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RESEARCH ARTICLE

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The Determinants of Family Support of Lung TB Patients in Consuming Anti Tuberculosis Medicine in Polonia Health Center Medan

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ABSTRACT

Tuberculosis treatment requires a relatively long time with two stages, namely the internship stage and the advanced stage. The number of drugs that must be taken and the toxicity and side effects of the drug can be a barrier in the completion of therapy for tuberculosis patients. Tackling tuberculosis through the provision of anti-tuberculosis drugs (OAT) in the DOTS Directly Observation Treatment Strategy (DOTS). Compliance with TB drugs is not done regularly, not according to the time of treatment, and the use of anti-tuberculosis (OAT) drugs will not adequately cause resistance to OAT or what is called Multi Drugs Resistance (MDR). This study aims to determine the factors that influence family support in patients with pulmonary TB in taking anti-tuberculosis drugs in Polonia Health Center Medan in 2019. The type of research used in this study is an analytical survey with a cross-sectional study design. The population was all Category I Lung Tuberculosis patients who were registered at the Polonia Health Center Medan from October to November 2019. The total sampling was 48 samples. In this study, bivariate and multivariate test analyses were performed using multiple logistic regression formulas. The result showed that there is an influence of patient's family support in taking anti-tuberculosis drugs, there is an influence of taking patient's medication in taking anti-tuberculosis drugs in the Polonia Health Center Medan in 2019. The family suggested involving in taking anti-tuberculosis drugs.

Keywords: tuberculosis; family support; supervision of taking medication; patients

INTRODUCTION

World Health Organization (WHO) declared TB as a Global Health Emergency. TB is considered an important problem because about 1/3 of the world's population is infected with TB mycobacterium⁽¹⁾. In 1998 there were 3,617,047 TB cases registered worldwide. Most of these TB cases (95%) and deaths (98%) occur in developing countries. Among them 75% are in the productive age which is 20-49 years. Due to the dense population and high prevalence, more than 65% of new TB cases and deaths have emerged in Asia⁽²⁾.

In Indonesia, it is still a country that experiences a lot of tuberculosis. Based on the WHO Global Tuberculosis Report in 2010, Indonesia is a country that is recorded as the fifth largest contributor of pulmonary TB cases in the world after India, China, South Africa and Nigeria. Irregular medical treatment behavior is a factor causing failure to achieve recovery⁽³⁾.

The incidence of tuberculosis in Indonesia in 2017 increased by 420,994 cases compared to the number of cases in 2016 as many as 360,565 cases and in 2015 330,910 cases⁽⁴⁾. Based on gender, the number of cases in men is higher than in women which is 1.4 times compared to women in each province throughout Indonesia. From the tuberculosis prevalence survey results found that men have a risk of contracting 3 times higher than in women, this happens because men are more exposed to TB risk

factors such as smoking and non-compliance with taking drugs⁽¹⁾. Based on a survey conducted in 2015 the province of North Sumatra ranks sixth nationally with the number of pulmonary TB 165 cases per 100,000 population in Indonesia⁽⁵⁾.

Adherence to treatment requires active patient participation in self-care management and collaboration between patients and health care workers. Patients who adhere to treatment are those who complete regular and complete treatment without interruption for at least 6 months to 9 months⁽⁶⁾.

Patients are said to be negligent if they do not come more than 3 days to 2 months from the date of the agreement and said to Droup Out if more than 2 consecutive months do not come for treatment. Factors that cause tuberculosis patients are not compliant because they are failing to take medication as recommended, do not follow the rules, stop doing rehabilitation exercises on diet and lifestyle changes recommended by health practitioners, eliminate some of the doses, use drugs for the wrong reasons, take drugs with wrong amount and wrong time, do not continue taking medication until the specified time limit⁽⁵⁾.

The source of transmission is positive smear pulmonary tuberculosis sufferers. When coughing or sneezing, the patient spreads germs into the air in the form of droplets (sputum sparks). Every time a person with pulmonary tuberculosis coughs, 3000 effective droplets will be released (have the ability to infect)⁽⁷⁾. Droplets containing tuberculosis germs will stay in the air at room temperature for 1-2 hours depending on the presence or absence of ultraviolet light, ventilation and humidity. In a humid and dark atmosphere, bacteria can last for days or even months. People can become infected if the droplet is inhaled into the respiratory tract and attached to the airway or lungs. Most of these particles will die or be cleaned by macrophages coming out of the trachea-bronchial branches along with ciliary movements with their secretions. But if not all come out, the bacteria that stay instead stick to and multiply on macrophages and will infect the lungs.

All tuberculosis suspects were examined 3 sputum specimens within 2 days, ie at any time in the morning (SPS). The diagnosis of pulmonary tuberculosis in adults is made with the discovery of Tuberculosis (BTA) bacteria. In the national tuberculosis program, the discovery of AFB through microscopic sputum examination is the main diagnosis. Sputum examination is important because with the discovery of AFB, the diagnosis of tuberculosis can be established. BTA (+) is said if there are two or more sputum smear (+) or 1 smear (+) accompanied by radiological results showing active tuberculosis⁽⁵⁾. As for other examinations such as chest X-ray, culture and sensitivity test can be used as a support for diagnosis as long as it is indicated⁽⁸⁾.

Many factors are thought to influence non-compliance with regular treatment, namely factors, economic, cultural, personal (low knowledge, beliefs, and motivation to take medication), education, and, family support. Treatment by involving the family so that patients adhere to treatment and taking medication⁽¹⁾.

Failure in treatment and prevention will become a health problem. Based on the theory of the Health Belief Model (HBM) individuals will take health actions both in preventing or taking treatment and improving health status which is influenced by factors such as susceptibility to disease, severity or seriousness of the disease felt, perceived benefits, perceived costs or barriers and cues for action derived from personal interactions such as family⁽⁹⁾. Various studies prove only that overcoming these factors is very influential on medication adherence. Non-compliance with treatment strategies is common and is the most common cause of initial treatment failure and relapse⁽¹⁰⁾.

METHODS

Type and Design

This type of research used in this study was an analytical survey with a cross sectional study design that aims to analyze the factors that influence family support in patients with pulmonary TB in taking anti-tuberculosis drugs at the Polonia Health Center in Medan.

Respondents, Data Collection and Data Analysis

The number of respondents in this study were 48 respondents with TB in Polonia Health Center Medan. This analysis was used to see the most influential factors. In this study, for the independent variables, there were five variables that were numeric / continuous, while the dependent variable was

categorical. Based on this, the appropriate multivariate analysis to analyze the data was logistic regression test.

RESULTS

Family Support of Patients in Taking Anti-Tuberculosis Drugs

Family support was obtained from distributing questionnaires. Family support is interpreted as verbal or non-verbal information, advice, tangible assistance or behavior provided by people who are familiar with the subject in their environment or in the form of attendance and things that can provide emotional benefits and affect the behavior of the recipient. Family support refers to social support that members perceive as something that can be accessed or held for the family. Social support may or may not be used, but members perceive that support people are always ready to provide assistance if needed (11).

Based on the results of the study note that of the 48 respondents studied, most respondents received negative family support as many as 31 (64.58%) respondents. Of the 31 (64.58%) respondents, there were 23 (47.92%) respondents received negative family support and were not compliant to take medication and as many as 8 (16.67%) respondents received negative family support and adhered to taking medication. Based on the results of the statistical test calculations the significance of p value is $0.008 < 0.05$, so it can be concluded that there is an influence of the patient's family support in taking anti-tuberculosis drugs at Polonia Health Center Medan in 2019.

Table 1. Effects of family support in taking anti tuberculosis drugs

Family support	Medication obidience						p-value
	Not obey		Obedient		Total		
	f	%	f	%	n	%	
Negative	23	47.92	8	16.67	31	64.58	0.008
Positive	6	12.50	11	22.92	17	35.42	
Total	29	60.42	19	39.58	48	100	

The Effect of Supervision of Taking Patient Medication in Taking Anti Tuberculosis Medicines

Table 2. Results of final stages of logistic regression analysis

Variable	B	P value	Exp(B) OR	95%CI for Exp(B)
Knowledge	1.443	0.040	4.233	1.069 – 16.771
Family support	1.163	0.102	3.199	0.794 – 12.891

Based on table 2 it can be seen that the logistic regression analysis produces 1 (1) the most dominant variable influencing the behavior of pulmonary TB sufferers in taking anti tuberculosis drugs in Polonia Puskesmas Medan in 2019 with p value < 0.05 , namely the knowledge variable with a significant 0.040 (p value < 0.05), OR = 4.233 (95% CI = 1.069 - 16.777) means that respondents who have less knowledge have a 4.233 times chance of non-compliance with taking anti-tuberculosis drugs at the Polonia Health Center in Medan in 2019 compared to respondents who have good knowledge, with Coefficient B value of 1.443 is positive, so the less knowledge the more patients who are not compliant to take anti-tuberculosis drugs in Polonia Health Center Medan in 2019.

DISCUSSION

From the results of the study it was known that the knowledge variable was significantly 0.040 (p-value <0.05), OR = 4.233 (95% CI = 1.069 - 16.7771) meaning that respondents who had less knowledge had a 4.233 times chance of non-compliance with taking anti-tuberculosis drugs in Medan Polonia Public Health Center in the year 2019. Family can be a supporting or inhibiting factor for patients with regular medical treatment until recovery. As for family support for families with tuberculosis, among others, record the time schedule for taking medication, remember the schedule for taking medication, explain the benefits of taking medication, explain what happens if you do not take medication regularly, and encourage sufferers to always take medication diligently even though they feel they have get well⁽¹²⁾.

Family support greatly influences the treatment schedule of patients with Tuberculosis, in improving treatment compliance. , people who live in a supportive environment, the conditions are much better than those who do not have a supportive environment⁽¹³⁾.

Theoretically, family support has several indicators, namely: Emotional support and its Relationship with Medication Adherence. Based on the patient's work factor, the majority of private employees or families who demand a home has a proportion of meetings at home very short and limited, causing communication between families is not optimal, if communication in the family is effective then the family will be easier to recognize the emotional needs of tuberculosis patients so that patients Tuberculosis feels emotional needs are met⁽¹⁴⁾.

Emotional support is a form of affection given by the family to one family member who suffers from an illness. Emotional support provided by this family greatly affects the patient's healing⁽¹⁵⁾. Emotional support provided by the family to patients will encourage patients to be able to undergo treatment regularly, this is because the support provided is used as a driving force for patients in carrying out a therapy program⁽¹⁶⁾.

Support provided by the family is by means of family reminding patients to get enough rest. However, there are still many families who are less emotionally supportive, this may also be caused by other factors that influence adherence such as the lack of knowledge the family has about the treatment undertaken by Tuberculosis patients⁽⁵⁾.

Fulfillment of this support means that the family has appreciated the efforts that have been made by patients in maintaining their health. Besides other forms of appreciation support that the family has provided a good example for patients and provide constructive criticism so that patients can be motivated to further improve their health⁽¹²⁾.

The role of the family lacks support for patients diagnosed with tuberculosis because of the freedom and trust in patients to make decisions regarding treatment and do not respect patient complaints during treatment. This can be influenced by the patient's family has not known from health workers that family members must undergo treatment in a long period of time, and the disease can be contagious so that families try to find more information that can prevent transmission and seek information about the duration of Tuberculosis treatment⁽¹⁶⁾.

The family can be a factor that determines the treatment program during home treatment. The greater the encouragement from the family to family members of tuberculosis patients to be obedient to take medicine, the more likely it is to take medicine obediently and on time and vice versa the less the encouragement from the family to family members of tuberculosis patients to remind patients to take medicine, the more likely it is to drink medicine regularly.

Efforts to improve the regularity of treatment of pulmonary TB patients by collaborating with families of patients as a form of support and supervision of treatment of patients as well as counseling the community to understand Lung TB disease. For patients with pulmonary TB, it is expected that regular treatment so that treatment failure does not occur resulting in the emergence of resistance to drugs and sources of transmission. Here the role of the PMO is very important to give advice so that patients want to take medication regularly⁽¹⁷⁾.

Based on observations and interviews with several PMO people it can be explained that for PMO who have blood relations like nuclear family, can control patients to take medication regularly. The PMO must insist that the patient is willing to take medication, even though it seems that the patient has recovered, even though only a few months after taking the medicine, this makes the patient reluctant to take the medication, because he feels he has recovered. The role of the PMO in healing is very strong, especially if the PMO is a nuclear family, so the motivation for healing the family is very high, on the other hand the patient feels spoiled and does not pay attention to his recovery sometimes not seriously taking medication, even though the family has taken it seriously. From this incident, it can be concluded

that there must be cooperation and mutual understanding between the patient and the PMO for healing. If between the two there is no mutual understanding then the recovery will be incomplete⁽⁵⁾.

Based on the results of the study note that of the 48 respondents studied, most respondents received supervision of inactive drugs as many as 30 (62.50%) respondents. Of the 30 (62.50%) respondents, there were 26 (54.17%) respondents received supervision of inactive and non-compliant medicine taking drugs and as many as 4 (8.33%) respondents were 30 (62.50%) and were obedient taking medication. Based on the results of the statistical test calculations the significance of p value is $0,000 < 0.05$, so it can be concluded that there is an influence of taking medication for patients taking anti tuberculosis drugs at Polonia Health Center Medan in 2019.

CONCLUSION

Based on the results, there is an influence of family support in taking anti tuberculosis drugs at Polonia Health Center Medan in 2019.

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