



## FAMILY SUPPORT WITH THE OCCURRENCE OF TB TREATMENT COMPLIANCE

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### ABSTRACT

Tuberculosis has been known for more than a century since the discovery of the germ that causes Tuberculosis by Robert Koch in 1882. WHO in 1993 said that TB is a very important and serious public health problem throughout the world and is a disease that causes a global emergency, because one in three of the world's population is estimated to have been infected with *Mycobacterium tuberculosis* (also called Acid-Fast Bacillus = AFB) as the germ that causes TB as evidenced by the Mantoux test. Geographically, the most cases of TB are in Southeast Asia (45.6%), Africa (23.3%) and the Western Pacific (17.8%), and the smallest in the Eastern Mediterranean (8.1%), The Americas (2.9%) and Europe (2.2%). This study uses a quantitative approach, by formulating a hypothesis which is then subjected to statistical testing to accept or reject the hypothesis. This study aims to determine the relationship between family support and treatment compliance in tuberculosis patients. Based on the table above about instrumental support shows that less instrumental support (10%) in non-compliant patients is lower compared to good instrumental support (57.1%). Based on statistical tests, the p-value on instrumental support is 0.001 which means there is a significant relationship between instrumental support and tuberculosis treatment compliance.

Keywords: compliance level; family support; TB treatment

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## INTRODUCTION

Tuberculosis has been known for more than a century since the discovery of the germ that causes Tuberculosis by Robert Koch in 1882. However, Tuberculosis (TB) is still a health problem worldwide and is the leading cause of death caused by infectious diseases. WHO in 1993 said that TB is a very important and serious public health problem worldwide and is a disease that causes a global emergency, because one in three of the world's population is estimated to have been infected with *Mycobacterium tuberculosis* (also called Acid-Fast Bacilli = AFB) as the germ that causes TB as evidenced by the Mantoux test. Geographically, the most cases of TB are in Southeast Asia (45.6%), Africa (23.3%) and the Western Pacific (17.8%), and the smallest in the Eastern Mediterranean (8.1%), The Americas (2.9%) and Europe (2.2%). There are 10 countries contributing two-thirds of the total TB cases, namely India (27.9%), Indonesia (9.2%), China (7.4%), Philippines (7.0%), Pakistan (5.8%), Nigeria (4.4%), Bangladesh (3.6%), Democratic Republic of the Congo (2.9%), South Africa (2.9%) and Myanmar (1.8%) (Sulistyo, et al. 2023:1).

Tuberculosis (TB) is caused by the bacteria *Mycobacterium tuberculosis*. This bacteria generally attacks but can also attack other parts of the body such as the kidneys, spine, and brain. The following are some factors that increase a person's risk of contracting TB: contact with TB Patients: Living or interacting closely with someone who has active TB; weak

Immune System: People with weak immune systems, such as those with HIV/AIDS, diabetes, or those receiving immunosuppressant therapy, are more susceptible to TB; crowded Living Conditions: Densely populated environments with poor ventilation increase the risk of TB transmission; malnutrition: Malnutrition can weaken the immune system, making a person more susceptible to TB infection; alcohol and Drug Abuse: Abuse of these substances can weaken the immune system, smoking: Smoking can damage - and increase the risk of getting TB; and TB is spread through the air when an infected person coughs, sneezes, or talks, spreading bacteria into the air that can then be inhaled by others

TB is a chronic and infectious disease through droplets into the air. The estimated incidence of TB in Indonesia in 2021 was 969,000 or 354 per 100,000 population; TB-HIV was 22,000 cases per year or 8.1 per 100,000 population. TB deaths are estimated at 144,000 or 52 per 100,000 population and TB-HIV deaths are 6,500 or 2.4 per 100,000 population. Based on the tuberculosis incidents in 2000-2020, there was a decrease in TB incidents and TB mortality rates, although not too sharp, but in 2020-2021 there was an increase. The incidence of TB in 2021 increased by 18% (absolute in 2020; 819,000 in 2021; 969,000 and rate per 100,000 population in 2020; 301 in 2021; 354) and the TB mortality rate increased by 55% for absolute (in 2020; 93,000 in 2021; 144,000), 52% for the rate per 100,000 population (in 2020; 34 in 2021; 52). Based on the TB incident of 969,000 cases per year, there were 724,309 TB case notifications in 2022 or 75% (Sulistyo, et al. 2023) and there were still 25% that had not been notified; both those that have not been reached, have not been detected or have not been reported (Ministry of Health, 2022).

Based on the researcher's observation of patient data at the Langkahan Lhoksukon Health Center UPTD, Aceh in 2021-2023, data on the number of TB patients was obtained as many as 50 patients. The results of interviews conducted by researchers in one day obtained 5 patients, where 3 patients said that they received positive support from their families, namely, the family accompanied the patient to come for check-ups, reminded them to take their medicine, and monitored the patient's health. Two other patients came with their families with complaints that arose after tuberculosis treatment, due to irregular medication intake, feelings of boredom due to long treatment and feeling cured because there were no symptoms during treatment. The purpose of this study was to identify the relationship between family support and increased adherence to treatment in patients with tuberculosis at the Langkahan Lhoksukon Health Center UPTD, North Aceh, Aceh.

## **METHOD**

This study uses a quantitative approach, by formulating a hypothesis which is then subjected to statistical testing to accept or reject the hypothesis. The specifications of this research activity are systematic, planned, and structured starting from the creation of a research design, both regarding research objectives, research subjects, research objects, data samples, data sources and methodology (Sugiono, 2015). Quantitative research emphasizes testing theories through measuring research variables with numbers and conducting data analysis with statistical procedures. The type of research used is correlational, namely research that aims to. The design of this research data collection uses a cross-sectional approach. The cross-sectional approach is a type of research that emphasizes the time/measurement of observation of variable data assessed simultaneously at one time, so there is no follow-up. Of course, not all research subjects must be observed on the same day or time. However, both independent variables and dependent variables are assessed only once (Nursalam, 2013).

**RESULT**

Tabel 1.  
Respondent characteristics

Characteristics	f	%
Family Support		
Not Good	13	29,5
Good	31	70,5
Emotional Support		
Not Good	30	68,2
Good	14	31,8
Instrumental Support		
Not Good	30	68,2
Good	14	31,8
Information Support		
Not Good	31	70,5
Good	13	29,5
Support Awards		
Not Good	26	59,1
Good	18	40,9
Tuberculosis Treatment Compliance		
Not Obey	11	25
Obey	33	75

Table 1 shows that respondents who rated family support as "poor" ranged from 13 to 31 respondents (29.5% to 70.5%), while those who rated family support as "good" ranged from 13 to 31 respondents (29.5% to 70.5%). Family support includes emotional, instrumental, informational, and rewarding aspects. In the tuberculosis treatment compliance variable, there were 11 respondents (25%) who were non-compliant, while 33 respondents (75%) showed compliance.

Table 2.  
The relationship between emotional support, instrumental support, information support, appreciation support and family support with tuberculosis treatment compliance

Variable	Not Obey		Obey		Total		Or 95%	P-value
	f	%	f	%	f	%		
Emotional Support								
Not Good	2	6,7	28	93,3	30	100	0,040	0,001
Good	9	64,3	5	35,7	14	100	0,007-0,241	
Instrumental Support								
Not Good	3	10	27	90	30	100	0,083	0,001
Good	8	57,1	6	42,9	14	100	0,017-0,411	
Information Support								
Not Good	2	6,5	29	93,5	31	100	0,031	0,001
Good	9	69,2	4	30,8	13	100	0,005-0,196	
Support Awards								
Not Good	1	3,8	25	96,2	26	100	0,032	0,001
Good	10	55,6	8	44,4	18	100	0,004-0,290	
Family Support								
Not Good	7	63,6	6	36,4	13	100	7,875	0,013
Good	4	18,2	27	81,8	31	100	1,733-35,785	

Table 2 shows that good emotional, instrumental, informational, and esteem support have a significant relationship with tuberculosis treatment adherence. Good emotional support reached 64.3%, instrumental support 57.1%, informational support 69.2%, and esteem support 55.6% in patients who are compliant, with p-values of 0.001 for each variable, indicating a significant relationship. Of the 44 respondents, 13 respondents (63.6%) with poor family

support showed non-compliance of 36.4%, while 31 respondents (81.8%) with good family support showed a high level of compliance (p-value 0.013 <0.05). This confirms that family support significantly influences tuberculosis treatment adherence.

## **DISCUSSION**

### **Medication Compliance**

The results of the study showed that most Tuberculosis patients were compliant in taking medication 33 (75%). Patients who were said to be compliant in taking medication were patients who finished their medication according to the advice of health workers and returned to the Health Center to take the next medication according to the schedule determined by health workers. Brunner & Suddarth (2002) stated that poor compliance or incomplete therapy are factors that contribute to individual resistance. Patients who are not compliant need an explanation of the importance of compliance in taking medication because if the patient is not compliant in undergoing treatment, the patient will be resistant to the previous drug. Intensive counseling carried out directly or indirectly can increase knowledge which will ultimately encourage and increase the regularity of treatment and taking medication (Notoatmodjo, 2005).

### **Emotional Support and Its Relationship with Medication Compliance**

Based on table 2 on emotional support, it can be seen that almost half of the respondents received insufficient emotional support (68.2%). Although most respondents received insufficient emotional support, 31.8% of respondents also received good emotional support. This condition is quite good but needs to be improved so that all patients have good emotional support. If we look at these results, it is likely caused by the patient's work, which is mostly private employees or families who require patients and families to be more active outside the home so that the proportion of meetings at home becomes very short and limited, resulting in communication between families being less than optimal. If communication within the family is effective, it will be easier for the family to recognize the emotional needs of the 44 tuberculosis patients so that tuberculosis patients feel that their emotional needs are met. This is reinforced by Satir's statement (1972) in Friedman (1998), which states that it is impossible for a family to meet the emotional needs of its family members without a clear and functional pattern of communication in the family. Therefore, communication can be a vehicle for recognizing and responding to the psychological needs of family members. Emotional support is a form of affection given by the family to a family member who suffers from an illness. The emotional support given by the family greatly influences the patient's healing (Friedman, 1998). The emotional support given by the family to the patient will encourage the patient to undergo treatment regularly, this is because the support given is used as driving energy for the patient in carrying out a therapy program (Sardiman, 2001).

The results of the study showed that emotional support and its relationship with medication adherence can be seen that non-compliant patients mostly received less emotional support (25.7%). Based on the results of bivariate analysis with the Chi-Square statistical test, there was no significant relationship between emotional support and 69 medication adherence with Pvalue = 0.437 (> 0.05). The results of this study are not in line with Afriani's (2009) study that the role of emotional support influences medication adherence. Based on the results of the study collected through questionnaires, it can be seen that the family has tried to provide support to the patient. The support provided by the family is by reminding the patient to get enough rest. However, there are still many families who lack emotional support, this may also be caused by other factors that influence adherence, such as the lack of knowledge the family has about the treatment undergone by the tuberculosis patient.

### **Reward Support and Its Relationship with Medication Compliance**

The results of the study showed that most of the appreciation support was good (40.9%). Although most respondents had received good appreciation support, there were still many respondents who received less support (59.1%). This condition was quite good but needed to be improved so that all patients had good appreciation support. This lack of appreciation support can be influenced by the lack of appreciation for Tuberculosis patients. In addition to that, it can also be due to the lack of patient autonomy in making decisions regarding their treatment because decision-making is still dominated by the family. The fulfillment of this support means that the family appreciates the efforts that the patient has made in maintaining their health. In addition, another form of appreciation support is that the family has provided a good example for the patient and provided constructive criticism so that the patient can be motivated to further improve their health. As expressed by Siagia in Koizer (2004) when a person's actions get praise or positive encouragement from others, then the person tends to repeat the same action. The results of this study on award support and its relationship with medication adherence can be seen that most patients who are not compliant have received good award support 22.9%. Based on the results of bivariate analysis with the Chi-Square statistical test, there was no significant relationship between award support and medication adherence with  $P\text{value} = 0.860 (> 0.05)$ . The results of this study are in line with Afriani's (2009) study that the role of appreciation support does not affect medication adherence. This may be caused by the family not giving enough freedom and trust to the patient to make decisions related to their treatment or the family not appreciating the patient's suggestions and complaints during their treatment.

### **Information Support and Its Relationship to Medication Compliance**

The results of this study on information support can be seen that sufficient and good information support have the same percentage, namely (29.5%). This can be influenced by the lack of counseling provided by health workers and the intensity of family exposure to sources where information can be obtained such as: newspapers, TV, magazines, radio and neighbor experiences. If the family is rarely exposed to the above information sources, the family will only get a little information about the patient's health. The acceptance or capture of information received by the family can also be influenced by the family's level of education. Caplan in Friedman (1998), stated that the family functions as a collector and disseminator, namely a disseminator of information about the world to other family members. This statement strengthens the evidence that apart from health workers, the family also has a role in providing support in the form of information.

The results of this study on information support and its relationship with medication adherence can be concluded that most non-compliant Tuberculosis patients have less information support (23.5) from their families. Based on the results of the bivariate analysis 72 with the Chi-Square statistical test, there was no significant relationship between information support and medication adherence with  $P\text{value} = 0.764 (>0.05)$ . The results of this study are in line with Afriani's (2009) study that the role of Information Support does not affect medication adherence. This can be influenced because the patient's family has not yet learned from health workers that their family members must undergo long-term treatment, and the disease can be transmitted so that the family tries to find more information that can prevent transmission and seek information about the length of Tuberculosis treatment.

### **Instrumental Support and Its Relationship with Medication Compliance**

The results of the study on instrumental support can be seen that most of the instrumental support is good (31.8%). Although most respondents have received good instrumental support, there are still many respondents who receive less support (68.2%). This is likely because the poverty rate in Indonesia was quite high in 2010, reaching 31.02 million, making it difficult for instrumental support to be met or given optimally to patients. Sarafino (1998) argues that instrumental support is very much needed by Tuberculosis patients, this support includes providing 73 direct assistance, such as giving/lending money, taking patients for health checks. Instrumental support is needed by patients to get the means to meet their needs. The family is a source of practical and concrete help for other family members (Caplan in Friedman, 1998). If the poverty rate is high, the possibility of providing or receiving instrumental support is smaller. The results of this study on instrumental support and its relationship with medication adherence can be seen that non-compliant patients are more likely to have less support, 21.2%. Although most non-compliant patients receive less instrumental support, as many as 20.0% of non-compliant patients have also received good family support. Based on the results of bivariate analysis with the Chi-Square statistical test, there was no significant relationship between instrumental support and medication adherence with Pvalue = 1,000 ( $> 0.05$ ).

The results of this study are in line with Afriani's research (2009) that the role of instrumental support does not affect medication adherence and the results of this study are not the same as the theory put forward by Taylor (1995) that instrumental support is very much needed for Tuberculosis patients, especially patients who are not compliant in taking 74 drugs, this support can help meet the needs required by patients. This can be influenced by other factors that are more influential such as income factors or family economic status, if the family's income is low, it is difficult for the family to provide the needs required by the patient for optimal treatment.

### **CONCLUSION**

The results of this study indicate that family support, whether emotional, instrumental, informational, or esteem, plays an important role in the treatment compliance of tuberculosis patients. Most respondents have insufficient family support, namely emotional support (68.2%), instrumental (68.2%), informational (70.5%), and esteem (59.1%). Meanwhile, treatment compliance is still low, with 33 respondents (75%) non-compliant. These data indicate a correlation between low family support and low levels of treatment compliance. Therefore, increasing the role of the family in providing comprehensive support to tuberculosis patients needs to be a focus in efforts to improve treatment compliance.

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