



ANALYSIS OF MEDICATION COMPLIANCE IN PATIENTS WITH TUBERCULOSIS (TB)

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ABSTRACT

Health is a fundamental right of every individual and a crucial measure of a nation's well-being. Infectious diseases such as pulmonary tuberculosis (TB) remain a major public health challenge in Indonesia. TB not only threatens individual health but also has economic and social impacts. It is the third leading cause of death from infectious diseases, ranking third after heart disease and respiratory infections. TB affects all age groups, from children to the elderly. This objective For analyze compliance TB patients in drinking TB medication Method: Design used is analytic with a cross approach sectional. Variable age, type gender, education, occupation, and medication adherence. The population in this study was 31 TB patients in the working area of the Klampis Community Health Center, Bangkalan. Instrument in study use questionnaire level of medication compliance, This questionnaire has been tested for validity and reliability > 0.05. analysis use multiple linear regression. Research result show age almost half of it 56-65 years a total of 14 (45.2%). Education is almost half of them are elementary school student, amounting to 14 (45.2%). Type sex part big man a total of 22 (71%) jobs almost half of it farmer a total of 10 (32.2%) and self-employed a total of 10 (32.2%) and compliance drink partial TB medication big show obedient a total of 21 (67.7%) and no obedient a total of 10 (32.3%) in the working area of the Klampis Health Center, Bangkalan. Pulmonary tuberculosis (TB) is a serious infectious disease and remains a leading cause of death from infectious diseases in Indonesia, especially among vulnerable groups such as children and the elderly. Despite control efforts, long-term treatment and the risk of drug resistance remain major challenges.

Keywords: compliance medicine; tuberculosis; tuberculosis medicine

How to cite (in APA style)

Subairi, M., & Hasina, S. N. (2026). Analysis of Medication Compliance in Patients with Tuberculosis (TB). Indonesian Journal of Global Health Research, 8(1), 597–600. <https://doi.org/10.37287/ijghr.v8i1.1264>.

INTRODUCTION

Pulmonary tuberculosis (TB) is an endemic infectious disease in Indonesia. In fact, it is the third leading cause of death, after cardiovascular disease and upper respiratory tract infections, in all age groups, from children to the elderly. TB is also the leading cause of death among infectious diseases (Samsugito, 2020). According to data from the Ministry of Health, there were 312 tuberculosis cases in 2019, 301 in 2020, 146 in 2021, and an increase to 475 in 2022, or 475 cases per 100,000 Indonesians. The treatment success rate (SR), which is the sum of cures and treatment completion rates, is a metric used to assess the effectiveness of TB treatment. In Indonesia, the tuberculosis treatment success rate was 84.6% in 2018, dropping to 82.9% in 2019, and then doubling to 86.0% in 2021 (Ministry of Health, 2021). In 2020, the number of tuberculosis (TB) sufferers in several regions in East Java and Madura was significant. In East Java, approximately 41,693 TB cases were recorded. Surabaya had the highest number of cases. Meanwhile, on Madura Island, TB cases are also quite high, with Pamekasan recording 754 cases, and other areas such as Sumenep, Sampang, and Bangkalan each reporting thousands of cases—Sumenep with 1,824 cases, Sampang 1,612, and Bangkalan 1,250 cases.

The increasing number of tuberculosis patients each year increasingly impacts the level of non-compliance with treatment in tuberculosis patients. The role and motivation of families play a crucial role in increasing adherence to treatment through monitoring and providing support to patients (Made, 2022). Pulmonary TB treatment consists of several phases: the initial phase lasting

1-2 months and the continuation phase lasting 3-4 months (Hasina, S. N., et al., 2023).. The patient's level of compliance with the recommended drug therapy depends on how severe the patient's symptoms are. Long-term non-compliance with treatment has negative health effects and increases treatment costs. The development of bacterial resistance to several anti-TB drugs, or multidrug resistance, which causes very severe and much more deadly pulmonary tuberculosis, is more than non-compliance with pulmonary tuberculosis treatment, which reduces patient recovery and increases relapse (Yeremia Mamahit et al., 2019). Efforts to prevent and manage the spread of the disease are not limited to individuals and medical staff, but families also play an active role in the care of tuberculosis patients. Researchers sought to understand the role of family members in tuberculosis treatment, assessing not only family presence but also family support. The role of families in tuberculosis patients is one of the considerations when patients begin treatment planning (Made, 2022).

METHOD

Study This the design used is analytic with a cross approach sectional. Variable age, type gender, education, occupation, and medication adherence. The population in this study was 31 TB patients in the working area of the Klampis Community Health Center, Bangkalan Regency. Instrument in study use questionnaire level of medication compliance analysis use multiple linear regression.

RESULT

Table 1.
Characteristics Patient

Characteristics Patient	f	%
Age		
36-45 Years Old	10	32.3
46-55 Years	7	22.6
56-65 Years	14	45.2
Education		
Elementary School	14	45.2
Junior High School	5	16.1
Senior High School	9	29.0
Collages	3	9.7
Gender		
Man	22	71.0
Woman	9	29.0
Work		
Farmer	10	32.3
Self-Employed	10	32.3
Housewife	8	25.8
Civil Servant	3	9.7

Table 1, the data shows that almost half are aged 56-65 years (14%, 45.2%). Almost half have primary education (14%, 45.2%). The majority are male (22%, 71%). Almost half are farmers (10%, 32.2%) and self-employed (10%, 32.2%).

Table 2.
Compliance with Taking TB Medication

Compliance with taking medication	f	%
Not obey	10	32.3
Obedient	21	67.7

Table 2 shows that the majority of TB medication compliance was 21 (67.7%) and 10 (32.3%) were non-compliant. From table 3 it is obtained Age: A beta coefficient of 0.137 indicates that age has a positive effect on adherence, but its significance value is 0.375 (>0.05) meaning the effect is not statistically significant. Education: A beta coefficient of 1.018 with a t-value of 5.829 and a significance of 0.000 indicates a very significant effect. This means that education has a significant positive effect on adherence to TB medication. Gender: A beta coefficient of 0.237 indicates a positive effect, but its significance value is 0.108 (>0.05), which means it is not statistically

significant. Occupation: A beta coefficient of -0.447 with a significance of 0.027 indicates a significant negative effect on adherence. This means that certain types of work can significantly reduce adherence to TB medication.

Table 3.
Factor Analysis Adherence to Taking TB Medication

Model	Standardized Coefficients	t	Sig .
Beta			
1 (Constant)		2,470	.020
Age	.137	.902	.375
Education	1,018	5,829	.000
Gender	.237	1,667	.108
Work	-.447	-2,336	.027

DISCUSSION

Based on the study results, TB patient compliance in taking medication showed that the majority, 21 patients (67.7%), adhered to the recommended treatment. However, 10 patients (32.3%) remained non-compliant. This non-compliance can lead to treatment failure and the development of drug resistance, which prolongs the duration and complexity of treatment. Treatment adherence reflects patient behavior in relation to everything necessary for optimal treatment, including adherence to OAT, which is a key requirement for successful treatment. (Syaifiyatul H, 2020). Non-compliance with treatment for pulmonary tuberculosis patients is caused by patients forgetting to take medication and taking it accidentally, reducing or stopping treatment when unwell, and patients not taking medication on time, and patients who are very late in re-examining sputum, failure of TB treatment will cause the chain of transmission of germs that have resistance to it to continue to expand and increase the risk of primary resistance. (Aldina et al. et al., 2020). According to researchers, TB patient compliance with medication is crucial for successful treatment. Although 67.7% of patients are compliant, 32.3% remain non-compliant, generally due to negligence, forgetting to take medication, or not taking it on time. This non-compliance risks prolonging treatment and worsening TB transmission, particularly with the emergence of drug resistance.

One factor that can influence adherence to TB medication is age. Research shows that almost half of patients are aged 56-65 years (14%, 45.2%). Age is a determining factor in patient non-adherence to treatment because both young and old have the motivation and desire to recover and live healthily and always pay attention to their health. Both young and old still follow treatment and recommendations for taking pulmonary tuberculosis medication (Elizah, 2024). According to researchers, elderly patients (56-65 years) often face greater challenges in adherence to tuberculosis (TB) treatment due to memory decline, worsening physical conditions, and the presence of comorbidities or complications. In addition, difficulty accessing health facilities and long treatment durations often reduce their motivation to follow therapy consistently. However, if they have family support, these challenges can be overcome. Family support can provide the necessary supervision, encouragement, and practical assistance, so that elderly patients are more likely to adhere to treatment and achieve better results.

Another factor that can influence adherence to TB medication is education. Research shows that almost half of primary school students (14% of primary school students) have primary school education (45.2%). Health education significantly influences the level of family independence in caring for TB patients under the DOTS program. Therefore, effective and comprehensive health education is crucial in increasing the level of family independence in caring for TB patients under the DOTS program (Adiaksa , 2023). According to researchers, patients with lower levels of education often have limited understanding of the importance of consistent treatment and the risks of non-adherence. Lack of information about the serious consequences of stopping treatment or not following medical instructions properly can lead patients to believe they are cured after symptoms subside, even though the TB bacteria are still active in the body. Conversely, patients with higher

education tend to be more aware of the importance of long-term treatment and the risk of drug resistance if non-adherence occurs.

Another factor that can influence adherence to TB medication is gender. Research shows that the majority of patients are male (22%, 71%). Gender is a factor associated with adherence to anti-TB medication, but men and women differ in several ways, including social relationships, environmental influences, lifestyle habits, biological and physiological differences, and equal access to information, including information on TB treatment (Lestari, 2022). According to researchers, gender is a factor influencing adherence to TB treatment, with men tending to be less compliant than women. This could be due to men's social role as breadwinners, which makes them prioritize their health less or feel they don't have enough time for routine treatment. Conversely, women are generally more disciplined due to their role as primary caregivers, although they also face obstacles such as limited access to health services. Therefore, a gender-based approach is needed to improve adherence, taking into account the different challenges faced by men and women.

CONCLUSION

This study shows that education and occupation significantly influence TB medication adherence. Patients with higher education tend to be more adherent, while certain types of employment can reduce adherence. Age and gender did not significantly influence adherence. Although 67.7% of patients were adherent, 32.3% were non-adherent, primarily due to advanced age, low education, male gender, and lack of family support. This highlights the need for an approach that considers these factors to improve TB medication adherence.

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