#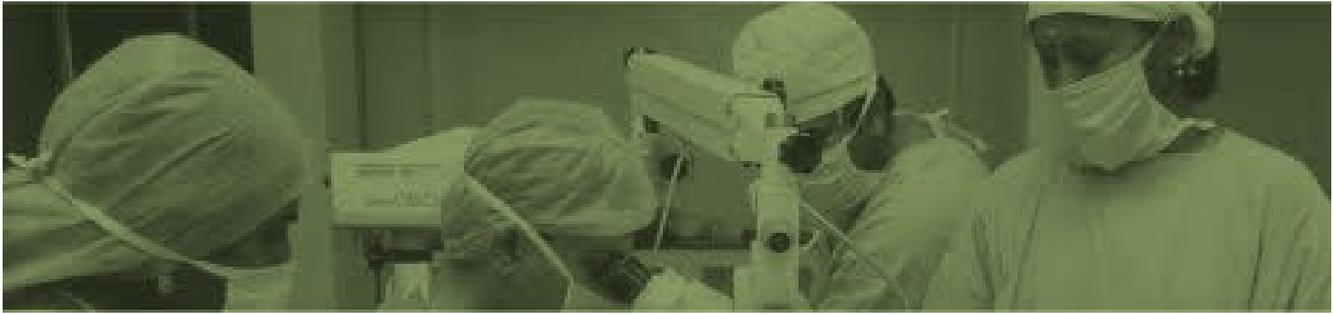 DEVELOPMENT INDICATORS TB PULMONARY DISEASE HEALING WETLAND IN THE CITY BANJARMASIN (Study of Swallowing Drug Assistance Program Supervisor at Family Core DOTS)

Original Research Article

Name of the Authors:

Syamsul Arifin[1], Ruslan Muhyi[2], Ratna Setyaningrum[3], Fauzie Rahman[4], Lenie Marlinae[5]

[1.] *Airlangga University, Faculty of Public Health, Student of Doctoral Program, and Lambung Mangkurat University, Faculty of Medicine, Departement of Public Health Sciences Banjarbaru, Indonesia*
[2.] *Lambung Mangkurat University, Faculty of Medicine, Departement of Pediatrics Banjarbaru, Indonesia*
[3.] *Lambung Mangkurat University Faculty of Medicine, Public Health Study Program, Departement of Occupational Health Banjarbaru, Indonesia*
[4.] *Lambung Mangkurat University Faculty of Medicine Program Study in Public Health Departemen Administration and Health Policy Banjarbaru, Indonesia*
[5.] *Lambung Mangkurat University Faculty of Medicine Program Study in Public Health Departemen of Health Environment, Banjarbaru, Indonesia*

Citation of the Article

ABSTRACT

Pulmonary tuberculosis is still a public health problem in the world, one of them in Indonesia. Based on data from the Health Research in 2013 it is known that as many as 14 098 patients with pulmonary tuberculosis were examined by medical personnel and the use of Oat Anti Tuberculosis (OAT) still amounted to 39.6%. This research aims to develop indicators cure pulmonary tuberculosis in Banjarmasin to analyze the risk factors for pulmonary tuberculosis cure such as: medication adherence, TB patient characteristics, and treatment supporter of the nuclear family. This research is observational analytic quantitative approach. The population of this study were 47 patients with pulmonary TB, the samples were 30 respondents. The research instrument used was a questionnaire. The research variables include the performance of PMO, medication adherence and characteristics (age, gender, education and income) pendetia pulmonary TB. Based on Chi Square test, found a link between the performance of PMO with adherence (p = 0.013), and there is no relationship between the characteristics of the respondent compliance, age (p = 1.000), gender (p = 1.000), education (p = 1.000) , income (p = 1.000).

Key words:

Pulmonary tuberculosis,

Performance PMO,

Compliance

I.　　INTRODUCTION

Pulmonary TB is a chronic infectious disease and infectious closely related to the environment and people's behavior. Pulmonary TB is an infectious disease caused by Mycobacterium tuberculosis. The disease is transmitted through the air, namely spray saliva, sneezing and coughing. Pulmonary TB disease usually attacks the lungs but can also attack other organs (Aditama, 2002).

Pulmonary TB remains a public health problem in the world. TB lung disease common in the productive age group. Most come from lower socioeconomic groups and a low education level (Aditama, 1994).

WHO (World Health Organization) in 1995, estimate the incidence of pulmonary tuberculosis every year as many as 583,000 cases with a mortality figure of about 140,000 cases. Pulmonary TB is the third largest cause of death after cardiovascular diseases and respiratory diseases and is the number one cause of death in the group of infectious diseases (Crofton, 2002).

Pulmonary TB is a disease that is closely related to the weak economy and an estimated 95% of the number of cases of pulmonary tuberculosis in developing countries are relatively poor. According to the WHO in 1999, Indonesia is a contributor to pulmonary tuberculosis disease in the world's third largest after India as many as 583,000 cases of as many as 2 million cases and 1.5 million cases of China (Dinkes RI, 2002).

Pulmonary TB prevalence survey conducted in several countries such as Ethiopia 189 per 100,000 population BTA (+) in the age group above 14 years (2001), China 122 per100.000 population with BTA (+) (2000), Philippines 3.1 BTA (+) and 8.1 culture (+) per1.000 population, and Korea 70 BTA (+) per 100,000 population (1995) (Gotama, 2002).

Pulmonary TB disease is also a health problem in Indonesia. It is estimated that every year 450,000 new cases of pulmonary TB, of which approximately one third of patients are in the clinic, 1/3 in hospital services, public and private clinics and the third was found diunit health services that are affordable as traditional medicine. Pulmonary tuberculosis patients in Indonesia mostly occurs in the productive age group and socioeconomic (Dinkes RI, 2004).

Efforts to decrease pulmonary TB in Indonesia has started since the symposium held in Ciloto pulmonary TB eradication in 1969. But until now the development of pulmonary TB control has not shown encouraging results. It terlihal of the proportion of deaths due to pulmonary tuberculosis has been an increase from 1980, 1986 and 1992 respectively -were 8.4%, 8.6%, and 9.4% (Dinkes RI, 1995).

WHO Global Report listed in the Quarterly Report of Sub Directorate of TB disease of the Directorate General of P2 and PL of 2010 mentions the estimated new cases of

TB in Indonesia in 2006 was 275 cases / 100,000 population / year and in 2010 fell to 244 cases / 100,000 population / year. (Basic Health Research 2010, Research and Development of the Ministry of Health of Indonesia, 2010) detection rate of new cases of pulmonary TB in South Kalimantan in 2007 as much as 45.6%, in 2010 about 43.7% and in 2012 as much as 44.1%. The cure rate of pulmonary TB treatment varies in 2007 as much as 91.17%, in 2010 about 93.9% and in 2012 it decreased to 79.17%. (Executive Summary, Data and South Kalimantan provincial health information, data and information center Ministry of Health Affairs, 2013). Clinical pulmonary TB in the last 12 months are scattered throughout the County / City in the province of South Kalimantan 1.4%. There are two districts that have a prevalence of TB is higher than the provincial rate of 3.0% which is the Banjar Regency and Barito Kuala 2.3%. Clinical pulmonary TB cases in Banjar district found as many as 5,216 people with cases of BTA (+) 603 and could be healed as much as 14.59%. Clinical pulmonary TB cases in Barito Kuala found as many as 3,237 people with cases of BTA (+) 319 and could be healed as much as 79.62%. Clinical cases of pulmonary tuberculosis in Banjarmasin found as many as 6004 people with a case of BTA (+) 709 and could be healed as much as 79.01%. Clinical pulmonary TB cases in the District Kotabaru found as many as 1,322 people with cases of BTA (+) 198 and could be healed as much as 68.69%. (Basic Health Research in 2006, the Agency for Health Research and Development Ministry of the Republic of Indonesia, 2007).

Tropical diseases are diseases that spread in the tropics and is referred to as a tropical disease because it is closely related to the climate that occurred in the tropics. The presence of the dry season (summer) are long and the rainy season with high volume, greatly influence the formation of a breeding ground for disease agents. High summer temperatures which can support the replication of disease agents, both inside and outside of a biological organism. Socio-economic factors are also very supportive, because most countries in the world temiskin are in the tropics. Climate change and global warming caused by the greenhouse effect, deforestation, mining and other environmental damage has been caused tropical diseases and vector spread from higher altitudes in mountainous areas to lowland areas even swamps. Are included in one of them is a tropical disease Tuberculosis (abbreviated as TB), which is a bacterial infection of the lungs or other tissues. This disease is a disease that is very common in the world, with more than 50% mortality if untreated. Tuberculosis is an infectious disease, which is transmitted by aerosol expectorants from coughing, sneezing, talking, kissing, or spit. The reason is that the mycobacterium tuberculosis bacteria microorganisms with a length of 1-4 um and thickness from 1.3 to 0.6 um, belonged aerobic gram-positive bacteria and acid resistant or acid-fast bacilli (WHO, Global Tuberculosis Control 2010. Switzerland: WHO Press , 2010).

TB disease can affect anyone (old, young, male, female, poor, or rich) and anywhere. Each year, Indonesia increased by a quarter of a million new TB cases and approximately 140,000 deaths occur annually due to TB.

In fact, Indonesia is the third largest country with the problem of TB in the world. TB prevalence surveys conducted in six provinces in the years 1983-1993 showed that the prevalence of TB in Indonesia ranges from 0.2 to 0.65%. Meanwhile, according to the Global Tuberculosis Control report issued by WHO in 2004, the TB incidence rate in 2002 reached 555,000 cases (256 cases / 100,000 population), and 46% of them thought to be new cases (WHO, Global Tuberculosis Control 2010. Switzerland: WHO Press, 2010).

Banjarmasin including tropical regions. Monsoon winds blowing from the West due to high pressure in the mainland continent of Asia pass through the Indian Ocean caused the rainy season, while high pressure in the continent of Australia blowing from the east is dry winds in the dry season. Local rain fell during the rainy season, which is in the months from November to April. In the dry season, often a long dry period. The annual rainfall average of up to 2,628 mm of rain per year 156 days. The average air temperature of about 25o C - 38o C with little seasonal variation. Fluctuations in daily temperature range between 74-91%, while in the dry season the humidity low at around 52% that occurred in the months of August, September and October (http: //www.kalselprov.go.iddiaksestanggal March 24, 2011).

Increased incidence of TB disease in South Kalimantan until the year 2010 were examined using smear-positive examinations reached 3,237 cases, the highest number in Banjarmasin which reached 642 with the detection rate is still low at 52.1%. To investigate the relationship between the risk factors contained in the neighborhood, smoking and alcohol consumption in patients with pulmonary TB disease with an incidence of pulmonary tuberculosis in the city of Banjarmasin. This study is observational analysis with case-control study. Which is the subject were patients with smear-positive TB as cases and patients with smear-negative control group. The density of people around the house, the air temperature, ventilation, natural lighting, smoking and alcohol consumption was significantly associated with the incidence of TB disease in the city of Banjarmasin. While the moisture does not have a significant relationship. The most dominant risk factor in the incidence of pulmonary TB disease in the city of Banjarmasin is the air temperature does not correspond to the subjects who had a history of household contact with TB patients, natural lighting and ventilation of the house.

Banjarmasin is one of the cities in South Kalimantan province where the population growth rate is increasing every year and is more densely populated than other cities in South Kalimantan, until 2008 there were 627.245 inhabitants with a density of 8.712 inhabitants / km2 and a healthy home environment only 62.7 and only 29.0% of the number of homes that adopt a clean and healthy. In 2009 the population increased to 638.902 population with a population density of 8.874 inhabitants / km2. (Http: //www.kalselprov.go.iddiaksestanggal March 24, 2011) Low coverage cure rates have a negative impact on public health and the successful achievement of the program, because they provide opportunities for pulmonary tuberculosis transmission to family members and the

surrounding community. In addition it allows its happening pulmonary TB germ resistance against the Anti-Tuberculosis Drugs (OAT), thereby increasing the dissemination of pulmonary TB, increasing morbidity and mortality from pulmonary tuberculosis (Amirudin, 2006).

To achieve the required regularity cure or treatment compliance for each patient. Alloy OAT short term and the role of the Supervisory Swallowing Drugs (PMO) is a strategy to ensure the recovery of the patient. Although the drugs used alloy is good but if the patient is not treated with medication regularly then generally results would be disappointing (DG P2M & PLP, 1997).

II.   RESEARCH METHODS

This study was analytical to explain the causes and the resulting disease and about hubungannya.Selanjutnya analysis between risk factors are occurring or beginning to happen in the past, assuming before the disease appears (Wijono, 2007). Studies conducted in the city of Banjarmasin conducted in 5 districts Banjarmasin and drawn one health center / health center Kecematan as modeling with development indicators cure pulmonary tuberculosis. Data collection method used is the study of documentation, information of the holder of pulmonary tuberculosis program, Information FGD results, measuring the change before and after assistance implemented in 5 districts Banjarmasin.

Subjects were patients, the holder of pulmonary TB program in puskesas and treatment supporter of the nuclear family in the last 2 years to determine and development of indicators of pulmonary TB disease cure dengue and management of pulmonary tuberculosis eradication of infectious diseases in the city of Banjarmasin.

III.   RESULTS AND DISCUSSION
A.   Univariate Analysis

No	Varies	Frequency Distributi	Percentage
1.	Age		
	-productive	11	36,7
	-non productive	19	63,3
2.	Gender		
	-Men	21	70
	-Women	9	30
3.	Educational status		
	-Low	27	90
	-High	3	10
4.	Income		
	-Low	17	56,7
	-High	13	43,3
5.	Medication adherence		
	- Submissive	13	43,3
	- Disobedient	17	56,7
6.	PMO performance		
	-Low	12	40
	-Good	18	60

1. **Age :** Based on Table 1 it can be seen the frequency distribution of productive age are more than the frequency distribution of age is not productive. Unknown productive age respondents aged 15-54 years, at this age have a higher activity compared to non-productive age. In the productive age of respondents have a high mobilization so the more chance of contact with many people, smoke and dust that may contain TB germs and do not carry anti-TB drugs while traveling (Sian R, 2014).

According Sitepu (2009) states that the productive age group is the most productive age group who have mobility / high activity so it is likely to be exposed to greater pulmonary TB germs. Also based on the reactivity of endogenous, un-reactivity endgen is TB bacilli present in the body will be active again and the endogenous reactivity tends to occur in the productive age (Dhewi GI, et al, 2011).

2. **Gender :** Based on Table 1 it can be seen the frequency distribution of respondents by sex men more dominating than the gender perumpuan as many as 21 (70%) survey respondents. This can happen due to differences in exposure and risk of infection from men to women. According Muh. Zainul (2009) stated that most men have the habit of smoking, drinking alcohol and using drugs. In addition, work, weight and average hemoglobin are things that cause men susceptible to pulmonary TB (Sian R, 2014). Men also have a higher mobility when compared with women so it is likely to be exposed to the germs that cause pulmonary TB is greater, given that the average respondent who develop pulmonary tuberculosis respondents gender is male (Dhewi GI, et al, 2011).

According Helper S (2010) states that the sex of male TB disease is higher than women because men are more often consume alcohol and the habit of smoking tobacco that behaviors can decrease the body's defense system, leading to more easily exposed by agent pulmonary TB disease. These results are also consistent with the results of Herryanto (2004), which states the results distribution and frequency of TB disease occurs more frequently in male sex than women in the amount of 54.5% in men and 45.5% women (Manalu HS 2010).

3. **Educational Status :** Based on Table 1it can be seen the frequency distribution with low education who dominate in the amount of 27 (90%) of respondents in comparison with higher education. Based on the results of research known as much as 13 respondents (48.14%) with elementary education, 11 respondents (40.74%) with secondary education, and 3 respondents (11.12%) did not complete primary school. Education will berengaruh on knowledge and information held by the respondent. Lack of information received about the lack of understanding causes pulmonary tuberculosis patients to the disease and the dangers that lead to reduced patient compliance to treatment or may stop treatment when symptoms are not felt anymore (Sian R, 2014 and Prayogo AH, 2013).

4. **Income :** Based on Table 1 it can be seen the frequency distribution of low income more than high-income respondents with as many as 17 respondents (56.7%). This income is measured based on the Decision of the Governor

of South Kalimantan In 2015 the minimum wage Regency / City in 2016 is Rp. 2,105,000.00 to the city of Banjarmasin (Kep.Gub Kal-cell, 2016). Known from the results of research and obserbvasi this study respondents on average had a simple business such as selling at home, nothing to sell groceries, there is also a selling vegetables.

The results show the average earnings of the lower categories is Rp. 1,179,412,- and the average income of high category is Rp. 2,983,333,- as well as the lowest income survey respondents is Rp.

500.000,- and the highest income respondent this experiment is Rp.6.000.000,-.

Tuberculosis usually affects people who are difficult to reach, such as homelessness, unemployment, and poor faskir (Pameswari P, 2016). This, along with the results of research in the field that most respondents memiliuki amount of revenue less than Rp. 2,105,000.0 per month. Based on this case can be drawn that the economic situation of TB patients is still low.

5. **Medication Adherence :** Based on Table 1 it can be seen the frequency distribution of medication adherence on survey respondents are dominated by adherence to taking medications as many as 17 (56.7%). Of the 13 (43.3%) of respondents who do not comply due to never forget to take medication, try to stop and reduce the amount of drugs as much as 7 respondents (53.84%), a total of four respondents (30.76%) claim to stop taking medication when the symptoms experienced resolved, while the remaining 2 respondents (28.57%) expressed discomfort when taking the medicine every day.

The reason most widely expressed by respondents who are obedient because of their strong desire to heal from within himself and has the support of the families of both the PMO as well as information obtained from local health officials.

6. **PMO Performance :** Based on Table 1 it can be seen the frequency distribution of PMO performance has been good as many as 18 respondents (60%) stated PMO good performance. While 12 respondents (40%) stated that the performance of the PMO is not good, based on the findings in the field of performance PMO This lack is due to PMO never get the medicine when TB patients prevented as much as 1 PMO, never see the current TB patients taking the medicine as much as 2 PMO, does not provide information as much as 2 TB neighbor PMO, does not help re-examined sputum and referral in case of drug side effects as much as 7 PMO. However, in the case of referral in case of side effects is never done because it is based on respondents' statements side effects from taking the drug had never felt.

Several studies have shown, that the DOTS strategy with PMO approach to fruition fairly ineffective in the treatment of pulmonary tuberculosis. According to research from Permatasari in 2005 revealed that treatment directly observed to be relatively more successful in the management of patients with difficult populations. This is supported by research conducted Mukhsin., Et al in 2006 which revealed that one of the factors that determine the

regularity of treatment of patients with pulmonary TB is the PMO (Rohmana O, 2014).

PMO role is necessary to ensure the compliance of patients took the drug in the intensive phase or the early stages of treatment. If the early stages of treatment is given correctly, the patient usually becomes contagious infectious within 2 weeks. Most patients with sputum smear positive TB negative (conversion) within 2 months (at the end of intensive treatment). In the advanced stages patients received fewer types of drugs, but in a longer period of time. Advanced stages it is important to kill germs persistent so that prevent recurrence (Pameswari P, 2016).

Direct supervision is one part of a comprehensive case management in patients with pulmonary TB. A watchful eye on patients who have already started treatment, can ensure that the patient will swallow their medicines regularly and will not block the treatment before the completion of his treatment (Lupitayanti LE., Et al, 2014).

Pulmonary TB patients must take drugs to health centers and if there is no obstacle, the PMO can accompany the patient to take the medicine. The purpose of the patients taking the drug itself is that they understand and know the type of medication to be taken during treatment. Duties PMO only supervise and encourage the patient to take medication regularly during treatment, reminding you to check out the phlegm and provide counseling to family members if there are symptoms of suspicious pulmonary TB to immediately went to the Unit of Health Services (Lupitayanti LE., Et al 2014). The results are consistent with research conducted at the Hospital Dr. Kariadi Semarang in 2012 that more is better than less PMO performance, where the PMO has a good performance by 60% and less than 40%.

B. **Bivariate Analysis**

Table 2 Bivariate Analysis

No	Varies	PMO Performance		Total	P-value	OR
		Low	Good			
1.	Medication adherence				0,013	10.50
	- Submissive	9 (75%)	4 (22,2%)	13 (100%)		
	- Disobedient	3 (25)	14 (77,8%)	17 (100%)		
2.	Age				1,000	
	-Non productive	4 (36,4%)	7 (63,6%)	11 (100%)		
	-Productive	8 (42,1%)	11 (57,9%)	19 (100%)		
3.	Gender				1,000	
	-Men	8 (38,1%)	13 (61,9%)	21 (100%)		
	-Women	4 (44,4%)	5 (55,6%)	9 (100%)		
4.	Education status				0,548	
	-Low	10 (37,0%)	17 (16,2%)	27 (100%)		
	-High	2 (66,7%)	1 (33,3%)	3 (100%)		
5.	Income				0,599	
	-Low	8 (47,1%)	9 (52,9%)	17 (100%)		
	-High	4 (30,8%)	9 (69,2%)	13 (100%)		

1) **The relationship between Treatment Compliance Pulmonary TB Patients with a Performance of PMO in the Health Center East Kelayan Banjarmasin**

Based on table 2 above can be seen that there is a relationship between medication adherence with the performance of PMO with p-value = 0.013 <0.05. From the results of this research note respondents are less adherent as much as 9 (75%) with a performance of PMO poor and obedient respondents who take medicine but less good performance of PMO. This is because, three respondents (25%) comply, but the performance of the PMO is less good because the respondents have awareness and a strong desire to heal, although the PMO did not alert or not see TB patients taking the medicine, respondents were still menimun the medicine as directed by your doctor given , In addition, based on observations in the field, if the respondent did not take the medicine according to the schedule and the PMO was also not taking the drug for 2 days after making the schedule, then the puskesmas officers who will come to your home to deliver the TB patients in order not to break up drug treatment.

This is consistent with research conducted by Iril F., et al in 2013 that claimed the role of health workers in serving patients with pulmonary tuberculosis is carried on directly or indirectly affect the regularity of treatment of patients that may ultimately determine the outcome of treatment (Fazizandiwi I, 2013) , In addition, the efforts made by puskesmas officers in Puskesmas East kelayan also supports the efforts of health services being together in line with the statement in

Based on the results of non-compliance to take medicine by as much as 9 pulmonary TB patients (75%) due to the poor performance of the PMO. This is because the PMO did not ever get the medicine when TB patients prevented as much as 1 PMO, never when tuberculosis patients taking the medicine as much as 1 PMO, does not provide information neighbor TB as much as 2 PMO, does not help check repeated sputum and referral in case of side effects of drugs as much as 5 PMO. However, in the case of referral in case of side effects is never done because it is based on respondents' statements side effects from taking the drug had never felt.

Most performance PMO does is reminded to take medication, keep an eye on taking medication, check the schedule reminiscent of phlegm, but at 9 respondents who do not abide in this study was not done. Whereas the role of PMO is urgently needed for patients with pulmonary tuberculosis to prevent himself from Drop Out and may improve patient adherence to treatment and taking his medication uninterruptedly until said cured (Fazizandiwi I, 2013). It can also be seen from this study, as many as 82.4% of respondents obedient in response to treatment with good performance PMO.

While four respondents did not obey taking medication but has PMO with good performance due. The four respondents feel the discomfort when taking the drug, even stop taking the drug because it was completely healed without the knowledge of the PMO. There are two things that affect treatment compliance someone namely internal and external factors. Internal factors one of which is a factor in and of itself, which is thinking and his own desire to address something (Murtiwi, 2006).

The inability of patients completed self-administered regimen, will lead to treatment failure, the likelihood of recurrence of the disease, resistant to the drugs and will continuously transmit the infection. Patient compliance in completing treatment programs in cases of active tuberculosis is the most important priority for the control program. The increase in the percentage of patients treated regularly (obedient) will have a positive impact, namely reducing the rate of transmission, reduce recurrence, inhibiting the growth of bacteria, reducing the resistance of germs to drugs, and reduce the disability of patients. In the end the number of TB patients will decrease (Murtiwi, 2006).

Based on the research field known that all who become PMO of pulmonary TB patients in this study were members of his family, which consisted of four husband, 15 wives, five children, and one parents and five other family members. Judging from the TB patient relationship with the PMO status can be known families of respondents who received support from family tend adherent to treatment. It is also in line with research conducted by Yunie A of 2011 which states there is a relationship between family support with pulmonary TB medication adherence in BKPM Pati with p-value = 0.0001 <0.05 (Dhewi GI., Et al, 2011).

The results showed 18 PMO who have performed well doing its job by keeping an eye, provide information, schedule

reminder to take medication, reminds schedule and memerikaakan take sputum, and willing to get the drug, deliver checks and do rujukun if side effects occur. This is because the PMO comes from a family of respondents who have emotional ties and responsibilities are greater than in non-family. So the order can be controlled by the PMO which provide support and guidance to patients with pulmonary tuberculosis. This is in line with research conducted by Iril F in 2013 that states the relationship between treatment compliance with a performance of PMO with p-value¬ = 0.0001 <0.05 (Fazizandiwi I, 2013).

2) The relationship between age of pulmonary TB patients with a performance of PMO in the Health Center East kelayan Banjarmasin

According to the table 2 that there was no correlation between the age of TB patients with a performance of PMO with the statistical test p-value = 1.000> 0.05. The results are consistent with research conducted by Eni E., et al (2009) with the results of the study there was no significant relationship between age and performance PMO with p-value = 0.469> 0.05 (Erawatyningsih E., et al 2009).

The results showed that the age factor is not a determining factor in the treatment of patients with non-compliance because they are young and the elderly have the motivation to live a healthy life and always pay attention to his health. In addition, the work is not too busy to make the patient can still run treatment and most people work as farmers. Several studies have confirmed that there is no significant relationship between age and treatment compliance. Old age berobatnya higher compliance because of old age is not busy with work so he could attend regular medical treatment. The results are consistent with the theory advanced by some researchers who claim that age does not affect the actions of a person because of factors such as a person's attitude intermediaries and other factors that affect a person's will (Erawatyningsih E., et al 2009). As obtained from this research that a strong desire to heal is a driving factor TB patient compliance in taking medication and support PMO that always reminds schedule taking anti-TB drugs.

3) The relationship between Gender pulmonary TB patients with a performance of PMO in the Health Center East kelayan Banjarmasin

According to the table 5.9 in mind that there is no relationship between the Gender TB patients with the performance of PMO with the statistical test p-value = 1.000> 0.05. Gender has nothing to do with the level of success in the treatment of TB. This is because the motivation or the strong desire of the patient's recovery, support from family and PMO were very large. And service facilities in the region also supported the research, as evidenced by the willingness of health workers to deliver drugs Anti-TB TB patients home if he does not take drugs Anti-TB according schedule. In addition, a program of treatment among patients of men and women alike, and therefore the performance of the PMO for the patient is the same.

PMO good performance is to ensure regularity of treatment, avoid dropping out of treatment, prevent incurability TB patients, TB patients to monitor food consumption. PMO of the respondents of this study all came from a family member. PMO who came from a family member has several advantages, namely, close to the TB patients that can monitor the take medicine, have an emotional attachment that people feel to get attention from her family, closer and be in trust by patients with TB (Harmanik, 2014). According Notoatmodjo (2003) when someone important to him then what he says are likely to be implemented. PMO good is the closest to the patient, respected and admired people. People respected the patient usually all the advice given will be carried by the patient. This is in line with that recommended by the WHO about the behavior of a person, that person's behavior can be influenced olehj people deemed important, regardless of gender male and female (Harmanik, 2014).

4) Relationship Between Patient Education pulmonary TB with PMO performance in Puskesmas East kelayan

According to the table it is known that among the 27 respondents who have low education more who have performed well (63.0%). Meanwhile, among the three respondents who have a college education more have a poor performance (66.7%). From the test results obtained by statistical p-value = 0.548 (> 0.05), which shows no relationship between education and the performance of PMO.

This study is consistent with research Auliani (2012), Sesri (2008), and Syahrul (2004), which states there is no relationship between education and worker performance (Auliani 2012, 2008 and Syahrul Sesri 2004). Education is an activity or process of learning to develop or enhance certain capabilities so that the educational goals that can stand alone (Notoatmodjo, 1997). The level of education also participated in determining whether someone is easy to absorb and understand the knowledge they gain, in general, the higher one's education the better the knowledge (HA Weid, 1996). The higher one's education, the greater the desire to utilize pengatahuan and skills (Siagian S, 2003).

Related to the performance of one's education, in which people with higher levels of education tend to have better performance than those with low education. Therefore, regular training will cover education which can further enhance the skills that lead to improved performance (Sesri, 2008).

Before becoming a PMO, they have been trained by the holder of pulmonary TB programs in health centers. Training is one of the efforts to increase knowledge, attitudes and skills of officers in order to improve the quality and performance of staff (Kepmenkes RI, 2009). Training is an activity that increased capacity will result in a change of behavior. Change is shaped increase their capacity (Notoatmodjo, 2009).

5) Relationship Between Income Patients with pulmonary TB PMO performance in Puskesmas East kelayan

According to the table it is known that among the 17 respondents who have low incomes have more good performance (52.9%), and the 13 respondents who have higher incomes have more good performance (69.2%). From the test results obtained statistical p-value = 0.599 (> 0.05), which shows no relationship between earnings performance PMO.

Income is all income received by each person in a given period. The way in which to earn income or earnings is to work with the various types of jobs will arise differences in the results received (Hastuti S, 2009). For low income communities they seek to result from his work just to meet daily needs. For middle-income families that they are directed to the proper fulfillment of basic needs such as food, clothing, housing, education and others. For high-income families and off then they would fulfill all the wishes that they want (Septiana IR, 2015).

Income people can be motivated to work better and improve their performance. Therefore, the lower one's income should be a spur to improve performance so that income can be increased. Likewise, the higher the income, the entrepreneur must maintain its performance in order not to decrease their income (Septiana IR, 2015).

However, the results showed that the income is not related to the performance of PMO. This is according to research Septiana (2015) which states there is no connection between the revenue performance. This shows that no matter how the respondent's income level is not related to the performance of the respondents. It can be caused by living dependents respondents. Although respondents have a high income, but if the burden borne dependents large it will affect the performance of the business (Septiana IR, 2015).

Dependents may be the cost of their children, living costs, electricity costs, taxes, rent, installment, and others. The dependents takes precedence over other things and the revenue generated will largely be allocated to such obligations. So that most of the income does not affect the performance of repsonden (Septiana IR, 2015).

IV.   CLOSING

The results showed that there is a relationship between the performance of PMO with treatment adherence in patients with pulmonary tuberculosis (pvalue 0,013). Therefore, it is necessary to increase performance while monitoring the PMO by health personnel in order to ensure the success of pulmonary TB treatment programs in the community.

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