Demographic Characteristics And Medication Adherence In Patients With Pulmonary Tuberculosis

Sri Mala Hayati[1], Ade Kartika[2]
[1,2]Faculty of Nursing, Universitas Nurul Hasanah, Kutacane

Article Info	ABSTRACT
Keywords: Pulmonary Tuberculosis Characteristic Complience	Pulmonary Tuberculosis is a chronic infectious disease that is contagious and can lead to illness and death. To date, no country has been free from pulmonary TB, although the incidence of pulmonary TB has decreased and requires long-term treatment. The purpose of this study is to understand the characteristics and medication adherence of pulmonary TB patients. This study employs a quantitative research method with a descriptive research design, using a sample size of 70 individuals. The results show that the majority of respondents are elderly, The results of the study showed that the majority of respondents had an elderly age of 44 (62.85%), male sex with 44 people (68.6%), married status majority with 47 people (71.4%), had incomes below 500,000 to 1,500,000 with 49 people (70%) and the majority of respondents had never received health education with 56 people (80%). In addition, the results showed that as many as 58 people had pulmonary TB patients. has low compliance with a percentage of 82.8%
 	Corresponding Author: Sri Mala Hayati Universitas Nurul Hasanah Jl. Ahmad Yani No 23 Pulo Kemiri Srimala31@gmail.com

INTRODUCTION

Tuberculosis (Pulmonary TB) is a chronic infectious disease that is contagious and can lead to illness and death. Pulmonary tuberculosis remains a public health issue worldwide and is a major global health problem, causing poor health in millions of people each year. To date, no country has been free from pulmonary TB, although its prevalence has decreased (Kusumawati et al., 2015). Indonesia is the country with the third-highest burden of TB in the world, with the WHO Global TB Report 2018 estimating 842,000 cases of TB incidence and 107,000 deaths. Indonesia is one of the countries facing the triple burden of TB, namely TB incidence, drug-resistant TB (RO), and TB-HIV (Ministry of Health of the Republic of Indonesia, 2019). North Sumatra Province saw an increase in pulmonary TB cases from 17,133 cases in 2008 to 19,673 cases in 2010, with 16,078 of these cases being sputum-smear positive, while the rest were diagnosed through other diagnostic methods (Ministry of Health, 2011). In the city of Medan, 7,431 cases of pulmonary TB were reported between 2013 and 2016. To date, Medan has 299 cases of drug-resistant TB, which has raised concern and increased vigilance (Medan City Health Department, 2018).

Pulmonary TB treatment requires a relatively long time (6-8 months) to achieve recovery, using a combination of several medications. It is not uncommon for patients to stop

taking their medication before the treatment period is over, leading to treatment failure. Non-adherence to treatment has a negative impact on the healing process, resulting in relapse, re-treatment, longer recovery time, and even suicide attempts (Higashi et al., 2013). Research by Zegeye et al. (2019) on the various factors contributing to non-adherence in pulmonary TB patients concluded that several factors are involved, including forgetting to take the medication, fear of side effects, waiting too long at healthcare facilities (>1 hour), and the long distance to healthcare facilities—all of which are risk factors for non-adherence to pulmonary TB treatment.

Research on the characteristics of pulmonary Tuberculosis (TB) patients is very important because some due to knowing the characteristics of pulmonary TB patients, such as age, gender, socio-economic status, and medical background, helps to understand patterns of disease spread. It can identify high-risk groups and design more effective interventions. This study may uncover risk factors related to the development of pulmonary TB, such as environmental conditions, lifestyle, or comorbidities. This is important for early prevention and risk management. This study can help identify the impact of TB on patients' lives, including its impact on employment, quality of life, and access to health services. With this data, it is possible to propose health policies that are more responsive to the needs of patients. Understanding patient characteristics helps in the prevention of the spread of TB, especially in the context of close contacts or populations living in dense environments. It also supports better global management strategies in TB control

The study conducted by Mekonnen and Azagew (2018) showed that patients with more than one comorbidity tend to be less adherent to TB treatment. Lack of knowledge about TB and its treatment is closely related to non-adherence. A poor relationship between patients and healthcare providers is also significantly associated with this issue. Forgetting, being busy with other work, and being away from home or out of town are the main reasons for most patients discontinuing TB medication. This study is reinforced by research conducted by Woimo et al. (2017), which states that the relatively high level of non-adherence among pulmonary TB patients is caused by a lack of knowledge, long distances to healthcare facilities, non-centralized DOTS services, insufficient health information at each visit, and treatment costs other than TB medication, all of which are obstacles to TB treatment adherence.

The key to the success of pulmonary TB treatment is the patient's adherence to taking their medication. One of the factors that can influence a person's behavior in following treatment recommendations is knowledge and attitude. Knowledge is something that pulmonary TB patients must have to increase medication adherence and prevent relapses, which can have fatal consequences. According to research conducted by Wardani (2009), the consequences of non-adherence to medication include relapse and overdose. This study aims to understand the characteristics and medication adherence of pulmonary TB patients.

Research on medication adherence in pulmonary Tuberculosis (TB) patients is important because it has a direct effect on successful treatment and control of the spread of disease. Pulmonary TB is a disease that requires long-term treatment with a combination of antibiotics for 6-12 months. If patients are not compliant in taking medication, this can lead

to resistance to TB drugs, such as Multi-drug Resistant Tuberculosis (MDR-TB), which are more difficult to treat and potentially life-threatening. Patients who are not compliant in pulmonary TB treatment tend to remain infectious and are at risk of spreading the infection to others. By improving understanding of factors affecting adherence, appropriate interventions can be implemented to reduce TB transmission in communities. Identification of Social, Economic, and Psychological

METHODS

This type of research uses quantitative research. With a descriptive research design approach. This study aims to determine the characteristics and compliance of taking medication for pulmonary TB patients. This study was conducted at Sering Health Center and Glugur Darat Health Center, Medan City. The number of samples in this study was 70 people. The data collection tools used in this study used demographic data questionnaire sheets and questionnaire sheets is *Morisky Medication Adherence Scale-8* (MMAS-8). The demographic data sheet of respondents includes age, gender, marital status, income and attending health education. The Morisky Medication Adherence Scale-8 (MMAS-8) questionnaire sheet was used to assess the medication adherence of Pulmonary TB patients before and after being given the Acceptance And Commitment Therapy (ACT) intervention. This instrument was developed by Donald E. Morisky (2008). This study has passed ethics with an ethical clearance number at the Ethics Committee of the University of Sumatera Utara (No: 938 KEP/USU/2021). The data analysis used is a descriptive data analysis in which the data is displayed in the form of frequency distribution and percentage of the characteristics of pulmonary TB patients and drug adherence of pulmonary TB patients

RESULTS AND DISCUSSION

The results of the study conducted at Sering Health Center and Glugur Darat Health Center on 70 respondents obtained the characteristics of respondents with Pulmonary TB based on age, gender, marital status, ethnicity, education level, occupation, income, having attended health education

Table 1. Demographic Characteristics of Pulmonary TB Patients

Karakteristik responden	Amount and Percentage	
	f	%
Age		
Teenager (18-25 tahun)	7	10
Adult (26-45 tahun)	19	27.14
Older (46-74 tahun)	44	62.85
Gender		
Male	44	68,6
Female	26	31,4
Marital Status		
Married	47	71,4

UnMarried	14	17,1
Widow/wodower	9	11,4
Income		
< RP 500.000	11	15,7
> Rp 500.000-Rp 1.500.000	49	70
> Rp 1.500.000	10	14,2
Ever attended education		
Yes	14	20
No	56	80

The results of the study showed that the majority of TB patients' medication compliance was low, amounting to 58 people with a percentage of 82.8%, and a minority had high compliance, amounting to 4 people with a percentage of 5.7%.

Tabel.2 Compliance in Taking Medication in Pulmonary TB Patients

Compliance in Taking Medication in Pulmonary TB Patients	Amount and Percentage	
	f	%
Low	58	82,8
Medium	8	11,4
High	4	5,7

Scientific Equations

Patient compliance is the extent to which patient behavior is in accordance with the provisions given by health professionals, or can also be defined as compliance or obedience to medical treatment is a patient's compliance with the prescribed treatment. Compliance with treatment requires active patient participation in self-care management and cooperation between patients and health workers. Patients who are compliant with treatment are those who complete treatment regularly and completely without interruption for at least 6 months to 9 months. Patients are said to be negligent if they do not come for more than 3 days to 2 months from the date of the agreement and are said to be Drop Out if they do not come for treatment for more than 2 consecutive months after being visited by a health worker (Gau, 2015).

The results of this study are in line with research conducted by Hayati (2016) which stated that as many as 13 respondents (34.2%) were not compliant in taking medication. This could be due to patients who are starting to get bored with long-term treatment and lack of knowledge of the effects of non-compliant treatment which will be difficult to treat. In addition, the history of other diseases that require patients to take medication causes patients to have to take various types of drugs at the same time or differently every day. The number of drugs that must be taken and the different rules for using drugs can make patients feel confused and bored so that there is the potential for non-compliance with treatment.

The results of this study indicate that a person's non-compliance with taking medication is lower in the elderly. This is because in the early elderly age, the lack of knowledge about

the treatment of Pulmonary TB is at risk of experiencing non-compliance with Pulmonary TB treatment and will result in incomplete treatment. In accordance with research by Susilayanti et al. (2014) that more than half of tuberculosis sufferers occur in the productive age group. Productive age is a period that plays an important role in earning a living outside the home and the frequency of going out of the house which often can allow the transmission of pulmonary tuberculosis (Tirtana and Musrichan, 2011, Herrero et al., 2015).

Gender can also be a factor that can affect medication adherence. Non-compliance with medication is more common in men than in women, in this study the majority of pulmonary TB patients were male. Compliance with medication in pulmonary TB patients in the intervention group and the control group. The results of this study indicate that gender does not affect non-compliance with medication in pulmonary TB patients. The results of this study are in line with research conducted by Yudinia (2018) who conducted research on pulmonary TB patients where the majority of respondents were male, found that gender did not have a significant effect on medication adherence in pulmonary TB patients, but was influenced by other factors such as family support, the length of the treatment process that must be undergone by pulmonary TB patients until they feel they are not getting better.

A person's marital status can affect their compliance in taking medication. This is likely because married people have more obligations in the household. Therefore, the possibility of attention to their health is reduced compared to married people (Mohamed et al., 2015). The lifestyle of a person with an unmarried status is different compared to those who are married. This is mainly due to the employment status factor where a person works outside his home (Ephrem et al., 2015).

Economic factors or material support are very important in changing knowledge and behavior. Likewise, compliance with treatment in patients with pulmonary TB is also greatly influenced by economic factors. If the patient's or family's socioeconomic status is low, it will affect the care and life of the patient with pulmonary TB. Patients can regularly come to the health center if supported by transportation facilities to the health center. Visits for treatment include taking medicine, health checks, sputum examinations. If transportation facilities are not available, compliance to come to the health center for treatment is not optimal and success is not achieved. So, poor socioeconomic status will affect the compliance of patients with pulmonary TB in seeking treatment. The economic condition itself may not only be directly related, but can also be an indirect cause such as worsening nutritional conditions, unhealthy housing, and decreased access to health services.

To achieve recovery, it is very important for TB patients to undergo regular treatment. Therefore, the level of compliance in taking TB drugs needs to be considered. Because if treatment is not carried out regularly and not according to the specified time, it can cause widespread immunity (resistance) of tuberculosis bacteria to Anti-Tuberculosis Drugs (OAT) or called Multi Drugs Resistance (MDR) (Ministry of Health of the Republic of Indonesia, 2014). One effort to increase the compliance of TB patients is to increase patient knowledge of their disease. Patient knowledge can be increased by providing education to patients. Based on research conducted by Sriwijaya et al (2018), from 108 respondents divided into two groups, namely the education and non-education groups, there was a significant

difference in the level of compliance in taking OAT between the education group and the non-education group. In order to increase the compliance of TB patients, counseling or education can be carried out through the use of electronic or non-electronic media.

CONCLUSION

The results of the study showed that the majority of respondents were elderly aged 46-74 years, the majority were male, the majority were married with a majority income of >500,000-1,500,000 and had never received education. The results also showed that respondents had a low level of compliance in consuming Pulmonary TB Drugs. recommendations can be applied to improve compliance and ensure successful treatment are patient education about the importance of completing TB treatment is essential. Education programs should explain the consequences of non-adherence, such as drug resistance, relapse, and transmission of the disease to others and Periodic monitoring through home visits or phone calls from healthcare workers can help ensure that patients remain compliant with treatment

REFERENCE

Depkes RI. (2013). Riset Kesehatan Data (RISKESDAS 2013). Jakarta: Badan Penelitian dan Pengembangan Kesehatan

Higashi, K., Medic, G., Littlewood, K. J., Diez, T., Granström, O., & Hert, M. De. 2013. Medication.

Kemenkes RI, 2018. (2017). *Profil Kesehatan Indonesia Tahun 2017*. *Ministry of Health Indonesia*.

Kemenkes RI, 2017. Profil kesehatan Indonesia 2016. Jakarta: Kementrian Kesehatan RI.

Kemenkes RI. Tuberkulosis Temukan Obati Sampai Sembuh. Jakarta: Pusat Data dan Informasi Kementrian RI. 2016.

Kemenkes RI, 2016. Profil kesehatan Indonesia 2015. Jakarta: Kementrian Kesehatan RI.

Kemenkes RI, 2015. Tuberkulosis Temukan Obati Sampai Sembuh. Infodatin.

Kemenkes, 2014. strategi nasional pengendalian TB di Indonesia tahun 2013- 2017. Jakarta : Direktorat Jenderal Pencegahan dan Pengendalian Penyakit Menular Kemenkes RI.

Kusumawati, F. (2015). *Hubunganantara Keberhasilan Pengobatan Tuberkulosis*

Mekonnen, H. S., & Azagew, A. W. (2018). Non-adherence to anti-tuberculosis treatment, reasons and associated factors among TB patients attending at Gondar town health centers, Northwest Ethiopia. *BMC research notes*, *11*(1), 1-8.

Paru Yang Dipantau Oleh Pengawas Minum Obat (Pmo) Dengan Yang Tidak di RS PKU Muhammadiyah Yogyakarta Tahun 2012 (Doctoral dissertation, Universitas Islam Indonesia).

Putri, M. S. O. (2018). Peran Paguyuban Tbc Terhadap Kepatuhan Minum Obat Penderita Tuberkulosis (Tbc) Di Kecamatan Sumberjambe Kabupaten Jember

Sari ID, Yuniar Y, and Syaripuddin M. 2014. Studi Monitoring Efek Samping

Obat Anti Tuberkulosis FDC Kategori 1 di Provinsi Banten dan Provinsi Jawa Barat. Media Litbangkes. 24 (1): 28-35.

Woimo, T. T., Yimer, W. K., Bati, T., & Gesesew, H. A. (2017). The prevalence and factors associated for anti-tuberculosis treatment non-adherence among pulmonary tuberculosis patients in public health care facilities in South Ethiopia: a cross-sectional study. *BMC public health*, *17*(1), 1-10.

Widiyanto, A. (2017). Hubungan Kepatuhan Minum Obat dengan Kesembuhan Pasien Tuberkulosis Paru BTA Positif di Puskesmas Delanggu Kabupaten Klaten. *Interest: Jurnal Ilmu Kesehatan*, *6*(1), 7-12.

Wijaya, A.S dan Putri, Y.M. 2013. *Keperawatan Medikal Bedah 2, Keperawatan Dewasa Teori dan Contoh Askep*. Yogyakarta : Nuha Medika.

Wilkinson, Judith, M., (2007). *Buku saku diagnosis keperawatan dengan intervensi NIC dan kriteria hasil NOC*, Edisi 7, ahli bahasa Widyawati, et al., Jakarta : EGC.

Zegeye, A., Dessie, G., Wagnew, F., Gebrie, A., Islam, S. M. S., Tesfaye, B., & Kiross, D. (2019). Prevalence and determinants of anti-tuberculosis treatment non-adherence in Ethiopia: A systematic review and meta-analysis. *PloS one*, *14*(1), e0210422.