Indonesian Journal of Global Health Research
Volume 7 Number 3, June 2025
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

ANALYSIS OF DETERMINANTS OF QUALITY OF LIFE IN PULMONARY TB PATIENTS

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ABSTRACT
Pulmonary Tuberculosis (TB) is one of the infectious diseases that often becomes a problem and the leading cause of death in the world. Improving the quality of life of TB patients is something that needs to be developed. Because quality of life is essential to support human life. To achieve a good quality of life, it is necessary to know more precisely the determinants of the quality of life of TB patients. This study aims to determine the determinants of the quality of life in TB patients in Banda Aceh City. This study is descriptive and analytical with a cross-sectional study design. The population is all TB patients in 4 working areas of the Health Center in Banda Aceh City. A sample of 57 people was taken using the total sampling technique. Data was collected in July 2023 by interviewing using a questionnaire—data analysis using logistic regression. The study showed that 30 of 57 TB patients (58.82%) had a good quality of life. Factors related to the quality of life of pulmonary TB patients are age (OR=1.08; 95%CI=1.75-71.64; p=0.002), income (OR=16.50; 95%CI=3.81-71.46; p=0.0001), duration of treatment (OR=31.90; 95%CI=3.64-279.29; p=0.002), family support (OR=38.00; 95%CI=6.87-120.05; p=0.0001), health literacy (OR=20.80; 95%CI=4.86-89.10; p=0.0001), and religious coping (OR=30.00; 95%CI=6.34-141.95; p=0.0001).

Keywords: infectious diseases; pulmonary TB patients; quality of life

How to cite (in APA style)
Ariska, T., Abdullah, A., Ichwansyah, F., Hermansyah, H., & Maidar, M. (2025). Analysis of Determinants of Quality of Life in Pulmonary TB Patients. Indonesian Journal of Global Health Research, 7(3), 953-964. https://doi.org/10.37287/ijghr.v7i3.6302.

INTRODUCTION

Pulmonary tuberculosis (pulmonary TB) is one of the infectious diseases that often becomes a problem and the highest cause of death in the world (Herawati et al., 2020). Pulmonary tuberculosis is a contagious disease caused by germs (Mycobacterium tuberculosis). The main symptoms are coughing for two weeks or more, coughing up phlegm mixed with blood, shortness of breath, weakness, loss of appetite, weight loss, feeling unwell, night sweats without physical activity, and fever for more than one month (Saragih & Sirait, 2020).According to the WHO Global TB Report, tuberculosis (TB) will affect 10 million people worldwide by 2020, causing 1.2 million deaths each year. Indonesia is one of the countries with the most TB cases in the world, with an estimated 845,000 people infected with TB and a death rate of 98,000, or 11 deaths per hour (Organization, 2020). Globally, an estimated 10.6 million people fell ill with TB in 2021, an increase of 4.5% from 10.1 million in 2020. TB incidence (new cases per 100,000 population per year) increased by 3.6% between 2020 and 2021, reversing a decline of about 2% per year for most of the past 2 decades. The net reduction from 2015 to 2021 was 10% (WHO, 2022).

In 2018, around 9.6 million people were infected with tuberculosis, and 1.5 million people died from tuberculosis. The 2019 strategic plan target shows that the prevalence of

tuberculosis in Indonesia is 245 cases/100,000 population/year. In other words, for every 100,000 Indonesians, an average of 400 people are diagnosed with pulmonary tuberculosis (Tindatu et al., 2020). Based on the results of the Basic Health Research (Riskesdas), the five provinces with the highest prevalence of pulmonary TB are Papua (0.77%), Banten (0.76%), West Java (0.63%), West Papua (0.53%), South Sumatra (0.53%). At the same time, Aceh is the eighth-highest province with TB prevalence (0.4%) (Kemenkes, 2018).Prevalence of Pulmonary Tuberculosis in Aceh Province from 23 districts, Gayo Luwes has the highest prevalence of pulmonary tuberculosis, with 95% of 729 respondents diagnosed. At the same time, Sabang City is the district with the lowest prevalence of pulmonary tuberculosis, with 21% of 272 respondents diagnosed (Riskesdas, 2018). This is caused by various factors, including unhealthy health behavior and environmental factors, as well as compliance with taking medication in Pulmonary TB patients who do not receive complete and regular treatment, so the incidence of TB is currently increasing (Rumimpunu et al., 2018). Based on data from the Banda Aceh City Health Office, the prevalence of Tuberculosis increases every year. In 2022, the highest cases were at the Baiturrahman Health Center, with 36, the Meuraxa Health Center, with 23 and the Kuta Alam Health Center, with 18 TB cases (Dinkes, 2022).

The quality of life of tuberculosis patients is essential for survival; even though the person is sick, the patient certainly experiences many obstacles to adapting to the disease. The obstacles usually result in decreased socialization with the community, activity and productivity, so the patient's quality of life will decrease (Lianawati, 2021). This study aims to determine the determinants of the quality of life in TB patients in Banda Aceh City.

METHOD

This research is descriptive-analytical with a cross-sectional research design; independent and dependent variables will be studied simultaneously when the research is conducted to know the determinants of quality of life in tuberculosis patients in Banda Aceh City. The population in this study were all people infected with Pulmonary TB in Banda Aceh City, especially in 4 health center work areas, namely Baiturrahman Health Center, Kuta Alam Health Center, Ulee Kareng Health Center and Batoh Health Center. The population was 57 respondents. The sample in this study were patients suffering from Pulmonary TB in 4 health center work areas, namely Baiturrahman Health Center, Kuta Alam Health Center, Ulee Kareng Health Center and Batoh Health Center. Fifty-seven people met the inclusion and exclusion criteria using a total sampling method. Primary data in this study include the characteristics of respondents and variables to be studied related to the quality of life of Pulmonary Tuberculosis patients in Banda Aceh City. Secondary data is derived as direct support and complement from Riskesdas, Banda Aceh City Health Office and Health Centers. The data obtained include Pulmonary TB prevalence data, Pulmonary TB patient identity data and various references from journals related to this study.

RESULT

The research was conducted by collecting data on the characteristics of TB patients obtained from patient medical records. The accessible population in this study was 57 TB patients. The sample that met the inclusion criteria was 51 patients. A total of 4 patients did not meet the inclusion criteria; one was a toddler, and 1 patient was elderly. Based on the study results conducted in 4 health center work areas in Banda Aceh City (Baiturrahman, Kuta Alam, Ulee Kareng and Batoh) in July 2023 with a sample size of 51 respondents.

Table 1.
Determinants of quality of life in pulmonary TB patients

Variables	f	%	Mean (SD)	Min-Max
Quality of Life			68,06 (18,18)	49-98
Good	30	58,82		
Not good	21	41,18		
Age			40,41 (14,13)	16-69

Variables	f	%	Mean (SD)	Min-Max
Young	10	19,61		
Mature	22	43,14		
Old	19	37,25		
Gender				
Man	33	64,71		
Woman	18	35,29		
Education				
High	23	45,10		
Intermediate	25	49,02		
Basic	3	5,88		
Work				
Work	37	72,55		
Doesn't work	14	27,45		
Income				
≥ Provincial Minimum Wage	25	49,02		
< Provincial Minimum Wage	26	50,98		
Treatment Duration			3,69 (1,41)	1-6
Treatment Duration	39	76.47		
Intensive Phase	12	23,53		
Family Support			33,14 (7,13)	24-48
Support	26	50,98		
Lack of support	25	49,02		
Health Literacy				
Good	31	60,78		
Not good	20	39,22		
Coping Religius			43,76 (6,58)	33-64
Positive	28	54,90		
Negative	23	45,10		

Table 1 shows that out of 51 respondents, 30 (58.82%) had good quality of life and 21 (41.18%) had poor quality of life. Based on the characteristic variables, it can be seen that the majority of respondents were aged 26-45 years, totaling 22 (43.14%). Male respondents were 33 (64.71%) more than female respondents. The highest level of education was secondary education, totaling 25 (49.02%). The highest employment status of respondents was working, totaling 37 (72.55%). The highest income of respondents was high income, totaling 25 (49.02%). The variable of duration of treatment was that the highest number of respondents was in the advanced stage, totaling 39 (76.47%). Family support was higher for respondents with supportive families, totaling 26 (50.98%). Health literacy was higher for respondents with a good category, totaling 31 (60.78%). Furthermore, the variable of religious coping was higher for respondents with positive religious coping, totaling 28 (54.90%).

Table 2.
Bivariate analysis of determinants of quality of life in pulmonary TB patients

Variables	Quality of Life				OR	95% CI	p-value
	Good		Not Good				
	f	%	f	%			
Age					1,08	1,03-1,14	0,002
Young	8	80,00	2	20,00			
Mature	17	77,27	5	22,73	1,18	0,19-7,43	0,863
Old	5	26,32	14	73,68	11,2	1,75-71,64	0,011
Gender							
Man	18	54,55	15	45,45			
Woman	12	66.67	6	33,33	0,60	0,18-1,98	0,402
Education							
High	19	82,61	4	17,39			
Intermediate	11	44,00	14	56,00	6,05	1,59-23,00	0,008
Basic	0	0,00	3	100,00	*Empty*	*Empty*	*Empty*
Work							
Work	26	70,27	11	29,73			
Doesn't work	4	28,57	10	71,43	5,91	1,52-22,95	0,010

Variables	Quality of Life				OR	95% CI	p-value
	Good		Not Good				
	f	%	f	%			
Income							
≥ Provincial Minimum Wage	22	88,00	3	12,00			
< Provincial Minimum Wage	8	30,77	18	69,23	16,50	3,81-71,46	0,0001
Treatment Duration					0,39	0,22-0,67	0,001
Treatment Duration	29	74,36	10	25,64			
Intensive Phase	1	8,33	11	91,67	31,90	3,64-279,29	0,002
Family Support					0,68	0,54-0,86	0,002
Support	24	92,31	2	7,69			
Lack of support	6	24,00	19	76,00	38,00	6,87-120,05	0,0001
Health Literacy					0,80	0,70-0,91	0,001
Good	26	83,87	5	16,13			
Not good	4	20,00	16	80,00	20,80	4,86-89,10	0,0001
Coping Religius					0,64	0,51-0,81	0,0001
Positive	25	89,29	3	10,71			
Negative	5	21,74	18	78,26	30,00	6,34-141,95	0,0001

Several factors are associated with the quality of life of pulmonary TB patients. Old age, low education, unemployment, low income, intensive treatment stage, lack of family support, low health literacy, and negative religious coping are all significantly associated with poorer quality of life. Specifically, factors such as low income (OR=16.50), intensive treatment stage (OR=31.90), lack of family support (OR=38.00), poor health literacy (OR=20.80), and negative religious coping (OR=30.00) showed a significant influence on the tendency for patients' quality of life to be inadequate (Table 2).Meanwhile, adult age and gender factors did not show a significant relationship to the quality of life of pulmonary TB patients. The linear regression results also confirmed that family support, advanced stages of treatment, good health literacy, and positive religious coping have a protective effect on the decline in quality of life. These findings indicate the importance of paying attention to social, economic, educational, and psychosocial support factors to improve the quality of life of pulmonary TB patients (Table 2).

Table 3.
Multivariate analysis of determinants of quality of life in pulmonary TB patients

Variables	Model 1		Model 2		Model 3	
	AOR 95%CI	p-value	AOR 95%CI	p-value	AOR 95%CI	p-value
Work						
Work						
Doesn't work	1,80 (0,36-8,98)	0,472	1,25 (0,20-7,77)	0,814	2,78 (0,15-49,29)	0,486
Income						
≥ Provincial Minimum Wage						
< Provincial Minimum Wage	12,86 (2,60-63,42)	0,002	8,71 (1,55-49,02)	0,014	14,16 (0,71-280,08)	0,082
Treatment Duration						
Intensive Phase			15,32 (1,50-1,55)	0,021	44,31 (0,59-3290,50)	0,085
Family Support						
Support						
Lack of support					22,85 (0,79-655,91)	0,068
Health Literacy						
Good						
Not good					3.87 (0,19-77,54)	0,376
Coping Religius						
Positive						
Negative					10,51 (0,51-214,51)	0,126
Pseudo R2	0,28		0,39		0,71	

Multivariate analysis showed that in Model 1 and Model 2, income was the most dominant factor associated with the quality of life of pulmonary TB patients. In Model 1, patients with low income had a 12 times higher risk of experiencing poor quality of life compared to patients with high income, with a factor contribution of 28% to quality of life (Pseudo R^2=0.28). In Model 2, low income remained the dominant factor, with an 8 times higher risk and an increase in simultaneous contribution to quality of life of 39% (Pseudo R^2=0.39) (Table 3).However, in Model 3, family support is the most dominant factor influencing quality of life. Patients with low-income family support have a 22 times higher risk of experiencing poor quality of life compared to patients with good family support. This model shows the most considerable simultaneous contribution, 71% (Pseudo R^2=0.71), to the quality of life of pulmonary TB patients, confirming the importance of social support in managing the quality of life of pulmonary TB patients (**Table 3**).

DISCUSSION

Relationship between Age and Quality of Life in Tuberculosis Patients

The results of the analysis above show that a good quality of life is more common at a young age (80%). Meanwhile, poor quality of life is more common in old age (73.7%). From the results of statistical tests, the results obtained (OR = 1.08; 95% CI = 1.75-71.64; p = 0.002) meaning that there is a relationship between age and quality of life in pulmonary TB patients, the results of linear regression (OR value = 1.08) means that every additional 1 year of age will affect 1 time the tendency for poor quality of life. Meanwhile, based on the statistical test results (OR = 1.18; 95% CI = 0.19-7.43; P = 0.863), there is no relationship between adult age and quality of life in pulmonary TB patients. This result is in line with Namuwali (2019) from the results of the Contingency Coefficient test obtained a value of p = 0.003 (> 0.05), which means that there is a relationship between age and quality of life with a positive or unidirectional relationship (r.0.514) with moderate correlation strength. Age significantly influences a person's quality of life because the older a person is, the worse their quality of life. As age increases, despair arises that good things will happen in the future.

This study is not in line with the results of Susilo and Supratman (2018); seen from the analysis of research data using the chi-square test, the results were not significant (p = 0.737), which means p value> 0.05, so it can be concluded that Ho is accepted so there is no relationship between age and the quality of life of tuberculosis patients. The study by Papeo et al. (2021) showed that from 75 patient data, the most significant number of tuberculosis sufferers were in early adolescence (23 people) and late adulthood (26 people), which are included in the productive age category. Productive age is perilous for transmission because sufferers easily interact with other people, have high mobility and can transmit to different people and their living environment (Stephani).Tuberculosis is common in adults for two reasons. First, these adults were infected with primary tuberculosis from their environment at a young age, but adequate preventive measures were not taken to prevent the disease from manifesting in adulthood. Another possibility is having activities and work environments that interact with tuberculosis sufferers or environments that make it easier to contract TB (Papeo et al., 2021).

Relationship between Gender and Quality of Life in Tuberculosis Patients

Based on the results of the analysis above, good quality of life is more common in women (66.67%). While poor quality of life is more common in men (45.45%). The results of the statistical test obtained (OR = 0.60; 95% CI = 0.18-1.198; p = 0.402) meaning that there is no relationship between gender and quality of life in pulmonary tuberculosis patients.This study is not in line with the research of Fitriyadi and Era (2023), seen from the results of the Chi-Square statistical test obtained a value of p = 0.032 then Ha is accepted, and Ho is rejected, which means that there is a relationship between gender and quality of life in tuberculosis patients. From the research of Namuwali (2019) seen from the results of the Contingency

Coefficient test, it was obtained that gender has a relationship with quality of life (p = 0.030) with a positive or unidirectional relationship (r.0, 358) with a weak correlation strength.

Several studies have shown that men and women can have different experiences of quality of life when dealing with TB. Several studies have concluded that women tend to have a lower quality of life than men when suffering from tuberculosis, especially in certain aspects, such as social and emotional aspects (Linggani & Muflihatin, 2018). Biological and psychological differences between men and women can also play a role in influencing their quality of life during TB. For example, hormonal differences and psychological responses to the disease can impact the quality of life (Lianawati, 2021).To improve the overall quality of life of TB patients, it is important to understand and address gender differences that may affect the care and support provided to men and women with the disease. Proper prevention, education, and support efforts should be directed toward achieving equitable care and a better quality of life for all TB patients, regardless of their gender. According to the researcher's assumption, the results of interviews with respondents in the field show that this is because it is influenced by other variables such as education. Higher and secondary education for both men and women is almost balanced, so it does not affect quality of life.

Relationship between Education and Quality of Life in Tuberculosis Patients

Based on the analysis above, a good quality of life is more common among those with higher education (82.61%). Meanwhile, poor quality of life is more common among respondents with basic education (100%). The statistical test results (OR = 6.05; 95% CI = 1.59-23.00; p = 0.008) mean that there is a relationship between secondary education level and the quality of life of pulmonary TB patients. Respondents with secondary education are 6 times more likely to have poor quality of life.In line with Fitriyadi and Era (2023) research, the results of the Chi-Square statistical test obtained a p-value = 0.046, so Ha was accepted. He was rejected, which means there is a relationship between education and quality of life in tuberculosis patients treated in the Daisy Room of Dr. H. Soemarno Sosroatmodjo Hospital, Tanjung Selor.This study does not align with that conducted by Priambada et al. (2019) who obtained a p-value = 0.092 and showed no significant relationship between education level and quality of life in patients with pulmonary tuberculosis. In this study, the absence of a relationship between education level and quality of life in patients with pulmonary tuberculosis was due to good counseling from the health center carried out by the person in charge of TB and other health center cadres.

TB patients with higher levels of education tend to experience an overall improvement in their quality of life. Higher levels of education provide better knowledge about TB, including early symptoms, proper treatment, and preventive measures to prevent the spread of the disease (Wiyati, 2019). This better understanding helps patients recognize and cope with their condition and allows them to take necessary preventive measures.According to the researcher's assumption, respondents with higher education have better access to information and knowledge needed to understand TB disease. This can contribute to a better understanding of their condition. In addition, the level of education can also affect the patient's understanding of the importance of adherence to the treatment plan. More educated patients tend to comply with treatment instructions. This significantly affects their quality of life. For respondents with low education, it is possible that they can increase their knowledge related to pulmonary TB disease through social media or counseling at the health center for a better quality of life.

Relationship between Work and Quality of Life in Tuberculosis Patients

Based on the above analysis, good quality of life is more common in respondents who work (70.3%), while poor quality of life is more common in respondents who do not (71.4%). The results of the statistical test obtained (OR = 5.91; 95% CI = 1.52-22.95; p = 0.010) mean that

there is a relationship between work and the quality of life of pulmonary TB patients. Respondents who do not work 5 times tend to have poor quality of life.In line with the research of Fitriyadi and Era (2023), the results of the Chi-Square statistical test obtained a p-value = 0.035, so Ha is accepted and Ho is rejected, which means that there is a relationship between work and the quality of life of tuberculosis patients. In contrast to the research conducted by Athiutama et al. (2022), the results of the chi-square statistical test obtained that the p-value = 1,000 (p> 0.05), so it can be concluded that there is no significant relationship between employment status and the quality of life of the mental domain of pulmonary TB patients. According to the results of the Namuwali (2019) from the Contingency Coefficient test, a p-value of 0.780 (> 0.05) was obtained, which means that there is no relationship between work and the quality of life of TB patients with a positive or unidirectional relationship (Fitriyadi & Era, 2023).

In this study, respondents were, on average, employed and had a good quality of life. This is because work is an important part of life that can affect the quality of life. Patients who work have more activities and better opportunities to connect with others, so they do not think too much about their illness compared to those who do not. For patients who do not work, it is recommended that they do practical activities to prevent stress that can negatively impact their quality of life later.

Relationship between Income and Quality of Life in Tuberculosis Patients

Based on the analysis above, a good quality of life is more common among respondents with high incomes (88%). Meanwhile, poor quality of life is more common among low-income respondents (69.2%). The results of the statistical test obtained (OR = 16.50; 95% CI = 3.81-71.46; p = 0.0001) mean that there is a relationship between income and the quality of life of pulmonary TB patients. Low-income respondents are 16 times more likely to have poor quality of life.This study is the same as the study conducted by Agustin (2019), seen from the Chi-Square statistical test using a computer program showing a value (ρ = 0.002). This shows that ρ <0.005 means that there is a relationship between income and the quality of life of pulmonary TB patients at the Perak Timur Surabaya Health Center. This study is not in line with the study of Athiutama et al. (2022), obtained the results of the chi-square statistical test, obtained that p-value = 1,000 (p> 0.05), so it can be concluded that there is no significant relationship between the relationship between economic status and the quality of life of the mental domain of pulmonary TB patients.

This result contradicts the existing theory that if individuals with high socioeconomic status can meet their living needs, their quality of life will also improve (Budiono & Rivai, 2021). Researchers assume that high-income levels have a better quality of life than low-income patients. This is because those with high incomes have more opportunities to meet their living needs, such as nutritious food, decent housing, and good sanitation. In addition, in terms of treatment costs, TB treatment can involve significant costs, especially if it requires expensive drugs and intensive monitoring. Low-income patients may have difficulty paying for treatment costs, impacting treatment adherence. Economic instability can put additional stress on TB patients and their families, affect their mental and emotional well-being, and ultimately impact their quality of life.

Relationship between Duration of Treatment and Quality of Life in Tuberculosis Patients

Based on the analysis above, good quality of life was more common in advanced-stage respondents (74.4%). Poor quality of life was more common among intensive-stage respondents (91.7%). The results of the statistical test obtained (OR = 31.90; 95% CI = 3.64-279.29); p = 0.002) mean that there is a relationship between the length of treatment and the quality of life of pulmonary TB patients. Respondents in the intensive stage 31 times tended

to have poor quality of life. This study is in line with Suriya (2018) from the results of the Chi-Square statistical test obtained a p-value of 0.000 (p <0.05). Thus, there is a significant relationship between the length of treatment and the quality of life of pulmonary TB patients at the West Sumatra Special Lung Hospital Lubuk Alung. The research of Athiutama et al. (2022) obtained the results of the chi-square statistical test, obtained that p-value = 0.009 (p> 0.05), so it can be concluded that there is a significant relationship between the relationship between the duration of treatment and the quality of life of the mental domain of pulmonary TB patients. The quality of life of tuberculosis patients who have passed the initial treatment phase is at a low level. Poor quality of life can predict poor and detrimental outcomes (Datta et al., 2020). The duration of treatment for TB patients will make patients feel bored because they take too much medication, and interrupted treatment will start over again. This affects the quality of life of TB patients, not to mention the side effects caused by TB patients, such as nausea, abdominal pain and loss of appetite.

Relationship between Family Support and Quality of Life in Tuberculosis Patients

Based on the analysis above, a good quality of life is more common among respondents with supportive families (92.3%). Meanwhile, poor quality of life is more common among respondents with less supportive families (76%). The results of the statistical test obtained (OR = 38.00; 95% CI = 6.87-120.05; p = 0.0001) mean that there is a relationship between family support and the quality of life of pulmonary TB patients. Respondents with unsupportive families are 38 times more likely to have a poor quality of life.The study by Jasmiati et al. (2017) showed that the statistical test results obtained a value of P = 0.018 <α 0.05, so it can be concluded that there is a relationship between family support and the quality of life of patients with pulmonary TB. Then, from the analysis results obtained OR (6,000), patients with high family support have 6 times better quality of life than those with low family support. Family support is the voluntary participation of family members without orders or coercion from other parties, a form of pure participation. This shows the high level of family support because the family is aware of the importance of supporting patients to increase interest in undergoing treatment and recovering from their illness.

Family support is significant for someone experiencing problems and can provide peace of mind during treatment, such as in patients with pulmonary tuberculosis (Hasanah et al., 2018). Respondents who received good support showed that the family realized that the person needed the presence of the family as the closest person to them who was always ready to provide support in the form of information, appreciation, instrumental, and emotional support (Komariah & Simanullang, 2021).Researchers assume that supportive families improve TB patients' quality of support. With support from the family, patients feel more cared for, such as emotional support, which can help reduce stress and anxiety in TB patients. This can contribute positively to the mental and emotional well-being of patients. In addition, family support can play an important role in increasing patient compliance with TB treatment. By providing supervision, reminders, and support, families can help ensure that patients take their medication regularly, thereby increasing the effectiveness of treatment so that their quality of life improves.

The Relationship between Health Literacy and Quality of Life in Tuberculosis Patients

Based on the analysis above, good quality of life is more common in respondents with good health literacy (83.8%). Meanwhile, poor quality of life is more common among respondents with poor health literacy (80%). The results of the statistical test obtained (OR = 20.80; 95% CI = 4.86-89.10; p = 0.0001) mean that there is a relationship between health literacy and the quality of life of pulmonary TB patients. Respondents with poor health literacy are 20 times more likely to have poor quality of life.In line with the research conducted by Suarnianti et al. (2022), based on statistical tests using the Chi-Square test, a p-value of 0.000 was obtained, indicating p <0.05. Thus, it can be concluded that Ho is rejected and Ha is accepted, or there

is a significant relationship between Health Literacy and Quality of Life in tuberculosis patients. In contrast to research in Quebec, Canada, by Couture et al. (2017) No relationship was found between health literacy and quality of life (physical component: r = 0.108, ρ = 0.11; mental component: r = 0.147, ρ = 0.15. This study, the SF-36 questionnaire was used to assess quality of life.Health literacy skills are very influential in obtaining all forms of information to achieve medication compliance for TB patients undergoing treatment. The importance of treatment will affect the quality of life of TB patients (Widhahyanti et al., 2021).

Researchers assume respondents with good health literacy have a good quality of life. This is because patients with good health literacy will be better able to understand pulmonary TB disease, including causes, symptoms, and treatment methods. This can reduce anxiety levels and increase understanding of the healing process. In addition, they also understand the importance of adhering to medication rules and undergoing therapy regularly to have a better chance of successful recovery. Patients with good health literacy can also more effectively seek and understand additional health information that may support their treatment. This can include understanding risks, seeking support, and obtaining additional resources.

The Relationship between Religious Coping and Quality of Life in Tuberculosis Patients

Based on the analysis above, good quality of life was more common in respondents with positive religious coping (89.2%). At the same time, poor quality of life was more common in respondents with negative religious coping (78.2%). The results of the statistical test obtained (OR = 30.00; 95% CI = 6.34-141.95; p = 0.0001) mean that there is a relationship between health literacy and the quality of life of pulmonary TB patients. Respondents with poor health literacy are 30 times more likely to have poor quality of life. Based on research conducted by Prastiwi (2018), Based on the analysis above, good quality of life was more common in respondents with positive religious coping (89.2%). At the same time, poor quality of life was more common in respondents with negative religious coping (78.2%). The results of the statistical test obtained (OR = 30.00; 95% CI = 6.34-141.95; p = 0.0001) mean that there is a relationship between health literacy and the quality of life of pulmonary TB patients. Respondents with poor health literacy are 30 times more likely to have poor quality of life. Based on research conducted by

Religious coping is a framework based on an individual's approach to problem-solving in the context of a relationship with God. This means that religious coping has two important points: an individual's problem-solving approach and a connection with God (Pargament et al., 2000). Spirituality is one of the determining factors for a person's quality of life. A human being will possess the essence of peace if he has a strong relationship with the creator If we want to know how close God is to us, look at how close we are to God. One of the spiritual sides of a person is seen through his religiosity (Yudra et al., 2018).In the research of Setiyowati and Rahman (2020), it is stated that spirituality and health are two related things. Scientific evidence says that even in common diseases, the state of mind, emotions, attitudes, awareness, and prayers offered by or for patients greatly influence their recovery. This will have a positive impact on improving the quality of life of patients.

Researchers assume that patients with positive religious coping will have a better quality of life. This is because religious coping can provide patients with significant spiritual support. Belief and prayer can be a source of strength and calmness for patients, helping them face the challenges of pulmonary TB treatment with a positive attitude. Religious coping can be a determining factor in improving patients' mental resilience. Pulmonary TB patients often face stigma and anxiety related to their disease. Having religious coping can help them cope with stress, depression, and worry. Religious coping is also often associated with increased hope and optimism. Patients with strong religious beliefs may be more able to see the future

positively, even in serious diseases such as pulmonary TB. Therefore, the more positive a patient's religious coping is, the better their quality of life will be. Those with negative religious coping are advised not to isolate themselves. They should consult with their religious community because religious communities often provide strong social support. Pulmonary TB patients involved in their religious community can feel moral support, practical help, and togetherness that can improve their quality of life.

CONCLUSION

Most pulmonary TB patients (58.82%) have a good quality of life, with factors such as age, income, duration of treatment, family support, health literacy, and religious coping significantly related to this quality of life. Family support is the most dominant factor in influencing the quality of life of pulmonary TB patients. For further researchers, it is recommended to deepen the research on the role of family support in more detail, use a longitudinal design to see changes in quality of life over time, and consider other psychosocial factors that may also play a role in supporting the quality of life of pulmonary TB patients.

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