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Treatment Duration And Family Support and Its Correlation With The Depression Symptoms In Pulmonary Tuberculosis Patients

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Abstrak

Pengendalian TB memerlukan pengobatan selama 6-8 bulan, lamanya pengobatan ini dapat mempengaruhi tingkat gejala depresi pada penderita TB paru, lingkungan juga akan mempengaruhi munculnya gejala depresi pada seseorang penderita TB paru, bentuk dukungan yang dapat diberikan adalah berupa dukungan keluarga, dukungan ini sangat penting agar penderita TB paru tidak mengalami depresi. Tujuan penelitian ini adalah untuk mengetahui hubungan lamanya pengobatan dan dukungan keluarga terhadap tingkat gejala depresi pada penderita TB paru. Metode Penelitian Desain analitik observasional dengan pendekatan cross-sectional study. Teknik pengambilan sampel yang digunakan adalah teknik non-probability sampling dengan metode quota sampling dan diperoleh 64 responden. Instrumen yang digunakan adalah kuesioner dukungan keluarga dan kuesioner tingkat gejala depresi. Analisis data menggunakan uji regresi logistik ordinal dengan nilai p<0,05. Hasil Penelitian. Hasil uji simultan hubungan lama pengobatan dan dukungan keluarga terhadap tingkat gejala depresi pada penderita TB paru di RSUD Surakarta diperoleh nilai p-value sebesar 0,000, maka (p = 0,000 < 0,05) artinya variabel lama pengobatan dan dukungan keluarga secara bersama-sama berpengaruh terhadap tingkat gejala depresi dengan besarnya hubungan sebesar 47,5%. Maka dapat disimpulkan bahwa, terdapat hubungan yang signifikan antara lama pengobatan dan dukungan keluarga terhadap tingkat gejala depresi pada penderita TB paru di RSUD Surakarta.

Kata Kunci: Tuberkulosis Paru; Lama Pengobatan; Dukungan Keluarga; Gejala Depresi

Abstract

TB control requires treatment for 6-8 months, the duration of this treatment can affect the level of depression symptoms in patients with pulmonary TB, the environment will also affect the emergence of depression symptoms in someone with pulmonary TB, the form of support that can be given is in the form of family support, this support is very important so that patients with pulmonary TB do not experience depression. The purpose of this study was to determine the relationship between the duration of treatment and family support on the level of depression symptoms in patients with pulmonary tuberculosis. Research Methods Observational analytical design with a cross-sectional study approach. The sampling technique used was a non-probability sampling technique with a quota sampling method and 64 respondents were obtained. The instruments used were a family support questionnaire and a questionnaire on the level of depression symptoms. Data analysis used an ordinal logistic regression test with a p value <0.05. Research Results. The results of the simultaneous test of the relationship between the length of treatment and family support on the level of depression symptoms in patients with pulmonary TB at Surakarta General Hospital obtained a p-value of 0.000, then (p = 0.000 <0.05) meaning that the variables of length of treatment and family support together have an effect on the level of depression symptoms with a magnitude of the relationship of 47.5%. it can be concluded that, there is a significant relationship between the length of treatment and family support on the level of depression symptoms in patients with pulmonary TB at Surakarta General Hospital.

Keywords: Pulmonary Tuberculosis, Duration of Treatment, Family Support, Symptoms of Depression

INTRODUCTION

Pulmonary tuberculosis (TB) is a global public health problem and a highly contagious disease. In 2020, approximately 10.6 million people were diagnosed with tuberculosis and 1.6 million died from the disease. Based on WHO (World Health Organization) data in 2020, Indonesia was in third place with the number of cases reaching 824,000 cases, then in 2021 Indonesia experienced an increase in cases to be in 2nd place with the number of TB sufferers as many as 969,000 cases, this figure increased by 17% from 2020, so that Indonesia became the country with the most TB cases in the world after India, followed by China, the Philippines, Pakistan, Nigeria, Bangladesh and the Democratic Republic of the Congo in sequence, data obtained The incidence of TB cases in Indonesia is 354 per 100,000 population (WHO, 2022).

According to data from the Central Java Provincial Health Office, cases of Tuberculosis in Central Java Province in 2018 were 134/100,000 population and in 2019 increased to 211/100,000 population. The highest TB cases in Central Java Province are in Magelang City with 1,936 cases and the lowest with 58 cases in Karanganyar Regency. Meanwhile, Surakarta City is ranked 7th with 317 cases (Central Java Provincial Health Office, 2019). In 2020, the number of tuberculosis (TB) sufferers in Central Java from January to June 2020 reached 23,919 people, while the highest TB sufferers in Central Java were in Brebes Regency, namely 1,840 sufferers. Then followed by Tegal Regency with 1,500 sufferers, Cilacap Regency with 1,447 sufferers, Banyumas Regency with 1,334 sufferers and Kudus Regency with 1,252 sufferers. This is evidence of the wide spread and increase in TB cases in a province (Farasonalia, 2020). Based on population data taken from medical records of patients undergoing outpatient treatment at Surakarta General Hospital, there were 174 pulmonary tuberculosis patients undergoing outpatient treatment.

TB control using anti-tuberculosis drugs (OAT) for pulmonary TB requires treatment for 6-8 months, the duration of this treatment can affect medication compliance (Meylisa, et al., 2021). This occurs due to inadequate TB treatment. Microbiologically, the cause of resistance that occurs is due to genetic mutations so that treatment is no longer effective against tuberculosis germs (Ariyanto, 2018). In patients with pulmonary TB, it is mandatory to take anti-tuberculosis drugs (OAT) every day on time, which is a burden for patients, because they have to adapt to the situation of their condition which must take medication, thus triggering depression in patients diagnosed with pulmonary TB (Meylisa, et al., 2021).

Early diagnosis of TB is one of the stressors that causes psychological disorders, especially depression. Depression is a mood disorder characterized by feelings of sadness, loss of interest and pleasure, feelings of guilt, low self-esteem, sleep disorders and eating disorders. Sufferers usually experience continuous fatigue even though they do not do activities and reduced concentration to the point of suicidal tendencies (Basuki, et al., 2014). Based on research conducted by Alinur Adem by taking samples in Ethiopia, there were 19.82% of TB patients who experienced cases of depression from

222 patients interviewed. Those who have a history of the disease that lasts more than 1.5 years have a presentation of (71.43%) for the risk of depression in TB sufferers (Adem, et al., 2013). Research also conducted by Molla, et al., (2019) reported that the prevalence of depression in TB sufferers is 51.9%. The presence of this depression poses a challenge in eliminating tuberculosis.

The environment will affect the onset of depressive symptoms in someone with pulmonary TB, in society, people with pulmonary TB have a negative stigma because people with pulmonary TB are considered to be able to transmit the disease to other people in the environment around the sufferer, so that everyone stays away from the TB sufferer, and allows symptoms of depression to appear (Meylisa, et al., 2021). As a result of being ostracized in the family and surrounding environment and considering themselves less able to do activities or something useful and feeling less productive because they have been exposed to the disease, TB sufferers feel they don't get enough support from their surroundings, tuberculosis sufferers feel they don't have a meaningful meaning in life (Nurmayana, et al., 2023).

One form of support that can be given to clients with tuberculosis is family support, this support is very important, because an environment that lacks emotional support will result in non-compliance with taking medication and prolonged non-healing in patients with Pulmonary TB (Tinah & Triwibowo, 2020). In patients with pulmonary TB, in addition to receiving medical treatment, they also need support in the form of attention and affection from family or people close to the patient with pulmonary TB. In a study conducted by Meylisa (2021) regarding the duration of pulmonary TB treatment with the level of depression symptoms in patients with pulmonary TB at the Meuraxa Hospital in Banda Aceh, it is hoped that further researchers will be able to conduct research on the duration of pulmonary TB treatment with the level of depression symptoms in patients with pulmonary TB by considering other aspects, one of which is family support. Family support can affect depression in patients with tuberculosis (TB) in several ways, first, emotional support from the family can help patients feel more accepted and less isolated, which can reduce feelings of anxiety and depression. Families who provide practical support, such as helping with daily treatment or care, can also reduce the burden felt by patients, thereby increasing adherence to treatment and improving overall health outcomes. In addition, the social stigma that is often attached to TB can make patients feel isolated. Families who support and understand the patient's condition can help reduce this stigma, provide a sense of security and increase patient confidence. By understanding more deeply about the role of family support, we can design more effective strategies to help TB patients cope with depression and improve their quality of life. (Meylisa, et al., 2021).

Based on the description above, the author is interested in conducting research with the title "the relationship between length of tuberculosis treatment and family support on the level of depressive symptoms in Pulmonary TB Patients".

METHOD

The design used is an analytical observational method with a cross-sectional study approach. The study was conducted to determine the correlation between risk factors (independent), namely the duration of treatment and family support on the (dependent) level of depressive symptoms in patients with pulmonary tuberculosis. Measurements were carried out simultaneously and simultaneously at one time on the subject variables at the time of the study, namely the duration of treatment and family support with the level of depressive symptoms in patients with pulmonary tuberculosis (da Lima et. al, 2019).

The population in this study amounted to 174 people with the determination of the number of samples using the Slovin formula obtained 64 people who fit the criteria, namely patients suffering from pulmonary TB who are undergoing outpatient treatment at Surakarta General Hospital, patients do not have verbal communication disorders, no complications of other diseases, patients are at least 18 years old, new patients with pulmonary TB within a period of 6 months, data collection by meeting each patient directly and explaining to each patient who underwent treatment. Patients were asked to fill out an informed consent as a form of agreement to become respondents. The instrument for measuring the duration of treatment used a questionnaire. Researchers filled in the respondent's treatment duration calculated from the beginning of the respondent's treatment until the first day of the study, with the total results obtained categorized into 3 categories, short: if in the range of 1 - 30 days, Medium: if in the range of 31 - 90 days, Long: if in the range of 91 -180 days. The instrument to reveal data on family support used a family support questionnaire of 18 questions with a validity correlation coefficient value of ≥ 0.3 ($r = 0.375 - 0.720$) and a cronbach alpha reliability coefficient value of 0.883 (≥ 0.7). The instrument to reveal data on depression uses a modification of the Beck Depression Inventory instrument (1996) which has been adapted into Indonesian with a validity value of 0.52 and a Cronbach alpha reliability coefficient value of 0.90 (Ginting, et al. 2013). Respondents were asked to fill out the questionnaire by choosing one answer that matches their characteristics. The filling of the questionnaire was supervised directly by the researcher, if the respondent had difficulty they were asked to convey it directly to the researcher, then the researcher collected the completed questionnaires and checked the completeness of the data, namely the completeness of the respondent's identity, filling out the questionnaire sheet, and checking again if there was any incorrect or incomplete filling.

In this study, data analysis used ordinal logistic regression, which is a statistical method that seeks the relationship between a response variable (Y) and one or more predictor variables (X), where the response variable is more than two categories and the measurement scale is level with an ordinal scale (Hosmer & Lemeshow, 2000). Ordinal regression is used to model the relationship between an ordinal-scale response variable and its explanatory variables (Indahwati et al, 2010). The cumulative logit model that meets the proportional odds assumption is the most commonly used ordinal regression model because it produces estimates that are easy enough to interpret (Lall, 2004).

RESULTS

The description of the respondent characteristics is presented in the following table:

Table 1 Respondents based on gender, age, duration of treatment, family support and depression symptoms at Surakarta Central General Hospital

Characteristics	N	%
Gender		
Man	38	59.4
Woman	26	40.6
Age		
18-26year	10	15.6
27-34 years	8	12.5
35-42 years	7	10.9
43-50 years	10	15.6
>50 years	29	45.3
Duration of Treatment		
Short (1 – 30 days)	7	10.9
Medium (31– 90 days)	23	35.9
Long (91 – 180 days)	34	53.1
Family Support		
Low (0 – 31)	2	3.1
Medium (32 – 39)	2	3.1
High (40 – 72)	60	93.8
Depression Level		
Not depressed (0 – 9)	48	75.0
Mild depression (10 -16)	13	20.3
Moderate depression (17 - 29)	3	4.7

Source: Primary data 2024

Based on Table 1, the gender is dominated by male as many as 38 respondents (59.4%), the most age is in the age range >50 years, namely 29 respondents (45.3%). Respondents with a long treatment period are dominated in the long range (91 - 180 days) as many as 34 people (53.1%). Respondents based on the level of family support are the most in the high category, namely 60 people (93.8%). Respondents who have the most depression levels are the non-depressed category, namely 48 respondents (75%)

Table 2. Simultaneous Test of the Relationship between Length of Treatment and Family Support on the Level of Depressive Symptoms in Pulmonary TB Patients

Model	-2Log Likelihood	Chi-Square	df	Sig.
Intercept Only	41,031			
Final	13,076	27,955	4	.000

Based on table 2, the results show that the duration of treatment and family support have a relationship with the level of depression symptoms with a p-value of 0.000 (<0.05).

Table 3. Model Determination Coefficient Test

Cox and Snell	.354
Nails	.475
McFadden	.320

The Negelkerke method is used because it provides the largest value among other methods, which is 0.475. Thus, it can be interpreted that the independent variable is able to explain the dependent variable by 47.5% while the other 52.5% is influenced by variables not included in this study.

Table 4. Partial Test

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Threshold	[Total_Y = 1]	2.711	.731	13.748	1	.000	1.278	4.143
	[Total Y = 2]	6.068	1.336	20.635	1	.000	3.450	8.686
Location	[X1=1]	2.647	1.090	5.901	1	.015	.511	4.783
	[X1=2]	1.992	.860	5.365	1	.021	.307	3.678
	[X1=3]	0[a]	.	.	0	.	.	.
	[Total_X2=1]	22.952	.000	.	1	.	22.952	22.952
	[Total_X2=2]	4.389	1.756	6.247	1	.012	.947	7.831
	[Total X2=3]	0[a]	.	.	0	.	.	.

Based on table 4, it shows that variable X1 (duration of treatment) has a significance value of 0.021, the value is smaller than alpha (0.021 <0.05). This means that partially the duration of treatment affects the level of depression symptoms. From the table above, it can also be seen that variable X2 (family support) has a significance value of 0.012, the value is smaller than alpha (0.012 <0.05). This means that partially family support affects the level of symptoms.

Based on the output results, the odds ratio value for the variable of length of treatment is obtained as exp (1.992) = 7.33. The palindromic invariance property can be utilized to facilitate interpretation, so that it is reversed to negative resulting in an odds ratio of exp (-0.1992) = 0.14. This means that there is a 0.14-fold increase in the tendency to experience mild depression for respondents undergoing short-term treatment than respondents undergoing long-term treatment.

The odds ratio value for family support is obtained as exp (4.389) = 80.56. Reversed based on the palindromic invariance property to negative, it produces an odds ratio of exp (-4.389) = 0.012. This means that there is a 0.012 times increase in the tendency to experience lower depression for respondents who receive high category family support compared to respondents who receive low category family support.

DISCUSSION

Duration of Treatment

This study shows that the average duration of treatment for pulmonary TB patients at Surakarta General Hospital from 64 respondents is categorized as long, namely a range of 91-180 days or entering the advanced phase (60-180 days) as many as 34 patients (53.1%). in the advanced stage, patients receive less medication. In the advanced stage, it is useful for killing persister or dormant germs (sleeping) so as to prevent relapse (Ministry of Health of the Republic of Indonesia, 2008).

The results of this study are supported by Zahroh's research (2016), The duration of TB treatment at the Tambelangan Health Center showed that out of 39 respondents, most of them, 27 patients (69.2%) underwent TB treatment category 1 (2-6 months), Category 1 treatment is given for 2-6 months, at this stage TB sufferers must take medication regularly because it greatly affects the healing of the disease. Failed treatment will cause relapse and failure of treatment, so TB sufferers must undergo repeat treatment for a longer period, namely category 2 treatment (7-8 months), if category 2 (7-8 months) fails, treatment can continue to category 3 (> 8 months). Health Educators for TB sufferers undergoing treatment are very important, the aim is to provide knowledge about the function and impact of regularity in taking medication and timely control, where this can affect the duration of TB treatment. The duration of TB treatment is the length of time that TB sufferers undergo treatment aimed at preventing relapse, resistance to OAT, breaking the chain of transmission, and death (Muttaqin, 2008).

Family Support

This study shows that family support for pulmonary TB patients at Surakarta General Hospital from 64 respondents is categorized as high, which is 60 patients (93.8%), moderate as many as 2 patients (3.1%) and low as many as 2 patients (3.1%). The results of this study are supported by research conducted by Randhy (2011), most of the informants (88%) received support from their families. This family support is manifested through emotional support, appreciation support, instrumental support, and informative support (Randhy, 2011). The family has an important role in determining the decision to seek and comply with treatment recommendations. The family is also a very influential factor in determining the beliefs and health values of individuals and can also determine the treatment program received. The family also provides support and makes decisions regarding the care of sick family members. Based on research conducted by Randhy (2011) patients with low family support are 36 times more likely to stop their treatment than people with high family support.

Emotional support includes expressions of empathy, concern, and attention to the source because he/she has TB. This appreciation support involves giving positive expressions of praise to the patient for taking TB medication, conversely if the patient does not take the medication the family will reprimand, this can. Instrumental support is direct assistance provided by the family to the source in the form of assistance with financing TB treatment, family who accompany the patient to treatment, and provide nutritious food. Informative support includes providing advice, instructions, information, suggestions and feedback. With family support, it can be an encouragement for sufferers in providing motivation so that sufferers can cope effectively in dealing with stressors to adapt well to new situations or circumstances (Hasanah et al., 2018).

Level of Depression Symptoms

This study shows that the level of depressive symptoms in pulmonary TB patients at RSUP Surakarta from 64 respondents is categorized as not depressed as many as 48 patients (75%), mild

depression as many as 13 patients (20.3%), and moderate depression as many as 3 people (4.7%). Symptoms of depression found in respondents include feelings of sadness due to their illness, discouragement about the future, feeling guilty, being disappointed with themselves, isolating themselves, having difficulty sleeping due to frequent coughing at night, decreased appetite and anxiety if the illness is transmitted to other people, making sufferers of mild to moderate depression. From these data it can be concluded that on average patients at RSUP Surakarta who are undergoing pulmonary TB treatment do not experience depression, but some patients experience mild to moderate depression, this can be influenced by supporting factors that worsen the mental condition of pulmonary TB sufferers. Based on research conducted by Meylisa, et al., (2021), the level of depressive symptoms in pulmonary TB patients at the Meuraxa Banda Aceh Hospital polyclinic in the intensive phase of pulmonary TB treatment experienced severe depression, while in the advanced phase of pulmonary TB treatment the level of depression in pulmonary TB patients became lighter.

Several theories explain that people with pulmonary TB are very susceptible to depression. The first biological theory, people with pulmonary TB are very susceptible to depression because the neurotransmitter does not trigger a new action potential in the post-synaptic neuro in the synaptic gap which will cause changes in certain areas of the central nervous system (CNS). The second psychological theory of depression, this theory explains that depression tends to occur early in patients diagnosed with pulmonary TB, patients will experience shock and the third theory is the environmental theory, this theory explains that the environment will influence the onset of depressive symptoms in someone with pulmonary TB (Meylisa, et al., 2021).

Relationship Between Length of Treatment and Level of Depressive Symptoms

Based on the results of the partial test of the relationship between the duration of treatment and the level of depression symptoms in pulmonary TB patients at Surakarta General Hospital, the significance value between the variable duration of treatment and the level of depression was 0.021 <0.05, so it can be concluded that there is a significant relationship between the variable duration of treatment and the level of depression, with an odds ratio of 0.14, which means that there is a 0.14-fold increase in the tendency to experience mild depression for respondents undergoing short-term treatment than respondents undergoing long-term treatment. From the results obtained, the conclusion is that the longer the treatment period, the lower the level of depression symptoms.

This data is supported by the results of a study conducted by Meylisa, et al., (2021), showing that the relationship between the duration of treatment and symptoms of depression is known, with a sig value <0.05, which is 0.000. So it can be concluded that there is a significant relationship between the duration of tuberculosis (TB) treatment and the level of depression symptoms in patients with pulmonary TB at the Meuraxa Hospital Pulmonary Polyclinic, Banda Aceh. How big the relationship is can be seen from the r value of 0.76 (76%), namely the relationship is very strong, so that there is a significant relationship between the duration of tuberculosis (TB) treatment and the level of depression symptoms

in patients with pulmonary TB at the Meuraxa Hospital Polyclinic, Banda Aceh with a P result of 0.000. In the intensive phase of pulmonary TB treatment, TB patients experience severe levels of depression, while in the advanced phase of pulmonary TB treatment, the level of depression in patients with pulmonary TB becomes lighter (Meylisa, et al., 2021).

Relationship between Family Support and Level of Depressive Symptoms

Based on the results of the partial test of the relationship between family support and the level of depression symptoms in patients with pulmonary TB at Surakarta General Hospital, the significance value between the family support variable and the level of depression was 0.012 <0.05, so it can be concluded that there is a significant relationship between the family support variable and the level of depression, with an odds ratio of 0.012, which means that there is an increase in the tendency of 0.012 times to experience lower depression for respondents who receive high category family support compared to respondents who receive low category family support. From the results obtained, the conclusion is that the increasing family support, the level of depression symptoms will decrease.

Another study conducted by Argyro Pachi reported that high levels of depression and anxiety among TB patients are associated with social stigma and inadequate family support. Psychosocial factors themselves often make it difficult to comply with treatment, so it is very important to pay attention to the mental health of patients related to the severity of the disease (Pachi et al, 2013).

It can be concluded that there is a relationship between family support and the level of depression in pulmonary TB patients, which is supported by research that states that there is a relationship where family support is very much needed by tuberculosis sufferers because the family functions to provide care for their sick family members so that they remain highly productive, therefore family support is very helpful in the course of active tuberculosis treatment, namely the family approaches the patient so that the patient still has the desire to take medication regularly and can reduce the number of treatment failures, so that it can reduce the level of depression in tuberculosis sufferers.

Relationship Between Length of Treatment and Family Support with Level of Depressive Symptoms

Based on the results of the simultaneous test of the relationship between the length of treatment and family support on the level of depressive symptoms in patients with pulmonary TB at Surakarta General Hospital, the p-value was 0.000, so 0.000 <0.05, meaning that the variables of length of treatment and family support together have an effect on the variable of the level of depressive symptoms with a magnitude of 47.5%.

The combination of treatment duration and family support plays an important role in managing symptoms of depression in patients with pulmonary tuberculosis. The effects of pulmonary TB can affect psychology, namely depression, at the beginning of treatment patients will experience depression but as treatment duration increases, depression will decrease. Conversely, good family support and

understanding from the family environment play a role in reducing the level of symptoms of depression, because they can provide the necessary support during the treatment process.

Several studies on social support have shown that social support from family has beneficial effects on mental health such as depression. Social support is important in helping individuals cope more effectively with personal difficulties and manage the emotional distress associated with these problems. For example, having emotional support from loved ones can reduce worries about life problems and daily issues (Taylor RJ, 2015). Psychosocial support is an important component of managing side effects. This is one of the most important roles played by health workers, who educate patients about side effects and encourage patients to continue treatment. Patient support groups are another way to provide psychosocial support to patients (WHO, 2014).

Longer treatment encourages patients to adapt to the condition of the disease being experienced, causing the level of depression symptoms to decrease because patients have begun to accept the condition being experienced. The nature of this long pulmonary TB treatment is expected that patients will receive continuous family support until the patient is declared cured both clinically and in the laboratory. Many respondents accept their illness and have become aware because they have received education from doctors, medical personnel or families, causing patient awareness to be high to continue treatment so as not to cause depression.

The limitations of this study are that the researcher only looked at the duration of category one treatment or a treatment period of 1-6 months, the researcher focused only on family support factors without including other broader support factors, and the measurement of the level of depression symptoms used was a closed questionnaire which meant that respondents could not provide other answers that were not provided in the questionnaire.

CONCLUSION

There is a significant relationship between the duration of treatment and family support on the level of depression symptoms in pulmonary TB patients ($P = 0.000 < 0.05$), with the magnitude of the relationship being 47.5%.

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