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# FACTORS RELATED TO THE QUALITY OF LIFE OF PATIENTS WITH PULMONARY TUBERCULOSIS

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**ABSTRACT**
Pulmonary tuberculosis remains a serious problem in Indonesia, especially in West Java and Sukabumi, with treatment lasting a minimum of 6 months requiring a high commitment from patients. Factors such as duration of illness, length of treatment, social stigma, and adherence greatly affect the quality of life of patients. This study aims to analyze the factors related to the quality of life of pulmonary tuberculosis patients in the Work Area of UPTD Puskesmas Sukabumi, Sukabumi City. The research design used is correlational with a cross-sectional approach. The population includes all pulmonary tuberculosis patients in the Work Area of UPTD Puskesmas Sukabumi, Sukabumi City, with a sample of 40 respondents selected using a total sampling technique. Data collection was conducted using questionnaires which is declared valid and reliable using the pearson's product moment and cronbach's alpha test. Univariable analysis employed frequency distribution, and bivariable analysis used the chi-square test. The research findings indicate that there is a significant relationship between the duration of illness and the quality of life of tuberculosis patients with a p-value of 0.009, the duration of treatment and quality of life with a p-value of less than 0.001, social stigma and quality of life with a p-value of less than 0.001, as well as treatment adherence and quality of life with a p-value of less than 0.001. There is a relationship between the duration of illness, length of treatment, social stigma, and treatment adherence with the quality of life of pulmonary tuberculosis patients in the Work Area of UPTD Puskesmas Sukabumi, Sukabumi City.

Keywords: adherence; duration of illness; duration of treatment; quality of life; social stigma

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## INTRODUCTION

Infectious diseases remain a major public health problem that can cause death and disability. Infectious diseases are also known as infections; they can be transmitted to humans by biological agents (Asmarida & Simarmata, 2025). One of the most prevalent infectious diseases in the world is tuberculosis (TB). The prevalence of tuberculosis cases in 2023 reached a staggering number of more than 10 million cases, of which 1.25 million died (WHO, 2025). In Indonesia itself, the incidence of tuberculosis is also high, with more than 700,000 cases in 2022, and a surge to 808,000 cases in 2023 (Kemenkes RI, 2024). One of the provinces with the highest number of TB cases is West Java, where there were 234,000 cases of TB in 2024. One of the districts/cities with the highest TB burden in West Java is Sukabumi District (Jabarprov, 2024).

Tuberculosis is a disease that is transmitted through the air, whether from sputum, droplets, sneezing, or coughing of patients infected with Mycobacterium tuberculosis bacteria (Pralambang & Setiawan, 2021). The bacteria contained in TB patient droplets are known to have good survivability, with most of them able to live for hours, especially if supported by dark and humid environmental conditions (Wulan, 2024). Individuals infected with tuberculosis will experience various symptoms, such as coughing up blood for more than two weeks, difficulty breathing, weakness, loss of appetite, night sweats, persistent fever, and severe swelling (Bermawi et al., 2024).

Fighting tuberculosis requires full commitment from patients. This is because tuberculosis treatment requires a minimum of 6 full months without any absences. Faced with bothersome symptoms, low life expectancy due to chronic illness, and lengthy, monotonous treatment that can lead to boredom, stress, and fatigue, the quality of life of TB patients can be reduced, both physically and emotionally. This is in line with various studies that explain that some TB patients tend to have a poor quality of life (Amalia et al., 2022; Pahrul et al., 2021; Rachmadiyanti et al., 2024).

Quality of life is defined as an individual's perception of their ability to carry out daily activities, particularly in fulfilling their roles, and includes their personal views on their well-being and satisfaction with life (Budhiana et al., 2025). The stability of TB patients' quality of life needs to be closely monitored by their families and the health workers responsible for caring for them. This is because a decline in quality of life will make patients more pessimistic, afraid of meeting people, withdrawn, and even cause them to discontinue their treatment (Diamanta et al., 2020). The quality of life of TB patients needs to be considered from the perspective of various factors. These factors can originate from within or outside the patient. Various factors that can affect the quality of life of TB patients include the duration of the disease, the duration of treatment, social stigma, and treatment adherence (Chen et al., 2021; Dixit et al., 2024; Febi et al., 2021; Ma'rifah et al., 2024b).

The first factor that can affect the quality of life of TB patients is the duration of treatment. TB treatment, which must last for six consecutive months, can cause frustration and reduce patient satisfaction in meeting their psychosocial needs. Long-term treatment can also cause increased stress and have a negative impact on their quality of life (Afrida et al., 2024b). Quality of life is also influenced by the duration of TB patients' suffering. TB patients who have suffered for more than two months tend to experience severe to extreme stress, which has reached the stage of exhaustion. The body becomes tired because it has to work too hard to adapt to stress (Nurjihan et al., 2025). These psychological and physical factors will significantly affect the quality of life of TB patients.

The next factor that affects the quality of life of TB patients is social stigma. To this day, there is still confusion about the assumption that TB is a contagious, dangerous disease that occurs due to genetic factors. The stigma attached to TB patients causes them to be ostracized, to withdraw, to refuse treatment, and even to have their families cover up the patient's condition (Nirwan, 2024). This condition will further aggravate the physical and psychological conditions that reduce the patient's quality of life. Another factor that affects the quality of life of TB patients is treatment adherence. Non-adherence to medication causes TB treatment to fail, which greatly contributes to a decline in quality of life. This condition increases the risk of morbidity, mortality, and resistance. Resistant TB patients will become a source of Mycobacterium tuberculosis transmission within their families and communities (Siallagan et al., 2023). The purpose of this study was to determine the factors associated with the quality of life of tuberculosis patients in the working area of the Sukabumi City Health Center.

## METHOD

This study used correlational research with a cross-sectional approach. The population in this study were pulmonary tuberculosis patients in the working area of the Sukabumi Community Health Center (UPTD Puskesmas Sukabumi) with a sample of 40 respondents using total sampling technique. Data collection techniques used questionnaires. Instruments for the variables of quality of life and pulmonary TB referred to the Guttman scale. Validity testing was conducted using Pearson's product moment test, in which all items received a p-value of $< 0.05$, thus confirming the validity of the instrument. Reliability testing was conducted using Cronbach's alpha test, which yielded an a-value of 0.74, confirming the strong reliability of the instrument. Univariate data analysis used frequency distribution, univariate analysis, and bivariate analysis using the Chi-Square test. The research ethics letter was issued by the Sukabumi College of Health Sciences Ethics Committee with the number: 000710/KEP STIKES SUKABUMI/2024.

## RESULT

Table 1.
Respondent characteristics (n=40)

| Respondent characteristics | f | % |
|---|---|---|
| Age (years) | | |
| <20 | 5 | 15.0 |
| 20–35 | 11 | 27.5 |
| 36–50 | 14 | 35.0 |
| 51–65 | 8 | 20.0 |
| >65 | 1 | 2.5 |
| Gender | | |
| Male | 18 | 45.0 |
| Female | 22 | 55.0 |
| Highest Level of Education | | |
| No schooling | 2 | 5.0 |
| Elementary school | 4 | 10.0 |
| Junior high school | 5 | 12.5 |
| Senior high school | 27 | 67.5 |
| College | 2 | 5.0 |
| Employment Status | | |
| Working | 11 | 27.5 |
| Not Working | 29 | 72.5 |
| Living With | | |
| Family | 40 | 100.0 |

Table 1 shows that most respondents were aged 36–50 years old, namely 14 people (35.0%), female, 22 people (55.0%), with a high school education, 27 people (67.5%), unemployed, 29 people (72.5%), and all lived with their families, totaling 40 people (100.0%).

Table 2.
Univariate Analysis

| Variable | f | % |
|---|---|---|
| Duration of illness | | |
| ≤2 months | 24 | 60.0 |
| >2 months | 16 | 40.0 |
| Duration of Treatment | | |
| ≤2 months | 23 | 57.5 |
| >2 months | 17 | 42.5 |
| Social Stigma | | |
| Low | 24 | 60.0 |
| High | 16 | 40.0 |
| Adherence to Treatment | | |
| Adherence | 21 | 52.5 |
| Non-adherence | 19 | 47.5 |
| Quality of Life | | |
| Good | 27 | 67.5 |
| Not so good | 13 | 32.5 |

Table 2 shows that most respondents had tuberculosis for ≤ 2 months, namely 24 people (60%), underwent tuberculosis treatment for ≤ 2 months, namely 23 people (57.5%), experienced low social stigma, namely 24 people (60%), adhered to treatment, namely 21 people (52.5%), and had a good quality of life, namely 27 people (67.5%).

Table 3.
The Relationship Between Duration of Illness and Quality of Life

| Duration of illness | Quality of Life | | | | Total | % | P-Value |
|---|---|---|---|---|---|---|---|
| | Good | % | Not so good | % | | | |
| ≤ 2 bulan | 20 | 83,3 | 4 | 16,7 | 24 | 100 | 0,009 |
| > 2 bulan | 7 | 43,8 | 9 | 56,3 | 16 | 100 | |

Table 3 shows that the results of the Chi-square statistical test, the p-value was 0.009 (p < 0.05), indicating a relationship between the duration of illness and the quality of life of tuberculosis patients in the working area of the Sukabumi City Health Centre.

Table 4.
The Relationship Between Treatment Duration and Quality of Life

| Duration of Treatment | Quality of Life | | | | Total | % | P-Value |
|---|---|---|---|---|---|---|---|
| | Good | % | Not so good | % | | | |
| ≤ 2 bulan | 21 | 91,3 | 2 | 8.7 | 23 | 100 | <0,001 |
| > 2 bulan | 6 | 35,3 | 11 | 64,7 | 17 | 100 | |

Table 4 shows that the results of the Chi-square statistical test, the p-value was < 0.001, indicating a relationship between the duration of treatment and the quality of life of tuberculosis patients in the working area of the Sukabumi City Health Centre.

Table 5.
The Relationship Between Social Stigma and Quality of Life

| Social Stigma | Quality of Life | | | | Total | % | P-Value |
|---|---|---|---|---|---|---|---|
| | Good | % | Not so good | % | | | |
| Low | 23 | 95,8 | 1 | 4,2 | 24 | 100 | <0,001 |
| High | 4 | 25 | 12 | 75 | 16 | 100 | |

Table 5 shows that the results of the Chi-square statistical test, the p-value was < 0.001, which means that there is a relationship between social stigma and the quality of life of tuberculosis patients in the working area of the Sukabumi City Health Centre UPTD.

Table 6.
The Relationship Between Treatment Adherence and Quality of Life

| Adherence to Treatment | Quality of Life | | | | Total | % | P-Value |
|---|---|---|---|---|---|---|---|
| | Good | % | Not so good | % | | | |
| Adherence | 20 | 95,2 | 1 | 4,8 | 21 | 20 | <0,001 |
| Non-adherence | 7 | 36,8 | 12 | 63,2 | 19 | 7 | |

Table 6 shows that the results of the Chi-square statistical test, the p-value was < 0.001, which means that there is a relationship between treatment adherence and the quality of life of tuberculosis patients in the working area of the Sukabumi City Health Centre.

## DISCUSSION

The results of this study show a relationship between duration of illness and quality of life of TB patients in the working area of the Sukabumi City Health Center UPTD. A similar finding was reported by Priambodo et al., (2022), who found a relationship between duration of illness and quality of life in patients with chronic TB. Additionally, Septiani et al., (2022) also reported that duration of illness is one of the factors affecting the quality of life of pulmonary TB patients. Quality of life is an individual's perception of their position in life as seen from the cultural context and value system in which they live and their relationship with goals, expectations, standards, and other things that concern that individual (Susilawati et al., 2023). One factor that affects quality of life is the duration of suffering from the disease. The duration of suffering can be defined as the period of time from when an individual is diagnosed with the disease to the present. Chronic diseases that last for a long time can cause various complications in the body. In TB patients, possible complications include lung damage, spread of infection to other organs, meningitis (inflammation of the brain membrane), drug resistance (drugs are no longer effective), and death (Dodd et al., 2021).

The duration of TB will affect the quality of life of sufferers. Chronic TB often causes persistent symptoms such as coughing, fatigue, and dyspnea that limit the patient's ability to perform daily activities, participate in work, or engage in recreational activities (Vasiliu et al., 2024). Nurjihan et al., (2024) similarly explain that prolonged duration of TB also increases the risk of long-term

complications, such as permanent lung damage or post-tuberculosis lung disease. This impairment of lung function causes patients to continue to experience respiratory limitations even after they have been declared medically cured. Furthermore, Monintja et al. (2020) also explain that patients who have to endure prolonged symptoms tend to feel isolated from their social environment, experience a decline in motivation, and may even lose hope for the future. These psychological factors significantly reduce overall quality of life.

The results of the study indicate that there is a relationship between the duration of treatment and the quality of life of pulmonary tuberculosis patients in the working area of the Sukabumi City Health Center UPTD. This is supported by Ramadhani (2025) study, which states that there is a relationship between the duration of treatment and the quality of life of patients with a p-value of 0.007 ($p = < 0.05$). This is further reinforced by the study by Ma'rifah et al. (2024), which states that the duration of treatment has a significant relationship with the quality of life of tuberculosis patients.

Quality of life is an individual's perception of their position in life, encompassing physical, psychological, social, and environmental aspects, which specifically in tuberculosis patients reflects the impact of the disease and its treatment on their ability to carry out daily activities and their overall well-being (Afrida et al., 2024a). There are several aspects related to the quality of life of tuberculosis patients, one of which is the duration of treatment, which can affect the physical and psychological condition of patients and the social support they receive during therapy (Ramadhani, 2025).

The duration of tuberculosis treatment, which lasts at least 6 months, is associated with a decline in patients' quality of life, particularly in physical and psychological aspects, because during treatment patients experience side effects such as fatigue, impaired bodily functions, and mental stress in the form of stress and anxiety. This can interfere with daily activities and reduce overall well-being, requiring special attention in managing therapy to maintain patients' quality of life (Ritassi et al., 2023).

In addition, social support also plays a role because patients who receive good social support from family, friends, and the surrounding environment tend to have higher motivation to comply with therapy, so that the psychological burden and stress during long-term treatment can be reduced, thereby significantly improving the patient's quality of life. Based on the results of the study, it is known that there is a relationship between social stigma and the quality of life of tuberculosis patients in the working area of the Sukabumi City Health Centre (p-value $< 0.001$). Chen et al., (2021) explained that the quality of life of tuberculosis patients tends to be influenced by the social stigma they receive. Furthermore, Akhtar et al., (2023) also explain that stigma is a risk factor for quality of life in TB patients.

The impact of social stigma on quality of life encompasses various dimensions, including physical, psychological, social, and spiritual. Psychologically, stigma can damage mental health through internalisation, whereby stigmatised individuals begin to believe the negative stereotypes attached to them. This internalisation can lead to 'self-stigma', which prevents individuals from reaching their full potential and participating in society. Socially, stigma can result in rejection from family, friends, and communities, leading to the loss of vital social support networks. This lack of support can exacerbate physical and mental conditions (Pradhan et al., 2022).

Social stigma against tuberculosis (TB) patients remains one of the major obstacles in efforts to improve their quality of life. Many TB patients face discrimination, are shunned by their communities, or are considered to be carrying a shameful disease. This situation causes patients to tend to isolate themselves, hide their illness, or be reluctant to seek further treatment. As a result,

their psychological burden increases and their self-confidence decreases, which directly impacts their quality of life (Rafiq et al., 2021).

The results of the study show that there is a relationship between treatment adherence and quality of life in tuberculosis patients (p-value <0.001). This is in line with the study by Ritassi et al. (2024) which found a positive relationship between adherence to medication and quality of life in tuberculosis patients. This is reinforced by research conducted by Ramadhani & Tri (2021), which found that good treatment adherence contributes significantly to improving the quality of life of tuberculosis patients.

Patient adherence to tuberculosis treatment is directly related to their quality of life. Patients who adhere to the recommended treatment regimen are more likely to achieve recovery, suppress symptoms, and prevent dangerous complications. Thus, adherence is directly related to improved physical function in patients, allowing them to resume their normal activities and maintain productivity in their daily lives (Dilas et al., 2023). From a psychological perspective, treatment adherence provides patients with a sense of security and optimism. As clinical symptoms gradually improve, patients experience increased self-confidence and reduced anxiety about their health condition. This has an impact on improving mental quality of life, as patients are not only focused on their illness but are also able to resume enjoying a more balanced social and emotional life (Junaid et al., 2021).

## CONCLUSION

Most respondents had tuberculosis for ≤ 2 months, underwent treatment for ≤ 2 months, experienced low stigma, adhered to treatment, and had a good quality of life. There was a significant relationship between duration of illness, duration of treatment, social stigma, and treatment adherence with the quality of life of tuberculosis patients in the working area of the Sukabumi City Health Center in Sukabumi.

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