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Factors Affecting the Success of Treatment in Drug Sensitive Pulmonary Tuberculosis Patients at the Rimba Jaya Health Center Merauke Regency

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ABSTRACT

Research Objectives to determine the factors that influence the success of drug-sensitive pulmonary TB patients at the Rimba Jaya Public Health Center, Merauke Regency. Research Methods: This type of research is analytic observational with a cross sectional design. Results: most of the respondents aged between 20-35 years amounted to 29 people (58%). The gender of the majority of women amounted to 28 people (56%). Most of the education is SMA with 28 people (56%). Most of the occupations are college students, students and not working totaling 19 people (38%). The knowledge of the respondents is good amounting to 32 people (64%). Most of the economic status is moderate amounting to 28 people (56%). Most of the access to treatment is close, amounting to 48 people (96%). Most of the PMO types are families with 46 people (92%). Most of the PMO roles were good, amounting to 44 people (88%). Most of the drug sensitive patients were drug sensitive at 6 months totaling 45 people (90%). There are 3 factors that influence the success of Pulmonary TB Treatment at the Rimba Jaya Health Center, namely education, economic status and access to treatment. Meanwhile, those that do not affect the success of drug-sensitive pulmonary TB treatment are age, gender, occupation, type of PMO, role of PMO, knowledge.

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INTRODUCTION

Tuberculosis (TB) is an infectious disease as a major cause of health problems. TB is one of the top 10 causes of death worldwide caused by the bacterium Mycobacterium tuberculosis (Chen, Zhou, Luo, Mohammed, & Zhang, 2007).. A quarter of the world's population has been infected with Mycobacterium tuberculosis. Diagnosis and timely treatment of routinely taking anti-tuberculosis drugs (OAT) for the first six months in TB patients can be cured and transmission of infection is decreasing (WHO, 2019).

The epidemic of TB patients in the world reached 10,000,000 people infected with TB in 2018. The three countries with the largest TB incidence are India (27%), China (14%), and the Russian Federation (9%). Geographically, most TB cases in 2018 were largest in Southeast Asia with 44%,

Africa (24%), and the Western Pacific (18%), with smaller percentages in the Eastern Mediterranean (8%), America (3%) and Europe (3%). Countries that make up two-thirds of the world's total are India (27%), China (9%), and Indonesia (8%) (WHO, 2019).

Research conducted at the Sukoharjo Health Center found that the role of PMO greatly influences the success of treatment. PMO which plays a role 56% more affects the success of treatment of pulmonary TB patients than those that do not play only 19% affects the success of patient treatment (Firdaus, 2012). Based on age characteristics, the results of the study in 10 regions in Ethiopia, found that the detected TB cases were 131,071 patients in July 2012 - July 0 2015. Patients with positive smear positive pulmonary TB cases were aged > 15 years by 30.2% compared to age 5 – 14 years by 18.3% and 0- < 4 years only 10.7%. With the end result of treatment during 2011-2014 the most commonly found are patients with complete recovery and treatment outcomes increasing from 2011 (88.(%), 2012 (90.6%) to 2013 (93%) and 2014 (92.5%) (Dememew, 2016).

Based on gender, the results of a study conducted at a Ugandan Hospital found that patients with the final outcome of TB treatment recovered, mostly found in the male sex, 37% (A. Nakanwagi-Mukwaya, 2013). The same study conducted in the western part of Ethiopia that some of the treatment success patients were women by 32.5% compared to only 27.0% men (Belay Tessema, 2019). Based on the educational characteristics of the respondents, from the results of research in Pekanbaru Riau, the characteristics of education that have the most success in treatment are upper secondary education (41.4 %), junior high school (27.6%), elementary school (24.%), and tertiary education (6.9%). In addition, the results of research conducted in Sokaraja District found that treatment success was more common in low education by 68.4% (Natalia, 2012).

Furthermore, the characteristics based on occupation are that patients with pulmonary TB AFB (+) who experience the most treatment success are self-employed workers at 65.51% followed by unemployed workers at 27.58% and civil servants at 6.9% (Imleda, 2015). Research conducted in Central Java showed that treatment success was more common in those who had non-risk jobs by 86.7% (Bertin Respons Tirtana, 2011).

Based on the results of data from the Rimba Jaya Health Center from 2020 the number of cases was 898 cases. In 2020 from July to May 2021 there were 282 cases. Based on the description of the background above, the author is interested in taking the title "factors that influence the success of drug-sensitive pulmonary TB patients at the Rimba Jaya Health Center, Merauke Regency.

RESEARCH METHOD

This type of research is analytic observational with a cross sectional design (Sugiyono, 2016). This type of research is a quantitative correlation research. The research design uses a cross sectional approach, namely research in which the measurement of the variables is carried out only once at a certain time and there is no follow-up to the measurements made (Notoatmodjo, 2018). Methods of collecting data retrospectively from the TB treatment register book at the Rimba Jaya Health Center. The total population is 50 people. The sample used is total sampling.

RESULTS AND DISCUSSIONS

Result

1. Univariate Analysis

a. Respondent's Age

Table 1. Frequency Distribution Based on Age of Respondents with Pulmonary TB in the Working Area of Rimba Jaya Health Center, Merauke Regency 2021 (n:50)

Age	Frequency (n)	Percentage (%)
20 – 35 years	29	58
36 – 50 years	16	32
51 years or older	5	10
Total	50	100

(Primary Data Source, 2021)

b. Respondent's Gender

Table 2. Frequency Distribution by Gender of Respondents with Pulmonary TB in the Working Area of Rimba Jaya Health Center, Merauke Regency 2021 (n=50)

Gender	Frequency (n)	Percentage (%)
Man	22	44
Woman	28	56
Total	50	100

(Primary Data Source, 2021)

c. Respondent's Education

Table 3. Frequency Distribution Based on Education of Respondents with Pulmonary TB in the Working Area of Rimba Jaya Health Center, Merauke Regency 2021 (n=50)

Education	frequency (n)	Percentage (%)
Primary School	2	4
Junior High School	10	20
Senior High School	28	56
College	10	20
Total	50	100

(Primary Data Source, 2021)

d. Respondent's Job

Table 4. Distribution of Frequency Based on Occupation of Lung TB Respondents in the Work Area of the Rimba Jaya Health Center, Merauke Regency 2021 (n=50)

Work	Frequency (n)	Percentage (%)
Private	15	30
Housewife	13	26
Civil Servant/Honorary	3	6
Others (Student/student/not working)	19	38
Total	50	100

(Primary Data Source, 2021)

e. Respondent's Economic Status

Table 5. Frequency Distribution Based on Economic Status of Lung TB Respondents in the Working Area of Rimba Jaya Health Center, Merauke Regency 2021 (n=50)

Economic Status	Frequency (n)	Percentage (%)
Low	19	38
Currently	28	56
Tall	3	6

(Primary Data Source, 2021)

f. Respondent's Access to Treatment

Table 6. Frequency Distribution Based on access to treatment of pulmonary TB respondents in the Work Area of the Rimba Jaya Health Center, Merauke Regency 2021 (n=50)

Medical Access	Frequency (n)	Percentage (%)
Far	2	4
Close	48	96
Total	50	100

(Primary Data Source, 2021)

g. Respondent's PMO Type

Table 7. Frequency Distribution by Type of Pulmonary TB PMO in the Working Area of Rimba Jaya Health Center, Merauke Regency (n=50)

PMO Type	Frequency (n)	Percentage (%)
Family	46	92
Health workers	4	8
Total	50	100

(Primary Data Source, 2021)

h. Pulmonary TB Drug Sensitive

Table 8. Frequency Distribution Based on Pulmonary TB Drug Sensitivity in the Working Area of the Rimba Jaya Health Center, Merauke Regency 2021 (n=50)

TB Drug Sensitive	Frequency (n)	Percentage (%)
Sensitive 6 months	45	90
Sensitive 8 months	5	10
Total	50	100

(Primary Data Source, 2021)

i. The Role of Drug Administration Supervisor

Table 9. Frequency Distribution Based on the Role of Respondent PMO in the Work Area of the Rimba Jaya Health Center, Merauke Regency 2021 (n=50)

PMO's Role	Frequency (n)	Percentage (%)
Enough	6	12
Well	44	88
Total	50	100

(Primary Data Source, 2021)

Table 10. Knowledge Distribution of Lung TB Respondents in the Work Area of Rimba Jaya Health Center, Merauke Regency 2021 (n=50)

Knowledge	Frequency (n)	Percentage (%)
Not enough	3	6
Enough	15	30
Well	32	64
Total	50	100

(Primary Data Source, 2021)

2. Bivariate Analysis

a. Relationship between Respondents Age and Drug Sensitivity

Table 11. The Relationship between Respondents Age and Drug Sensitivity for Pulmonary TB in the Working Area of Rimba Jaya Health Center, Merauke Regency (n=50)

Age (years)	Drug Sensitive		Total	P-Value
	6 months	8 months		
20 – 35	25	4	29	0.247
36 – 50 years	16	0	16	
51 years or older	4	5	5	
Total	45	5	50	

(Primary Data Source, 2021)

b. The Relationship Between Respondent's Gender and Drug Sensitivity

Table 12. The Relationship between Respondents' Gender and Drug Sensitivity for Pulmonary TB in the Working Area of Rimba Jaya Public Health Center, Merauke Regency (n=50)

Gender	Drug Sensitive		Total	P-Value
	6 months	8 months		
Man	20	2	22	0.849

Woman	25	3	28
Total	45	5	50

(Primary Data Source, 2021)

c. Relationship Between Respondent's Education and Drug Sensitivity

Table 13. The Relationship between Respondents' Education and Drug Sensitivity for Pulmonary TB in the Working Area of the Rimba Jaya Health Center, Merauke Regency (n=50)

Education	Drug sensitive		Total	P-Value
	6 months	8 months		
Primary Schoole	0	2	2	0.000
Junior High School	8	2	10	
Senior High School	27	1	28	
College	10	0	10	
Total	45	5	50	

(Primary Data Source, 2021)

d. Relationship Between Respondent's Occupation and Drug Sensitivity

Table 14. Relationship between Respondents' Employment and Drug Sensitivity for Pulmonary TB in the Work Area of the Rimba Jaya Health Center, Merauke Regency (n=50)

Work	Drug Sensitive		Total	P-Value
	6 months	8 months		
Private	15	0	15	0.234
Housewife	12	1	13	
Civil Servant/Honorary	2	1	3	
Others (Pljr/Mhs/no Bkrj	16	3	19	
Total	45	5	50	

(Primary Data Source, 2021)

e. Relationship Between Economic Status and Drug Sensitivity

Table 15. The Relationship between Respondents' Economic Status and Drug Sensitivity for Pulmonary TB in the Working Area of Rimba Jaya Public Health Center, Merauke Regency (n=50)

Economic Status	Drug Sensitive		Total	P-Value (α)
	6 months	8 months		
Low	19	0	19	0.002
Currently	25	3	28	
Tall	1	2	3	
Total	45	5	50	

(Primary Data Source, 2021)

f. Relationship Between Access to Medication and Drug Sensitivity

Table 16. The Relationship between Respondents' Access to Treatment with Drug Sensitivity for Pulmonary TB in the Working Area of Rimba Jaya Public Health Center, Merauke Regency (n=50)

Medical Access	Drug Sensitive		Total	P-Value
	6 months	8 months		
Far	1	1	2	0.054
Close	44	4	28	
Total	45	5	50	

(Primary Data Source, 2021)

g. The Relationship Between PMO Type and Drug Sensitivity

Table 17. The Relationship between Respondents Type of Drug Taking Supervisor (PMO) and Drug Sensitivity for Pulmonary TB in the Work Area of Rimba Jaya Health Center, Merauke Regency (n=50)

PMO Type	Drug Sensitive		Total	P-Value
	6 months	8 months		
Family	42	4	46	0.297
Case Officer	3	1	4	
Total	45	5	50	

(Primary Data Source, 2021)

h. PMO Role Relationship with Drug Sensitivity

Table 18. The Relationship of Respondents' PMO Role with Drug Sensitive Pulmonary TB in the Work Area of Rimba Jaya Health Center, Merauke Regency (n=50)

PMO's Role	Drug Sensitive		Total	P-Value
	6 months	8 months		
Enough	6	0	6	0.384
Well	39	5	44	
Total	45	5	50	

(Primary Data Source, 2021)

i. Knowledge Relationship With Drug Sensitivity

Table 19. The Relationship between Respondents' Knowledge and Drug Sensitivity for Pulmonary TB in the Working Area of Rimba Jaya Public Health Center, Merauke Regency (n=50)

Knowledge	**Drug Sensitive**		**Total**	**P-Value**
	6 months	**8 months**		
Not enough	3	0	3	0.210
Enough	15	0	15	
Well	27	5	32	
Total	45	5	50	

(Primary Data Source, 2021)

Discussion

1. Bivariate Analysis

a. Age Factor with Drug Sensitive Success for Pulmonary TB

The results of the chi-square test showed that the p-value was 0.247. So it can be concluded that there is no age factor that affects the success of drug-sensitive pulmonary TB patients at the Rimba Jaya Health Center, Merauke Regency. Age can affect the incidence of pulmonary tuberculosis because the older a person is, the more susceptible they are to pulmonary tuberculosis. Age factor in the incidence of pulmonary tuberculosis. The risk of getting pulmonary tuberculosis can be said to be like an inverted normal curve, which is high at first, decreasing because over 2 years old until adults have good resistance to pulmonary tuberculosis (Indonesian Ministry of Health, 2019).

b. Gender Factors with Drug Sensitive Success of Pulmonary TB

The results of the study using the chi square test showed that the p-avlue value was 0.849. So it can be concluded that there is no gender factor that affects the success of drug-sensitive pulmonary TB treatment at the Rimba Jaya Health Center, Merauke Regency (Firdaus,2012). Gender can also cause pulmonary TB disease. Where this is due to the smoking habit of men which is almost twice that of women. Pulmonary TB disease tends to be higher in male than female (according to WHO), but at least in a year period there are about 1 million women who die from pulmonary TB, it can be concluded that in women there are more deaths caused by TB Lungs compared with the consequences of the process of pregnancy and childbirth. In the male gender, this disease is higher because smoking tobacco and drinking alcohol can lower the body's defense system, making it easier to be exposed to the agent causing pulmonary TB. Similarly, based on gender, from the results of the study it was found that

most of the patients who were successful in treatment were male. This is because from the results of the TB.01 report, that the incidence of AFB (+) pulmonary TB cases is more common in the male sex than female, so that the success of treatment is also the same, that the male sex is more successful than the female.

c. Educational Factors with Sensitive Success of Pulmonary TB Drugs

The results of the chi-square test show that the p-value is 0.000. So it can be concluded that there are educational factors that influence the success of drug-sensitive pulmonary TB treatment at the Rimba Jaya Health Center, Merauke Regency. Education about pulmonary TB is influenced by educational background which has a positive influence on healing, this is in accordance with what was stated by (Depkes RI, 2002) that the relatively low level of education in patients with pulmonary TB causes limited information about the symptoms and treatment of pulmonary TB. Low education does not guarantee that it can lead to a lack of public awareness of personal health in this case in the form of prevention of disease problems. According to Mukhsin (2006) that the higher the patient's education, the better the reception of information about treatment and illness so that it is complete for treatment and healing. However, this is inversely proportional to research conducted in Sokaraja District that the success of treatment is more common in low education by 68.4% compared to higher education (31.7%) (Natalia et al., 2012).

d. Occupational Factors with Drug Sensitive Success

The results showed that the chi-square test got a p-value of 0.234. So it can be concluded that there are no occupational factors that affect the success of drug-sensitive pulmonary TB patients at the Rimba Jaya Health Center, Merauke Regency. Differences in the work that a person has causes there are also differences in the socioeconomic status they have (Notoatmodjo 2007). Every job is a burden for the perpetrator. The burden in question is the physical, mental or social worker. The abilities of workers differ from one another, namely in skills, compatibility, nutritional status, gender, age and body size. The work in Pulmonary TB research in the work area of the Pagimana Health Center is the sample's daily work to fulfill their daily needs.

e. Economic Status Factors with Sensitive Success of Pulmonary TB Drugs

The results showed that the p-value was 0.002. So it can be concluded that there are factors of economic status that affect the success of treatment of drug-sensitive pulmonary TB patients at the Rimba Jaya Health Center, Merauke Regency. Family income which will have an impact on the pattern of daily life between food consumption, health care, besides that it will also affect home ownership (house construction). Heads of families who have incomes below the minimum wage will consume food with nutritional levels that are not in accordance with the needs of each family member so that they have poor nutritional status and will make it easier to get infectious diseases including pulmonary tuberculosis (Nurmasadi. (2015). From the results of research conducted in Semarang, the socio-economic level is seen from the UMR income in the city which is divided into low and high incomes. It was found that the proportion of cured pulmonary TB patients mostly had low socioeconomic status as many as 36 people (94.7%) compared to only 2 patients with high income (5.3%) (Kholifah, 2019).

f. Factors of Access to Treatment with Drug Sensitive Success for Pulmonary TB.

The results showed that the p-value was 0.054. This shows that there are factors that influence the success of drug-sensitive pulmonary TB treatment in the Rimba Jaya Community Health Center, Merauke Regency. Access to health services that are easily accessible can increase their benefits. According to Andersen in Notoadmojo (2016) that there are three important things in the use of health services, including 1) the ease of using the available services 2) the

existence of factors that guarantee the existing health services, and 3) the need for health services. In addition, according to Dever (2014) that the factors that influence the use of health services in seeking treatment to improve health are influenced by the affordability of the location related to the affordability of place and time which can be measured through distance traveled, travel time, and cost. From the results of the study, it was found that the access of patients with pulmonary TB AFB (+) who had successful treatment took less than 30 minutes using a vehicle. This is supported by research conducted at the Friendship Hospital in Jakarta that most of the pulmonary TB patients by 86% turned out to choose the health facility closest to their homes for treatment with a travel time of less than 30 minutes by vehicle (Bastable, 2016).

g. PMO Type Factors with Pulmonary TB Drug Sensitive Success

The results showed that the p-value was 0.297. It can be concluded that there is no PMO type factor that affects the success of drug-sensitive pulmonary TB treatment at the Rimba Jaya Health Center, Merauke Regency. In improving patient healing, it takes a PMO who has been trusted by patients and health workers. The people who have the right to become a PMO are health workers, for example village midwives, nurses, workers, sanitation workers, immunization officers, and others. If there is no possible health worker, PMO can come from health cadres, teachers from PKK members or other community leaders or family members (Ministry of Health, 2018).

h. PMO Role Factors with Drug Sensitive Success of Pulmonary TB

The results showed that the p-value was 0.384. it can be concluded that there is no PMO role factor that affects the success of drug-sensitive pulmonary TB treatment at the Rimba Jaya Health Center, Merauke Regency. It is known that PMO plays an important role in the success of pulmonary TB treatment. A PMO has a role as 1) Supervising tuberculosis patients to take medication regularly until the end of the treatment period, 2) Providing encouragement to patients to want to seek treatment regularly, 3) Reminding patients to re-examine sputum at a predetermined time, 4) Providing counseling for family members of tuberculosis patients who have symptoms of suspected TB to check with the nearest health worker, 5) Assist or assist patients in taking OAT in health services 6) Assist health workers in monitoring the development of tuberculosis in their village (Nizar, Meyer, Galustian, Kumar, & Dalgleish, 2010).).

i. Knowledge factor with sensitive success of pulmonary TB drugs

The results showed that the p-avlue value was 0.210, so it can be concluded that there is no knowledge factor that affects the success of Drug Sensitive Pulmonary TB Treatment at the Rimba Jaya Health Center, Merauke Regency. According to Notoadmojo, knowledge is the result of "knowing" that occurs after people sense certain objects, through sight, hearing, smell, taste and touch. Which of these knowledge a person has the ability to re-express what he knows in the form of evidence of answers either orally or in writing (Notoadmojo, 2012).

CONCLUSION

Based on the results and discussion, it can be concluded as follows: Characteristics of respondents mostly aged between 20-35 years amounted to 29 people (58%). The gender of the majority of women amounted to 28 people (56%). Most of the education is SMA with 28 people (56%). Most of the occupations are college students, students and not working totaling 19 people (38%). The knowledge of the respondents is good amounting to 32 people (64%). Most of the economic status is moderate amounting to 28 people (56%). Access to treatment is mostly close, amounting to 48 people (96%). Most of the PMO types are families with 46 people (92%). Most of the PMO roles were good,

amounting to 44 people (88%). Most of the drug sensitive people were drug sensitive 6 months totaling 45 people (90%), there is no age factor that affects the success of treatment in drug-sensitive pulmonary tuberculosis patients at the Rimba Jaya Health Center, Merauke Regency, there is no gender factor that affects the success of treatment in drug-sensitive pulmonary tuberculosis patients at the Rimba Jaya Health Center, Merauke Regency, there are educational factors that influence the success of treatment in drug-sensitive pulmonary TB patients at the Rimba Jaya Health Center, Merauke Regency, there are no Occupational Factors that affect the success of treatment in drug-sensitive pulmonary TB patients at the Rimba Jaya Health Center, Merauke Regency, there are factors of access to treatment that affect the success of treatment in drug-sensitive pulmonary TB patients at the Rimba Jaya Health Center, Merauke Regency, there are economic status factors that affect the success of treatment in drug-sensitive pulmonary tuberculosis patients at the Rimba Jaya Health Center, Merauke Regency, there is no PMO type that influences the success of treatment in drug-sensitive pulmonary TB patients at the Rimba Jaya Public Health Center, Merauke Regency, there is no PMO role that influences the success of treatment in drug-sensitive pulmonary tuberculosis patients at the Rimba Jaya Health Center, Merauke Regency, there is no knowledge factor that influences the success of treatment in drug-sensitive pulmonary tuberculosis patients at the Rimba Jaya Health Center, Merauke Regency.

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