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## The Relationship Between Family Support and TB Prevention Behavior at Level II Hospital, RW Mongisidi, Manado

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### Abstract

*Tuberculosis (TB) is an infectious disease that remains a public health problem in Indonesia. Preventive behavior against TB transmission is an important effort in breaking the chain of disease transmission. Family support is a factor that can influence patient health behavior, including behavior against TB transmission. Methods: This study used a quantitative method with an observational analytical design through a cross-sectional approach. The study was conducted at Level II RW Mongisidi Hospital, Manado in May 2026. The study sample consisted of 37 respondents selected using a purposive sampling technique. Data collection was carried out using a questionnaire and analyzed using the Chi-Square test with a significance level of  $\alpha = 0.05$ . Results: The results showed that most respondents received supportive family support (21 respondents (56.8%)), and most had good TB transmission prevention behavior (23 respondents (62.2%)). The results of the bivariate analysis showed that of the 21 respondents who received supportive family support, 18 respondents (48.6%) had good TB transmission prevention behavior. The results of the Chi-Square test obtained a  $p$ -value of 0.002 ( $p < 0.05$ ), so  $H_0$  was rejected and  $H_1$  was accepted. Conclusion: There is a significant relationship between family support and TB transmission prevention behavior in TB patients at Level II RW Mongisidi Hospital, Manado. Good family support plays a role in improving TB transmission prevention behavior in patients.*

**Keywords:** Family Support, Preventive Behavior, Tuberculosis, TB

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## INTRODUCTION

Pulmonary tuberculosis is a public health problem that remains a major global challenge. It is among the top ten causes of death worldwide, with incidence and mortality rates continuing to rise. This situation is influenced by several factors, including increasing cases of antituberculosis drug resistance, a weakened immune system in patients, suboptimal TB prevention practices within families and communities, and low patient compliance with regular treatment.

According to data from the World Health Organization (WHO, 2024), the number of pulmonary tuberculosis (TB) cases worldwide in 2024 reached approximately 9.6 million cases. Most of these cases were found in Southeast Asia and the Western Pacific, which accounted for 58% of the total global cases, while the remaining 28% were in Africa. In the same year, TB caused approximately 1.5 million deaths worldwide. This disease ranks second as a cause of death from infectious diseases after Human Immunodeficiency Virus (HIV). The WHO also projects that if TB control efforts are not carried out optimally, the number of TB cases in 2035 could increase to 20.1 million cases, with approximately 20% of these potentially experiencing complications in the form of extrapulmonary TB (WHO, 2024).

Based on the results of the Indonesian Health Survey (SKI), the prevalence of tuberculosis (TB) in the population decreased from 0.4% to 0.3% in 2023. However, Indonesia still ranks second in the world in terms of TB caseload. It is estimated that there are around 1 million TB cases annually, with a death toll of up to 130,000. If effective and sustainable control efforts are not implemented, the number of TB cases is projected to increase to around 2–3 million cases per year by 2030 (Indonesian Health Survey, 2024).

Based on data from the Manado City Health Office in 2023, the target for tuberculosis (TB) case detection was set at 2,727 cases. Of this target, 2,359 suspected TB cases were identified, representing an 87% success rate. This data indicates that tuberculosis remains a public health issue requiring serious attention in Manado City. In addition to the high number of cases detected, the

success rate of TB treatment in Manado City also faces various challenges. Data from the Manado City Health Office shows that TB treatment success rates fluctuated between 2021 and 2024, reaching only 68.7% in 2024, still below the national target of 90%. This situation is influenced by various factors, including low public awareness of early screening, persistent stigma against TB sufferers, patient non-compliance with regular treatment, and suboptimal supervision during therapy.

Preventing the transmission of pulmonary tuberculosis (TB) is a crucial effort that must be undertaken not only by the patient but also by family members living in the same household and the surrounding community. The family, as the patient's closest environment, plays a crucial role in preventing the spread of the disease. Family members are at higher risk of contracting TB due to their intense and ongoing contact with the patient, especially in densely populated areas and homes that do not meet health standards. Therefore, family support is a crucial factor in preventing and controlling TB transmission, both within the family and in the wider community (Khumairoh et al., 2023).

Research conducted by Desy Rindra Puspita (2022) on the relationship between family support in family members' health care and transmission prevention behavior in pulmonary TB patients at the Patrang Community Health Center, Jember Regency, showed that most patients who received good family support also had good transmission prevention behavior. These findings indicate that family support plays a significant role in shaping patients' health behavior. The results of this study are in line with the health behavior theory proposed by Kar, which states that individual behavior can be influenced by social support, including support provided by family.

Based on preliminary interviews conducted with 10 pulmonary TB patients at Level II RW Mongisidi Hospital in Manado, it was found that some patients were still inconsistent in implementing TB transmission prevention behaviors. Several patients admitted to not always wearing masks when doing activities outside the home, not practicing proper cough etiquette, and sometimes forgetting to take their medication on schedule. Furthermore, some patients stated that family support in reminding them of their treatment schedule, providing motivation, and helping them implement transmission prevention measures was still less than optimal. This condition indicates that family support plays a crucial role in shaping TB transmission prevention behaviors in patients.

## RESEARCH METHODS

This research is a quantitative study with an analytical approach using a cross-sectional design. The study was conducted at Level II RW Mongisidi Hospital, Manado in May 2026. A cross-sectional design was used to measure the independent and dependent variables simultaneously so that the relationship between the two variables could be determined. Research data were collected through questionnaires given to respondents according to predetermined inclusion criteria. Data analysis was carried out using statistical tests to determine the relationship between family support and tuberculosis (TB) transmission prevention behavior in patients at Level II RW Mongisidi Hospital, Manado. According to Nursalam (2020), a cross-sectional design is a research design that observes research variables at a specific point in time, while Pasaribu et al. (2022) stated that this design is effective for identifying relationships between variables in a population over the same period.

This study used a non-probability sampling technique with a purposive sampling approach. This technique was chosen because respondent selection was based on specific criteria established in accordance with the research objectives. Therefore, only respondents who met the inclusion criteria were included in the research sample, allowing the data obtained to more accurately describe the phenomenon being studied (Sugiyono, 2017).

RESULTS AND DISCUSSION

This study was conducted at Level II RW Mongisidi Hospital, Manado, with 37 Tuberculosis (TB) patients who met the inclusion criteria. The results of the study were presented in the form of univariate analysis to describe the characteristics of the respondents, including gender, age, education, and occupation, as well as the distribution of family support variables and TB transmission prevention behavior. Furthermore, a bivariate analysis was conducted to determine the relationship between family support and TB transmission prevention behavior in TB patients at Level II RW Mongisidi Hospital, Manado.

Table 1. Frequency Distribution of Respondents by Gender

| Gender | f  | %    |
|--------|----|------|
| Man    | 21 | 56.8 |
| Woman  | 16 | 43.2 |

Based on Table 1, it shows that the majority of respondents were male, 21 people (56.8%), while the majority of respondents were female, 16 people (43.2%).

Table 2.DistributionRespondent Frequency by Age

| Age   | f  | %    |
|-------|----|------|
| 18-30 | 10 | 27.0 |
| 31-45 | 15 | 40.5 |
| 46-60 | 9  | 24.3 |
| >60   | 3  | 8.2  |

Based on Table 2, it shows that the majority of respondents were aged 31–45 years, as many as 15 people (40.5%), while the least were aged over 60 years, as many as 3 people (8.2%).

Table 3.DistributionRespondent Frequency by Education

| Education          | f  | %    |
|--------------------|----|------|
| Elementary School  | 6  | 16.2 |
| JUNIOR HIGH SCHOOL | 8  | 21.6 |
| SENIOR HIGH SCHOOL | 18 | 48.6 |
| College            | 5  | 13.6 |

Based on Table 3, it shows that the majority of respondents had a high school education of 18 people (48.6%), while the least had a college education of 5 people (13.6%).

Table 4.DistributionRespondent Frequency by Occupation

| Work                  | f  | %    |
|-----------------------|----|------|
| Doesn't work          | 5  | 13.5 |
| Housewife             | 8  | 21.6 |
| Self-employed         | 12 | 32.4 |
| Farmers/Fishermen     | 6  | 16.2 |
| Private Employees/PNS | 6  | 16.2 |

Based on Table 4, it shows that the majority of respondents work as self-employed, as many as 12 people (32.4%), while the least are not working, as many as 5 people (13.5%).

Table 5.Univariate Analysis of Family Support Variables

| Family Support   | f  | %    |
|------------------|----|------|
| Support          | 21 | 56.8 |
| Does not support | 16 | 43.2 |

Based on Table 5, it shows that the majority of respondents received supportive family support, namely 21 people (56.8%), while 16 respondents (43.2%) received non-supportive family support.

**Table 6.Univariate Analysis of TB Prevention Behavior Variables**

| Preventive Behavior | f  | %    |
|---------------------|----|------|
| Good                | 23 | 62.2 |
| Not good            | 14 | 37.8 |

Based on Table 6, it shows that the majority of respondents have good TB transmission prevention behavior, namely 23 people (62.2%), while 14 respondents (37.8%) have poor TB transmission prevention behavior.

**Table 7.Bivariate Analysis of Family Support and TB Prevention Behavior**

| Family Support   | Preventive Behavior |      |          |      |       | P-   |
|------------------|---------------------|------|----------|------|-------|------|
|                  | Good                | %    | Not good | %    | Total |      |
| Support          | 18                  | 48.6 | 3        | 8.1  | 21    | 56.8 |
| Does not support | 5                   | 13.5 | 11       | 29.7 | 16    | 43.2 |

Based on Table 7, it shows that of the 21 respondents who received supportive family support, the majority had good TB transmission prevention behavior, namely 18 people (48.6%). Meanwhile, of the 16 respondents who received unsupportive family support, the majority had poor TB transmission prevention behavior, namely 11 people (29.7%). The results of the Chi-Square test showed a p-value = 0.002 ( $p < 0.05$ ), so  $H_0$  was rejected and  $H_1$  was accepted. Thus, there is a relationship between family support and TB transmission prevention behavior in TB patients at Level II RW Mongisidi Hospital, Manado.

**Discussion**

The results of the study indicate that there is a relationship between family support and TB transmission prevention behavior in TB patients at Level II RW Mongisidi Hospital, Manado. Based on the results of the Chi-Square test, a p-value of 0.002 ( $<0.05$ ) was obtained, so  $H_0$  was rejected and  $H_1$  was accepted. These results indicate that family support plays a role in the formation of TB transmission prevention behavior in patients. Of the 21 respondents who received supportive family support, most had good TB transmission prevention behavior, namely 18 people (48.6%). Conversely, of the 16 respondents who received unsupportive family support, most had poor prevention behavior, namely 11 people (29.7%).

Family support is a reinforcing factor that can influence a person's health behaviors. For TB patients, families play a role in providing emotional, informational, rewarding, and instrumental support that can increase patient motivation to adopt preventative behaviors. This support can be demonstrated through monitoring mask use, reminders about cough etiquette, assistance during treatment, and providing information about TB prevention efforts to other family members.

The results of this study align with research by Masnita Nainggolan (2022), which found a relationship between family support and infection prevention behavior in TB patients. This study showed that patients with good family support tended to have better infection prevention behaviors than those with less support.

This research is also supported by research by Daniel Ginting and Nina Fentiana (2023), which states that family support is associated with the risk of TB transmission within the family. Patients who receive good family support are more likely to adopt preventive behaviors, thereby minimizing the risk of TB transmission. This research finding is further strengthened by recent research showing that family support is a crucial factor in improving TB prevention behaviors. Family involvement in providing support, supervision, and education has been shown to contribute to improved TB prevention behaviors in both patients and family members living in the same household.

According to researchers, the relationship between family support and TB prevention behavior occurs because the family is the closest environment that interacts directly with patients in their daily

lives. Patients who receive attention, motivation, and supervision from their families tend to be more compliant in implementing preventive behaviors such as wearing masks when interacting, covering their mouths when coughing or sneezing, expelling phlegm in the correct place, maintaining environmental cleanliness, and taking medication regularly. Conversely, a lack of family support can lead to low patient motivation in carrying out preventive measures, thereby increasing the risk of TB transmission to family members and the surrounding environment.

Based on the results of this study, it can be concluded that family support is a factor associated with TB transmission prevention behavior. Therefore, healthcare professionals need to involve families in every TB education and control program so that families can play an active role in supporting patients in optimally implementing transmission prevention behaviors.

## CONCLUSION

Based on the results of the study, it shows that most respondents received supportive family support, namely 21 respondents (56.8%), and most respondents had good TB transmission prevention behavior, namely 23 respondents (62.2%). The results of the statistical test using Chi-Square showed a p-value of 0.002, so  $H_0$  was rejected and  $H_1$  was accepted. Thus, there is a significant relationship between family support and TB transmission prevention behavior in TB patients at Level II RW Mongisidi Hospital, Manado.

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