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THE RELATIONSHIP BETWEEN SIDE EFFECTS OF ANTI-TUBERCULOSIS DRUGS (OATS) WITH DRUG COMPLIANCE IN PULMONARY TB PATIENTS AT THE PAAL V HEALTH CENTER IN JAMBI CITY IN 2024

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ABSTRACT

Background: Tuberculosis (TB) is a disease caused by Mycrobacterium Tuberculosis. One of the factors causing the low cure rate is non-compliance in the treatment of TB patients. This is due to the side effects of TB drugs so some patients choose to stop taking anti-tuberculosis drugs. This study aims to analyze the relationship between the side effects of anti-tuberculosis drugs (OAT)andn drug compliance in pulmonary TB patients at the Puskesmas.
Methods: Quantitative research with a cross-sectional approach. Sampling using a total sampling technique where the number of pulmonary TB patients was 30 people. The instrument used for OAT side effects was a questionnaire that had been used before and the questionnaire for drug compliance used a valid and reliable questionnaire from MMAS, then the data were analyzed univariately and bivariately with the Chi-square test and Fisher's test.
Results: Most of the respondents experienced mild side effects as much as (86.7%) and most of the respondents were compliant in taking the drug as much as (46.7%) from the results of the analysis obtained the value of the OAT side effect variable p-value = 0.039 (<0.05).
Conclusion: They concluded that there is a relationship between the side effects of anti-tuberculosis drugs (OAT) and adherence to taking medication in pulmonary TB patients. Respondents in this study had good compliance despite mild or severe side effects**.**

Keywords: Tuberculosis, Anti-Tuberculosis Drugs, Side Effects, Adherence to Taking Medicine

INTRODUCTION

Pulmonary tuberculosis (TB) is one problem in Indonesia. According to the World Health Organization (WHO), Indonesia is the country with the second highest number of tuberculosis cases in the world. In 2022, there were more than 824 thousand cases of tuberculosis, of which 34% have been successfully discovered and 74% of them have been treated. The recurrence rate is estimated at 11.8% in 2021 and decreased to 5% in 2022. Many patients are unable to tolerate the side effects of their medications, such as nausea, vomiting, red urine, and other discomforts that make them unable to comply with treatment, thus leading to the spread of the disease. The patients also stopped their treatment, delaying the completion of treatment for up to 6 months, which led to drug resistance and facilitated the spread of the disease. Patient adherence to treatment is one of the factors that determine the success of pulmonary TB treatment. Some of the factors that affect medication adherence include patient characteristics, patient knowledge about pulmonary TB, and analysis of the relationship between medication adherence and the side effects of anti-tuberculosis drugs experienced by pulmonary TB patients.

Low levels of medication adherence can lead to therapy failure, which increases the risk of morbidity and mortality in pulmonary

TB patients. In addition, high rates of treatment failure can lead to an increase in Acid-Resistant Bacilli (BTA) in pulmonary tuberculosis patients, commonly referred to as dual drug resistance (MDR). (Kirana et al., 2016). The relationship between the patient's level of knowledge and adherence to pulmonary TB medication can also be influenced by the patient's characteristics. For example, patients with low levels of education are often less aware of the side effects of their medications and are less likely to take them as prescribed. In addition, patients' ignorance of pulmonary tuberculosis can negatively impact the prevention and treatment of the disease.

According to the research of Maulitha et al. in 2022, which researched the Analysis of Side Effects of the Use of Anti-Tuberculosis Drugs (OAT) at the Outpatient Installation of RSD BLUD Dr. H. Soemarno Sosroatmodjo Tanjung Selor, it is known that the majority of TB patients in this location have "moderate" compliance (73.08%). Among those who experienced side effects, some experienced red urine (96.63%), decreased appetite (74.51%), nausea (57.43%), itching on the skin (22.59%), heartburn (18.26%), vomiting (16.34%), fever (7.68%), and balance disorders (5.28%) (Maulitha et al., 2022). According to a different study, by Christy et al. 2022, there is a non-directional relationship between OAT side effects and medication adherence, that is, patients are less likely to take medication when the OAT side effects are severe, and more likely to take medication when the OAT side effects are mild (Christy et al., 2022).

Therefore, in an effort to assist the authorities in improving treatment standards and achieving the goal of TB elimination in Indonesia, this study aims to find out whether OAT side effect factors are related to pulmonary tuberculosis treatment compliance at the Paal V Health Center, Jambi City.

METHOD

The method of this study is cross-sectional, sampling using a total sampling technique where the number of pulmonary TB patients is 30 people. The instruments used for OAT side effects were questionnaires that had been used previously and medication adherence questionnaires using valid and reliable questionnaires from MMAS, then the data were analyzed univariate and bivariate with the Chi-square test.

RESULTS AND DISCUSSION

Description of Respondent Characteristics

The description of respondents at the Paal V Health Centers in Jambi City based on gender, age, education, and occupation was described with the results of the respondents' characteristics. The following are the results of the univariate analysis of the demographics of the respondents:

Tabel 1 Frequency Distribution of Respondent Characteristics

Characteristics of Respondents	Frequency (n)	Percentage (%)
Gender		
Man	18	60,0 %
Woman	12	40,0%
Total	**30**	**100%**
Age		
17-25	6	20,0%
26-35	4	13,3%
36-45	5	16,7%
46-55	5	16,7%
56-100	10	33,3%
Total	**30**	**100%**
Education		
Elementary School	1	3,3%
Junior High School	4	13,3%
Senior High School	10	33,3%
College	15	50,0%
Total	**30**	**100%**
Work		
Housewife/ Not Working	10	33,3%
Self employed	11	36,7%
Civil Servant	6	20,0%
Private employees	1	3,3%
Farmer	2	6,7%
Total	**30**	**100%**

Table 1 describes the characteristics based on the gender of the respondents. Among the 30 respondents (100%), the largest percentage was male, namely 18 respondents (60.0%). The results of the study

are in line with the research conducted (Budi et al., 2018) stated in their research that men are more likely to develop pulmonary tuberculosis because men smoke more often than women. It is known that smokers are 2.2 times more likely to develop pulmonary tuberculosis than non-smokers. While the research conducted (Oktavia et al, 2016) stated that there was no association between the incidence of pulmonary tuberculosis (TB) and sex, because TB is a contagious disease caused by germs, other risk factors for the disease include a humid atmosphere and inadequate lighting.

Meanwhile, the frequency distribution based on the age of 30 respondents showed that the highest percentage was found in the age of 56-100 as many as 10 respondents (33.3%). The proportion of pulmonary TB cases by age varies from country to country, according to WHO data. In general, pulmonary tuberculosis (TB) can affect all ages, from toddlers to adults. The majority of respondents in this study were between 56-100 years old. As they age, their immune systems weaken, making the elderly more susceptible to bacteria and viruses. Based on an article from (Sazkiah et al., 2015) It was found that the group most affected by TB at Sri Pamela Hospital was the 52-61 years old gender group.

Then, based on the level of education, the largest percentage was found at the university level, with as many as 15 respondents (50.0%). This is in accordance with the composition of the population in the working area of the Puskesmas based on the level of education, which shows that the population with a university level is the majority. This is not in line with research (Widiati & Majdi, 2021) which shows that in the working area of the Korleko Health Center, there are 39 pulmonary tuberculosis patients with low education (75.0%), while pulmonary tuberculosis patients with higher education are 13 people (25.0%).

The reason is that education is an effort that aims for society to apply the lessons learned through educational behavior. A person who is highly educated will need better medical facilities for themselves and their family to get treatment if they fall ill. Higher levels of education will make people more aware of the importance of health in life, which will encourage them to get care in better health facilities. In addition, the individual will more easily receive information and expand his knowledge, and vice versa.

Then the distribution of characteristics based on occupation from 30 respondents (100%) can be found in the highest percentage of non-working occupations/IRT as many as 10 respondents (33.3%). This is in line with the research (Siregar, 2015) The results of the study showed that the majority of case respondents were not working. If the respondents do not work, then the use of health services will have an effect. A person can also reflect the amount of information they get, which can influence their decision to use current health services.

Distribution of OAT Side Effects

Tabel 2 Distribution of respondents based on OAT side effects

OAT side effects	Frequency (n)	Percentage (%)
Mild Side Effects	26	86,7%
Side Effects Weight	4	13,3%
Total	30	100,0%

Table 2 above, which contains the distribution of respondents according to OAT side effects from the drugs taken and experienced by the respondents, shows that of the 30 respondents who participated in this study, 26 respondents (86.7%) experienced mild side effects, such as reddish urine, nausea, vomiting, or no appetite, while 4 respondents experienced severe side effects, such as hearing loss, visual impairment, and skin rashes.

This is consistent with the research (Abidin et al., 2022) which showed the side effects of TB drugs, especially since almost all respondents, namely 38 respondents (82.6%) felt mild side effects when using TB

drugs. Meanwhile, the research (Farhanisa et al., 2007) found that the side effects of OAT category 1 in pulmonary TB patients in UP4 West Kalimantan province were 100% with a total of 11 respondents. The side effects of OAT category 1 that are experienced are reddish urine color, nausea, weakness, vomiting, indigestion, joint pain, dizziness, itching on the skin, drowsiness, and tingling.

Distribution of Medication Compliance

Tabel 3 Distribution of respondents based on medication compliance

Medication Compliance	Frequency (n)	Percentage (%)
Low	3	10,0%
Medium	13	43,3%
High	14	46,7%
Total	30	100%

Table 3, Displays the distribution of respondents according to medication adherence shows that 14 respondents (46.7%) are the majority of participants in this study who have a high level of medication adherence.

This is in line with research (Christy et al., 2022) which shows the distribution of patients' medication adherence, with 65.71% of patients having high compliance and 34.29% having low compliance. In the research (Abidin et al., 2022) The number of respondents who adhered to taking tuberculosis medication was 45 people (97.8%), based on the results of the study on medication adherence.

The Relationship Between OAT Side Effects and Drug Adherence in Pulmonary TB Patients

Tabel 4 Adverse Reaction Relationship (OAT) with Compliance

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	8.207[a]	2	.017	.039		
Likelihood Ratio	5.486	2	.064	.133		
Fisher's Exact Test	5.571			.039		
Linear-by-Linear Association	3.925[b]	1	.048	.097	.061	.051
N of Valid Cases	30					

Based on Table 4 above, because the results obtained do not meet the interpretation requirements of the Chi-square Test results, namely there is an Expected Count (EC) value of less than 5%, the researcher uses the Fisher Test where the results obtained are p-value = 0.039 (<0.05) which means that there is a significant relationship between OAT side effects and medication adherence in pulmonary TB patients. This is in line with research (Abidin et al., 2022) where there is a relationship between drug side effects (ESO) and medication adherence in tuberculosis patients.

CONCLUSION

Based on the research that has been conducted, it can be concluded that there is a significant relationship between OAT side effects and medication adherence in pulmonary tuberculosis patients at the Paal V Health Center, Jambi City.

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