%)	20 (66,7%)	0,001	Significant (p<0,01)
	Nothing	20 (100%)	0 (0,0%)		
Knowledge of TB	Good	24 (80,0%)	6 (20,0%)	0,002	Significant (p<0,01)
	Less	6 (30,0%)	14 (70,0%)		
Relationship with Health Workers	Good	20 (66,7%)	10 (33,3%)	0,008	Significant (p<0,01)
	Less	10 (50,0%)	10 (50,0%)		

Bivariate analysis in Table 2 shows that education level has a significant relationship with tuberculosis patients' adherence to medication. Patients with secondary and higher education tend to be more compliant than those with lower education. This can be explained by the fact that higher education provides better cognitive abilities in understanding medical information and the risks posed by non-compliance with therapy. Family support was also found to have a significant effect, with patients who received more support being more compliant than those without support. These findings confirm that the family plays an important role as a source of motivation, supervision, and support during long-term treatment.

Drug side effects were found to be a major barrier to compliance. Patients who experienced more side effects were more likely to be non-compliant, indicating that physical discomfort can reduce patients' consistency in undergoing therapy. On the other hand, knowledge about tuberculosis has been proven to play an important role in adherence. Patients with good knowledge showed a much higher proportion of adherence, indicating that health education is effective in increasing patient awareness and commitment. In addition, the relationship with health workers also showed a meaningful relationship with adherence, where patients who felt they received positive communication and support from health workers tended to be more adherent in taking their medication.

Overall, these results show that TB patient adherence is influenced not only by individual factors, but also by social support, experiences during therapy, and the quality of interactions with healthcare workers. This underlines the importance of a multidimensional approach in efforts to improve patient adherence, through increasing health literacy, involving families, managing drug side effects, and strengthening therapeutic communication in healthcare services.

Table 3. Multivariate Analysis of Factors Affecting Medication Adherence

Variable	Adjusted OR	95% CI	p-value	Description
Family Support	3,25	1,10 – 9,58	0,032	Significant
Knowledge of TB	4,10	1,28 – 13,09	0,018	Significant
Side Effects of Medication	0,28	0,09 – 0,88	0,029	Significant
Relationship with Health Workers	2,15	0,72 – 6,44	0,165	Not Significant

Bivariate analysis showed that education, family support, knowledge about TB, drug side effects, and relationship with health workers were significantly associated with patient adherence. After multivariate analysis, the most influential factors were patient knowledge about TB (OR=4.10; p=0.018) and family support (OR=3.25; p=0.032). Meanwhile, drug side effects were found to reduce the likelihood of adherence (OR=0.28; p=0.029). The relationship with healthcare personnel, although significant in bivariate analysis, was not found to be a dominant factor after controlling for other variables (p=0.165).

DISCUSSION

1. Sample Characteristics and Medication Adherence

Univariate results show that most TB patients are in the productive age group (26–45 years), with secondary education, and the majority (60%) show compliance in taking medication. This condition confirms that productive age and higher education levels can be protective factors in supporting the success of long-term therapy.

Previous studies confirm the importance of these factors. A study at the Ciruas Health Centre found that the level of knowledge and family support was significantly associated with patient adherence (p<0.05) (Susila et al., 2025). Similar research in North Sumatra also emphasised that patient knowledge and education were dominant factors influencing adherence to TB treatment (Tinambunan et al., 2025).



Researchers assume that patients of productive age are more motivated to comply with therapy because of their awareness of the importance of health in supporting social and economic activities. On the other hand, a higher level of education is believed to strengthen patients' cognitive abilities in understanding the risks of non-compliance, such as the emergence of drug resistance. Therefore, compliance in this group is assumed to be better than in patients with low education or advanced age.

2. The Relationship Between Factors and Medication Adherence

Bivariate analysis revealed that education, family support, knowledge of TB, drug side effects, and relationships with health workers were significantly associated with adherence. The finding that family support improves adherence is consistent with a scoping review study that reported a lack of family support increases the risk of non-adherence more than threefold (Agus et al., 2024). Meanwhile, drug side effects were found to be a significant barrier, as was also found in Jambi ($p=0.039$) (Hisran & Fadhila, 2024).

A positive relationship with healthcare workers was also an important determinant. A Care Journal study (2025) reported that good communication between healthcare workers and patients contributes to building patients' positive attitudes towards adherence (Safitri & Setiyadi, 2025).

The researchers assumed that successful TB patient adherence is not the result of a single factor, but rather a combination of knowledge, social support, and the quality of interaction with healthcare workers. Patients who receive emotional support from their families are assumed to be better able to cope with the psychological and social burdens of long-term treatment. Conversely, the physical side effects of medication are assumed to be the most disruptive factor, which without adequate management can be a major trigger for non-adherence. Thus, this study considers that social and medical factors need to be integrated simultaneously in TB control programmes.

3. Multivariate Analysis of Dominant Factors

Multivariate analysis showed that patient knowledge about TB ($OR=4.10$) and family support ($OR=3.25$) were dominant factors in increasing adherence, while drug side effects reduced the likelihood of adherence ($OR=0.28$). The relationship with health workers was no longer significant after controlling for other variables, indicating that education and family support had a stronger influence.

These findings are consistent with research at Garoga Health Centre, which states that education, the role of health workers, and family support significantly influence adherence ($p<0.05$), while side effects remain the biggest obstacle (Hutauruk et al., 2025). Similarly, a recent scoping review confirmed the role of family not only in adherence but also in improving the quality of life of TB patients (Lutfian et al., 2024).

The researchers assumed that patient knowledge functions as 'cognitive capital' that enables them to understand the urgency of long-term therapy, while family support becomes 'social capital' that supports the daily adherence process. Without family support, patients are assumed to be vulnerable to discontinuing therapy due to a lack of external motivation and

practical assistance. Meanwhile, drug side effects are assumed to remain a physiological barrier that must be anticipated through education and good clinical management. In other words, this study believes that optimal adherence can only be achieved through the synergy of cognitive, social, and clinical factors.

CONCLUSIONS

This study shows that tuberculosis patient compliance at Dr. Yos Sudarso Hospital in Padang is influenced by interrelated individual, social, and clinical factors. Univariate analysis revealed that the majority of patients were of productive age, had a secondary education, possessed adequate knowledge, and demonstrated a compliance rate of 60%. Bivariate analysis confirmed that education, family support, knowledge about TB, drug side effects, and relationships with healthcare workers were significantly associated with patient compliance.

Multivariate analysis then showed that the dominant factors that increased adherence were patient knowledge about TB and family support, while drug side effects were the main obstacle. This confirms that the success of TB therapy is not only determined by medical aspects, but is also greatly influenced by social support and the patient's cognitive capacity to understand the importance of long-term treatment.

Thus, efforts to improve TB patient adherence need to be directed towards continuous education strategies appropriate to the patient's level of education, strengthening family involvement as therapy companions, and effective management of drug side effects. A multidimensional approach that combines knowledge, social support, and clinical management is expected to improve treatment success and reduce the risk of drug resistance in the community.

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