Self-Management for Patients in the Treatment Program of Pulmonary Tuberculosis in Kupang City, East Nusa Tenggara Province, Indonesia

Pius Selasa[1] , Israfil [2] ,Margaretha Teli [3]

[1]*Departement of Medical Surgical Nursing_Poltekkes Kemenkes Kupang, Indonesia*
[2,3] *Departement of Public Health Nursing_Poltekkes Kemenkes Kupang, Indonesia*

Email : [1]piusselasa@gmail.com, [2]ahmadisrafil6@gmail.com, [3]margarethateli@gmail.com

ABSTRACT

Pulmonary Tuberculosis (Pulmonary TB) is a type of chronic infectious disease that threatens public health. Self-management is a form of patient self-control in the treatment and cure of TB disease.

The aim of the study was to see the self-management of patients in the pulmonary TB treatment program from the aspects of patient interaction with health care facilities and patient compliance in taking TB drugs in Kupang City, East Nusa Tenggara Province, Indonesia.

Non-experimental research design with cross sectional design. The number of samples was 246 TB patients. Sampling with cluster sampling technique. Data were collected directly on patients and study documentation of patient care in public health centers. Data were analyzed descriptively and correlated using the Spearman rho test (α <0.05)

The results showed the interaction of patients with health care facilities; good 38.2%, good enough 56.6%, not good 5.3%. Patient adherence to ingesting TB drugs; obedient 88.6%, non-compliant 11.4%. Correlation test of patient characteristics on interactions with health care facilities; age 0.07, gender 0.24, education 0.01, TB treatment stage 0.76, distance from home to public health center 0.00. Correlation of patient characteristics with adherence in ingesting TB drugs: age 0.76, gender 0.62, education level 0.55, TB treatment stage 0.00, distance from home to public health center 0.02.

Conclusion Self-management of patients in the TB treatment program from the aspect of patient interaction with health care facilities is quite good, patient adherence to ingesting TB drugs is adherent. Factors related to self-management of patients are the level of education, the stage of TB treatment, and the distance from the house to the health care facility.

Keywords : Self-Management, Patient, TB Drugs, East Nusa Tenggara

1. INTRODUCTION

Tuberculosis (TB) is a type of chronic infectious disease that still threatens the health and life of Indonesian people. TB disease is caused by infection with the bacteria mycobacetrium tuberculosis which can attack various organs, especially the lungs [5]. TB disease that is not treated properly will cause serious complications that can lead to death. Self-management is a form of self-control for TB patients in an effort to cure disease and prevent complications. Kupang City is one of the regions with the highest TB disease cases in the province of East Nusa Tenggara.

According to the 2017 WHO Report, the number of TB cases in Indonesia is estimated to be 1,020,000 new TB cases per year (391 per 100,000 population) with 100,000 deaths per year (42 per 100,000 population) [4]. An estimated 45,000 cases of tuberculosis occur with HIV positive (17 per 100,000 population) mortality 13,000 [6]. The Central Statistics Agency of East Nusa Tenggara Province reported that TB cases in the province of NTT from 2015 - 2018 have increased quite drastically, namely 2,561 cases in 2015, decreased to 1,320 cases in 2016, increased to 3,670 cases in 2017, and increased by two doubled to 6,583 cases in 2018. Data from the Center for Statistics in NTT Province for TB cases in Kupang City shows that in 2015 there were 308 cases, in 2016 it decreased to 41 cases, in 2017 it increased drastically to 359 cases, and in 2019 it continued to increase to 645 cases.

TB disease control in Indonesia has been going on for a very long time. In 1995, the government established a national TB control program starting with the implementation of a short-term treatment strategy with direct supervision (dicetly Observed Treatment Short-course, DOTS) which was implemented at the public health center. Since 2000 the DOTS strategy has been implemented nationally in all public health centers, especially public health centers, which are integrated into basic health services [6].

The success of TB control is influenced by various factors. Self-management is one of the important factors to consider in efforts to deal with TB disease in the community. Self-management is the ability of TB patients to manage and control themselves for the healing process, prevention of complications and prevention of disease transmission [12]. Self-management allows patients to develop skills in solving problems, increase self-confidence or self-efficacy and support the application of knowledge in disease control. The purpose of this study was to see the self-management of patients in the TB treatment program in Kupang City from the aspects of patient interaction with health service facilities and patient compliance with the TB drugs programmed.

2. RESEARCH METHOD

This research is a non-experimental study with a cross sectional design to see the self-management of patients in the treatment program for pulmonary tuberculosis in Kupang City, East Nusa Tenggara Province. The study was conducted in August - October 2019. The study population was 645 TB patients registered in Kupang City. The research sample was taken using the Slovin formula with a sample size of 246 people. Sampling was done by using cluster sampling technique at 4 Public health centers with the most TB cases in Kupang City. The research variable was patient self-management in the treatment program for pulmonary tuberculosis in Kupang City with sub-variables of patient interaction with health care

facilities and patient compliance in ingesting TB drugs that were programmed. Instrument and data collection using questionnaires and observation documentation of patient care at the public health center. The research data were analyzed using the Spearman-rho SSP test with α <0.05.

3. RESULT

Table 1.Distribution of Respondents Characteristics by age, gender, level of education, stage of TB treatment, and distance from house to health service facilities in Kupang City (n = 246)

No	Characteristics	Frequency	%
1	Ages		
	26 – 35 years old	41	16,7
	36 – 45 years old	139	56,7
	46 – 55 years old	66	26,8
2	Gender		
	Male	185	75,2
	Female	61	24,8
3	Level of education		
	Elementary school	0	0
	Junior high school	87	35,4
	Senior high school	115	46,7
	University level	44	19,9
4	TB Treatment Stage		
	Intensive Stage (initial)	67	27.2
	Advanced Stage	179	72.8
5	Distance between the house and the public health center		
	Close	101	41,1
	Far	145	58,9

Table 1 shows that most of the respondents in this study were aged 36-45 years (56.7%), most of them were male (75.2%), had a high school education level (46.7%), entered the stage follow-up treatment (72.8%), and the distance from the respondent's house to health service facilities is mostly far (58.9%).

Table 2. Distribution of Self-Management of TB Patients in Kupang City (n = 246)

No	Self-Management	Frequency	%
1	Interaction of patients to health care facilities		
	Good	94	38,2
	Enough	139	56,5
	Less	13	5,3
2	Patient adherence to ingesting TB drugs		

| | Obedient | 218 | 88,6 |
| | Disobedient | 28 | 11,4 |

Table 2 shows that most of the respondents had a fairly good interaction with health service facilities (56.5%), and most of the respondents were obedient in ingesting TB drugs that were programmed (88.6%)

Table 3. Results of the Relationship Analysis of Respondent Characteristics with Patient Interactions with Health Care Facilities, and with Patient Compliance in having TB drugs programmed (n = 246)

Respondent Characteristics	Patient Interaction with Health Care Facilities		Patient Compliance in Ingesting TB drugs	
	p-value	*Correlation coefficient*	*p-value*	*Correlation coefficient*
Ages	0,071	-.115	0,765	-.019
Gender	0.248	-.074	0.625	+.031
Level of education	0.013*	+.158	0.558	+.037
TB Treatment Stage	0.760	+.020	0.001**	-.212
Distance between home and public health center	0.000**	+.273	0.025*	+.143
Patient interactions with health care facilities			0.000**	+.398

correlation is significant at the 0.05 level

*** correlation is significant at the 0.01 level*

Table 3 shows that there is a significant relationship between education level and distance from home to health service facilities with patient interactions with health care facilities (p-value <0.05). There was a significant relationship between the stages of patient treatment, the distance between the patient's house and the health care facility, and the interaction between the patient and the health care facility and the patient's adherence to taking the TB drug that was programmed (p-value <0.05)

4. DISCUSSION

The results showed that most respondents had a fairly good interaction with health service facilities (56.5%). The interaction between health care facilities and health workers is an important factor in the successful treatment of TB patients. The interaction of patients with health care facilities and health workers will provide benefits for patients to obtain the TB drugs needed according to the program. The interactions that occur are also beneficial for patients to obtain important information and knowledge about the TB disease treatment and control program that must be undertaken. This condition is in accordance with the

government program which has determined that the DOTS program for TB patients is integrated into basic services in public health centers.

The interaction of patients with services and health workers is influenced by various factors. The interaction of patients with services and health workers can be affected by the distance between the patient's residence and the health service facility. This study found that there was a significant relationship between the distance between the patient's house and the health care facility and the patient's interaction at the health care facility. The research data shows that most of the distance between the patient's house and the health service facility is far (58.9%), the distance is 41.1%. This condition causes the interaction of patients with services and health workers to be less than optimal. This is in accordance with the results of research by Prubantari et al which found that there was a significant relationship between access to health services and utilization of health services for patients with pulmonary TB AFB (+) [8]. Access to health services has a contribution of 16.9% to the utilization of health services for patients with pulmonary TB AFB +.

Another factor that influences the patient's interaction with health care providers and personnel is the level of patient education. The results of this study indicate that there is a significant relationship between the level of patient education and patient interactions at health care facilities. The data shows that most of the respondents have senior secondary level of education (46.7%), 35.4% junior high school and only 19.9% of respondents have a higher education level. The level of education has a relationship with a person's knowledge and perception in their interactions with health service facilities and health workers. This is evidenced by the results of research by Napirah et al which found that there was a significant relationship between the patient's education level and the utilization of health services in the working area of the Puskesmas [7]. The level of education can also affect a person's perception of a problem. Perception is a process of accepting, interpreting and reacting to a problem. The research results of Napirah et al prove that there is a significant relationship between people's perceptions of health and the use of health service facilities [7]. The good knowledge that patients get in health services also does not always affect patients' positive perceptions of TB treatment. Research results from Gyimah and Gyeke reveal that good knowledge about TB treatment practices does not spontaneously shape perceptions of treatment. Belief factors, prevailing culture, physical and psychological stress, consequences, and challenges to the patient's health system are the various barriers to caring for TB patients [3].

It is hoped that the interaction between patients and health service facilities will not only occur in Public health centers. Interaction of TB patients with health service facilities is expected to occur outside the community health center in the form of home visits. The results of the study by Roy et al found that most of the default treatment of TB patients occurred because of pre-treatment counseling and the first home visit which played a very important role in preventing treatment failure of TB patients [9]

The results showed that most of the patients were adherent in swallowing TB drugs that were prescribed (88.6%). Adherence in ingesting TB drugs will accelerate patient recovery, prevent complications of MDR TB, prevent transmission to other people, and reduce mortality due to TB. Patient adherence to taking TB drugs is influenced by various factors. One of the factors related is the stage of treatment. The results of this study indicate

that there is a significant relationship between the stages of TB treatment with patient adherence to ingesting TB drugs that are programmed. The research data shows that the majority of respondents (72.8%) are entering the advanced stage of treatment, and 27.2% are currently undergoing intensive / early phase treatment. Advanced treatment is an advanced stage of treatment where the patient has passed the intensive or early stages of treatment. Patients who have passed the intensive stage of treatment (early stage) will mostly show improvement in their health status, namely reduced cough, non-infectious TB patients after 2 weeks of treatment, and TB patients with AFB (+) become AFB (-) within 2 months of treatment. Changes in health status that occur after the intensive stage (early stage) can increase patient adherence to TB treatment. This is supported by the results of Yuni's study which found that there was a significant relationship between the phase / stage of treatment and adherence to treatment of TB patients [12]. This condition is not in accordance with the results of a study by Roy et al in India who found that TB treatment defaults mostly occurred in the intensive or early phase [9]

Another factor related to patient adherence to the TB treatment program is the distance between the patient's residence and the health service facility. Table 1 shows that 41.1% of respondents have a house distance that is close to health service facilities. The distance from the residence close to health facilities will make it easier for patients to get TB drugs easily. The ease of obtaining TB drugs can increase patient compliance in taking medication and reduce the incidence of drug withdrawal in TB patients. This condition is supported by the results of a study by Yulistianingrum et al which found that there was a significant relationship between house distances and medication compliance in TB patients [13]. The distance between the house and the health service facility has a relationship of 30.588 times the level of patient compliance with TB treatment. The results of the study by Ulfah et al also found a significant relationship between the distance of health facilities and treatment compliance in pulmonary tuberculosis patients [11]. Health facility services close to patients greatly affect patient compliance in TB treatment. Research by Borua et al found that even though TB drugs were given free of charge, there were still patients who did not comply with treatment because it was caused by unavailability of services in the nearest health facility [1].

Interactions with health care providers and personnel also affect patient adherence to TB treatment. Table 3 shows that there is a significant relationship between patient interactions with health care facilities and patient adherence to ingesting TB drugs. Data from the results of this study indicate that most respondents have a fairly good interaction with health service facilities (56.5). This condition can be a cause that allows the level of patient adherence to TB treatment to increase. This is in accordance with the research results of Sahile et al which found that although some informants experienced unethical behavior by several health professionals, interviewed patients generally had a positive evaluation of the patient-provider relationship and DOTS services obtained for their recovery [10]. The proximity of the home to health facilities, good communication and accepting attitude from health care providers appear as increasing factors for TB patient treatment adherence [2]

5. CONCLUSION

Self-management of patients in the TB treatment program in Kupang City from the aspect of patient interaction with health care facilities is quite good, most patients adhere to taking TB drugs. Factors related to patient self-management were level of education, stage of TB treatment, and distance from home to health care facilities. The higher the level of patient education, the better the patient's self-management of TB treatment is. The closer the patient's house to the health service facility, the better the patient's self-management towards TB treatment is.

6. REFERENCES

[1] Borua,G,C,.Tariku,S.,Arebu I.B, (2014). Factors contributing to non-adherence with treatment among TBpatients in Sodo Woreda, Gurage Zone, Southern Ethiopia: Aqualitative study. Journal of Infection and Public Health 10 (2017) 527–533 http://www.elsevier.com/locate/jip

[2] Gebreweld,F.H.,Meron M. K., Fitusm E. G., Leban L.S., Meron M.G.,Shewit S.G.,Yordanos T.M.,Nebiat G.Wahd., (2018). Factors influencing adherence to tuberculosis treatment in Asmara, Eritrea: a qualitative study. Journal of Health, Population and Nutrition (2018) 37:1 DOI 10.1186/s41043-017-0132-y

[3] Gyimah,F.T., and Phyllis Dako-Gyeke (2018). Perspectives on TB patients'care andsupport: a qualitative study conducted inAccra Metropolis, Ghana. Globalization and Health (2019) 15:19 https://doi.org/10.1186/s12992-019-0459-9

[4] Ministry of Health of the Republic of Indonesia, 2017. Regulation of Minister of Health No. 67 of 2016 concerning Tuberculosis Control. Minister of Health Republic of Indonesia: Jakarta

[5] Ministry of Health of the Republic of Indonesia, 2015. Infodatin Tuberkulosis ; Find Medication Until Healed. Data and Information Center for the Minister of Health Republic of Indonesia: Jakarta

[6] Ministry of Health of the Republic of Indonesia, 2011. National Guidelines for Tuberculosis Control. Director General of Disease Control and Environmental Health: Jakarta

[7] Napirah,R,M., Rahman,A.,Tony,A.,(2015). Factors related to the utilization of health services in the working area of the Public Health Center of Tambarana, Poso Pesisir Utara District, Poso Regency. Journal of Urban Development /JPK. Vol.4 No.1. (2016) 29- 39

[8] Purbantari,D.A, Roesdiyanto, Ulfah,H.N, (2017). Relationship of Education, Access to Health Services and Family Support with the Utilization of Health Services for Patients with AFB (+) Pulmonary TB at the Public Health Center in Janti, Malang City. Preventia: The Indonesian Journal of Public Health. Vol. 4, No.1. In 2019

[9] Roy,N.,Mausumi,B.,Sibasis,D.,Amitava,M.,Debashis,D.,Samir,D.,(2011). Risk factors associated with default among tuberculosis patients in Darjeeling district of West Bengal, India. Journal of Family Medicine and Primary Care. Year : 2015/Volume : 4/ Issue : 3 /Page 388 – 394

[10]   Sahile,Z.,Abenezer Y., and Mirgissa.K., (2016). Patients'experiences and perceptions onassociates of TB treatment adherence: aqualitative study on DOTS service in

publichealth centers in Addis Ababa, Ethiopia. BMC Public Health (2018) 18:462 https://doi.org/10.1186/s12889-018-5404-y

[11]   Ulfah, Cicilia.W.,Zainal.,A.,Farida.M.,(2017). Factors Associated with Treatment Compliance in Patients with Pulmonary Tuberculosis. Journal of The Indeonesian Journal of Infection Diseases. Vol.4. No.1. 2018

[12]   Yuni,A.M.A.D.I, (2016). Relationship between TB Treatment Phase and Knowledge of MDR TB with Treatment Adherence to TB Patients (Study at a Community Health Center in Perak Timur). Periodical Journal of Epidemiology. Vol.4 No.3. September 2016 : 301-312

[13]   Yustianingrum, Hidayah,N.,Yuliarti,R.,(2017). Relationship between House Distance and Compliance with Medication in Tuberculosis Patients at RSI Sunan Kudus. Journal of Nursing and Midwifery Vol.10, No.1 (2019) 248-255