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Factors Related To Patient Adherence To Anti Tuberculosis Drug Treatment At The Mekar Jaya Health Center

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ABSTRACT

Regular administration of Anti Tuberculosis Drug is one of key success of tuberculosis treatmen. Discontinuing treatment, has resulted a double immune and Multu Drug Resistant (MDR) in pulmonary tuberculosis bacterias. The purpose of this study was to determine the effect of Attitude, Distance and Family Support on adherence to anti Tuberculosis Treatment. Subject and Method: This study was a cross-sectional study carried out in working area Mekar Jaya Health Center. A total sample 65 patents who diagnosed TB which cunducted in April 2021. The dependent variable was adherence to Anti Tuberculosis Drug. The independent variables were Attitude,Distance and family support. Result: The findings revealed that 61.5 % of respondents did not comply with treatment, while 38.5 %. The bivariate test results attitude was possitively associated (p-value 0.009; OR; 3.946 CI (1.364-11.416), distance p-value 0.002, OR; 5.333 CI (1.801-15.797), and family support with p-value 0.003, OR 5.091 CI (1.684-15.390) To concluded, attitude, distance and family support are associated with patient's adherence to anti tuberculosis drug treatment.

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1. Introduction

Tuberculosis (TB) is an infectious disease caused by the bacterium Mycobacterium tuberculosis, which is the primary cause of health problems. This infection usually affects the lungs (pulmonary tuberculosis), but it can also affect other organs (extrapulmonary TB). Transmission occurs via the microscopic splash of phlegm released by TB patients with BTA[1]. Pulmonary TB is a disease that has a high risk of transmission. However, TB disease can be cured and prevented. 85% of patients were successfully treated with a drug regimen for 6 months [2].

After HIV/AIDS, tuberculosis is one of the top ten causes of death in the world. According to the WHO Global TB Report for 2020, at least 10 million people worldwide suffer from tuberculosis (TB), with 1.2 million death each year. India (26%), Indonesia (8.5%), China (8.4%), the Philippines (6.0%), Pakistan (5.7%), Nigeria (4.4%), Bangladesh (3.6%), and South Africa accounted for the majority of TB cases (3.6 %). The remaining 22 countries on the WHO list of the 30 with a high TB burden account for 21% of the global total[2]. In Southeast Asia in 2018, there were a total of 3,183,255 confirmed new cases and relapses. Meanwhile, the estimated number of pulmonary tuberculosis cases in Indonesia is 845,000, with a new caseload of 846,000 cases at a rate of 316/100,000 population. There have been 563,879 confirmed new and relapse cases, with a death rate of 98,000, or 11 deaths per hour[2]. Only 67 percent of these cases were discovered and treated, leaving 283,000 TB patients untreated and at risk of transmitting the disease to those around them[3].

According to data from the Central Statistics Agency (BPS), there were 19,292 TB cases in South Sumatra in 2018, 22,485 cases in 2019, and 9,506 cases in 2020. Data released on the South Sumatra provincial government data website shows that there were 1,549 cases of pulmonary TB in Musi Banyu Asin Regency, while in the Mekar Jaya Health Center work area, there were 5 cases, 2017 as many as 17 cases and 44 cases in 2018. When viewed from the perspective of the number of cases of pulmonary TB in the working area of the Mekar Jaya Health Center, the number of cases has increased. One of the keys to successful TB therapy management is patient compliance with medication adherence[4]. Non-adherence to taking medication on a regular basis or dropping out of treatment results in resistance or double immunity of pulmonary tuberculosis bacteria to anti-tuberculosis drugs. As a result, the patient will need to be treated for a longer period of time, as well

as at a higher cost[5]. In order to achieve patient compliance in taking TB medication, supporting factors are needed so that patients are more independent and have a strong desire to recover.

Based on this background, the researcher is curious about patient adherence to treatment. Despite the fact that many studies have been conducted on the same theme, no research has been conducted on medication adherence at the Mekar Jaya Health Center in order to analyze the factors related to medication adherence of patients with pulmonary TB in the Mekar Jaya Health Center's working area.

2. Method

This is a qualitative analytic study that used a cross-sectional design to determine the relationship between the independent variables, such as attitude, distance, and family support factors, and the dependent variable, adherence to treatment in patients with pulmonary tuberculosis. This study was carried out in April 2021 in the Working Area of the Mekar Jaya Health Center in Ogan Musi Banyuasin Regency, South Sumatra Province. This study included all patients who were diagnosed with tuberculosis at Mekar Jaya Health Center or the Puskesmas, a total of 65 patients. With a total of 65 respondents, this study's sample was drawn using a total sampling technique.

Adherence to treatment of pulmonary tuberculosis patients in terms of taking medication, regularly taking medication, and checking sputum is the compliance variable as the dependent variable. Respondents were considered adherent if they took their medication on time and did not miss a sputum examination. Respondents were labeled non-compliant if they stated that the patient was late taking medication or did not check sputum. Then, on the attitude variable, when the respondent's response to pulmonary TB and pulmonary treatment, a score ≥70 is considered good, while a score ≤70 is considered not good. The distance variable, which is the respondent's perception of the measured taken from the respondent's place of residence to the Puskesmas, which is declared far if the distance is ≥3 KM, close if the distance is ≤3 km. The family support variable represents the respondent's perception of the support provided by close family members during the treatment process.

SPSS was used to analyze the data. Univariate analysis was used to determine the frequency distribution of the independent variables, while bivariate analysis was used to determine a significant relationship between the independent variables and the dependent variable using the *chi square* test with the P≤ 0.05, indicating that there is a relationship.

3. Result and Discussion

a. Result

TABLE 1.
DISTRIBUTION OF VARIABLE FREQUENCY

No	Variable	Frequency N	Presentage (%)
1	Adherence to treatment		
	Poor	40	61.5
	Good	25	38.5
2	Attitude		
	Poor	34	52.3
	Good	31	47.3
3	Distance		
	Far	39	60
	Close	26	40
4	Familly Support		
	Poor	43	66.2
	Good	22	33.8

Regarding the table 1, the number of respondents in this study was 65 respondents where patients who did not comply with treatment at the Puskesmas amounted to 40 people (61.5%) had a greater proportion than patients who adhered to treatment as many as 25 patients (38.5%). while, the precentage of respondents who have a bad attitude reaches 34 respondents (52.3%), only

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a difference of 0.3% where patients who have a good attitude are 32 respondents (47.3%).

Over 50% of those surveyed are far from Puskesmas. 39 people (60%) and 26 people surveyed are 39 people (40 %). In addition, in this case the role of the family in support of the family shows that very few families provide treatment support, only 22 respondents (33,8%) do not receive the support of the family of a patient, and 43 respondents (66.2 %).

TABLE 2.
BIVARIATE ANALYSIS

No	Variabel	Adherence to treatment N (%)		OR	95% CI	*P-Value*
		No	Yes			
1	Attitude					
	Good	26 (76.5)	8 (23.5)	3.946	1.364 -11.416	0.009
	Poor	14 (45.2)	17 (54.8)			
2	Distance					
	Far	30 (76)	9 (23.1)	5.333		0.002
	Close	10 (38.5)	16 (61.5)		1.801 -15.797	
3	Familly Support					
	Poor	32 (74.4)	11 (25.6)	5.091		0.003
	Good	8 (36.4)	14 (63.6)		1.684- 15.390	

In the context of bivariate analysis the relationship between the independent variable and the dependent variable was determined with the chi-squere test obtaining a p-*value* α = 0.05. There is a significant relationship if the P value is P-*value* ≤0.05. In the meantime, there is no significant relationship if the p-value is p-*value* ≥ 0.05. The attitude of the pulmonary TB patient was assessed with nine questions including the patient's adherence to taking medication regularly after being diagnosed TB, covering the mouth when coughing, knowledge about drug consumption can cure pulmonary TB.

From the results of the analysis in the table above, it shows that there is a significant relationship between attitude and adherence to treatment in patients with p-value 0.009; OR; 3,946, which means that respondents have a 3,946 times higher chance of disobeying. Furthermore, patients who are 3 KM from the Puskesmas, have a relationship with patient adherent with treatment with a p-value of 0.002 where patients who have long distances have a 5.333 (OR)-fold chance of not complying. In addition, support or the role of the family also has a relationship with patient adherence to treatment (p value = 0.003) where patients who do not have support from their families have 5,091 times the potential (OR) for non-adherence to take treatment at the hospital.

b. Discussion

On the basis of the results, the participants with non-compliance to pulmonary TB therapy were shown to be smear positive. However, some respondents showed that they do not comply with the treatment. adherent is the patient's attitude towards efforts to comply with instructions or instructions from health workers. Attitude is an encouragement to the patient in the form of a response that the patient understands well the importance of doing treatment completely to achieve healing and restore health [5]. In this case, the officers responsible for managing the pulmonary TB are caused by a number of factor factors, support from the family and difficult distance-health services as well as accessible knowledge and patient experience, although non-compliance means that TB patients are not on time to take anti-TB and drugs on schedule[6].

Adherence to taking medication in TB patients is an important effort to increase the cure rate in patients and suppress the increase in the number of TB cases with multidrug resistant TB[7]. The incident of MDR in the prevention and eradication of TB is the major problem and an obstacle to the efficacy of TB control programs worldwide and in Indonesia. It takes long, from 6 to 9 months, to achieve healing in the treatment of tuberculosis. The treatment time makes the patient bored and tired, which can lead to non-compliance. Studies are needed to improve the adherence to the medicines[8].

In this study, it was found that the factors studied such as respondents' attitudes, distance from

home to health services and family support had a relationship with respondents' medication adherence. In the patient attitude variable in taking medication, it shows that a good patient attitude is greater than that of a patient who has a poor patient attitude. The results of the chi-square test obtained a value of p = 0.009, indicating that there is a significant relationship between patient attitudes and medication adherence in pulmonary TB patients at the Mekar Jaya Health Center 2021. This is in line with the theory of Lawrence Green (Notoatmodjo, 2012), where the attitude is one of the predisposing factors that motivate or are intentional to take medications and one of adherence[4]. Respondents who have a bad attitude have a 3,946 times higher chance of being non-adherence. The results of another study also showed an association between non-adherence with patient attitudes with p-value 0.001 and OR 5.01 and 95% CI; 2.19-11.45[9]. The patient's attitude is influenced by his lack of knowledge about tuberculosis[6],socioeconomic issues encountered, as well as the drug's effects [10].

Furthermore, the majority of respondents are > 3KM away. The distance bivariate test results indicate a relationship with patient adherence to treatment, with interpretation results indicating that patients who travel long distances are more likely to be non-adherence. Distance is one of the reasons patients fail to take medication and follow-up treatment for health services as scheduled[11]. In line with two studies conducted in the Addis Ababa and Amhara regions, Ethiopia, Ethiopian distance is related to transportation costs required by patients to get to health services[11]. Cohort studies also showed that patients living more than 2 km are more at risk for non-adherence[12]. The other reason is that the road infrastructures to the Mekar Jaya Center work area are difficult and that public transportation is out of reach, so that the patients don't have to be there in time.

In this study, 33.8% of the individuals received family support. Emotional support is the highest level of family support, where the family always reminds the patient to medicate each day[8]. Respondents who received no support had 66.2%, although family support would impact on the patient's awareness of TB treatment. The results of statistical family support calculations are related to a therapy adhesion of patients (p = 0,003), when patients who have no family support have a 5,091 (OR) times non-therapy potential. This finding is consistent with several studies that remind patients, who receive social assistance from their families and the environment, to take medicine, to eat and to receive financial help, so that patients are adherence to the treatment they receive[11].

4. Conclussion

It was known based on the results of the study in Mekar Jaya Health Center that the majority of patients adhered to TB treatment with a good degree and other factors related to the adherence of the patient to the medication. The finding demonstrated a strong relationship with medication adherence between patient attitudes, the distance from home, health services and family support. The study is just an initial study requiring further research through the analysis of socio-economic factors and patient activities.

Reference

[1] D. Rosadi, "Faktor-Faktor yang Berhubungan dengan Kepatuhan Pasien Tuberkulosis Paru Terhadap Obat Anti Tuberkulosis," *J. Berk. Kesehat.*, vol. 6, no. 2, p. 80, 2020, doi: 10.20527/jbk.v6i2.9452.
[2] T. R. 2020 WHO, *Global Tuberculousis Report.* .
[3] W. R. TBC, "No Title," no. 2019.
[4] M. Mujamil, L. O. M. Sety, A. Zainuddin, and A. Kusnan, "Analisis Faktor Yang Berhubungan Terkait Kepatuhan Minum Obat Pasien Tuberkulosis Paru BTA+ di Masa Pandemi Covid 19 di Puskesmas Wilayah Kota Kendari," *Nurs. Updat. J. Ilm. Ilmu Keperawatan P-ISSN 2085-5931 e-ISSN 2623-2871*, vol. 12, no. 2, Jun. 2021, doi: 10.36089/NU.V12I2.348.
[5] R. Rojali and N. Noviatuzzahrah, "Faktor Risiko Kepatuhan Pengobatan pada Penderita Tb Paru BTA Positif," *J. Kesehat.*, vol. 9, no. 1, pp. 70–79, May 2018, doi: 10.26630/JK.V9I1.754.
[6] T. Mathes, T. Jaschinski, and D. Pieper, "Adherence influencing factors - a systematic review of systematic reviews," *Arch. Public Heal.*, vol. 72, no. 1, Oct. 2014, doi: 10.1186/2049-3258-72-37/METRICS.
[7] Kemenkes RI, "Tuberkulosis (TB)," *Tuberkulosis*, vol. 1, no. april, p. 2018, 2018, [Online].

Contents lists available at iocspublisher

Science Midwifery

journal homepage: www.midwifery.iocspublisher.org

Available: www.kemenkes.go.id.

[8] I. S. M. Wulandari, J. Rantung, and E. Malianti, "Faktor Yang Berhubungan Dengan Kepatuhan Minum Obat Pasien TB Di Wilayah Kerja Puskesmas Parongpong," *J. Keperawatan …*, vol. 5, no. 1, pp. 128–134, 2020, [Online]. Available: http://journal.um-surabaya.ac.id/index.php/JKM/article/view/4536.

[9] L. Puspitasari, B. Murti, and A. Demartoto, "Social Support on the Adherence to Treatment of Tuberculosis in Cilacap, Indonesia," *Multilevel Anal. Bio-psychosocial Environ. Factors Affect. Risk Pneumonia Infants*, vol. 01, no. 01, pp. 58–65, 2016, doi: 10.26911/jepublichealth.2016.01.01.07.

[10] A. Smaje, M. Weston-Clark, R. Raj, M. Orlu, D. Davis, and M. Rawle, "Factors associated with medication adherence in older patients: A systematic review," *Aging Med.*, vol. 1, no. 3, pp. 254–266, Dec. 2018, doi: 10.1002/AGM2.12045.

[11] Z. S. Nezenega, L. Perimal-lewis, and A. J. Maeder, "Factors influencing patient adherence to tuberculosis treatment in ethiopia: A literature review," *Int. J. Environ. Res. Public Health*, vol. 17, no. 15, pp. 1–12, 2020, doi: 10.3390/ijerph17155626.

[12] K. O. Robsky *et al.*, "Is distance associated with tuberculosis treatment outcomes? A retrospective cohort study in Kampala, Uganda," *BMC Infect. Dis.*, vol. 20, no. 1, pp. 1–9, 2020, doi: 10.1186/s12879-020-05099-z.