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Analysis of the Role of Family Support in Treatment Compliance of Pulmonary Tuberculosis Clients

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Abstract: Pulmonary tuberculosis is a deadly infectious disease caused by *Mycobacterium tuberculosis*. Pulmonary tuberculosis is very easily resistant to drugs, so treating it takes a long time. In the process of treatment, the role of the family is needed as the closest unit to the patient to supervise. This study aimed to determine the relationship between the part of family support and adherence to treatment of pulmonary tuberculosis clients. The research design used was analytic descriptive research with a cross-sectional study approach. The sample in this study was 30 people, who were taken using the total sampling technique—data analysis using Chi-square on SPSS. The results showed that the role of a good family was 53.3% and less was 46.7%. The frequency of client compliance is 80% and 20% non-compliant. The results of the statistical test showed that the p-value was smaller than the α value, which meant that there was a relationship between the role of family support and adherence to treatment for pulmonary tuberculosis clients in the working area of the Wara Public Health Center, Palopo City, South Sulawesi Province, Indonesia. The long process of treating pulmonary TB will result in boredom and boredom in patients. Therefore, the family has an important role in monitoring and increasing the motivation of pulmonary TB patients to remain consistent in the treatment process. As the frontline in disease prevention and rehabilitation, health workers must always be active in providing health education to the community, especially to families of pulmonary TB sufferers, about the importance of family support in the patient's treatment process.
Keywords: Medication adherence; pulmonary tuberculosis; the role of family support.

INTRODUCTION

Tuberculosis is a disease caused by *Mycobacterium tuberculosis*. This aerobic bacterium can live mainly in the lungs or other body organs with a high partial pressure of oxygen. This bacterium is not resistant to ultraviolet. Therefore, transmission occurs at night. TB can occur in all age groups[1]. Tuberculosis (TB) is one of the deadliest diseases in the world. The World Health Organization (WHO) estimates that one-third of the world's population has been infected with *Mycobacterium tuberculosis*[2].

In developing countries, pulmonary TB deaths account for 25% of all preventable deaths. WHO reported in 2022 that more than 4100 people lose their lives due to TB every day, and almost 28 000 people fall ill with this preventable and curable disease. Global efforts to fight TB have saved an estimated 66 million lives since 2000. However,

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the COVID-19 pandemic has reversed years of progress in ending TB. For the first time in over a decade, TB deaths have increased in 2020[3]. In Indonesia, the Ministry of Health (Kemenkes) detected 717,941 tuberculosis (TB) cases in 2022. This number jumped 61.98% compared to the previous year, which amounted to 443,235 cases. Furthermore, the Ministry of Health noted as many as 608,947 TB cases in the country had been successfully treated in 2022. This number increased by 51.04% compared to 2021, with 403,168 points. It's just that the success rate of treating TB cases has decreased to 85% in 2022[4].

One of the successes of TB treatment is influenced by the compliance factor of TB sufferers undergoing treatment. According to Sackett, patient compliance is the extent to which the patient's behavior complies with the provisions given by health professionals[1]. One of the treatments carried out is the administration of anti-tuberculosis drugs, which must be taken within six to eight months—long-term treatment results in patients not being compliant in undergoing treatment. Presently, the prevalence of drug-resistant TB in Indonesia is quite high, reaching 1 to 2 percent of the prevalence of ordinary TB. When it starts to become resistant to drugs, TB requires a longer treatment time of up to 2 years, while the drugs are also harder and more expensive.

Research conducted by Simamora regarding non-compliance with pulmonary TB patients in terms of treatment found that incomplete treatment of pulmonary TB patients was caused by the role of family members who did not fully accompany the sufferer. As a result, the disease recurs and can be transmitted to other family members[5]. Regarding family support for adherence to anti-tuberculosis medication, Dhewi, Armiyati's research shows that family support can increase adherence to medication for pulmonary TB patients. Attention to treatment progress has the greatest influence on improving commitment to taking OAT in pulmonary patients[6].

Non-compliance with anti-tuberculosis drugs is a serious problem because it can cause germs to become resistant, relapse, and increase morbidity and mortality. Non-adherence to treatment also risks transmission to the community and impacts the failure of global TB eradication[7]. One of the factors that cause non-adherence in treatment is social factors, such as the absence of social support from the family and fellow sufferers (peers)[8]. Increasing support from family and also peers will be able to improve treatment adherence.

In supervising the regularity of taking medication for pulmonary TB sufferers, the important role of the family is needed as the closest unit to the patient. Part of the family is by family's duties in the health sector one of which is providing care to family members who are sick and unable to help themselves due to disabilities or too young age; for example, the family reminds/monitors the time to take medication, controls drug supplies, takes patients controls[9].

This study aims to determine the relationship between the role of family support and adherence to the treatment of pulmonary tuberculosis clients, as it is known that the part and support of the closest people, in this case, the family, is needed by pulmonary TB patients undergoing treatment[9]. Several previous studies have emphasized the role of family and family support in monitoring pulmonary TB patients taking medication separately[8,9]. Whereas in this study, the role of family support in adherence to treating pulmonary tuberculosis clients was seen in detail and depth.

MATERIALS AND METHODS

The research design used in this study is descriptive-analytic with a cross-sectional approach[10]. This research was conducted in the working area of the Wara Health Center in Palopo City, South Sulawesi Province, Indonesia. The population in this study were all pulmonary TB patients who were on outpatient status and visited the health center. The sample in this study was 30 people who were taken by total sampling[11].

The data collection tool used a questionnaire on the role of family support and compliance with pulmonary tuberculosis client medication. The family support role questionnaire was adapted from the theory of Friedman MM[12]. Univariate data analysis aims to identify sample characteristics, including age, sex, and education level, presented in Table 1. Meanwhile, the bivariate analysis seeks to analyze the relationship between the role of family support and the treatment of pulmonary tuberculosis clients using the Chi-square test on SPSS. This research complies with the research ethics stated in the Declaration of Helsinki (ethical clearance).

RESULTS AND DISCUSSION

Sociodemographic Characteristics

Respondent characteristics based on age in this study were mostly aged <50 years (63.3%) and ≥50 years (36.7%). The gender in this study was 17 males (56.7%) and 13 females (43.3%). While the level of education in this study, most of them had a high school education, as many as 19 people (63.3%).

Table 1. Characteristics of Respondents Based on Age, Gender and Education Level.

Characteristics of Respondents	Frequency	%
Age		
< 50 years	19	63.3
≥ 50 years	11	36.7
Gender		
Man	17	56.7
Woman	13	43.3
Education		
Elementary School	2	6.7
Junior High School	9	30
Senior High School	19	63.3

Analysis of the Relationship Between Family Roles and Client Medication Adherence

The family role variable is associated with adherence to treatment for pulmonary tuberculosis clients, as seen in Table 2.

Table 2. Analysis of the Relationship between Family Roles and Client Medication Adherence

Family Support Role	Medication Adherence				Amount	%	(p)
	Obey		Not obey				
	F	%	F	%			
Good	15	50	1	3.33	16	53.3	0.042*
Not enough	9	30	5	16.7	14	46.7	
Total	24	80	6	20	30	100	

*Chi-square test (α=0.05)

Table 2 shows that 15 respondents (50%) had a good family role and medication adherence, and one person (3.33%) had a good family role and was not compliant with treatment. Meanwhile, nine respondents (30%) had a less family role and were not compliant with treatment, and five respondents (16.7%) had a less family role and were disobedient to treatment. The results of the Chi-Square statistical test obtained p = 0.042 < α (0.05), which means that Ha is accepted, which means that there is a relationship between the role of family support and compliance with pulmonary tuberculosis client medication.

The role is a behavior expected by other people towards someone according to their position in a system[13]. The part of the family describes interpersonal relationships, traits, and activities related to individuals in certain situations and conditions. The role of the individual in the family is based on the expectations and behavior patterns of the family, group, and society.

Treating pulmonary TB requires the active role of sufferers and families as a support system. This is because treating pulmonary TB requires a long period, and sufferers must take medication without interruption. During treatment, the patient must be disciplined in taking the drug and routinely carry out controls to the doctor until he is considered completely recovered. If this is not done properly, the pulmonary TB treatment process will be in vain because the bacteria will become resistant and develop into MDR (Multi Drug Resistance)[14].

The results showed that 15 respondents (50%) had good family roles and adherence to medication adherence, and one person (3.33%) had good family roles and non-adherent medication adherence. Meanwhile, nine people (30%) had fewer family roles, five people (16.7%) had fewer family roles, and five people (16.7%) had fewer family roles (Table 2).

The results of statistical analysis using the Chi-square test showed that the value of p (0.042) > 0.05, which means there is a relationship between the role of family support and compliance with pulmonary tuberculosis client medication (table 2). This study's results align with research conducted by Lestari, which states that there is a very strong relationship between the family's role and adherence to medication in tuberculosis clients[9]. This research is also in line with Nurhidayati's research, which said that there was a relationship between the role of the family and adherence to taking medication in patients with pulmonary tuberculosis in Kawedanan Pedan with a p-value = 0.000 with Kendall Tau's statistic[15].

According to Lenny, in monitoring the regularity of taking medication for pulmonary TB patients, the important role of the family is needed as the closest unit to the patient. The part of a family is the family's duties in the health sector, one of which is providing

care to family members who are sick and unable to help themselves due to disabilities or too young age; for example, the family reminds/monitors the time to take medicine, controls drug supplies, takes patients controls[13].

The role of the family as a supervisor of drug swallowing is very much needed in the successful treatment of pulmonary TB patients because it can reduce the risk of failure in treatment and help increase the enthusiasm and confidence of sufferers to recover[16]. The family's ability to provide health care affects the health status of the family. This shows that carrying out the role of a drug-swallowing supervisor requires real knowledge and commitment so that the treatment of family members who have TB can obtain successful treatment[8].

In addition to the family positioning its role in supervising and controlling compliance with TB patients in consuming drugs. Families are also required to be able to provide adherence support in taking medication. Herawati, in her research, said there was a relationship between family support and medication adherence in pulmonary TB patients (p-value 0.007)[7]. Family support is important in encouraging TB patients' self-efficacy in undergoing treatment. The benefits of extended family support are felt by each subject when experiencing an event to increase motivation and self-confidence to rise again from adversity due to the suffering experienced[17].

Family support is needed as a reinforcing factor for action and provides support (enabling) when the patient's self-efficacy decreases during treatment. In his research, Hasna said that family/group support had a significant effect on adherence to taking medication for pulmonary TB patients[8]. Nursalam said there are four types of support: emotional support, appreciation support, instrumental support, and information support[17,18]. Emotional support in the form of motivation and appreciation in the form of self-esteem, expressions of empathy, care, and concern for patients is provided by the family as the most trusted party by patients[12].

Instrumental support in the form of direct and real assistance provided by the family to the patient, for example, medical expenses or all the physical needs needed by the patient. In comparison, information support is in the form of providing information related to the treatment process. Information support from the family also plays an important role in the method of treating TB patients. TB clients who get information support from the family will suppress stressors and provide positive suggestions about the treatment[19].

The results of this study can contribute to the world of health, including knowledge about the importance of family support in the treatment process for pulmonary TB patients. Obedience and adherence of pulmonary TB patients in taking medication will be the key to success in the treatment process. Health cadres at the Puskesmas are expected to routinely conduct health counseling to families and pulmonary TB patients so that patients will feel cared for and have more confidence in undergoing the treatment process.

The limitation of this study is that the number of respondents, amounting to 30 people, is certainly not enough to describe the real situation. In the data collection process, the information provided by respondents through questionnaires sometimes did not show the actual opinions of respondents; this happened because sometimes different thoughts, assumptions, and understandings were different for each respondent, as well as other factors such as the honesty factor in filling out the respondents' opinions in the questionnaire.

CONCLUSION

The results of the statistical test showed that the ρ value was smaller than the α value, which meant that there was a relationship between the role of family support and adherence to treatment for pulmonary tuberculosis clients in the working area of the Wara Public Health Center, Palopo City, South Sulawesi Province, Indonesia. Family support and adherence of pulmonary TB patients in taking medication will be the key to success in the treatment process. It is hoped that health workers and cadres at the Puskesmas will routinely conduct health education to families and pulmonary TB patients so that patients will feel cared for and be more confident in undergoing the treatment process.

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CONFLICT OF INTEREST

All authors declare that they have no conflict of interest in this research.

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