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Research Article

Relationship of Family Support to Medication Compliance in Pulmonary Tuberculosis Patients

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Abstract

Aims: Tuberculosis (TB) is a disease caused by infection with Mycobacterium Tuberculosis. According to World Health Organization (WHO) figures, there were 10.4 million instances of tuberculosis events in 2016 (8.8 million-12 million), which is comparable to 120 cases per 100,000 population. India, Indonesia, China, the Philippines, and Pakistan have the highest incidence of instances. Health Status According to the Ministry of Health of the Republic of Indonesia, West Java province had the highest number of TB infections in Indonesia in 2016, with 52,328 cases.
Methods: This study's design is descriptive analytic using a cross-sectional approach. In the TB DOTS poly space, 71 patients with pulmonary tuberculosis were sampled. Purposive sampling procedures are used to obtain samples. Primary data collected directly from respondents / informants through a questionnaire are used in research data collection methodologies.Univariate and bivariate (Chi-square) analyses were utilized, with a significance limit of Alpa = 0.05.
Results: According to the findings of this study, there is a strong association between family support and medication adherence in patients with pulmonary tuberculosis (P = 0.000).
Conclusion: In the DOTS Polyclinic Hospital, there is a relationship between family support and medication adherence among the three factors.

Keywords:
Family Support, Compliance with medication, Tuberculosis

INTRODUCTION

The number of new cases of tuberculosis (TB) and the number of deaths caused by TB have both increased in recent years. Mycobacterium tuberculosis infection results in tuberculosis. Reference: (1). According to the WHO, in 2016, there were 10.4 million new cases of tuberculosis (8.8 million-12 million), or 120 new cases for every 100,000 people. Cases are most common in India, Indonesia, China, the Philippines, and Pakistan. The Southeast Asia Region, of which Indonesia is a part, accounted for 45% of the predicted TB cases in 2016, while Africa accounted for 25%. There are three markers that the WHO uses to determine which nations have a high TB burden: TBC, TBC/HIV, and MDR-TB. The list consists of 48 different countries. A single nation may appear on two or perhaps all three of these classifications. Indonesia is one of 14 countries that make up the HBC for these 3 metrics. This indicates that there are significant challenges in Indonesia in addressing TB (2).

The Data and Information Information Center of the Ministry of Health in the Republic of Indonesia reports that out of a total of 52,328 TB cases in Indonesia, 29,429 were male and 22,899 were female in the province of West Java. Central Java follows

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with 28,842 total instances. Gorontalo had the third-highest number of cases, at 1,151, after DKI Jakarta (24,775) and North Sumatra (17,798). According to the Ministry of Health's 2018 report, DKI Jakarta has the third-highest number of TB cases in Indonesia. The administration of DKI Jakarta is placing an emphasis on the strategy of the Directly Observed Treatment Shortcourse (DOTS) program in an effort to curb the spread of pulmonary TB in the region. The Government has made it clear that they are pleased with the program's provision of all anti-TB medications. Long-term sickness, disability, and mortality can result from tuberculosis if the condition is not treated. Untreated pulmonary tuberculosis results in a 50% mortality rate within 5 years, with most cases being fatal within 18 months. Those who do not get treatment for tuberculosis risk infecting their loved ones, especially their children, and are limited in their social interactions. To help patients take their medications as prescribed, DOTS recommends having a Drug Swallowing Supervisor (PMO) oversee the application of short-term OAT recommendations. (3).

In order to prevent the development of immunity to all anti-tuberculosis drugs (OAT), especially refamicin, it is essential that patients take the drug for at least two months straight during the intensive phase of tuberculosis treatment. (4) The closest person to a victim is their family, and the comfort they provide is inseparable. When loved ones take an interest in and care for a sick family member, the patient experiences a sense of comfort and security that encourages them to take the family's advice on how to best manage the illness (5). The four categories of familial support that (6) describe are as follows: First, there is emotional support, which entails showing relatives (TB patients) that they are loved and trusted. Second, there is instrumental support, which entails providing tangible aid like cash or assisting with schoolwork. When we talk about providing instrumental help, we are talking about giving people access to resources that can be used to address real-world issues. Third, informational backing, which includes guidance, suggestions, suggestions, directions, and information provision. The family acts as a source of and conduit for global knowledge. The fourth sort of support is esteem support, which manifests as words of praise, words of encouragement, or displays of agreement with another person's thoughts or emotions (7).

In September 2019, 87 people were seen, in October 2019, 89 people were seen, and in November 2019, as many as 91 people were seen for pulmonary TB (Pademangan Hospital medical record, 2020). This is according to preliminary research on pulmonary TB conducted in December 2019 at the DOTS Polyclinic at Pademangan Hospital. As a result of the above, in 2020 scientists at the DOTS Polyclinic at Pademangan Hospital sought to investigate "The relationship between family support and adherence to taking medication in pulmonary TB patients."

METHODS

This study uses a descriptive analytic Cross-Sectional design. Subjects included 71 TB DOTS poly space patients diagnosed with pulmonary TB. Methods for collecting samples strategically chosen for study. Primary data gathering methods in research typically involve administering a questionnaire to a sample of interested parties. Computerized data management with SPSS 25.0. Univariate and bivariate (Chi-square) tests with a 0.05 alpha level of significance were performed.

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RESULTS

The results of a study on all patients that visited the TB DOTS Polyclinic at Pademangan Hospital in North Jakarta in 2020.

Univariate analysis

Medication Compliance

Table 1. Frequency Distribution of Medication Compliance in Pulmonary TB Patients at the DOTS Polyclinic at Pademangan Hospital

Obedience Take medicine	Frequency	Percentage
Obey	28	39,4%
Not Obet	43	60,6%
Total	**71**	**100.0%**

According to table 1 of the frequency distribution of respondents at the DOTS Polyclinic at Pademangan Hospital, out of a total of 71 respondents, 28 (39.4%) were adherent to taking pulmonary TB medication, while the number of non-adherents was higher at 43 (60.6%).

Family support

Table 2. Frequency Distribution of Family Support in Pulmonary TB Patients at the DOTS Polyclinic at Pademangan Hospital, Jakarta

Family Support	Frequency	Percentage
Good	25	35,2%
Not Good	46	64,8%
Total	**71**	**100%**

According to table 2 based on the responses of patients at Pademangan Hospital's DOTS Polyclinic, we know that only 35.2% of patients had good family support for taking their pulmonary TB medicine, while 64.8%, or 46 patients, did not.

Emotional Support and Appreciation

Table 3. Frequency Distribution of Emotional Support and Rewards in Pulmonary TB Patients at the DOTS Polyclinic at Pademangan Hospital, Jakarta

Emotional Support	Frequency	Percentage
Good	33	46,5%
Not Good	38	53,5%
Total	**71**	**100%**

According to table 3 of the frequency distribution of respondents in the DOTS Polyclinic at Pademangan Hospital, 46.5% of the 71 respondents reported receiving some level of emotional support and appreciation from family members or friends while taking effective pulmonary tuberculosis medication. There were 38 people who answered that they were taking medication for pulmonary TB.

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Instrumental Support

Table 4. Frequency Distribution of Instrumental Support in Pulmonary TB Patients at the DOTS Polyclinic at Pademangan Hospital, Jakarta

Instrumental Support	Frequency	Percentage
Good	31	43,7%
Not Good	40	56,3%
Total	**71**	**100%**

Table 4 shows the frequency distribution of respondents in the DOTS Polyclinic at Pademangan Hospital. Of the 71 respondents, 43.7% had family support in the form of instrumental support in taking good pulmonary TB medication, while 16.7% did not. that is 40 people that answered (56.3%).

Information Support

Table 5. Frequency Distribution of Information Support for Pulmonary TB Patients at the DOTS Polyclinic at Pademangan Hospital, Jakarta

Information Support	Frequency	Percentage
Good	31	43,7%
Not Good	40	56,3%
Total	**71**	**100%**

According to table 5 of the frequency distribution of respondents in the DOTS Polyclinic at Pademangan Hospital, out of 71 respondents, 31 (43.7%) had family support in the form of information support in taking good pulmonary TB medication, while 40 (56.3%), had no such support.

Bivariate Analysis

Table 6. Relationship of Family Support to Medication Compliance in Pulmonary TB Patients at the DOTS Polyclinic at Pademangan Hospital

Family Support	Medication Adherence to Pulmonary TB patient			P Value	OR (95%CI)
	Obey	Not Obey	Total		
	F (%)	F (%)	F (%)		
Good	25 (100%)	0 (0,0%)	25 (100%)	0,000	0,65 (0,022-0,195)
Not Good	3 (6,5%)	43 (93,5%)	46 (100%)		
Total	28 (39,4%)	43 (60,6%)	71 (100%)		

Table 6 shows that the 25 respondents with the most family support were the most likely to take their pulmonary TB medication as prescribed, while the 46 respondents with the least family support were the most likely to fail to do so. consisting of 43 (or 93.50%) scheduled participants. According to the cross-tabulation results between family support and adherence to taking pulmonary TB medication, Ho was rejected and Ha was accepted, indicating that there is a significant relationship between family support and medication adherence in TB patients. The Chi-square statistical test obtained a P value of 0.000 (P Value 0.05).

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Table 7. Relationship between Emotional Support and Appreciation for Medication Compliance in Pulmonary TB Patients at the DOTS Polyclinic at Pademangan Hospital

Emotional Support and Appreciation	Medication Adherence to Pulmonary TB patient			P Value	OR (95%CI)
	Obey	Not Obey	Total		
	F (%)	F (%)	F (%)		
Good	26 (78,8%)	7 (21,2%)	33 (100%)	0,000	66,8 (12,8-348,2)
Not Good	2 (5,3%)	36 (94,7%)	38 (100%)		
Total	28 (39,4%)	43 (60,6%)	71 (100%)		

Table 7 shows that among the 33 respondents who reported having family support—defined as both emotional support and good appreciation—26 (78.8%) were taking their pulmonary TB medication as prescribed, while among the 38 respondents who reported having neither type of support, 36 (94.7% of the total) did not. A cross-tabulation of emotional support and appreciation with adherence to taking pulmonary TB medication yielded a P value of 0.000 (P Value 0.05), rejecting the null hypothesis (Ho) in favor of the alternative (Ha) and indicating a statistically significant relationship between emotional support and reward and adherence to taking pulmonary TB medication.

Table 8. Relationship of Instrumental Support to Medication Adherence in Pulmonary TB Patients at the DOTS Polyclinic at Pademangan Hospital

Instrumental Support	Medication Adherence to Pulmonary TB patient			P Value	OR (95%CI)
	Obey	Not Obey	Total		
	F (%)	F (%)	F (%)		
Good	25 (80,6%)	6 (19,4%)	31 (100%)	0,000	51,3 (11,7-224,8)
Not Good	3 (7,5%)	37 (92,5%)	40 (100%)		
Total	43 (60,6%)	28 (39,4%)	71 (100%)		

Twenty-five of the thirty-one respondents (80.6% of the total) who reported having good instrumental support from family were the most compliant with taking their pulmonary TB medication as prescribed (see Table 8 above), whereas the remaining forty respondents were noncompliant. 37 out of 38 respondents (92.5%) completed their course of pulmonary TB treatment. The cross-tabulation between the two variables yielded a P value of 0.000 (P Value 0.05) from the Chi-square statistical test, indicating a significant relationship between instrumental support and adherence to taking pulmonary TB medication.

Table 9 Relationship of Family Support to Medication Compliance in Pulmonary TB Patients at the DOTS Polyclinic at Pademangan Hospital

Information Support	Medication Adherence to Pulmonary TB patient			P Value	OR (95%CI)
	Obey	Not Obey	Total		
	F (%)	F (%)	F (%)		
Good	25 (80,6%)	6 (19,4%)	31 (100%)	0,000	51,3 (11,7-224,8)
Not Good	3 (7,5%)	37 (92,5%)	40 (100%)		
Total	28 (39,4%)	43 (60,6%)	71 (100%)		

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Table 9 shows that among the 40 respondents, 37 (82.5%) were the most disobedient when it came to taking their pulmonary TB medication on time, indicating that those with family support, i.e. good information support, were the most likely to adhere to their treatment regimen. According to the cross-tabulation between the two variables, the results of the Chi-square statistical test obtained a P value of 0.000 (P Value 0.05), ruling out the null hypothesis Ho and accepting the alternative hypothesis Ha, which states that there is a significant relationship between information support and adherence to taking pulmonary TB medication.

DISCUSSION

Frequency Distribution of Medication Compliance in Pulmonary TB Patients at Pademangan Hospital, Jakarta

Based on the questionnaire responses, we know that out of a total of 71 people, 28 (or 39.4%) are strict adherents to taking their medications as prescribed, whereas 43 (or 60.6%) are not. Twenty of 45 respondents (55.6%) adhered to taking their medication as prescribed by their doctors in the IRINA C5 room at Prof.DR.R.D.Kandou Hospital in Manado, while the remaining 25 (66.7%) did not. These findings are consistent with those of a study by (8) with the same title. In order to prevent developing immunity to all Anti-Tuberculosis Drugs (OAT), especially refamicin, patients in the intensive phase of tuberculosis treatment are advised to take their medication continuously for at least two months. These results are consistent with this theory. The hypothesis of the study is that people understate the importance of regular medication use. This is supported by the fact that three of the responders have post-secondary education and are following the guidelines for their pulmonary TB treatment.

Frequency Distribution of Relationships with Family Support to Compliance with Taking Medication in Pulmonary TB Patients at Pademangan Hospital, North Jakarta in January 2020

It was determined from the questionnaire results that 25 respondents had good family support and adhered to taking their pulmonary TB medication on schedule, for a total of 25 respondents (100%), while 46 respondents had poor family support and did not adhere to taking their pulmonary TB medication on schedule, for a total of 46 respondents (93.5%). The Chi-square test findings show that H0 cannot be accepted, with a P Value of 0.000 (P Value 0.05). When patients with pulmonary tuberculosis at Pademangan Hospital in January 2020 have family support, they are more likely to take their medicine as prescribed. According to the same title study by (9), the frequency distribution of family support relationships on medication adherence in pulmonary TB patients at the Ranotana Weru Health Center, Manado shows that out of 66 respondents, only 17 (25.8%) had good family support and as many as 49 (74.2%) had poor family support. The results of the Chi-square test obtained a value (0.008), and the results of the contingency coefficacy matrix showed that family support was associated with medication adherence (P = 0.000). These findings corroborated those of previous research by (10), which found that the majority of patients at the Umbulharjo I Public Health Center adhered to their prescribed medications (77.3%).

Findings from this study are consistent with (11) theory that a person's family is the closest and most important source of support at a difficult time. Patients are more likely to follow their families' advice for disease management if they feel loved and cared for by them, and they report higher levels of happiness and calmness as a result of the family's attention and support. According to the study's authors, patients' failure to take their medications as prescribed was associated with a lack of family support. The researcher hypothesizes that this is due to the fact that the majority of respondents have employment that need

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them to spend more time away from home, reducing the amount of time spent together as a family and leading to less-than-ideal communication. Effective family communication makes it simple to understand emotional needs, appreciation, support, and patient information, which may explain why most responders in the study either didn't know or didn't say who the patient was infected with. As a result, patients have less say in their care and families take on a more paternalistic role.

The results of the cross-tabulation between family support are: emotional support and appreciation, instrumental support and information support with adherence to taking pulmonary TB medication. Theoretically, researchers divide family support into several indicators, namely:

1. **Emotional Support and Appreciation for Medication Compliance in Pulmonary TB Patients**

   Questionnaire results from 71 respondents, out of 33 respondents with family support, namely emotional support and good appreciation and adherence to taking pulmonary TB medication according to the schedule, namely 26 respondents (78.8%), while from 38 respondents with less emotional support and appreciation and 36 respondents (94.7%) did not comply with taking pulmonary TB medication according to the schedule. Based on the results of the Chi-quare statistical test, the P Value is 0.000 (P Value <0.05), which means that H0 is rejected. If the hypothesis put out by Ha is correct, then in January of 2020, patients with pulmonary tuberculosis at Pademangan Hospital will be more likely to take their medication as prescribed. In accordance with the research findings, 18 respondents (27%) have good emotional support and 48 respondents (73%) lack emotional support with the acquisition of bivariate analysis, which is different from the title but uses the same variables. Patients at the RSJ who receive positive reinforcement and acknowledgement are more likely to take their medications as prescribed when the p-value is less than 0.05 (Ha is accepted). Polyclinic of Prof. Dr. Muhammad Ildream at Medan.

   Findings from this study agree with those from previous research by (6). Love, caring, and trust expressed to loved ones of TB patients constitute emotional support. Support for emotional mastery and appreciation comes when one receives positive expressions of appreciation for themselves or for the efforts of others, encouragement, or agreement with the thoughts and feelings of others. The researchers hypothesize that subpar family communication is to blame for the lack of emotional support. Lack of patient autonomy in treatment decisions is influenced by the fact that decision making is still dominated by the family; if there is insufficient or ineffective communication within the family, members may fail to recognize the emotional needs of pulmonary TB patients.

2. **Instrumental Support for Medication Compliance in Pulmonary TB Patients**

   Questionnaire results 71 respondents, out of 31 respondents with family support, namely good instrumental support and adherence to taking pulmonary TB medication according to the schedule, namely 25 respondents (80.6%), while of the 40 respondents with insufficient instrumental support and not adhering to taking TB medication lungs according to schedule as many as 37 respondents (92.5%). The Chi-square test findings show that H0 cannot be accepted, with a P Value of 0.000 (P Value 0.05). As of January 2020 at Pademangan Hospital, if patients with pulmonary tuberculosis are admitted for treatment, there will be a correlation between instrumental support and drug adherence. The bivariate Pvalue analysis indicates a link between instrumental support and medication adherence, with

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8 respondents (11%) reporting high levels of support and 58 respondents (89%) reporting low levels of support. The study's conclusions are similar to those of a study by (12), despite differences in the study's title and the variables used. The Medan polyclinic run by Prof. Dr. Muhammad Ildream.

These results lend credence to (13) theory that tuberculosis patients, especially those who do not take their pulmonary TB medication as prescribed, require instrumental support. Scientists speculate that families aren't bringing their patients in for health and income checks, or that they can't afford to, due to the families' low socioeconomic level and money.

3. **Information Support for Medication Compliance in Pulmonary TB Patients**

The survey resulted in 71 responses; among the 31 who reported having family support, 25 (80.6%) reported having good information support and adhering to taking pulmonary TB medication on schedule, while 37 (92%) reported having insufficient information support and not adhering to taking TB medication in the lungs on schedule. The Chi-square test findings show that H0 cannot be accepted, with a P Value of 0.000 (P Value 0.05). As of January 2020 at Pademangan Hospital, if patients with pulmonary tuberculosis are admitted for treatment, there will be a correlation between instrumental support and drug adherence. However, the research factors are consistent with the study of (14), and the researcher's solid information support at 45% with the acquisition of bivariate analysis means that the study's results differ from the title. Patients at the Health Center in the Ciracas sub-district are more likely to take their medications as prescribed if they have access to helpful information about doing so (H1; p=0.011, P0.05).

The study's findings corroborate (15) theory of information support, wherein advise, suggestions, suggestions, instructions, and supplying information all play a role. Information about the world is gathered and shared within the family. The researchers use the assumption that families only hear about health-related topics from professionals, rather than from other sources such as the media, neighbors, and friends. The family only receives little knowledge on the patient's health if they are only seldom exposed to the aforementioned sources of information. Most survey respondents have only completed elementary school, which may affect how well they are able to receive and record information from their family.

CONCLUSION

The results showed that the frequency of family support had a 100% effect on adherence to taking Anti-Tuberculosis Medicine. The management of adherence to taking this medicine was well received by most of the research subjects.

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