The Correlation Between Self-Efficacy and Medication Adherence with the Quality of Life of Pulmonary Tuberculosis Patients at Randuagung Health Center, Lumajang Regency

Nur Aifa[1*], Suhari[2], Ro'isah[3]

[1] Bachelor of Nursing Student, Faculty of Health Sciences, Hafshawaty Zainul Hasan University, Indonesia
[2] Diploma of Nursing Program, Faculty of Nursing, University of Jember, Indonesia
[3] Bachelor of Nursing Program, Faculty of Health Sciences, Hafshawaty Zainul Hasan University, Indonesia

Correspondence should be addressed to:
Nur Aifa
aifanurdiansyah@gmail.com

Abstract:
Tuberculosis (TB) remains a significant health issue in Indonesia. Individuals diagnosed with pulmonary tuberculosis often have a negative response to their illness, which impacts their quality of life. Factors that can enhance the quality of life of clients include self-efficacy and medication adherence. The purpose of this study was to analyze the Correlation between self-efficacy and medication adherence with the quality of life of pulmonary tuberculosis patients at Randuagung Health Center, Lumajang Regency. This study employed a cross-sectoinal methodology and a correlational design. Twenty respondens made up the study's sample. Self-efficacy questionnaires, MMAS-8, and WHOQOL-BREF were used in the study. The data analysis employed Spearman's Rho. This study has been submitted and approved by the ethics committee at Universitas Hafshawaty Zainul Hasan. The results indicated that the majority of patients had high self-efficacy, with 13 respondents (65%), the majority adhered to medication, with 15 respondents (75%), and the majority had a good quality of life, with 14 respondents (70%). The study showed a correlation between self-efficacy and the quality of life of pulmonary tuberculosis patients with a p-value of 0.000 ($p<\alpha=0.05$) and a correlation strength (r) of 0.898, indicating a very strong positive correlation. There was also a correlation between medication adherence and the quality of life of pulmonary tuberculosis patients with a p-value of 0.000 ($p<\alpha=0.05$) and a correlation strength (r) of 0.882, indicating a strong positive correlation. A good quality of life is crucial for individuals with pulmonary tuberculosis because it allows them to manage their illness and maintain health effectively, leading to well-being and the ability to engage in physical activities in their lives. High self-efficacy and medication adherence play a significant role in the quality of life of patients. High or moderate self-efficacy and adherence to medication contribute to a good quality of life, and vice versa.

Keywords:
self-efficacy; medication adherence; quality of life; pulmonary tuberculosis

INTRODUCTION

Tuberculosis (TB) remains one of the top ten causes of death globally and is the leading cause of death from an infectious agent. Pulmonary tuberculosis is a contagious disease caused by Mycobacterium tuberculosis, primarily affecting the lungs. TB continues to pose a major health burden in Indonesia, as patients often experience negative responses, including crises in self-efficacy, impacting their quality of life (Azalia et al., 2020; Yunding & Irwan, 2021)

Medication adherence is closely linked to quality of life in TB patients. Daily, long-term treatment can lead to treatment fatigue, which reduces adherence. Patients who do not adhere to TB therapy risk ineffective treatment and prolonged infection, leading to worsened clinical symptoms and the need for retreatment (Amalia et al., 2022; Papeo et al., 2021).

According to the World Health Organization (WHO), in 2020, approximately 10 million people globally were infected with TB, including 5.6 million men, 3.3 million women, and 1.1 million children. TB caused an estimated 1.5 million deaths that year. Indonesia ranks third globally in TB cases after India and China, with an estimated 824,000 cases in 2020, including around 33,000 cases among children. In East Java alone, there were 78,799 TB cases reported in 2022, a rise from 43,247 cases in 2021 (Istiqomah & Yuliyani, 2022). Lumajang Regency had 2,197 TB cases in 2022.

A preliminary study conducted at Randuagung Public Health Center revealed 209 hypertension visits in 2023. Observations on February 13, 2024, showed that among 10 pulmonary TB patients, three patients (30%) had low self-efficacy and doubted that medication could cure their condition, while two patients (20%) had moderate self-efficacy, expressing uncertainty about recovery. Five patients (50%) had high self-efficacy, believing that regular medication would lead to recovery. Regarding medication adherence, 70% of patients reported adherence, while 30% did not. Additionally, 30% of patients reported a poor quality of life due to frequent health concerns, while 70% reported satisfaction with their health and daily activities.

Tuberculosis is an infectious disease caused by Mycobacterium tuberculosis, which primarily infects lung tissue. The bacterium spreads when an individual with active TB speaks, sneezes, or coughs, releasing droplet nuclei containing the microorganism. Sunlight and high temperatures can cause these droplets to evaporate, allowing bacteria to become airborne. Once inhaled by healthy individuals, these bacteria pose a risk of TB infection (Mar'iyah & Zulkarnain, 2021; Mawardi et al., 2019). Tuberculosis brings mental, physical, and social challenges for patients, impacting their quality of life (Sembiring et al., 2022). A good quality of life is crucial for TB patients, as it helps them manage their condition and maintain their health, thereby promoting physical activity and overall well-being. A better quality of life also aids healthcare providers in TB treatment and care (Diamanta et al., 2020; Putra et al., 2022).

Self-efficacy is essential for improving the quality of life in TB patients. It reflects an individual's belief in their ability to solve problems and influences their cognition and behavior. High self-efficacy encourages TB patients to adhere to treatment, leading to improved quality of life (Azalia et al., 2020; Kurniyawan et al., 2023). Studies by (Noranisa et al., 2023; Yunding & Irwan, 2021) confirm that self-efficacy is linked to better quality of life in TB patients, while research by (Papeo et al., 2021) shows that high medication adherence is significantly associated with improved quality of life in TB patients.

METHOD

This research employs a correlational analytic design with a cross-sectional approach, focusing on the relationship between self-efficacy and medication adherence in pulmonary tuberculosis patients at the Randuagung Health Center, Lumajang. The population comprises 21 pulmonary tuberculosis patients receiving treatment in 2024, with a calculated sample size of 20 respondents, selected using purposive sampling based on set inclusion and exclusion criteria. The study location is Randuagung Health Center, conducted until July 23, 2024. Data collection instruments include a demographic questionnaire, self-efficacy questionnaire, the Morisky Medication Adherence Scale (MMAS-8), and the WHO Quality of Life-BREF, validated with Cronbach's Alpha scores of 0.890, 0.92, and 0.975, respectively, ensuring reliability.

The research data collection follows structured steps: obtaining informed consent, selecting eligible participants, distributing questionnaires, and assisting respondents in completing them. Data analysis involves scoring based on Likert and Guttman scales, interpreting self-efficacy, medication adherence, and quality of life. Self-efficacy and adherence are scored in ordinal categories, with quality of life categorized as "good" (>75) or "poor" (<75) based on WHOQOL-BREF scores. Ethical considerations include informed consent and confidentiality, adhering to ethical guidelines set by the healthcare institution and the Faculty of Nursing, Hafsawaty Zainul Hasan University.

RESULT

Table 1. Characteristics of Respondents (n=20)

Characteristics	Frequency	Percentage (%)
Age		
18 - 25 years	4	20
26 - 35 years	1	5
36 - 45 years	4	20
46 - 55 years	3	15
56 – 65 years	5	25
>65 years	3	15
Gender		
Male	12	60
Female	8	40
Occupation		
Not Working/Housewife	8	40
Laborer	6	30
Entrepreneur	4	20
Private Sector Employee	2	10
Education		
No formal education	1	5
Elementary School	10	50
Junior High School	2	10
Senior High School	5	25
Higher Education	2	10
Duration of Treatment		
2 Month	9	45
3-6 month	11	55

The study population comprised various characteristics, including age, gender, occupation, education, and duration of treatment. Among the participants, 20% were aged 18-25 years and 36-45 years, while 25% were aged 56-65 years. The gender distribution revealed that 60% of respondents were male and 40% female. In terms of occupation, 40% were not working or housewives, 30% were laborers, 20% were entrepreneurs, and 10% were private sector employees. Regarding education, 50% had completed elementary school, while 5% had no formal education. The duration of treatment varied, with 45% receiving treatment for 2 months and 55% for 3 to 6 months.

Table 2. Self-Efficacy, Medication Adherence, and Quality of Life Among Pulmonary Tuberculosis Patients in the Randuagung Health Center (n=20)

Category	Frequency	Percentage (%)
Self-Efficacy		
High	13	65
Moderate	5	25
Low	2	10
Medication Adherence		
Adherence	15	75
Non-Adherence	5	25
Quality of Life		
Good	14	70
Poor	6	30

This table summarizes the self-efficacy, medication adherence, and quality of life of pulmonary tuberculosis patients. Among the respondents, 65% exhibited high self-efficacy, while 25% had moderate self-efficacy and 10% had low self-efficacy. Regarding medication adherence, 75% of patients adhered to their treatment regimen, whereas 25% did not. In terms of quality of life, 70% of the respondents reported a good quality of life, while 30% indicated a poor quality of life.

Table 3. Correlation of Self-Efficacy and Medication Adherence with Quality of Life At Randuagung Health Center

Variables		P Value
Self-Efficacy	Quality of Life	0.000
Medication Adherence		0.000

The table presents the p-values indicating the significance of the relationship between self-efficacy, medication adherence, and quality of life among patients. The analysis reveals a p-value of 0.000 for both self-efficacy and medication adherence, suggesting a statistically significant correlation with quality of life. This indicates that higher levels of self-efficacy and adherence to medication are associated with an improved quality of life for patients.

DISCUSSION

Self-Efficacy of Tuberculosis Patients

The results of the study indicate that out of 20 respondents, a significant majority, 13 respondents (65%), exhibited high self-efficacy. High self-efficacy can reduce fear of failure, enhance aspirations, and improve analytical thinking abilities (Suputra & Susilawati, 2019). Tuberculosis patients who have strong confidence in their recovery are more proactive in seeking treatment and preventing transmission by increasing their knowledge through various methods, such as health training (Dewi, 2021). Self-efficacy plays a crucial role in initiating and maintaining healthy behaviors. In other words, enhancing self-efficacy in a health context is believed to contribute to overall health improvements and the adoption of healthy behaviors (Noranisa et al., 2023; Yunding & Irwan, 2021). Thus, high self-efficacy not only reduces fears but also empowers patients to actively manage their health and seek necessary treatments.

HTechJ **Health and Technology Journal (HTechJ)**

Adherence to Tuberculosis Medication

The research findings reveal that among the 20 respondents studied, the majority, 15 respondents (75%), adhered to their medication regimen. Adherence to medication is a critical factor for the successful treatment of pulmonary tuberculosis. Consistent medication consumption is essential for preventing the transmission of tuberculosis. Non-adherence to tuberculosis treatment can lead to drug resistance, potentially resulting in Multi-Drug Resistant Tuberculosis (MDR), where the bacteria become resistant to multiple primary drugs. This non-compliance can lead to high rates of treatment failure, increasing morbidity and mortality risks (Herawati et al., 2020; Suryana & Nurhayati, 2021). Therefore, patient adherence is crucial for effective tuberculosis management and overall public health.

Quality of Life of Tuberculosis Patients

The study results indicate that out of 20 respondents, the majority, 14 respondents (70%), reported good quality of life. A good quality of life is crucial for patients with pulmonary tuberculosis, as it enables them to manage their illness effectively and maintain their health, leading to overall well-being and the ability to carry out daily activities. Additionally, a better quality of life facilitates healthcare providers in the treatment process of pulmonary tuberculosis. Conversely, a low quality of life can negatively impact how tuberculosis patients navigate their illness and treatment process, ultimately affecting treatment success (Dedi Pahrul et al., 2021; Ritassi et al., 2024).

Relationship Between Self-Efficacy and Quality of Life in Tuberculosis Patients

The research findings, assessed using Spearman's Rho, showed a p-value of less than 0.05 (p = 0.000), indicating a significant relationship between self-efficacy and quality of life in tuberculosis patients at Puskesmas Randuagung, Lumajang. Self-efficacy refers to an individual's belief in their ability to overcome challenges, which, in turn, influences their cognition and behavior. Tuberculosis patients need to have confidence in their ability to adhere to treatment, as this belief fosters a positive motivation to engage actively in their recovery process (Azalia et al., 2020). Therefore, high self-efficacy can lead to improved quality of life for tuberculosis patients (Hidayati et al., 2023; Noranisa et al., 2023)

Relationship Between Medication Adherence and Quality of Life in Tuberculosis Patients

The study results demonstrated a significant relationship between medication adherence and the quality of life of tuberculosis patients, with a Spearman's Rho p-value of less than 0.05 (p = 0.000). The duration of tuberculosis treatment influences patient adherence to therapy. Adherence to medication is a key indicator of treatment success, significantly affecting patient recovery and health status, ultimately impacting their quality of life (Ritassi et al., 2024). Patients who adhere to their treatment programs are expected to experience improved health, reduced disease symptoms, and better physical, psychological, and social well-being. Higher adherence levels correlate with better quality of life outcomes (Suryana & Nurhayati, 2021; Kurniyawan et al., 2023). Consequently, patient adherence to tuberculosis treatment plays a vital role in improving their quality of life by controlling the bacteria Mycobacterium tuberculosis, thereby enhancing recovery rates and reducing mortality and transmission risks (Ritassi et al., 2024).

CONCLUSION

The findings of this study highlight the significant interrelationships between self-efficacy, medication adherence, and quality of life among tuberculosis patients. A notable portion of the

respondents demonstrated high self-efficacy, which plays a crucial role in motivating patients to seek treatment and engage in healthy behaviors, ultimately leading to better health outcomes. The study also underscores the importance of strict adherence to medication regimens, which is essential for successful tuberculosis treatment and for preventing drug resistance.

Moreover, a good quality of life was reported by most participants, indicating that effective disease management and health-related quality of life are closely linked. Patients with high self-efficacy are likely to adhere to their treatment plans, resulting in improved quality of life. This suggests that enhancing patients' self-efficacy through education and support can foster better treatment outcomes.

In summary, strategies aimed at improving self-efficacy and promoting adherence to tuberculosis treatment should be integral components of public health interventions. By focusing on these areas, healthcare providers can enhance the overall well-being and recovery of tuberculosis patients, thereby contributing to more effective disease control and management.

ACKNOWLEDGEMENT

CONFLICT OF INTEREST

The authors declared no competing interests in the production of this manuscript.

REFERENCES

Amalia, A., Arini, H. D., & Dhrik, M. (2022). Analysis of The Relationship of Compliance Rate of Antituberculosis Drug on The Quality of Life of Lung Tuberculosis Patients. *Jurnal Ilmiah Mahaganesha*, *1*(2), 67–74.

Azalia, C. R., Maidar, & Ismail, N. (2020). Analisis Kualitas Hidup Penderita Tuberkulosis Paru terhadap Kepatuhan Pengobatan Tuberkulosis di Wilayah Kabupaten Pidie Jaya Tahun 2020. *Jurnal Aceh Medika*, *4*(2), 122–136.

Dedi Pahrul, Helsy Desvitasari, & Asih Fatriansari. (2021). Analisis Pemahaman Penderita Tb Tentang Tuberkulosis Paru Terhadap Kualitas Hidup. *Jurnal Kesehatan : Jurnal Ilmiah Multi Sciences*, *11*(2), 86–94. https://doi.org/10.52395/jkjims.v11i2.327

Dewi, S. W. (2021). Upaya Pengendalian Tuberkulosis dengan Meningkatkan Kepatuhan Minum Obat Anti Tuberkulosis. *Media Kesehatan Masyarakat Indonesia*, *20*(3), 200–205. https://doi.org/10.14710/mkmi.20.3.200-205

Diamanta, A. D. S., D, M. A. E., & Buntoro, I. F. (2020). *HUBUNGAN TINGKAT STRES DAN TINGKAT PENDAPATAN KOTA KUPANG*. *April*, 44–50.

Herawati, C., Abdurakhman, R. N., & Rundamintasih, N. (2020). Peran Dukungan Keluarga, Petugas Kesehatan dan Perceived Stigma dalam Meningkatkan Kepatuhan Minum Obat pada Penderita Tuberculosis Paru. *Jurnal Kesehatan Masyarakat Indonesia*, *15*(1), 19. https://doi.org/10.26714/jkmi.15.1.2020.19-23

Hidayati, W., Mamlukah, M., Suparman, R., & Iswarawanti, D. N. (2023). Faktor-faktor yang berhubungan dengan kualitas hidup pasien tb di Balai Kesehatan Paru Masyarakat Kota Cirebon tahun 2023. *Journal of Health Research Science*, *3*(02), 165–174. https://doi.org/10.34305/jhrs.v3i02.929

Istiqomah, I. N., & Yuliyani, N. (2022). Efektivitas Latihan Aktivitas Fisik Terhadap Penurunan Kadar Glukosa Darah Pada Pasien Diabetes Melitus Tipe 2: Kajian Literatur the Effectiveness of Physical Activity Exercise Towards Reducing Blood Glucose Levels in Patients With Type 2 Diabetes Mellitu. *Berkala Ilmiah Mahasiswa Ilmu Keperawatan Indonesia*, *10*(1), 1–10. https://doi.org/10.53345/bimiki.v10i1.196

Kurniyawan, E. H., Rifai, A., Widayati, N., Rasni, H., Dewi, E. I., & Wuryaningsih, E. W. (2023). Parenting Patterns and Adolescent Self-Efficacy in Prevention of HIV/AIDS Risky Behavior. *Health and Technology Journal (HTechJ)*, *1*(1), 87-94.

Kurniyawan, E. H., Maharani, D. P., Fitriani, A. M. S., Inachys, Z. G., Phambudi, W., Afandi, A. T., & Nur, K. R. M. (2023). The role of the family As supervisors of tuberculosis medication adherence. *International Journal of Midwifery and Health Sciences*, *1*(3), 304-316.

Mar'iyah, K., & Zulkarnain. (2021). Patofisiologi penyakit infeksi tuberkulosis. *Prosiding Biologi Achieving the Sustainable Development Goals with Biodiversity in Confronting Climate Change*, *7*(1). https://doi.org/10.55724/jbiofartrop.v5i1.378

Mawardi, M., Sambera, R., & Hamisah, I. (2019). Studi Hubungan Antara Faktor Lingkungan Fisik Rumah Dengan Penderita TB Paru BTA di Aceh Selatan. *Jurnal Serambi Engineering*, *4*(1), 406. https://doi.org/10.32672/jse.v4i1.851

Noranisa, Alisi, & Puteri, A. D. (2023). Hubungan Efikasi Diri dengan Kualitas Hidup Pasien TB Paru di Wilayah Kerja Puskesmas Tambang Tahun 2023. *SEHAT : Jurnal Kesehatan Terpadu*, *3*(2), 293–301. https://ojs.unsulbar.ac.id/index.php/j-healt/article/view/942

Papeo, D. R. P., Immaculata, M., & Rukmawati, I. (2021). Hubungan Antara Kepatuhan Minum Obat (MMAS-8) Dan Kualitas Hidup (WHOQOL-BREF) Penderita Tuberkulosis Di Puskesmas Di Kota Bandung. *Indonesian Journal of Pharmaceutical Education*, *1*(2), 86–97. https://doi.org/10.37311/ijpe.v1i2.11143

Putra, O. N., Hidayatullah, A. Y. N., Aida, N., & Hidayat, F. (2022). EVALUATION OF HEALTH – RELATED QUALITY OF LIFE IN PULMONARY TUBERCULOSIS PATIENTS USING SHORT FORM-36. *Jurnal Ilmiah Farmako Bahari*, 1–13.

Ritassi, A. J., Nuryanto, I. K., & Rismawan, M. (2024). Hubungan antara Kepatuhan Minum Obat dengan Kualitas Hidup Penderita Tuberkulosis. *Jurnal Gema Keperawatan*, *17*(1), 63–78. https://doi.org/10.33992/jgk.v17i1.3255

Sembiring, T. B., Hidayat2, R., & Hisni, D. (2022). PENGARUH EDUKASI SELF CARE TERHADAP KUALITAS HIDUP OSTOMATE DI WOCARE CENTER BOGOR. *MANUJU: MALAHAYATI NURSING JOURNAL*, *4*, 1471–1478.

Suputra, I. G. D., & Susilawati, L. K. P. A. (2019). Peran Efikasi Diri dan Kecemasan akademis terhadap Self-Regulated Learning pada Mahasiswa Program Studi Sarjana Psikologi Fakultas Kedokteran Universitas Udayana. *Jurnal Psikologi Udayana*, *3*(1), 68–78.

Suryana, I., & Nurhayati. (2021). HUBUNGAN ANTARA PERAN PENGAWAS MENELAN OBAT (PMO) TERHADAP KEPATUHAN MINUM OBAT PENDERITA TB PARU. *Indonesian Journal of Nursing Sciences and Practices*, *2015*(2).

Yunding, J., & Irwan, M. (2021). Hubungan Efikasi Diri Dengan Kualitas Hidup Pasien Tb Paru Di Wilayah Kerja Puskesmas Lembang Tahun 2018. *Journal of Health Education and Literacy*, *3*(2), 111–115. https://doi.org/10.31605/j-healt.v3i2.942