

FAMILY SUPPORT AND STRESS LEVELS: A CORRELATIONAL STUDY ON TUBERCULOSIS PATIENTS AT RSI SAKINAH MOJOKERTO

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ABSTRACT

Tuberculosis (TB) is an infectious disease that affects not only physical health but also gives rise to psychological issues—such as stress stemming from prolonged treatment, medication side effects, social stigma, and shifts in family and work roles. Family support plays a crucial role in helping patients cope with psychological stress during treatment. This study employed a quantitative, correlational, cross-sectional design. The sample consisted of 50 pulmonary TB patients selected via consecutive sampling. Data were collected using questionnaires and analyzed through univariate and bivariate methods, specifically the Spearman rank test. The results indicated that 46.0% of respondents received good family support, while 38.0% experienced moderate stress levels. Among respondents with good family support, the majority (56.5%) experienced mild stress; conversely, the majority of those with poor family support (64.7%) experienced severe stress. The Spearman rank test revealed a significant relationship between family support and stress levels ($p=0.000$; $p<0.05$). Thus, better family support is associated with lower stress levels among pulmonary TB patients.

Keywords: Family Support, Stress Level, Pulmonary Tuberculosis

INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by the bacterium *Mycobacterium tuberculosis* and remains a significant public health issue, both globally and nationally. The disease contributes significantly to morbidity and mortality rates, particularly in countries with a high burden of TB, such as Indonesia. The prolonged and intensive nature of TB treatment combined with the physical symptoms experienced by patients can impact their psychological well-being, leading to increased stress, anxiety, and depression. (Nofiyanti, 2024). Psychological stress among tuberculosis (TB) patients is a factor that requires attention in the management of chronic disease, as TB not only affects physical health but can also cause significant emotional distress (Febi, 2021). Psychological stress in TB patients is influenced not only by the clinical condition of the disease but also by social and environmental factors; notably, family support plays a crucial role in maintaining the patient's mental health. Family support is a significant factor in reducing psychological stress levels among TB patients, as individuals who receive strong family support tend to experience lower stress levels compared to those who lack such support. (Karlinda Novira Ramadhani et al, 2025). Globally, it is estimated that approximately 25% or one-quarter of the world's population has been infected with *Mycobacterium tuberculosis*. The number of active TB cases worldwide is estimated to reach 10.8 million, with an incidence rate of 134 cases per 100,000 population, equivalent to about 0.13% of the total global population (WHO, 2023). Based on data from the 2023 *Indonesian Health Survey* (SKI), the prevalence of pulmonary tuberculosis (TB) in Indonesia based on a history of medical diagnosis stands at 0.30%. This means that for every 1,000 people in Indonesia, approximately three have been diagnosed

with pulmonary TB by healthcare professionals through sputum testing, chest X-rays, or a combination of both. These data indicate that pulmonary TB remains a public health issue in Indonesia and requires sustained control efforts. (kemenkes, 2023).

Specifically in East Java, the prevalence of pulmonary tuberculosis (TB) based on a history of medical diagnosis was recorded at 0.24%, with a 95% confidence interval of 0.19% 0.30%. This prevalence was calculated based on the percentage of respondents who had been diagnosed with TB by a healthcare professional within the past year. This figure indicates that approximately 2 to 3 out of every 1,000 residents in East Java had been diagnosed with pulmonary TB in the last year (kemenkes, 2023). According to data from the 2024 Mojokerto Regency Health Profile, a total of 2,148 Tuberculosis (TB) cases were detected and reported that year. Based on this data, the percentage of TB cases relative to the total population is approximately 0.19%. This indicates that TB remains a public health issue in Mojokerto Regency (Dinas Kesehatan Mojokerto, 2024).

Research by (Sulistiyawati & Kurniawati, 2021) A study conducted at PKU Muhammadiyah Hospital in Yogyakarta found that the frequency distribution of family support for tuberculosis patients showed that the majority of respondents received good support, amounting to 18 people (56.3%). Meanwhile, 14 respondents (43.8%) received poor family support. Another study conducted by (Lanawati, Aulia, 2025) The results of the univariate analysis indicate that the majority of respondents 93.3% (28 individuals) experienced a moderate level of stress. The remaining 6.7% (2 individuals) experienced a mild level of stress, and no respondents were found to be experiencing a severe level of stress.

Data obtained from a preliminary study conducted on March 12, 2026, using medical records from RSI Sakinah Mojokerto, revealed 198 TB cases over the past year, with 50 cases recorded in the last three months. Interviews with five TB patients showed that two received good family support—such as reminders to take medication, accompaniment during check-ups, and motivational encouragement—leading them to feel calmer and less distressed about their illness. In contrast, the other three patients reported a lack of family support; this was attributed to factors such as incomplete family structures, living alone, or family members being preoccupied with their own activities and thus unable to provide sufficient attention.

Factors influencing pulmonary tuberculosis include both individual and environmental factors. Individually, contributing factors include poor nutritional status, HIV infection, diabetes mellitus, smoking, and poor medication adherence. Malnutrition can reduce cellular immunity, increasing susceptibility to *Mycobacterium tuberculosis* infection. Additionally, behavioral factors such as smoking and Excessive alcohol consumption contributes to an increased risk of infection and the severity of TB. (WHO, 2023). From environmental and social perspectives, factors such as housing density, poor home ventilation, low education levels, poverty, and limited access to healthcare services also significantly influence the incidence of TB. Densely populated housing with inadequate air circulation facilitates the transmission of droplets containing TB bacteria. Furthermore, delays in diagnosis and treatment resulting from limited access to healthcare services can increase transmission within the community (WHO, 2024).

Stress in tuberculosis (TB) patients is generally influenced by several factors, including the duration of treatment, social stigma, and a lack of family support. These conditions can lead to feelings of isolation and a lack of attention, as well as a decline in motivation to adhere to long-term therapy (Syahleman & Rayasari, 2025). Stress in

tuberculosis (TB) patients that is not managed appropriately can have a negative impact on the patients' physical and psychological health (Juati, 2023). This condition has the potential to hinder the healing process and diminish the patient's quality of life. Studies indicate that the majority of TB patients experience moderate to high levels of stress stemming from the uncertainty of the disease, medication side effects, and the social and economic pressures associated with long-term treatment. If this stress is not effectively managed, it can worsen overall health, reduce motivation to adhere to therapy, and negatively impact the patient's quality of life (Juli Krisna et al., 2024).

Family support is one of the most important factors in alleviating the emotional distress experienced by patients, as the family serves as the primary source of social support influencing the psychological response of TB patients (Suarnianti et al., 2023). Without family support, TB patients tend to experience increased stress (WHO, 2023). Nurses play a crucial role in enhancing family support for tuberculosis (TB) patients as part of efforts to achieve optimal treatment outcomes and reduce patient stress caused by a lack of family support (Syahleman & Rayasari, 2025).

Based on this background, the research question is: "Is there a relationship between family support and stress levels among TB patients at RSI Sakinah Mojokerto?" This study aims to determine the relationship between family support and stress levels in tuberculosis patients, identify the level of family support and patient stress, and analyze the association between these two variables. The findings are expected to contribute to the advancement of nursing science particularly in the delivery of medical-surgical nursing care that incorporates the family as a support system and serve as a reference for educational institutions. Furthermore, the study aims to broaden the researcher's insight into nursing research and help TB patients understand the importance of family support in reducing stress and improving treatment outcomes.

METHOD

This study employs a quantitative research approach with a correlational design and a cross-sectional study method. The study population consists of all tuberculosis patients attending the Outpatient Clinic at RSI Sakinah Hospital, Mojokerto. Sample selection was based on specific inclusion and exclusion criteria using a non-probability sampling method—specifically, consecutive sampling. Two variables were examined: the independent variable (family support) and the dependent variable (stress levels among TB patients). Data collection utilized the Family Support Scale (FSS) questionnaire to measure family support levels and the Perceived Stress Scale (PSS-10) to measure stress levels in TB patients. The study was conducted at the pulmonary clinic of RSI Sakinah Mojokerto, with data collection taking place over three days: Monday, May 25, 2026; Thursday, May 28, 2026; and Saturday, May 30, 2026. Data processing involved editing, coding, scoring, and tabulation stages. Data analysis included univariate analysis—aimed at determining the mean, median, and mode for the variables under study (family support and stress levels in pulmonary TB patients) based on the questionnaire results—and bivariate analysis. Statistical analysis utilized the Spearman Rank correlation test to determine whether a relationship exists between family support and stress levels. One limitation of the study was that some respondents were unable to read or write; consequently, the researcher assisted with the questionnaire completion process by reading each question aloud and recording the answers exactly as provided by the responde. This study has obtained ethical clearance (No. 90/KEP/UBS-PPNI/IV/2026).

FINDING AND DISCUSSION

RESEARCH RESULT

1. General Information

a. Respondent Characteristics Based on Age, Gender, Education, and Duration of Tuberculosis Treatment

Table 1 Respondent Characteristics Age, Gender, Education, Length of TB Treatment

No	Characteristics	Frequency	Percentage (%)
1	Age		
	(18-59 Years)	38	76
	(60 - > 60 Years)	12	24
2	Gender		
	Male	32	64
	Famale	18	36
3	Educations		
	SD	20	40
	SMP	13	26
	SMA	17	34
4	Durations of TB		
	Less than 1 year	27	54
	More than 1 year	23	46
TOTAL		50	100

Source: Primary data, 2026

Table 1 presents the respondents' characteristics, showing that the vast majority fell into the adult age group (18–59 years), comprising 38 respondents (76.0%), while a smaller proportion belonged to the elderly age group (≥ 60 years), comprising 12 respondents (24.0%). Regarding gender, the majority were male (32 respondents or 64.0%), while females accounted for 18 respondents (36.0%). In terms of education level, the largest group had an elementary school education (20 respondents or 40.0%), followed by those with high school education (17 respondents or 34.0%) and junior high school education (13 respondents or 26.0%). Regarding the duration of TB illness, the majority had been suffering from TB for less than one year (27 respondents or 54.0%), while 23 respondents (46.0%) had been ill for more than one year. These results indicate that the majority of respondents in this study were adult males with an elementary school education who had been suffering from TB for less than one year. This narrative outlines the profile of the respondents participating in the study at the TB Clinic of RSI Sakinah Mojokerto.

2. Special Data

a. Family Support

Table 2 Frequency distribution of respondents regarding family support at the TB Clinic of RSI Sakinah, Mojokerto Regency

Family Support	Frequency	Percentage (%)
Good Family Support	23	46,0
Adequate Family Support	10	20,0
Inadequate Family Support	17	34,0
Total	50	100

Source: Primary data, 2026

Table 2 shows that out of a total of 50 respondents, nearly half (23 respondents or 46.0%) received good family support. Another significant portion—nearly half—received poor family support (17 respondents or 34.0%), while a small minority received adequate family support (10 respondents or 20.0%). These results indicate that the majority of respondents in this study received good family support while undergoing TB treatment.

b. Stress Level

Table 3 Frequency Distribution of Respondents' Stress Levels at the TB Clinic, RSI Sakinah, Mojokerto Regency.

Stress Level	Frequency	Percentage (%)
Mild Stress	16	32
Moderate Stress	19	38
Severe Stress	15	30
Total	50	100

Source: Primary data, 2026

Table 3 shows that out of a total of 50 respondents, the largest group—comprising 19 respondents (38.0%)—experienced a moderate level of stress. Nearly half as many, or 16 respondents (32.0%), experienced a mild level of stress, while 15 respondents (30.0%) experienced a severe level of stress.

c. The Relationship Between Family Support and Stress Levels in TB Patients

Table 4: Relationship between Family Support and Stress Levels among TB Patients at the Pulmonary Clinic of RSI Sakinah Mojokerto

Family Support	Stress Level						Total		P-Value	R
	Mild Stress		Moderate stress		Severe Stress					
	N	%	N	%	N	%	N	%		
Good family support	13	56,5	6	26.1	4	17,4	23	100	0.000	0.534

Family support is sufficient.	2	20,0	8	80,0	0	0,0	10	100
Lack of family support	1	5,9	5	29,4	11	64,7	17	100
Total	16	32,0	19	38,0	15	30,0	50	100
Total	16	32,0	19	38,0	15	30,0	50	100

Source: Primary data, 2026

Based on the cross-tabulation results in Table 4, the majority of respondents receiving good family support experienced mild stress (13 respondents; 56.5%). Among those receiving adequate family support, the majority experienced moderate stress (8 respondents; 80.0%). Meanwhile, the majority of respondents receiving poor family support experienced severe stress (11 respondents; 64.7%). These results indicate a trend where better family support received by patients corresponds to a lower level of experienced stress; conversely, lower family support corresponds to a higher level of stress.

The Spearman Rank correlation test yielded a p-value of 0.000 ($p < 0.05$), indicating a significant relationship between family support and stress levels in TB patients. The correlation coefficient of 0.534 signifies a moderate, positive relationship, implying that better family support tends to be associated with milder stress levels.

DISCUSSION

1. Family Support at the Pulmonary Clinic of RSI Sakinah Mojokerto

The research results indicate that among the 50 respondents, the majority received a "good" level of family support (23 respondents or 46%), while 17 respondents (34%) received "poor" support, and 10 respondents (20%) received "adequate" support.

Family support refers to the assistance and active involvement of family members, encompassing emotional, informational, and instrumental support, as well as support in the form of validation or appreciation. This support plays a crucial role in enhancing treatment adherence, quality of life, and the successful management of chronic diseases. (Setyoadi at al., 2025). Family support comprises several factors, including marital status, the family's role in patient care, the presence of a Treatment Supervisor (PMO), the family's level of knowledge regarding TB, the family's economic and employment status, and cultural norms and the social environment. These factors influence the family's ability to provide attention, motivation, assistance, and support to the patient throughout the course of treatment..

The majority of respondents (23 or 46.0%) reported receiving a good level of family support. These results indicate that most families provided optimal support to patients during their pulmonary TB treatment. This positive support was reflected in the respondents' high level of agreement regarding various aspects of care—such as the family showing affection and respect, assisting with daily activities, demonstrating concern for the patient's health, helping with the treatment process, treating the patient

as a valued family member, helping maintain the patient's happiness, and providing overall support that the patient found satisfactory. Conversely, a smaller group of respondents (17 or 34.0%) reported receiving a low level of family support. This situation was attributed to factors such as a lack of affection and attention from family members, as well as instances where respondents lived alone and lacked family available to provide support during treatment..

The results of this study are also supported by research (Nasedum, 2021) ...indicating that strong family support is associated with treatment adherence among TB patients. Families who actively provide attention, motivation, supervision, and assistance during treatment can boost a patient's resolve to undergo therapy consistently until completion. Conversely, a lack of family support can leave patients feeling neglected and unmotivated, and even place them at risk of treatment non-adherence. These findings align with research results showing that respondents with poor family support often experienced a lack of attention and affection; some even lived alone, thereby failing to receive adequate support while undergoing treatment for pulmonary TB.

Researchers note that the high proportion of respondents receiving a good level of family support indicates that families are effectively fulfilling their role as the primary support system for pulmonary TB patients undergoing treatment. Support manifested through affection, attention, appreciation, care assistance, and daily companionship fosters a sense of security and boosts the patients' morale and motivation to complete their treatment regimen. Conversely, patients receiving inadequate family support often face limitations regarding attention and companionship, particularly those living alone or lacking family members available to assist during treatment. Such circumstances can potentially diminish a patient's motivation to adhere to the therapy schedule. Therefore, family involvement should be further enhanced through education and guidance from healthcare professionals, enabling families to provide optimal support that contributes to the successful treatment of pulmonary TB patients.

2. Stress Levels at the Pulmonary Clinic of RSI Sakinah Mojokerto

The research results indicate that out of a total of 50 respondents, the majority (19 respondents, or 38.0%) experienced a moderate level of stress. Respondents with a mild stress level accounted for 16 (32.0%), while those with a severe stress level accounted for 15 (30.0%).

Stress is a psychological response that arises when an individual faces pressure exceeding their ability to cope. In patients with pulmonary tuberculosis (TB), stress can be triggered by the prolonged duration of treatment, medication side effects, concerns regarding recovery, changes in daily activities, and social stigma. Factors that can influence stress levels among pulmonary TB patients include age, gender, education level, and the duration of the illness. These factors affect the patient's ability to understand the disease, adapt to their condition, and employ coping mechanisms during treatment. (Kurniyawan, 2022).

Cross-tabulation results indicate that the majority of adult respondents experienced either moderate or severe stress, with an equal number—13 respondents—in each category. These findings demonstrate that adult patients remain susceptible to stress

while undergoing treatment for pulmonary tuberculosis. Adults typically bear responsibilities related to work, family, and financial stability; consequently, a diagnosis of pulmonary tuberculosis can trigger concerns regarding their ability to work, provide for their families, and manage the recovery process. Although age can influence an individual's capacity to cope with stress, psychological responses are ultimately shaped by life experiences, coping mechanisms, and the support received during treatment (Wibowo et al., 2025). According to researchers, high stress levels among adult respondents are influenced by various demands and responsibilities, such as work, financial matters, and family obligations. These factors render pulmonary TB patients more susceptible to stress while undergoing treatment.

Based on the cross-tabulation of gender and stress levels, nearly half of the male respondents experienced either mild or moderate stress, with an equal number—12 respondents—in each category. Differences in stress levels between men and women may be influenced by variations in biological and psychological characteristics, as well as the social roles each individual holds. Men undergoing treatment for pulmonary TB often face the pressure of being breadwinners, which can lead to psychological stress when their health condition hinders their ability to work. Meanwhile, women may also experience stress due to their roles in caring for their families and physical changes occurring during treatment. Therefore, gender can be a factor influencing a patient's psychological response to their illness (Wibowo et al., 2025). According to researchers, gender-based differences in stress levels are influenced by the varying roles and responsibilities of individuals, which can lead to differences in responses to pulmonary tuberculosis and its treatment.

Regarding education, the majority of respondents with only an elementary school education—specifically nine individuals—experienced moderate stress. These results indicate that education level is a factor influencing stress levels among patients with pulmonary tuberculosis. Education affects an individual's ability to receive information, understand the disease, and recognize the importance of treatment adherence. Patients with higher levels of education tend to possess better health knowledge, making it easier for them to understand the treatment process and employ effective coping mechanisms to manage stress. Conversely, a low level of education can lead to a lack of understanding regarding tuberculosis, trigger excessive worry, and increase psychological pressure during treatment (Djua et al., 2024). Nevertheless, in this study, respondents with a high school education also exhibited a relatively high incidence of severe stress, with six individuals affected. This indicates that stress levels among pulmonary TB patients are influenced not only by education level but also by various interacting factors, such as coping abilities, family support, psychological condition, and the patient's experience during treatment.

A cross-tabulation of the duration of TB illness and stress levels revealed that the majority of respondents who had been ill for less than one year (11 individuals) experienced moderate stress. Meanwhile, among those who had been ill for more than one year, the highest numbers experienced either moderate or severe stress, with an equal count of 8 respondents in each category. These findings indicate that the duration of treatment is a factor that can influence a patient's stress level. TB treatment requires a relatively long period, necessitating consistent therapy and requiring patients to face

various challenges—such as medication side effects, physical fatigue, changes in daily activities, and concerns regarding treatment success. Such conditions can lead to increased feelings of weariness and psychological pressure if not balanced by effective coping mechanisms and family support (Akbar et al., 2025). The results of this study are also consistent with the research (Kurniyawan, 2022) which states that pulmonary TB patients often experience psychological stress during treatment due to the prolonged duration of therapy, changes in health status, and various demands they must face. Poorly managed stress can affect patient adherence to treatment and impact both quality of life and therapeutic success. According to researchers, the longer a patient undergoes TB treatment, the greater the likelihood of stress arising from treatment fatigue, concerns about recovery, and various challenges encountered during the treatment process.

According to researchers, the stress levels experienced by pulmonary TB patients represent a natural psychological response to the various changes that occur during treatment. The majority of respondents experienced moderate stress, indicating that while they were under psychological pressure, they remained capable of adapting to their situation. Stress levels are influenced by a complex interplay of factors—such as age, gender, education level, duration of illness, coping abilities, and family support. Therefore, the management of pulmonary TB patients should not focus solely on medical aspects but must also address psychological needs through health education, counseling, the strengthening of coping mechanisms, and enhanced family support, enabling patients to manage stress and successfully complete their treatment.

3. The Relationship Between Family Support and Stress Levels Among Patients at the Pulmonary Clinic of RSI Sakinah Mojokerto

Based on the descriptive analysis in this study, the stress level variable among the 50 respondents yielded a mean of 18.40 and a median of 19.00, with a minimum value of 2 and a maximum of 35. This indicates that the average stress level score experienced by TB patients was 18.40, with a median score of 19. Meanwhile, the family support variable showed a mean of 39.40 and a median of 42.00, with a minimum value of 13 and a maximum of 60. These results indicate that the average family support score received by TB patients was 39.40, with a median of 42. Overall, these findings reveal that the respondents experienced varying levels of family support and stress while undergoing TB treatment at the Pulmonary Clinic of RSI Sakinah Mojokerto.

Cross-tabulation results reveal that the majority of respondents receiving good family support experienced mild stress (13 respondents, 56.5%). Among those receiving adequate family support, the majority experienced moderate stress (8 respondents, 80.0%). Meanwhile, the majority of respondents receiving poor family support experienced severe stress (11 respondents, 64.7%). These findings indicate a trend where better family support received by patients corresponds to lower levels of stress, whereas lower family support corresponds to higher levels of stress.

The Spearman Rank correlation test yielded a p-value of 0.000 ($p < 0.05$), indicating a significant relationship between family support and stress levels in TB patients. The correlation coefficient of 0.534 signifies a moderate, positive relationship, implying that better family support tends to be associated with lower stress levels. Thus, it can be

concluded that there is a significant relationship between family support and stress levels among TB patients at the Pulmonary Clinic of RSI Sakinah Mojokerto.

In this study, stress levels among pulmonary TB patients are influenced by family support, which serves as a primary source of support for individuals coping with chronic illness. Emotional, informational, and appraisal support, as well as instrumental assistance from the family, can enhance a patient's ability to cope with psychological stress, thereby lowering stress levels. Recent research also indicates a significant link between family support and improved psychological well-being. This suggests that the better the family support received, the more capable patients are of managing the stress associated with the prolonged treatment required for pulmonary TB. Such support fosters a sense of being cared for and alleviates feelings of isolation, while also strengthening the patient's motivation to adhere to the treatment regimen consistently until completion. Therefore, family support plays a vital role not only in physical aspects but also in maintaining the patient's psychological stability throughout the treatment process. (Jinlong, 2024).

According to the researchers, the study findings indicate that family support plays a crucial role in influencing the stress levels of TB patients. Patients receiving good family support tend to experience milder stress, whereas those with inadequate family support tend to experience higher levels of stress. The Spearman rank test results, showing a p-value of 0.000 ($p < 0.05$), further confirm a significant relationship between family support and stress levels in TB patients. The researchers argue that the emotional, informational, and appraisal support, as well as the practical assistance provided by the family, help patients cope with the various challenges encountered during the relatively long course of TB treatment. Such support fosters a sense of being cared for, instills the motivation to recover, and enables patients to better manage psychological pressure. Conversely, a lack of family support can lead to feelings of anxiety and distress, as well as reduced motivation to adhere to treatment. Therefore, family involvement is essential as a means to reduce stress levels among TB patients.

CONCLUSION

Based on a study of 50 pulmonary tuberculosis patients at the Pulmonary Clinic of RSI Sakinah Mojokerto, it can be concluded that the majority of respondents received good family support and experienced moderate stress levels. The analysis results indicate a significant relationship between family support and stress levels among pulmonary tuberculosis patients ($p\text{-value} = 0.000$; $p < 0.05$). The better the family support provided, the lower the stress level experienced by the patients.

Based on the study findings, families are expected to provide consistent support to TB patients during treatment to reduce stress levels and improve adherence to therapy. Nurses are expected to enhance their roles by providing education, involving families in the care process, and monitoring patients' stress levels to ensure appropriate interventions are implemented. Furthermore, future researchers are encouraged to expand upon this study by using larger sample sizes and different research designs, as well as by examining other factors influencing stress levels in TB patients, thereby yielding more comprehensive results.

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