

## **FAMILY SUPPORT IN MONITORING ADHERENCE TO TAKING MEDICATION IN PATIENTS WITH PULMONARY TUBERCULOSIS**

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### ***ABSTRACT***

*Pulmonary Tuberculosis is one of the 10 main causes of death worldwide from WHO observation levels. Tuberculosis attacks more men than women throughout the world and in 30 countries. The aim of this research is to find out the picture of family support in monitoring medication adherence in Pulmonary TB sufferers in Special Lung Hospital, North Sumatra Province. The type of research is descriptive quantitative with a cross sectional design. In this study there were 66 respondents and the sampling technique was Accidental Sampling. Data collection was by using a questionnaire. The research results showed that family support in the form of appreciation and information support was more dominant, as many as 81.8% of pulmonary TB sufferers were compliant in taking OAT. It is recommended that the Special Lung Hospital staff carry out clear and continuous information dissemination about medication adherence and routine control.*

**Keywords :** *Family support, Medication adherence*

### **INTRODUCTION**

Tuberculosis is a case that is of concern to the world today. This case is one of the 10 highest causes of death in the world that affects more men than women worldwide (WHO, 2020). The highest incidence of Pulmonary TB based on WHO observations, in 2019 was in Southeast Asia (44%), Africa (25%), Western Pacific (18%) with lower percentages in the Eastern Mediterranean (8.2%) and America (2.9%), as well as in Europe (2.5%) and Indonesia (8.5%), and TB prevalence data at the national level varied from less than 5 to more than 500 new and relapsing cases per 100,000 population per year. In 2019, low incidence was confirmed in 54 countries, which included two-thirds worldwide (WHO, 2020).

The low success rate of TB treatment has led to an increase in TB cases in the world. The estimated success rate of treatment is only 56%. This has led to a high mortality rate, from 1.2 million in 2019 to 1.4 million in 2020 and this is due to failures in treatment (Diniati, 2021). WHO (2019), Pulmonary TB cases in Indonesia are estimated to reach 845,000, in 2018 this number increased by 843,000 compared to the previous year. This makes Indonesia one of the countries responsible for 60% of all TB cases in the world.

The Ministry of Health (2021), stated that TB cases in Indonesia are increasing every year, in 2019 there were 312 cases per 100,000 people, in 2020 it became 301 cases per 100,000 people and in 2021 it became 397 cases per 100,000 people. namely West Java, Central Java and East Java.

In North Sumatra province, there was an increase in cases from 26,418 cases in 2018 to 33,779 cases in 2019. The report on the number of cases of Pulmonary TB in the Lung Special Hospital is known The largest case of stopping pulmonary TB treatment occurred in 2017 as many as 86 cases out of a total of 147 cases of pulmonary TB, the smallest in 2018 as many as 63 cases out of a total of 117 cases of pulmonary TB. In 2019 until May there were 95 cases of Pulmonary TB and 26 reported cases of stopping taking medication (Rivai Harahap et al., 2020). This is the focus of attention in North Sumatra, to reduce the case. This effort is contained in the 2015-2019 National Medium-Term Development Plan (RPJMN) which sets health development goals, namely reducing 577,188 cases of pulmonary TB in 2019 with an incidence rate of 245 per 100,000 population. (North Sumatra Health Office, 2019).

Family support relationships are a very important source of social support, especially for patients with chronic pulmonary tuberculosis who need long-term care. Family is the main support for people with pulmonary TB, and is responsible for helping patients take medication regularly and thoroughly (Trilianto et al., 2020). Closeness in relationships is the most important source of social support. Various research results suggest that the success of treatment with patient compliance during treatment and the quality of life of TB patients can increase with family support (Warjiman et al., 2022). Amalia (2020), stated that the relationship between family support and the success of pulmonary tuberculosis treatment at the Dinoyo Malang Health Center showed that 89% of respondents were very obedient and 10% of respondents were quite obedient. 1% of respondents had poor adherence to taking Pulmonary TB medication.

From the background above, researchers are interested in conducting research on family support support in tuberculosis patients, especially in relation to monitoring medication adherence, at the Medan City Lung Special Hospital in 2023. The formulation of the problem in this study is how to support family in monitoring medication adherence in patients with pulmonary TB in 2023 at the Medan City Lung Special Hospital in 2023. This study aims to see the picture of family support in monitoring medication adherence in patients with Pulmonary TB at the North Sumatra Province Lung Special Hospital.

## **METHOD**

The type of research used is quantitative descriptive research, using a cross-sectional approach, which has been carried out at the Medan Lung Special Hospital, North Sumatra.

The research has been conducted in June-August 2023.

Polpulation in this study is that all Pulmonary TB patients at the Medan Lung Special Hospital in North Sumatra in 2023 there are 193 people. The sample in this study was calculated using the formula:

$$n = \frac{N}{1+N(e)^2}$$

n : Approximate number of samples.

N : Large population.

e : Confidence Level 10%.

A sample of 66 respondents was obtained. The sampling technique is done by Accidental Sampling. Data collection was carried out by filling out the family support questionnaire and the Morinsky Medication Adherence Scale (MMAS) standard questionnaire while secondary data was obtained from the North Sumatra Provincial Lung Special Hospital.

The collected data will be processed and analyzed by describing the frequency distribution with Pulmonary TB and family support and medication adherence in the frequency distribution table.

## **RESULTS AND DISCUSSION**

The results of the study are presented in the form of a frequency distribution table below;  
Table 1 Frequency Distribution of Characteristics of Pulmonary TB Patients in Special Lung Hospital North Sumatra Province

Characteristic	n	%
<b>Age</b>		
15-44 Tahun	34	51,5
>45 Tahun	32	48,5
<b>Gender</b>		
Male	39	59,1
Female	27	40,9

<b>Education Level</b>		
Elementary School	6	9,1
Middle School	14	21,2
High School	41	62,1
College	5	7,6
<b>Occupation</b>		
Unemployed	23	34,8
Farmers	2	3,0
Laborers	2	3,0
Retirees	1	1,5
Self-Employed	37	56,1
Civil Servants	1	1,5
<b>TOTAL</b>	<b>66</b>	<b>100</b>

The table above shows, the most patients with pulmonary TB are at the age of 34 years, there are 51.56%; male, 59.1%; High school education is 62.1% and has a job as self-employed, amounting to 56.1%.

Table 2 Distribution of Family Support for Pulmonary TB Patients in the Special Lung Hospital of North Sumatra Province

<b>Family Support</b>	<b>n</b>	<b>%</b>
<b>Emotional support</b>		
Less	0	0
Enough	5	7,6
Good	61	92,4
<b>Award Support</b>		
Less	0	0
Enough	2	3,0
Good	64	97,0
<b>Information Support</b>		
Less	0	0
Enough	2	3,0
Good	64	97,0
<b>Instrumental Support</b>		
Less	2	3,0
Enough	6	9,1
Good	58	87,9
<b>Total</b>	<b>66</b>	<b>100</b>

The table above shows that patients with pulmonary TB received emotional support in the good category there was 92.4%; award support for good categories of 97%; Information support in the good category was 97% and informational support in the good category was 87.9%.

Table 3 Distribution of Adherence to Taking Medication for Pulmonary TB patients in the Special Lung Hospital of North Sumatra Province

Adherence to taking medication	n	%
Low Compliance	5	7,6
Moderate compliance	7	10,3
Low compliance	54	81,8
Total	66	100

The table above shows that adherence to taking medication for TB patients in the Lung Special Hospital is in the low category, there are 81.8%.

## DISCUSSION

Age is one of the most important characteristics, since age is closely related to exposure. Age has a relationship with the level of risk of certain diseases and the nature of resistance in certain age groups. Differences in exposure, susceptibility, pathogenesis, and differences in experience for some diseases are important for human age. (NurNasry, 2008 in Hindawulani, 2017).

Pulmonary tuberculosis is usually diagnosed at a young age or reproductive age, which is between the ages of 15 to 50 years. Demographic changes, the life expectancy of the elderly increases, after the age of 55 years, the human immune system weakens, making it easy to develop diseases, especially tuberculosis (Naga, 2017).

This situation can occur due to the presence of pathogens, agents and unhealthy environmental factors and host factors including body resistance. A person can contract pulmonary tuberculosis if an airborne pathogen (*Mycobacterium tuberculosis*) contaminates the air, then a healthy person inhales this bacteria in large quantities, with a long exposure time and of course by itself. have low immunity (Bintoro, 2014)

The sex factor is one of the descriptors that can provide differences in incidence rates between men and women. Differences in prevalence in sex differences should also be considered as another variable that indicates disease differences (Nur Nasry, 2008 in Hindawulani, 2017).

The results of this study found that the majority of men were 39 respondents (59.1%). This is because men are more susceptible to this disease because smoking and alcohol consumption can weaken the body's defense system. Men are at risk for several reasons compared to women because women's immune system is higher than men. Another cause is the difference in the incidence of pulmonary tuberculosis in men and women is a difference in lifestyle. Possible lifestyle differences are smoking and drinking alcohol.

Surakhmi Oktavia et al. (2016), pulmonary tuberculosis is a lung disease caused by air pollution caused by *Mycobacterium tuberculosis* bacteria. Bacteria in which both sexes have an equal risk for TB infection. Tuberculosis is an infectious disease that affects the lungs of malnourished people, regardless of gender, in hospitals.

A person's level of education affects his knowledge of healthy living and his knowledge of pulmonary tuberculosis, so with enough knowledge one can strive to be healthy and change one's lifestyle to be clean and healthy. A person's level of education affects how they react to what comes from outside. Highly educated people react more rationally. The information obtained can consider the amount of potential profit that will be obtained. Education can make

a difference in human behavior, including a person's lifestyle. Providing motivation, to behave healthily to avoid disease transmission, is very necessary in supporting Health Development. The provision of health education needs to be provided on an ongoing basis to increase a person's understanding of their health status.

The types of jobs obtained in this study, the majority are Self-employed. This type of work describes the status of the job that is not limited by time and space. This condition can increase the risk of transmission and hamper the treatment being carried out by the patient. Occupational factors can affect the regularity of treatment and the schedule of visits that are being undertaken by sufferers. The type of work that sufferers have can show attachment and freedom of the activities they carry out daily. The income earned each month will show how the picture of treatment and care during treatment to nutritional arrangements and prevention efforts so as not to transmit to others or family members.

The results of research by Surakhmi Oktavia et al. (2016) show that 63.7% of respondents on average work in the informal sector and have irregular monthly income, which directly affects nutrition and health due to an inadequate living environment for their own living and health needs. Hiswani (2014), low income can increase a person's risk of suffering from tuberculosis. This situation leads to poor accommodation (room temperature, ventilation, lighting, humidity, sufficient sanitation) and overcrowding, lack of food and poor working conditions. Humidity in the house facilitates the proliferation of pulmonary tuberculosis bacteria and ventilation conditions that are less than 15% of the floor area are closely related to the incidence of tuberculosis.

Family support is the family's attitude of action and acceptance towards family members who are supportive or always ready to provide help and assistance if needed. Good family support and family roles if able to provide motivation, support and information that encourage patients to seek regular treatment as recommended (Pitters et al., 2019). Family support is one of the factors that affect adherence to tuberculosis therapy, the family acts as a support system for sick family members. Families are always ready to provide help and support when needed (Friedman, Bowden & Jones, 2010).

Obedience is the response that occurs when a person is confronted with a stimulus. A person is said to be disobedient when he does not obey the rules that have become regulated. Adherence to taking medication in patients with Tb patu can be influenced by several variables, such as: age, gender, education, occupation, knowledge, attitudes and the role of Drug Taking Monitors (PMO) (Budiman, Mauliku & Anggraeni, 2010).

Adherence to taking medication in patients with pulmonary TB can be overcome with alternatives in the form of family support. Family support for sick people can be in the form of attention to daily needs given to patients (Niven, 2002). Purwanta (2005), a monitor of taking medication for patients with pulmonary tuberculosis who is expected to be someone who lives in the same house with the patient. Dhewi et al. (2011) stated that family support is related to adherence to taking medication in tuberculosis patients. PMO should be a family member (child or spouse). Close emotional connections have a significant impact on PMOs, in addition to drug monitoring, they also provide emotional support to sufferers.

Emotional support from family gives people with Pulmonary TB confidence because they feel cared for and loved. Families can reward patients if the treatment they undergo is

timely, families can give praise and still encourage patients to be more obedient in treatment (Muna & Soleha, 2018).

Instrumental support can be observed when the family motivates the patient to carry out treatment and does not charge the patient's medical expenses, so that in undergoing treatment the patient does not need to worry. Emotional support from family will give confidence because they feel cared for and loved.

Caplan in Friedman (1998), the family functions as a collector and disseminator, that is, as a mediator of information about the world to other family members. This statement reinforces that health workers and families jointly take part in providing support to patients (Deshpande, 2019). The results of research on adherence to taking medication, in TB patients at the Lung Special Hospital, the majority (81.8%) are obedient to taking OAT (Anti-Tuberculosis Drugs). A strong desire or drive to heal, good family support, such as reminding to take medication every day, becomes a support for the success of such adherence.

Treatment of pulmonary tuberculosis takes a long time and routine, which is for 6-8 months. A long time can cause boredom for sufferers, so the possibility of drug withdrawal can occur. Withdrawal can result in the occurrence of double immunity of pulmonary TB germs to Anti-pulmonary TB Drugs (OAT). This can cause the disease to become chronic so that it requires even more expensive costs for treatment. Tuberculosis treatment takes a long time, the disease is difficult to cure, this disease affects the work and healing process is too long, so that Pulmonary Tuberculosis patients do not pay attention to the results of further Pulmonary Tuberculosis examination and stop treatment.

The success or failure of Pulmonary Tuberculosis treatment depends on support for complete treatment will affect the patient's adherence to taking the drug. If the patient stops taking the drug will result in the emergence of drug-resistant tuberculosis germs. If this continues and the bacteria continue to spread, then tuberculosis drug control will be increasingly difficult to achieve and the death rate from tuberculosis will increase. The goal of treatment of tuberculosis patients is not only drug administration, but disease monitoring and providing optimal information about treatment are also very important. The DOTS program is designed to ensure that patients who have taken medication regularly and return for examinations to evaluate treatment outcomes (Fitri, 2018).

Bunner & Suddarth (2002) found that abandonment or incompleteness of therapy impairs a person's resilience. Patients who do not comply with treatment must be educated about the importance of adherence to treatment because if patients do not comply with treatment, there can be resistance to previous treatment.

## **CONCLUSION**

The results showed that as many as 51.5% of pulmonary TB sufferers were in the age category of 15-44 years, 59.1% were male, the highest level of education was high school as much as 62.1%, the most jobs were self-employed as much as 56.1%. Family support obtained by patients with pulmonary TB in the treatment process, the majority is reward support and information support, each 97%, and as many as 81.8% of patients studied have adherence to taking OAT.



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