



## Analysis of Factors Affecting the Success of Pulmonary TB Treatment in the Working Area of Puskesmas Sukaramai, Pakpak Bharat District

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**Abstract.** Tuberculosis disease is still a global problem at this time, the WHO (World Health Organization) report in 2023, there were 9.6 million people in the world suffering from pulmonary tuberculosis and 1.5 million of them died. While the number of cases of pulmonary TB at the Sukaramai Health Center in 2023 was 321 total cases and 43 people recovered. The purpose of the study was to analyze the factors that influence the success of Pulmonary TB treatment in the Sukaramai Puskesmas Working Area, Royal District, Pakpak Bharat Regency. The research design used Analytical Survey method with Cross Sectional approach. The population in this study were all TB patients who sought treatment at the Sukaramai Health Center, namely 101 patients, all of whom were sampled using the total population technique. Data analysis used univariate analysis, bivariate with chi-square test and multivariate with logistic regression. The results of logistic regression research show that there is an influence of knowledge  $p = 0.000$ , family motivation  $p = 0.001$  adherence to taking medicine  $p = 0.003$  and side effects of drugs  $p = 0.010$ . While the dominant factor that influences the success of Lung TB treatment is knowledge  $p = 0.000$  with an Exp(B) value of 60.141, meaning that knowledge has 60 times the risk compared to other variables. The conclusion of this study is that there is an influence of knowledge, family motivation, adherence to taking medication and side effects of drugs on the successful treatment of Pulmonary TB in the Working Area of the Sukaramai Health Center, Royal District, Pakpak Bharat Regency and variables that do not affect the distance of health services. It is recommended for patients with pulmonary tuberculosis to be more independent in undergoing pulmonary tuberculosis treatment, active in field counseling activities and using social media as a promotional medium, conducting home visits to patients' homes in an effort to monitor drug compliance in order to increase the acceleration of healing of pulmonary tuberculosis disease which is for their own health and the health of the family around them.

**Keywords:** Knowledge, Family Motivation, Adherence to Taking Medication, Side Effects of Medication, Distance to Health Services, Successful Treatment

### 1. INTRODUCTION

The problem of tuberculosis is still often found in society, spreading very quickly and very easily, both through droplets and equipment used daily. Tuberculosis is an infectious disease transmitted by the bacterium Mycobacterium tuberculosis, which is a cause of death, especially in developing countries throughout the world. This disease is spread throughout the world, and Indonesia is known as the largest country with tuberculosis sufferers in the entire world after India and China. (Acmadi,2014).

Based on the WHO (World Health Organization) report in 2023, there will be 9.6 million people in the world suffering from pulmonary tuberculosis and 1.5 million of them will die. WHO also stated that the incidence rate of pulmonary tuberculosis in 2023 is 183/100,000 population and the prevalence rate of tuberculosis in 2023 is

272/100,000 population. Tuberculosis is a disease of global concern, but tuberculosis is estimated to still attack 9.6 million people and cause 1.2 million deaths in 2023. The countries with the most tuberculosis sufferers are India 23%, Indonesia 10% and China 10% of all sufferers in world. (WHO. Global Tuberculosis Report 2023).

According to the Indonesian Health Profile (2023), tuberculosis can attack all ages, not only old age, but also young and productive age. According to age groups, the most new cases were found in the 25-34 year age group, (18.65%), followed by the 45-45 year age group (17.33%), and the 35-44 year age group (17.18% ). According to gender, the number of positive BTA cases in men is 1.5 times higher than positive BTA cases in women. (Republic of Indonesia Ministry of Health. 2023).

According to the North Sumatra Provincial Health Service (2022), of all provinces in Indonesia with tuberculosis sufferers, North Sumatra Province is in sixth position with the highest number of sufferers. There will be 16,500 people suffering from tuberculosis in North Sumatra Province in 2022. First place is North Sulawesi province with 23,800 people, West Papua with 23,500 people, DKI Jakarta with 22,200 people, Papua with 21,600 people, Maluku with 21,300 people. (Dinkes Provsu, 2022). Data for 2022 of pulmonary TB cases in Pakpak Bharat Regency is 1,196 cases. The cure rate (cut rate) for pulmonary TB sufferers was 88.2% or 756 cases, the complete treatment rate was 37.6% or 440 cases and the treatment success rate was 91.1% or 917 cases. (Dinkes Provsu, 2022).

In order to achieve healing, it is necessary to comply with each patient taking medication. Compliance is individual behavior (such as taking medication, undergoing treatment, or making lifestyle changes) according to therapy and health recommendations. ( Kozier, B. 2015) .Patient non-compliance with treatment is a serious health problem and often occurs in patients with chronic diseases, such as pulmonary tuberculosis. The average patient compliance with long-term treatment for chronic diseases is 20-60%. This is supported by research conducted by Prasetya (2020), it was found that the compliance rate for TB sufferers in taking anti-tuberculosis drugs was only 25.86%. ( Safri, 2020) .Meanwhile, research conducted by Safri (2020), found that the compliance rate for TB sufferers in taking anti-tuberculosis drugs was 33%.(7).Another study conducted by Dhewi (2021), found that the compliance rate for pulmonary TB sufferers in taking anti-tuberculosis drugs was 60%.

Health behavior is determined by 3 factors, namely predisposing factors including age, gender, education, occupation, knowledge and attitudes. Supporting factors (enabling factors) include side effects from taking medication, type of patient who owns a JKN card, access to health services, and area of residence. Lastly, reinforcing factors include family support and the role of health workers.

Based on the profile of the Sukaramai Health Center for 2021-2023, the number of pulmonary TB cases in 2021 was 175 cases, 26 people recovered, in 2022, 243 cases recovered, 31 people recovered, while in 2023, 321 cases of pulmonary TB sufferers recovered, 43 people. Based on the basis of the Ministry of Health's target for pulmonary TB cases of 80%, while the achievements of Sukaramai Health Center is still far from the target, namely 40-50% every year. The total number of pulmonary TB cases in 2023 will be 321 and 43 people will recover, bringing the total number of cases to 278 cases. The details of the number of cases in children are 23 people and adults are 255 cases. The number of new cases < 6 months in adulthood was 154 cases and old cases > 6 months and drop outs were 101 cases.

Based on previous studies at the Sukaramai Community Health Center, it was found that many people have insufficient knowledge, such as not knowing and understanding pulmonary TB disease, both its causes, transmission, prevention and treatment. If this continues to happen, it will make the patient's illness worse, as it is known that pulmonary TB disease can take medication with a long period of 6-12 months. Supported by the response from the community, especially pulmonary TB patients, when they were given education about this disease, many patients did not understand this, this was related to education, the majority of patients graduated from elementary school or middle school or even did not finish school. Judging from the patient's environment, such as the immediate family does not provide motivation in treatment efforts so that the patient is not compliant with treatment, the family is busy working such as gardening so there is no time to remind them to take medication every day, other support such as the family does not have time to take the patient to control the disease or taking medicine when it has run out, supported by access to health services such as community health centers far from where they live makes families reluctant to take patients to the community health center. Another reason for the lack of family motivation is that families are afraid to interact with other families for fear of contracting pulmonary TB.

Anti-tuberculosis drugs (OAT) are the most important component in tuberculosis treatment. The dose of drug given must be sufficient and within the specified time to avoid TB germs developing resistance to the drug. Another fact is that pulmonary TB disease is difficult to cure because several types of medication must be given at once and the treatment takes a long time, at least 6-12 months. Apart from that, there are many types of medicine they take and when they take medicine they will experience side effects, such as nausea, vomiting, indigestion, loss of appetite and so on. These things make them disobedient in taking medication.

Based on the description above, this research is important to carry out that is because pulmonary TB medication is taken long term for 6-12 months, it must be consumed every day without stopping a single day, if one day is missed then the pulmonary TB treatment will be repeated from the beginning, if this anti-TB medication is not consumed or not drunk Regularly it will cause resistance to the drug, if this continues to be left untreated it will make pulmonary TB disease worse and the most fatal thing is causing weight loss, loss of appetite, weakened immunity and easily contracting other diseases which cause complications. Apart from the side effect factor of the drug which makes patients not able to take anti-pulmonary TB drugs, another factor which is the reason why researchers took part in this research is because the population density is still very high. The results of the initial survey showed that in one house there are 3 heads of families, children and in-laws live in the same house.

## **2. RESEARCH METHODS**

The research design uses quantitative methods using an analytical survey with a cross sectional study approach, which is a research design where the independent variable and dependent variable are measured and collected at the same time. The population in this study is all TB patients seeking treatment at the Sukaramai Health Center, Royal District, Pakpak Bharat Regency, were 101 patients. The sample to be studied is as many as 101 patients, using total population techniques. Data analysis uses univariate, bivariate and multivariate analysis. This research was conducted in Sukaramai Health Center, Royal District, Pakpak Bharat Regency. This research will be conducted from January to August 2024.

## **3. RESULTS**

**Table 1. Distribution of Age, Gender, Education and Occupation of Respondents  
in the Working Area of Sukaramai Health Center, Royal District, Pakpak  
Bharat Regency**

<b>Age</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>
27-31 Years	44	43.6
32-36 Years	19	18.8
37-41 Years	18	17.8
42-46 Years	6	5.9
47-51 Years	7	6.9
<b>Gender</b>		
Man	73	72.3
Woman	28	27.7
<b>Education</b>		
elementary school	12	11.9
Junior High School	50	49.5
Senior High School	29	28.7
Higher Education (D3, S1, S2)	10	9.9
<b>Work</b>		
Farmer	64	63.4
Self-employed	6	5.9
Civil servants	5	5.0
IRT	16	15.8
Laborer	10	9.9
<b>Total</b>	<b>101</b>	<b>100.0</b>

Based on table 1. shows that of the 101 respondents studied, there were 44 respondents aged 27-31 years (43.6%), 19 respondents aged 32-36 years (18.8%), 18 respondents aged 37-41 years (18.17.8%), respondents aged 42-46 years were 6 people (5.9%) and respondents aged 47-51 years were 7 people (6.9%). There were 73 male respondents (72.3%) and 28 female respondents (27.7%). Respondents with elementary school education were 12 people (11.9%), respondents with junior high school education were 50 people (49.5%), respondents with high school education were 29 people (28.7%) and respondents with tertiary education (D3, S1, S2) as many as 10 people (9.9%) and respondents with farming jobs as many as 64 people (63.4%), respondents with self-employed jobs as many as 6 people (5.9%), respondents with civil servant jobs as many as 5 people (5.0%), respondents with housewife jobs were 16 people (15.8%) and respondents with labor jobs were 10 people (9.9%).

**Table 2. The Influence of Knowledge, Family Motivation, Compliance with Taking Medicine, Side Effects of Medicine and Distance to Health Services on the Success of Pulmonary TB Treatment in the Working Area of Sukaramai Health Center, Royal District, Pakpak Bharat Regency**

Successful Treatment of Pulmonary							p value
Knowledge	TB				Total		
	Not Healed		Healed		f	%	
	f	%	f	%			
Not good	65	64.3	17	16.9	82	81.2	<b>0,000</b>
Good	3	3.0	16	15.8	19	18.8	
<b>Total</b>	<b>68</b>	<b>67.3</b>	<b>33</b>	<b>32.7</b>	<b>101</b>	<b>100.0</b>	

  

Successful Treatment of Pulmonary							p value
Family Motivation	TB				Total		
	Not Healed		Healed		f	%	
	f	%	f	%			
Not good	65	64.3	13	12.9	78	77.2	<b>0,000</b>
Good	3	3.0	20	19.8	23	22.8	
<b>Total</b>	<b>68</b>	<b>67.3</b>	<b>33</b>	<b>32.7</b>	<b>101</b>	<b>100.0</b>	

  

Successful Treatment of Pulmonary							p value
Medication Adherence	TB				Total		
	Not Healed		Healed		f	%	
	f	%	f	%			
Not obey	56	55.4	16	15.5	72	71.3	<b>0,000</b>
Obedient	12	11.9	17	16.8	29	28.7	
<b>Total</b>	<b>68</b>	<b>67.3</b>	<b>33</b>	<b>32.7</b>	<b>101</b>	<b>100.0</b>	

  

Successful Treatment of Pulmonary							p value
Drug Side Effects	TB				Total		
	Not Healed		Healed		f	%	
	f	%	f	%			
Heavy	49	48.5	8	7.9	57	56.4	<b>0,000</b>
Light	19	18.8	25	24.8	44	43.6	
<b>Total</b>	<b>68</b>	<b>67.3</b>	<b>33</b>	<b>32.7</b>	<b>101</b>	<b>100.0</b>	

  

Successful Treatment of Pulmonary							p value
Distance to Health Services	TB				Total		
	Not Healed		Healed		f	%	
	f	%	f	%			
Far > 5 Km	51	50.5	13	12.9	64	63.4	<b>0,000</b>
Near ≤ 5 Km	17	16.8	20	19.8	37	36.6	

<b>Total</b>	<b>68</b>	<b>67.3</b>	<b>33</b>	<b>32.7</b>	<b>101</b>	<b>100.0</b>
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Based on table 2 Based on the results of the Chi-Square analysis test, it is known that all the independent variables studied were knowledge, family motivation, adherence to taking medication, side effects of medication and distance to health services that influence the success of pulmonary TB treatment., because p-value < 0.05.

#### **4. DISCUSSION**

##### **The Influence of Knowledge on the Success of Pulmonary TB Treatment in the Working Area of the Sukaramai Health Center, Royal District, Pakpak Bharat Regency**

The results of research on knowledge showed that there were more respondents with poor knowledge, 82 people (81.2%) and 19 people with good knowledge (18.8%). The results of the findings in the field show that there are still many patients who have insufficient knowledge, this is related to low patient education which influences the level of knowledge. The process of receiving information that can increase knowledge is slightly hampered by the respondent's low mindset due to the respondent's low education. Apart from formal education, respondents' knowledge can also be obtained from non-formal education, for example through information obtained through advertisements or counseling from health services such as community health centers.

Many TB patients fail to undergo treatment due to a lack of knowledge about pulmonary TB disease itself. A well-informed TB patient is a patient who understands the importance of pulmonary TB treatment, so that the patient will undergo regular treatment and never stop treatment until the treatment is declared successful. Meanwhile, a patient who lacks knowledge means that the patient does not understand and does not understand the treatment being undertaken. With insufficient knowledge, patients are still not aware of the importance of carrying out pulmonary TB treatment regularly and there is a high possibility that treatment will stop midway so that the treatment is not successful.

These results are in line with research by Sela P, Rona F and Fadli S, namely the Influence of Knowledge on the Success of Treatment for Tuberculosis in the Telaga Biru Community Health Center Area. The research results show  $\rho$  value (0.000), R value = 0.607, R Square = 0.369. There is an influence of knowledge on the success of treatment for tuberculosis patients in the Telaga Biru Community Health Center area at

a strong level of 36.9%. Variability regarding the success of tuberculosis treatment can be explained by the knowledge possessed by tuberculosis patients. Tuberculosis sufferers are expected to be able to carry out treatment well accompanied by compliance with treatment and supported by adequate nutritional intake to achieve successful treatment.

As explained, the results of treatment in pulmonary TB sufferers are classified as patients being declared cured if they have completed complete treatment and the results of the sputum re-examination (follow-up) are negative, at the End of Treatment (AP) and the manual one previous follow-up PM was negative. Treatment is complete if a patient who has completed treatment completely but does not meet the requirements is cured or fails because there are no sputum examination results, especially at the End of Treatment (AP). Dead patients are patients who are known to have died during the treatment period due to any cause. Patients who are transferred for treatment to a unit with another TB 03 register and the results of their treatment are unknown. Patients who drop out of treatment are patients who do not seek treatment for 2 consecutive months or more before the treatment period is completed. Failed patients are patients whose sputum examination results remain positive or return positive in the 5th month or more during treatment.

Knowledge is the result of knowing and this occurs after someone senses a particular object. From experience and research it has been proven that behavior that is based on knowledge will be more lasting than behavior that is not based on knowledge.

The researcher's assumption is that the most fundamental problem in the successful treatment of pulmonary TB patients is related to knowledge, namely that knowledge about pulmonary TB in the community is still low, even though pulmonary TB is a very widespread disease in society, this disease is not well understood, so the public assumes that pulmonary TB is a simple and easy to treat disease and the main management is to treat the symptoms only. Limited knowledge about pulmonary TB means that this disease is often not treated properly, apart from that, the lack of knowledge is also based on the education of the respondents who are still in the low education category, namely elementary and junior high school. Education greatly influences the knowledge possessed by the respondents.



## **The Influence of Family Motivation on the Success of Pulmonary TB Treatment in the Working Area of Sukaramai Health Center, Royal District, Pakpak Bharat Regency**

The results of research on family motivation showed that there were more respondents with poor family motivation, 78 people (77.2%) and 23 people with good family motivation (22.8%). The research results show that the majority of respondents have poor motivation. As mentioned in the theory above, respondents who have poor motivation are because pulmonary TB patients have low confidence in being cured due to the assumption that pulmonary TB cannot be cured so that respondents feel it is futile to take pulmonary TB medication for a long period of time, but still they are not cured. Apart from that, respondents felt that they were old and had no hope of recovery. Respondents felt that their illness would not be cured, the long treatment was very tedious and they did not take the medication as recommended. Apart from their own motivation, respondents felt that their families did not provide advice regarding the importance of discipline in taking medication regularly, must be full of enthusiasm, so that the respondent feels bored in treatment because of pulmonary TB, which takes a long time to heal.

The results of the same research by Happi M, et al (2021) stated that there was a significant relationship between family support and patient compliance with taking tuberculosis medication with a p value = 0.000. Family support is very important in a patient's recovery, especially in the patient's medication compliance. Where patients will feel happy and at ease if they receive attention and support from their family because this support will increase their confidence to face or manage their illness better.

Motivation means the urge from within humans to act or behave. Motivation is said to be moderate if a person has positive desires, has hope who is high but has low confidence that he will be successful in achieving his goals and desires(8). Family support is the family's view that supportive people are always ready to provide support so that the patient receives regular treatment. Having family attention and support in monitoring and reminding sufferers to take medication can improve the degree of patient compliance.

Researchers assume that family motivation has an important role to be directly involved in the treatment process of family members to provide encouragement, motivation and assistance during the treatment process and the family is the first person to know about the actual condition of the pulmonary TB sufferer and is the closest

person who always communicates every day with sufferers. The family is the unit closest to the patient and is the biggest motivator in the treatment behavior of respondents with pulmonary TB based on good family support. Family support really supports the successful treatment of pulmonary tuberculosis patients by always reminding patients to take medication as recommended and given.

### **The Influence of Adherence to Taking Medication on the Success of Pulmonary TB Treatment in the Working Area of Sukaramai Health Center, Royal District, Pakpak Bharat Regency**

The results of research on medication adherence showed that 72 people (71.3%) did not comply with medication and 29 respondents (28.7%) did not comply with medication. The research results show patients who experience treatment withdrawal who had not undergone treatment for 4 months consecutive. The patient is said to have dropped out of treatment if the patient does not seek treatment for 2 months in a row or more before the treatment period is complete.

The profile of OAT use used at the Suka Ramai Community Health Center is 5 types of OAT, namely rifampicin (R), isoniazid (H), pirazinamide (Z), ethambutol (E) and streptomycin (S). Drugs such as rifampicin, isoniazid, and pyrazinamide are thought to have selective action on individual populations, making it necessary to use multiple drug therapies to eradicate all bacilli. Isoniazid is thought to kill bacilli in the log phase of growth, while pyrazinamide is thought to kill slowly replicating bacilli during the first 2 months of the initial phase of therapy. Rifampicin is thought to slowly kill persistent bacilli to prevent resistance during the continuation phase.

Based on the drug use profile at the Suka Ramai Community Health Center, it shows that patients receive appropriate treatment. The use of OAT also causes drug side effects that the patient will definitely feel. The types of unwanted drug reactions (ADR) that occur generally include mild side effects such as nausea, loss of appetite, joint pain, reddish urine, dizziness, dry mouth and blurred vision. In this study, many patients experienced serious side effects and had to change OAT. This could potentially lead to non-compliance because it causes discomfort. During the research, TB officers generally advised patients to continue taking OAT. For example, patients who experience nausea after taking medication can change the schedule for taking OAT from taking it one hour before breakfast to drinking it before going to bed at night so that the effects of nausea are no longer felt.

Research results (Tukayo et al., 2020). The patient's recovery is closely related to the patient's discipline in taking medication. Discipline in taking medication in treating tuberculosis is very important because by taking medication regularly for 2 weeks, the tuberculosis germs are divided and have no potential to spread. As a result, it can be concluded that if you are disciplined in taking medication, the recovery of pulmonary tuberculosis sufferers will also increase, so the risk of developing drug-resistant TB problems can also be protected.

Compliance with TB treatment is very important, because if treatment is not carried out regularly and does not comply with the specified time, TB germs will develop widespread immunity to anti-TB drugs (OAT) or what is called Multi Drug Resistance (MDR). Generally, sufferers take medication for 6 months to ensure recovery, but in some cases it can take longer.

According to the researchers' assumptions, adherence to taking medication greatly influences the success of pulmonary TB treatment, respondent compliance is a determinant of the success of treatment and makes the respondent recover from pulmonary TB disease, however, there are many factors that cause patients to not comply with taking medication, namely the side effects of the medication felt by the patient, there is no support or motivation from people closest to them such as family who remind them to take medication regularly and are supported by health workers when giving medication to patients at the Puskesmas, such as providing information and support regarding the treatment that is currently being carried out by the patient so that they can comply with treatment so that the patient can recover from illness.

### **The Influence of Drug Side Effects on the Success of Pulmonary TB Treatment in the Working Area of Sukaramai Health Center, Royal District, Pakpak Bharat Regency**

The results of research on drug side effects showed that there were more respondents with serious drug side effects, 57 people (56.4%) and 44 people (43.6%) with mild drug side effects. Based on the research results, it shows that the distribution of respondents is based on the side effects of anti-tuberculosis drugs (OAT), namely that all respondents experienced side effects and the majority of respondents had serious drug side effects. This is based on the statement that the respondent felt nauseous, experienced loss of appetite, felt joint pain, felt stomach pain, felt tingling, felt redness in the urine, felt redness and itching on the skin, felt hearing and balance problems and felt shock. Side effects of antituberculosis drugs generally occur in the first and second

months of treatment (intensive stage). At this stage, patients are very vulnerable to experiencing drug side effects because anti-tuberculosis drugs require time for the body to adjust. Apart from that, the side effects of medication felt by patients such as nausea and vomiting, the community health center has given anti-nausea medication to patients to be taken before consuming pulmonary TB medication so that the side effects felt can be minimized so that the medication can be consumed properly without experiencing side effects during this is felt.

The results of this study are in line with Merzistya and Rahayu's 2019 research showing that there is a relationship between OAT side effects and the incidence of treatment dropout for pulmonary TB sufferers ( $p$  value =  $0.01 < 0.05$ ). The results of a survey conducted by researchers showed that one of the reasons why pulmonary TB patients decided to stop treatment was the side effects they received after taking OAT. The large number of patients who experience side effects, both mild and severe, often make patients decide to stop treatment because they are afraid that if they continue, it will get worse and they will not be able to stand it if they continue to experience it.(18).

A drug side effect/adverse drug reaction (ADR) is a response to a drug that is detrimental and undesirable that occurs at doses normally used in humans for the prevention, diagnosis or therapy of disease or for modification of physiological function. Characterized by the presence of mild drug side effects and severe drug side effects. Mild drug side effects are characterized by one or more symptoms such as loss of appetite, nausea, stomach ache, joint pain, tingling and burning sensation in the legs and reddish color of urine, flu syndrome (fever, chills, weakness and headache). and bone pain). Symptoms of serious drug side effects are characterized by one or more of the symptoms such as itching and redness of the skin, hearing loss, balance without other causes, confusion, nausea, vomiting, visual disturbances, shock, acute kidney failure and decreased urine production.

Efforts are made if a patient experiences side effects, namely health workers usually consult about the side effects felt by the patient with a general practitioner at the health center and the patient is given additional medication according to the side effects felt. Apart from that, patients must have a good lifestyle, such as doing regular exercise and consuming healthy food and drinks so as not to trigger side effects. The side effects of TB disease and treatment can be stated as multi-system side effects, as the treatment and treatment process progresses, there is a change in appetite, allergies,

itching and pain, as well as changes in urine color when taking the drug. Side effects that have a multisystem impact based on the subcategories of disturbance of comfort, increased appetite, change in urine color and impaired circulation in the extremities(20).

Researchers assume that drug side effects affect compliance with treatment for pulmonary TB patients because anti-pulmonary TB drugs have many side effects, including loss of appetite, nausea, vomiting, stomach ache, pain, tingling joints which cause bad effects, so that if the patient experiences side effects The side effects that are considered bad are that sufferers tend to no longer want to seek treatment because they cannot stand the side effects of the medication, which results in sufferers not complying with treatment, which causes the patient's treatment to fail.

### **The Influence of Distance to Health Services on the Success of Pulmonary TB Treatment in the Working Area of Sukaramai Health Center, Royal District, Pakpak Bharat Regency**

The results of research on distance to health services showed that there were more respondents with a long distance to health services  $> 5$  km, as many as 64 people (63.4%) and with a distance to close health services  $\leq 5$  km, as many as 37 people (36.6%). The results of the findings in the field show that the distance between residence and health services is sometimes a barrier to seeking treatment, such as the distance between residence and health services, supported by difficult transportation facilities. However, tuberculosis sufferers who were respondents in this study considered the long distance from where they live to health services to be a barrier to getting treatment. This is evidenced by the fact that 63.4% live far from health services compared to 36.6% who live close to each other. This proves that tuberculosis sufferers do not have much motivation to recover so they consider the distance from home to health services because the distance is too far.

These results are in accordance with research conducted in Central Java and Sukoharjo, that there is no relationship between the distance between a TB sufferer's house and a health service facility (Puskesmas) on the success of the patient's treatment.(68).This research is inversely proportional to research conducted by Shargie and Lindtjorn which states that the distance from a TB sufferer's house to a health service center greatly influences the success of treatment for TB sufferers, because the farther the patient's house is from a health service center, the greater the chance of failure and failure in treatment.

The basic requirement for good health services is that it is easily accessible to the community. The meaning of achievement is intended primarily from the location perspective. Thus, to be able to achieve good health services, regulating the distribution of health facilities is very important. Health services that are too concentrated in urban areas, and are not found in rural areas, are not good health services. Access to health services must be good, meaning that health services are not hindered by geographical, social, economic, cultural, organizational or language barriers. Geographic access can be measured by the type of transportation, distance, travel time and other physical barriers that can prevent someone from obtaining health services. Ease of access to health facilities makes it possible for someone to take advantage of them. Perception of health and illness, where it is said that every person who is sick will seek treatment in a place that is considered to be able to provide treatment so that they can achieve healing for the illness they are suffering from. This behavior is carried out by almost every individual.

According to the researchers' assumption, what causes failure in the treatment of pulmonary TB in patients taking medication is their assumption that treatment requires money, for transportation purposes or individual needs that must be paid more attention to than the importance of treatment. However, we have to straighten this out because treatment for pulmonary TB is now available free of charge, you can get the medicine for free at the health center so there is no longer any reason for patients not to seek treatment.

## **5. CONCLUSION**

The conclusion in this research is there is knowledge, family motivation, adherence to taking medication, side effects of medication and distance to health services influence the success of pulmonary TB treatment in the Sukaramai Community Health Center Working Area, Royal District, Pakpak Bharat Regency.

## **6. SUGGESTION**

Expected to the Community Health Center in increasing outreach activities about tuberculosis in Sukaramai Health Center both in sufferers, targets who are at risk of being affected pulmonary tuberculosis and families of pulmonary tuberculosis sufferers, both use social media to make it easier for the public to access. Conduct

approaches and outreach to health cadres and determine Medication Monitoring from the patient's family pulmonary tuberculosis. Do a Home Visit and go straight to the patient's house pulmonary tuberculosis that experiences problems and is non-compliant treatment of pulmonary tuberculosis Carry out supervision and evaluation of each activity that has been carried out carried out in order to know the achievements of the program and know problems encountered that hinder the progress of activities. Carry out strict monitoring of patients who suffer from pulmonary TB in consuming medication, so that the achievements and targets of the health center are achieved and patients can recover from pulmonary TB disease.

## 7. THANK-YOU NOTE

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