



## ORIGINAL RESEARCH

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# Relationship Between Knowledge Level of Pulmonary Tuberculosis Patients and Compliance In Taking Anti-Tuberculosis Drugs (Oat)

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Vivi Selawati Furiyana

[Furiyana88@gmail.com](mailto:Furiyana88@gmail.com)**Abstract**

**Background:** tuberculosis disease is still a problem in the world, one of these diseases is about the treatment program. In Indonesia is the country with the third highest tuberculosis cases in the world after India and China. The purpose of this study is to determine whether there is a relationship between the level of knowledge of pulmonary tuberculosis patients with compliance with taking anti-tuberculosis drugs (OAT).

**Methods:** a Cross Sectional approach to tuberculosis patients. The sampling method uses total sampling. There were 69 respondents asked to fill out a questionnaire regarding the level of knowledge with compliance with taking anti-tuberculosis drugs (OAT).

**Results:** this study showed that the level of knowledge was sufficient at 44.9%, the level of knowledge was good at 36.2%, the level of knowledge was lacking at 18.8%. And the level of compliance with taking anti-tuberculosis drugs (OAT) with moderate compliance was 55.1%, high compliance was 24.6%, low compliance was 20.3%. Data analysis using Pearson Chi-Square Test with p-value result of 0.011 ( $p < 0.005$ ).

**Conclusions:** The results that have been found mean that there is a significant relationship between the level of knowledge of pulmonary tuberculosis patients with compliance in taking anti-tuberculosis drugs (OAT) at the Sentra Medika Cibinong Hospital Polyclinic.

**Keywords:** Knowledge, Medication Compliance, Tuberculosis

## Introduction

Mycobacterium Tuberculosis is a bacteria that causes tuberculosis infection which is transmitted through droplets and social interaction, and is one of the vectors of transmission when someone makes physical contact and mucus droplets are inhaled by healthy people (Sapto, 2021). Tuberculosis is still a problem in the world, one of which is the problem of treatment programs. The obstacle in

the treatment of tuberculosis is the lack of compliance of tuberculosis patients, the cause of which is due to a person's lack of knowledge with compliance in taking medication anti-tuberculosis (Prasetya, 2021). According to the World Health Organization (WHO) report, Indonesia is the country with the third highest number of tuberculosis cases in the world after India and China.

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Currently, the number of tuberculosis sufferers in Indonesia has reached 824,000 people, making Indonesia one of the countries with 60% of tuberculosis cases worldwide (Ministry of Health of the Republic of Indonesia, 2021). Tuberculosis cases in West Java province in 2023 were detected the highest in private health facilities with 66,756 cases of tuberculosis. Meanwhile, in Bogor City there were 7,777 cases of tuberculosis (Bogor City Health Office, 2023).

The national tuberculosis treatment success rate is 85% and is still below the global target of 90% in 2022. Based on SITB data, 8,978 cases of tuberculosis and 43,417 suspected tuberculosis cases were detected in Bogor City in 2023, but the success rate of tuberculosis treatment using OAT was only 75% and did not achieve the target of 90% success. Therefore, non-compliance of tuberculosis patients with treatment has increased the rate of treatment failure and increased the risk of other diseases to death. Lack of knowledge about pulmonary tuberculosis is a risk factor for failure in treatment. On the other hand, successful therapeutic management of tuberculosis cases requires patient education about treatment, so that the tuberculosis treatment program ensures that patients regularly take anti-tuberculosis drugs (OAT) at full doses to prevent drug resistance.

Based on a preliminary study conducted at the Sentra Medika Cibinong Hospital, there was a population of tuberculosis patients from December 2023 to February 2024, namely 219 tuberculosis patients. The data obtained showed that 174 patients routinely took anti-tuberculosis drugs (OAT). The results of interviews with three patients, one of the patients was undergoing the second tuberculosis treatment because in the first tuberculosis treatment the patient was bored of taking medication and the distance from the house to the health facility was quite far which made the patient fail the first treatment. Then the second patient said that he was undergoing additional treatment for 9 months, which initially the patient underwent treatment for 6 months completely. However, when checking sputum and X-rays after completing treatment for 6 months, tuberculosis bacteria were still found and the doctor recommended additional treatment for 3 months. Based on the results obtained in the statement above, the author is interested in conducting a study on the relationship between the level of knowledge of pulmonary tuberculosis patients and compliance with taking anti-tuberculosis drugs

(OAT) at the Sentra Medika Cibinong Hospital Polyclinic.

### Methods

This study uses a quantitative method using a Cross Sectional approach, namely finding a relationship between one and another in the same population. This study was conducted at the Lung Polyclinic of Sentra Medika Cibinong Hospital with a population of 69 respondents with sampling using the Total Sampling technique.

The instrument in this study used a knowledge level questionnaire that had been taken from Tri Retno Widyaningrum's research using the Guttman measurement scale, a firm answer was obtained, namely "True or False" and consisted of 15 questions. While the medication adherence level questionnaire used the MMAS-8 (Mororisky Medication Adherence Scaele) questionnaire, which is a medication adherence questionnaire using closed questions with the answers "Yes" and "No".

### Results

This study involved pulmonary tuberculosis patients with 60 respondents. The data obtained from the analysis of respondents' answers are as follows:

**Table 1. Respondent Characteristics**

Characteristics	Freq	%
<b>Age</b>		
Adults (20-44 Years)	48	69.6%
Pre-Elderly (45-59 Years)	12	17.4%
Elderly >60 years	9	13.0%
<b>Gender</b>		
Woman	30	43.5%
Man	39	56.5%
<b>Education</b>		
No school	2	2.9%
SD	4	5.6%
Junior High School	8	11.6%
Senior High School	37	53.6%
Higher Education Institution (HEI)	18	26.1%
<b>Work</b>		
Doesn't work	22	31.9%
civil servant	6	8.7%
Private sector employee	35	50.7%
Businessman	6	8.7%
<b>Mileage</b>		
Near (<5 km)	44	63.8%
Far (>5 km)	25	36.2%

Table 1 shows the results from 69 respondents with the majority being adults (20-44 years) as many as 48 respondents (69.6%), with almost all of them being male as many as 39 respondents (56.5%), with the majority having high school education as many as 37 respondents (53.6%), with the majority of jobs being private employees as many as 35 respondents (50.7%), and the distance from





home to health facilities being mostly close as many as 44 respondents (63.8%).

**Table 2. Level of Knowledge of Tuberculosis Patients**

Level of Knowledge	Freq	%
Good	25	36.2%
Enough	31	44.9%
Not enough	13	18.8%

Table 2 shows that from 69 respondents, the majority of respondents had sufficient knowledge about tuberculosis, with 31 respondents (44.9%) having sufficient knowledge.

**Table 3. Compliance with Taking Anti-Tuberculosis Drugs (OAT)**

Medication Compliance (OAT)	Freq	%
High Compliance	17	24.6%
Moderate Compliance	38	55.1%
Low Compliance	14	20.3%

Table 3 shows that from 69 respondents, the majority of them were compliant with taking anti-tuberculosis drugs (OAT) with moderate compliance of 38 respondents (55.1%).

**Table 4. Level of Knowledge of Pulmonary Tuberculosis Patients with Compliance in Taking Anti-Tuberculosis Drugs (OAT)**

Level of Knowledge		Medication Compliance						P-value	
		Tall		Currently		Low			amount
		N	%	N	%	N	%		
Good	9	36	14	56	2	8	25	0.011	
Enough	7	22.6	19	61.3	5	16.1	31		
Not enough	1	7.7	5	38.5	7	53.8	13		
Total	17	24.6	38	55.1	14	20.3	69		

Table 4 shows that in the Chi Square Test above, the p-value results were obtained, namely 0.011 from the value ( $p = <0.05$ ) which means that  $H_0$  is rejected, which means that there is a significant relationship between the level of knowledge of pulmonary tuberculosis patients and compliance in taking anti-tuberculosis drugs (OAT) at the Sentra Medika Cibinong Hospital Polyclinic.

## Discussion

### Respondent Characteristics

Based on the results of the analysis, this study shows that most respondents who contracted tuberculosis were adults (20-44 years) as many as 48 respondents (69.6%). This study is in line with research conducted by Siti Nur Hasina, et al. (2023) where this age is considered a productive age that does more outdoor activities and social interactions. Based on gender, the majority of those affected by

tuberculosis were men, as many as 39 respondents (56.5%). This study is also in line with research conducted by Retno Ayu Wardhani (2022). This shows that because men tend to be more active smokers, this can reduce the body's immune system and are more easily exposed to pulmonary tuberculosis germs. Based on the level of education where the majority of respondents have a high school education level of 37 respondents (53.6%). This study is also in line with research conducted by Cemy Nur Fitria (2023) which shows that a person's level of education greatly influences the level of knowledge about tuberculosis treatment. Based on work, most respondents work as private employees as many as 35 respondents (50.7%). This study is also in line with research conducted by Anung Susilo (2023) for example workers in garment where the closed work environment is a risk of transmission of tuberculosis germs through inhaling small particles from mining or cloth fragments that are inhaled into the lungs which can eventually experience decreased cilia and lung function so that the immune system becomes weak. Based on the distance to health facilities, it shows that most respondents are close ( $<5$  km) as many as 44 respondents (63.8%). This study is also similar to that conducted by Annisa Novita Sary (2023) which shows that it greatly influences patients to undergo a tuberculosis treatment program. Where patients who are close to health facilities experience changes with the condition of patients who already feel healthy, then the sufferer does not need further treatment and chooses to stop taking medication.

### Level of Knowledge of Pulmonary Tuberculosis Patients

The results of the study showed that out of 69 respondents, most of the respondents had sufficient knowledge levels of 31 respondents (44.9%), good knowledge levels of 25 respondents (36.2%), and poor knowledge levels of 13 respondents (18.8%). This study is also in line with that conducted by Ratna Yunita Sari (2023). This shows that a person's level of knowledge is greatly influenced by their educational background, and in general, someone with higher education is easier for someone to receive information.

### Compliance in Taking Anti-Tuberculosis Drugs





The results of the study showed that out of 69 respondents, most of the respondents had a moderate level of compliance of 38 respondents (55.1%), a high level of compliance of 17 respondents (24.6%), and a low level of compliance of 14 respondents (20.3%). This study is also in line with that conducted by Riska Rohmawati (2023) which shows that compliance with taking anti-tuberculosis drugs (OAT) plays a very important role in the healing process, if patients take medication regularly and are compliant with treatment, the patient will recover completely, if someone is not compliant with treatment, there will be resistance in taking medication, there is a possibility that treatment will continue to be repeated and even the possibility of other complications.

### Relationship between Knowledge Level and Compliance in Taking Anti-Tuberculosis Drugs (OAT)

From the research conducted on 69 respondents using the Pearson Chi-Square test, the p-value result was 0.011 from the value ( $p = <0.05$ ) which means  $H_0$  is rejected, which means there is a significant relationship between the level of knowledge of pulmonary tuberculosis patients and compliance in taking anti-tuberculosis drugs at the Sentra Medika Cibinong Hospital Polyclinic.

### Limitation

In the process of conducting this research, there were several limitations that may have affected the results of the research, including the research location which was very crowded and noisy because the Lung Polyclinic was adjacent to the Neurology Polyclinic and Internal Medicine Polyclinic. As for some elderly respondents who could not read and write, the respondents were assisted by their families to fill out the questionnaire.

### Conclusion

The conclusion that can be drawn from the discussion and description of the study concludes that from 69 respondents, the dominant characteristics of respondents are adults aged 20-44 years 69.6%, male gender 56.5%, high school education 53.6%, private employee work 50.7%, and the distance from home to health facilities <5km 63.8%. With a sufficient level of knowledge of 44.9%, and a moderate level of compliance of 55.1%. The

results of the Pearson Chi Square test analysis obtained a p-value of 0.011 from the value ( $p = <0.05$ ) which means that there is a significant relationship between the level of knowledge and compliance with taking anti-tuberculosis drugs (OAT) at the Sentra Medika Cibinong Hospital Polyclinic.

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