THE RELATIONSHIP BETWEEN FAMILY SUPPORT AND ADHERENCE TO ANTI-TUBERCULOSIS MEDICATION AMONG TUBERCULOSIS PATIENTS AT PEKAUMAN HEALTH CENTER, BANJARMASIN

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Abstract

Background: Tuberculosis (TB) is a contagious infectious disease that remains a major public health issue in developing countries, including Indonesia. The primary symptom is a persistent productive cough. This study aimed to analyze the relationship between family support and patient adherence to anti-tuberculosis medication at Pekauman Health Center, Banjarmasin. **Methods**: A correlational analytic design with a cross-sectional approach was employed. A total of 32 respondents were selected using a total sampling technique. Data were collected using structured questionnaires and analyzed using the Spearman rank correlation test. **Results**: The findings revealed that 53.1% of respondents were non-adherent to their tuberculosis treatment regimen, while 50% reported receiving good family support. The Spearman rank test showed a p-value of 0.001, indicating a statistically significant relationship between family support and treatment adherence among TB patients. **Conclusion:** Family support plays a critical role in improving treatment adherence among tuberculosis patients. Enhancing family involvement may be a key factor in achieving successful TB therapy outcomes.

Keywords: Family Support, Treatment Adherence, Tuberculosis

Background

Tuberculosis (TB) is an infectious disease commonly found in developing countries such as Indonesia and can affect individuals across all age groups, from children to adults (Linda & Sari, 2022). The disease is characterized by a productive cough lasting two weeks or more and is often accompanied by hemoptysis, shortness of breath, chest pain, fatigue, low-grade fever, and night sweats. TB treatment consists of two phases: the initial phase (2–3 months) and the continuation phase (4–7 months). The success of treatment is largely dependent on the patient's adherence to the prescribed regimen (Mar'iyah & Zulkarnain, 2021).

TB is caused by *Mycobacterium tuberculosis*, which spreads through droplets expelled when an infected individual coughs or sneezes. The bacteria primarily affect the lungs but may also infect other organs such as the brain, bones, and intestines. Transmission is influenced by the intensity and duration of exposure, as well as the individual's immune status (Ministry of Health RI, 2016; Noerhalimah, 2020).

The World Health Organization (WHO) reported 10.6 million cases of pulmonary TB in 2021, resulting in 1.6 million deaths. Indonesia ranks among the top three countries with the highest TB burden, following India and China. The high incidence and prolonged duration of treatment increase the risk of non-adherence, making treatment compliance a major challenge in achieving the global TB elimination target by 2030.

According to the WHO 2023 report, Indonesia ranked second globally with 1,060,000 TB cases and 134,000 related deaths. However, only 88% of drug-sensitive TB patients and 73% of drug-resistant TB patients had initiated treatment. The 2018 Indonesian Basic Health Research (Riskesdas) reported a TB prevalence of 16,043 cases in South Kalimantan, with a treatment success rate of 84.7%, slightly below the target of 85%. At Pekauman Health Center, 635 TB cases were recorded among a total population of 25,905.

A preliminary study conducted at Pekauman

Health Center revealed that out of 10 interviewed TB patients, half admitted to not taking their medication regularly due to forgetfulness and lack of family support. According to Friedman (2016), family support encompasses attitudes and actions aimed at assisting a sick family member. This support is essential, as many patients discontinue treatment prematurely due to symptom improvement or adverse drug effects. Without family involvement, treatment success is difficult to achieve. Families play a vital role in improving patient adherence through supervision, motivation, and emotional support (Zainal Aqib, 2022). This study focuses on the impact of family support, particularly conative attitudes, on TB patients' adherence to anti-tuberculosis medication (OAT).

Based on the above, the researcher conducted a study entitled "*The Relationship Between Family Support and Adherence to Anti-Tuberculosis Medication Among Tuberculosis Patients at Pekauman Health Center, Banjarmasin.*"

Method
This study employed a quantitative research method using a cross-sectional design. The research subjects consisted of patients diagnosed with pulmonary tuberculosis at Pekauman Health Center, Banjarmasin. A total of 32 respondents were selected using the total sampling technique.

The instruments used in this study included a demographic questionnaire, a family support questionnaire, and a medication adherence questionnaire specific to anti-tuberculosis treatment.

Results and Discussion
Based on Table 1, the majority of respondents (34.4%) were over 50 years of age.

Table 1. Respondents by Age

Age (years)	f	%
20-30	8	25.0
31-40	6	18.8
41-50	7	21.9
>50	11	34.4
Total	32	100.0

Based on Table 2, the majority of TB patients were female, accounting for 19 individuals (59.4%).

Table 2. Respondents by Gender

Gender	f	%
Male	13	40.6
Female	19	59.4
Total	32	100.0

Based on Table 3, out of 32 respondents, the majority had a junior high school level of education or its equivalent (43.8%).

Table 3. Respondents by Education Level

Education Level	f	%
Elementary School	12	37.5
Junior High School	14	43.8
Senior High School	5	15.6
Higher Education	1	3.1
Total	32	100.0

Based on Table 4, out of 32 respondents, the majority were employed, totaling 19 individuals (59.4%).

Table 4. Respondents by Employment Status

Employment Status	f	%
Employed	19	59.4
Unemployed	13	40.6
Total	32	100.0

Based on Table 5, out of 32 respondents, the majority had been suffering from tuberculosis for 4–6 months, totaling 18 individuals (56.3%).

Table 5. Respondents by Respondents by Duration of Tuberculosis Illness

Duration of TB Illness	f	%
1-3 months	14	43.8
4-6 months	18	56.3
Total	32	100.0

Based on Table 6, out of 32 respondents, the majority reported having good family support, totaling 16 individuals (50.0%).

Table 6. Family Support

Family Support Category	f	%
Good	16	50.0
Moderate	8	25.0
Poor	8	25.0
Total	32	100.0

Based on Table 7, out of 32 respondents, the majority were categorized as non-adherent to anti-tuberculosis medication, totaling 17 individuals (53.1%).

Table 7. Adherence to Anti-Tuberculosis Medication

Medication Adherence	f	%
Adherent	15	46.9
Non-adherent	17	53.1
Total	32	100.0

Based on Table 8, the significance value (2-tailed) of 0.001 indicates a statistically significant relationship between family support and adherence to anti-tuberculosis medication ($p < 0.05$). The correlation coefficient of 0.886 indicates a strong positive relationship, meaning that higher levels of family support are associated with increased adherence to anti-tuberculosis treatment.

Table 8. The Relationship Between Family Support and Adherence to Anti-Tuberculosis Medication

Family Support	Adherent		Non-adherent		Total	
	f	%	f	%	f	%
Good	15	46.9	1	3.1	16	50.0
Moderate	0	0	8	25.0	8	25.0
Poor	0	0	8	25.0	8	25.0
Total	15	46.9	17	53.1	32	100.0
Spearman Rank Correlation Test Result						
Asymp. Sig (2-tailed) = 0.001						
Correlation Coefficient = 0.886*						

Column header: Adherence to Anti-Tuberculosis Medication

Discussion
Respondents by Age
Based on the data, out of 32 respondents, the majority were over 50 years old, totaling 11 individuals (34.4%). Most tuberculosis patients in this study were aged above 50, which may be attributed to the fact that aging affects the immune system, making individuals more susceptible to diseases.

In older adults over the age of 55, the immune system tends to decline, increasing vulnerability to various illnesses, including pulmonary tuberculosis. Moreover, individuals in productive age groups can serve as major sources of transmission due to their higher mobility (Sikumbang et al., 2022).

Respondents by Gender
Regarding gender, the majority of the 32 respondents were female, accounting for 19 individuals (59.4%). This suggests that women were more frequently affected by tuberculosis in this study. This could be due to limited access to information about TB transmission or living conditions, such as inadequate home ventilation and close contact with individuals already infected.

Although studies show that men generally have a higher prevalence of pulmonary TB, lifestyle factors such as smoking and alcohol consumption can weaken the immune system. Men are often at greater risk due to higher physical activity levels and work hours, coupled with habits like smoking and alcohol use, which significantly reduce antibody function and increase TB susceptibility.

Based on the output above, the significance value (2-tailed) of 0.001 indicates a statistically significant relationship between family support and adherence to anti-TB medication ($p < 0.05$). The correlation coefficient of 0.886 shows a strong and positive association, meaning that increased family support is linked to greater medication adherence among TB patients (Sikumbang et al., 2022).

Respondents by Education Level
In terms of educational background, the majority of respondents had a junior high school level education or its equivalent (43.8%), followed by elementary school (37.5%). This indicates that most respondents had a moderate level of education, which may allow for an adequate understanding of health information.

According to Mubarak et al. (2007, as cited in Widiati et al., 2021), individuals with lower educational attainment are more likely to face difficulties in processing information. Higher education levels facilitate better information comprehension. Knowledge about tuberculosis and its treatment should improve in accordance with one's educational attainment. Therefore, the level of education is considered a determining factor in the effectiveness of health education interventions.

Respondents by Employment Status
Regarding employment, most respondents (59.4%) were employed, indicating that many spent more time outside the home, which could potentially affect their consistency in

medication adherence.

Siregar et al. (2015, as cited in Widiati et al., 2021) found no significant relationship between occupation and the incidence of pulmonary TB. Employment type does not significantly influence the growth or proliferation of Mycobacterium tuberculosis. However, their study showed most respondents were unemployed, and being unemployed may affect access to health services. In contrast, the present study found that 19 respondents were employed, suggesting a differing result—indicating a potential relationship between employment status and the incidence of pulmonary TB.

Respondents by Duration of Illness
With regard to duration of illness, most respondents (56.3%) had suffered from tuberculosis for 4–6 months. This finding suggests that many patients had been dealing with the disease for an extended period, likely due to poor adherence to follow-up care and treatment.

The duration of tuberculosis affects a patient's daily life. Since TB treatment requires at least six months of regular medication, many patients become non-adherent due to the high number of pills, side effects such as appetite loss, nausea, vomiting, dizziness, fatigue, joint pain, numbness, and changes in urine color. Additionally, a lack of family support and social stigma can lead to fear of incurability, feelings of isolation, and low self-confidence (Zuprin, 2015, as cited in Nurjihan et al., 2024).

Family Support
Based on data regarding family support, among 32 respondents, the majority—16 individuals (50%)—reported receiving good family support.

According to Friedman (2013, as cited in Afifa & Sumiatin, 2024), family support is a continuous process that occurs throughout an individual's life. The focus of family support lies in the interactions that occur within various social relationships, as perceived by those involved. Family support refers to how families act, think, and accept their members. Family members view those who assist as always being available to provide help and support whenever needed.

Mantovani (2022, as cited in Suwanto et al., 2024) emphasized that good family support in the

treatment of patients with pulmonary tuberculosis contributes to greater adherence to medication regimens. Support from family members in monitoring the patient's medication adherence can significantly boost the patient's motivation to consistently take their medication.

According to the Indonesian Ministry of Health (2022, as cited in Rosidah & Lestari, 2024), family support is one of the most influential factors affecting a patient's compliance in taking medications. Family involvement plays a critical role in treatment success, as patients feel more encouraged and are more likely to adhere to their prescribed therapy. This is supported by a study by Lestari (2021), which found that the role of the family in supervising tuberculosis medication intake is vital and can serve as a motivational factor for the patient's health recovery.

Adherence to Anti-Tuberculosis Medication
Based on the adherence data of 32 respondents, the majority—17 individuals (53.1%)—were categorized as non-adherent to tuberculosis medication.

Adherence refers to a patient's willingness to take medication according to the prescribed dosage, frequency, and timing. To improve adherence, patients' decision-making regarding whether or not to take the medication must be taken into account. Adherence reflects a positive behavior in achieving therapeutic goals. It is a human behavior that involves compliance with norms, guidelines, protocols, and established disciplines (Afifa & Sumiatin, 2024).

According to Parawati (2021, as cited in Togatorop et al., 2024), adherence behavior plays a crucial role in the success of tuberculosis treatment. The factors that influence patients' adherence include social support systems such as family, peers, and healthcare workers. One of the primary drivers of adherence is family support, which acts as a reliable support system for sick family members and is consistently available when needed. A harmonious family environment provides emotional support, enhances the patient's comfort, fosters a belief in recovery, and consequently improves medication

adherence.

The Relationship Between Family Support and Adherence to Anti-Tuberculosis Medication

Based on the findings of this study on the relationship between family support and adherence to anti-tuberculosis (TB) medication, it was found that among respondents who received good family support (16 individuals or 50%), they tended to be more adherent in regularly taking their anti-TB medication compared to those who received moderate or poor family support. These results indicate that patients who receive strong family support are more likely to comply with their medication regimen.

The analysis using the Spearman Rank test yielded a p-value of 0.001, which is less than 0.05, indicating that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. This suggests that there is a statistically significant relationship between family support and adherence to anti-TB medication.

The output also revealed a correlation coefficient of 0.886, indicating a strong correlation between the variables of family support and medication adherence.

Since the correlation coefficient is positive (0.886), the relationship between the two variables is unidirectional. This means that the greater the level of family support, the higher the adherence to anti-TB medication.

This finding is consistent with a study by Damayanti & Noorratri (2025), which reported a significant relationship between family support and medication adherence among patients with pulmonary tuberculosis at the Pulmonary Community Clinic in Tegal City. The study found a p-value of 0.000 (<0.05) and a correlation coefficient of 0.468, indicating that the better the family support provided to pulmonary TB patients, the higher their level of medication adherence. The study concluded that family plays an important role in ensuring patient adherence to TB treatment.

Similarly, the results align with a study by Suwanto et al. (2024), which was conducted among 52 respondents at the Maridan Health Center. The study showed that 67.3% of TB patients adhered to their medication, and 75% reported receiving good family support. However, statistical testing revealed no significant relationship between overall family support and medication adherence (p = 0.232). Likewise, no relationship was found with esteem support (p = 0.779) or informational support (p = 0.4949). However, emotional support was significantly associated with medication adherence (p = 0.008).

Conclusion

Based on the analysis of 32 respondents, the majority of tuberculosis (TB) patients were over 50 years old (34.4%), female (59.4%), had a junior high school level education or equivalent (43.8%), were employed (59.4%), and had been diagnosed with TB for 4–6 months (56.3%). Among all respondents, 53.1% were categorized as non-adherent in taking anti-TB medication, while 50% received good family support. The Spearman Rank test showed a p-value of 0.001 (p < 0.05), indicating a significant relationship between family support and adherence to anti-TB medication.

It is hoped that the results of this study can serve as an additional reference for future research by including additional variables or developing relevant ones, such as home environment and motivation. Increasing the sample size and population is also recommended for subsequent studies.

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