

The Role of The Family as Supervisors of Tuberculosis Medication Adherence

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Abstract

Effective TB treatment involves consistent and timely administration of anti-TB drugs over a sufficiently long period. However, the problem of non-compliance with treatment is common and can result in treatment failure, spread of infection, and drug resistance. This study aims to examine the role of the family as a supervisor in monitoring medication adherence in TB patients. The literature search process in this literature review uses several databases, namely Google Scholar, Science Direct, and PubMed, with the publication year of 2018-2023. The results of this study are expected to provide better insight into the role of the family in supervising medication adherence in TB patients. With a better understanding of the factors influencing family roles, more effective steps can be taken to improve adherence to TB treatment. Our advice as writers is that anyone appointed as a supervisor of swallowing medicine, both nurses and patients' families, must carry out their duties in supervising patients taking medicine. This is because TB is a severe infectious disease, and the way to overcome it is by taking medication regularly and on time. Therefore, the role of drug-swallowing supervisors is needed in this case.

Keywords: Supervisor of taking medication, Family Support, Patient Compliance, Tuberculosis, Agriculture

Introduction

Agronursing is the management of nursing care and nursing service management for clients, both healthy and sick, which is holistic and comprehensive

throughout the human life cycle in the agricultural scope¹. Agriculture is a place or principal for carrying out human activities that seek to obtain results from agriculture. The agricultural sector includes agriculture, plantations, fisheries, animal husbandry, and agro-industry². Agronursing has a crucial role in handling health problems and maintaining the health of farmers³. At the same time, farmers are jobs that utilize biological resources carried out by humans to produce food, raw materials, industrial materials, and energy sources, as well as efforts to manage their environment. Farmers are a human activity in which there are farming, animal husbandry, fisheries, and forestry activities⁴.

Farmers in Indonesia are at risk of various health problems, including psychosocial factors that can impact farmers' health problems, such as stress caused by workload⁵. Farmers often ignore the lack of rest and energy needs, so many farmers experience a decrease in the immune system in their bodies. One of the diseases suffered by many farmers in Indonesia is tuberculosis. In Indonesia, the highest number of cases is found on the island of Java, and this is due to the relatively high population density compared to other islands. The achievement of treatment progress and the discovery of new cases in East Java province in 2020 was ranked 8th with Treatment Coverage (TC) of 43% of the target of 80%, and this figure is a reminder to all stakeholders that there is still a lot of work to be done⁶.

Tuberculosis is a disease caused by infection with the bacterium *Mycobacterium tuberculosis*. It is an infectious disease that poses complex problems and extends to social, economic, cultural, security, and national security problems⁷. Tuberculosis usually infects the lungs (pulmonary TB) and can attack other body organs (extrapulmonary TB)⁸. The success of tuberculosis treatment is influenced by the patient's compliance with the treatment program⁹.

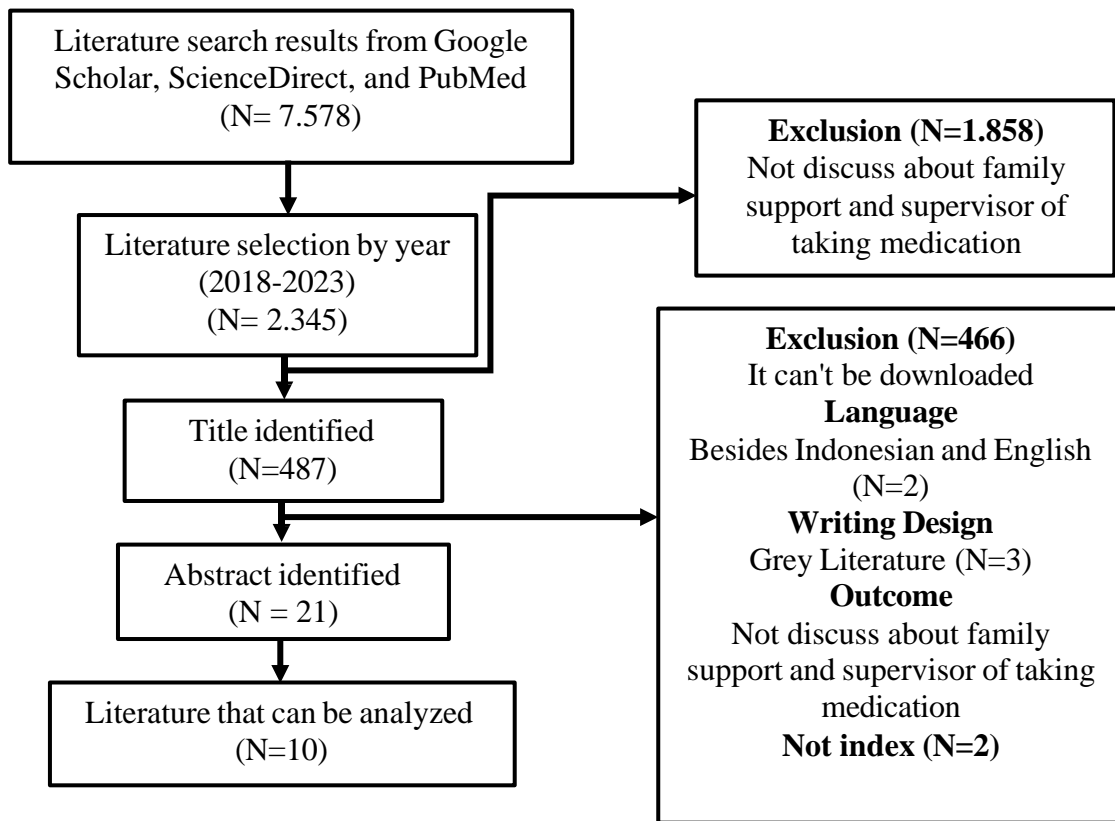
The supervisor of taking medication is someone whose job is to monitor and control compliance with patients with routine and long-term treatment programs such as tuberculosis. Family as supervisor of taking medication plays a role in providing motivation or encouragement so that patients are motivated to undergo treatment according to the rules until they recover. The role given is in the form of moral support and hope of recovery for patients¹⁰. If returned with tuberculosis cases, then this supervisor of taking medication is needed by them because as an effort to cure,

awareness is required related to early detection with health checks and also adherence to taking medication when diagnosed with tuberculosis, which this factor is often not understood by the community, especially farmers, this is related to the high working hours as well as the lack of knowledge and low education of some farmers in Indonesia.

Method

The literature search process in this literature review uses several databases, namely Google Scholar, Science Direct, and PubMed, with the publication year of 2018-2023. The search was carried out using several keywords in Indonesian and English. A literature search in Indonesian uses the keywords "Family Support," "Supervisor of taking medication," "Patient Compliance Level," OR " Pulmonary Tuberculosis." Meanwhile, in searching for literature in English, use the keywords "Family Support" OR "Supervisor of taking medication" OR "Agriculture."

The article search process begins by identifying the keywords that have been found. At the identification stage, 7.578 articles match the keywords. The next step is screening by selecting the title of the article and the year of publication that fits the research criteria. At the screening stage, 2.345 articles matched the research criteria. After that, articles were screened according to inclusion and exclusion research articles. At this stage, four hundred eighty-seven reports were obtained using the inclusion and exclusion research articles. The next step is to filter articles against abstracts to focus on themes that match the criteria for research articles. In this step, 21 articles were obtained that match the research criteria. Then, from the 21 articles selected, re-selected the language, research design, outcome, and several other measures that have been determined. Finally, ten articles match the research criteria and can be continued at the analysis stage.



Results

The occurrence of relapse of TB can cause new problems because it increases the possibility of anti-tuberculosis drug resistance. The danger of drug resistance is that TB disease can return with stronger germs, making it more challenging to treat, treatment costs are more expensive, and the success rate of treatment is lower¹¹. Family support as drug swallowing supervisors (PMO) is needed in providing support and motivation so that sufferers can complete routine treatment and comply with the procedure for taking pulmonary tuberculosis medication.

A supervisor of drug swallowing (PMO) is an officer who guarantees the regularity of treatment so that patients recover quickly and have successful treatment. Therefore, the Ministry of Health recommends that the requirements to become a PMO are to be known and approved by the patient and by health workers; apart from that, the sufferer must be respected, live near the sufferer, and be willing to help voluntarily on the other hand, the PMO must understand the signs and symptoms of the disease including how to transmission, treatment, and care.

Based on research conducted by Fitriani and Ayuningtyas (2019), the results showed that there was a relationship between the role of the family as supervisors for taking medication and the level of compliance of pulmonary TB patients with treatment programs in the Serpong 1 Tangsel Health Center area. The study also showed that 45 pulmonary TB patients who adhered to the treatment program had good support from their families. In addition, in the same survey, 17 pulmonary TB patients were not compliant with treatment programs and did not receive support from their families¹². In addition, it was also explained in the research conducted by Sriyanah et al. (2022) that there is a relationship between attitudes and knowledge with family support as supervisors for taking medication in patients with pulmonary tuberculosis in the Working Area of the Bontoa Health Center in Maros Regency¹³. Fitriani and ayuningtyas (2019) stated that the role of the family in motivating pulmonary TB patients had a very positive impact on the treatment of pulmonary TB patients. Psychologically, the closeness of the inner relationship between family members makes support in the form of hope for recovery, and the family's desire to see the patient return to activity makes this a motivation for the patient¹².

Table 1. Result of Literature Review

No.	Author/Year	Article Title/Journal Name/Volume	Sample	Method	Result
1.	Sriyanah, N., Efendi, H. Ilyas and Nadira /2022	Relationship of Knowledge, Attitudes with Family Support as Monitoring Compliance with Taking Medication in Patients with Pulmonary Tuberculosis /An Idea Health Journal /Vol.2(02): 87-92.	The population in this study was the families of patients as supervisors of taking drugs, as many as 44 people, and the sample who became drug supervisors (PMO) amounted to 35 people.	This study used analytical research with a cross-sectional study approach to all supervisors taking medication for TB sufferers in the Bontoa Health Center, Maros Regency working area.	The role of the family as PMO of pulmonary TB patients is vital. This research found a relationship between knowledge and attitudes with family support as supervisors for taking medication in patients with pulmonary tuberculosis in the Working Area of the Bontoa Health Center, Maros Regency.
2.	Ibrahim and S. Purwiningsih /2022	The Role of the Family as Supervisors for Taking Medicine in Patients Suffering	Fifty-one respondents suffered from TB at the Gimpu Health Center.	Descriptive research, which only describes the role of the family as PMO in	Based on the results of this study, it was found that most families had a good role as PMO, which could be seen from the

		from Tuberculosis in the Work Area of the Gimpu Health Center / Jurnal Ilmiah Kesmas IJ (Indonesia Jaya) /Vol.22(2): 68-73.	patients suffering from TB	attitude of the respondents who did not let the patient become lazy to take medication, did not allow the patient to provide his expenses, did not let the patient disobey taking medication, and constantly reminded the patient to keep doing treatment until it's finished.	
3.	Aris, A., D. Nurafifah and N. Sagita /2021	The Relationship between the Role of the Family as Supervisor for Drug Swallowing (PMO) and Patient Perceptions with Compliance with Taking Medicine for TB Sufferers at Deket Health Centers Lamongan Regency in 2020/Jurnal Kesehatan /Vol.10(1): 1-14.	25 patients who were treated at the TB polyclinic at the Deket Health Center Lamongan	This study used population correlation analysis in all patients treated at the TB poly.	From the results of the study, it was found that there was a relationship between the role of the family as supervisors in swallowing medication and adherence to taking medication in TB patients, and there was no relationship between patient perceptions and adherence to taking medication in TB sufferers at the Health Center near Lamongan.
4.	Tahun, O. D., E. Sundari and Yulianti /2021	The Effectiveness of the Family's Role as a Supervisor in Compliance with Taking Anti-Tuberculosis Medications /Jurnal Antara Keperawatan/Vol.4 (1): 46-51.	All patients visiting the TB DOTS Poly Clinic at the Jakarta Harbor Hospital from December 2019 to March 2020	The method used is analytic with a cross-sectional approach. Then, the primary data collection method uses a questionnaire.	Research shows a relationship between the role of the family as PMO and adherence to taking Anti Tuberculosis Drugs (OAT), as evidenced by the results of statistical tests with a p-value of 0.038. The role of the family as PMO showed 74 results, which were associated with 61 respondents (82.4%) obedient subjects.
5.	Suryana, I. and Nurhayati/ 2021	Relationship Between the Role of Drug Swallowing Supervisor (PMO)	TB patients with drug swallowing supervisors at the Setu II District Health Center.	This type of research uses descriptive analytics with a cross-sectional	There is a relationship between the role of a drug swallowing supervisor (PMO) and adherence to taking

		Against Compliance with Taking Medicine in Patients with Pulmonary TB/Indonesian Journal of Nursing Sciences and Practices/ Vol.4 (2): 93–98.	Respondents were 30 people who were taken by total sampling technique.	approach.	pulmonary tuberculosis medication. The active Drug Swallowing Supervisor (PMO) has 13 times the chance to comply with taking medication compared to those who are inactive.
6.	Hohedu, R. Y., O. A. Blandina and P. N. Fitria/2021	Relationship Of Family Support as PMO with TBC Patients Medication Adhere in Pitu Health Center /Jurnal Kepeawatan dan Kesehatan Program Studi Keperawatan/ Vol.1 (1): 23-28	The family members of TB patients are 55 people.	Quantitative method with crosssectional approach, data analysis techniques using descriptive and correlation statistics.	Based on the study's results, family support as a supervisor for taking medication correlates with the level of adherence to taking medication in TB patients.
7.	Pratiwi, Q. A., L. Sulistyorini and D. Kurniawati /2021	The Relationship of the Family Role as a Medication Supervisor with Adherence in Children with Pulmonary Tuberculosis in Jember City Area /Nursing and Health Sciences Journal/ Vol.1 (2): 154-158	Thirty-two families of pediatric pulmonary TB patients.	This research method is descriptive through internal evaluation indicators and external evaluation indicators. The research design used is a cross-sectional research type.	There is a relationship between the role of the family as supervisors of taking medication and adherence to taking medication in children with pulmonary tuberculosis in the Jember city area. The better the role of the family as supervisors of taking medication, the higher the level of adherence to taking medication in children with pulmonary tuberculosis.
8.	Zhafirah, N. S. and L. M. Palupi/2020	Role of Family as Supervisor of Anti-Tuberculosis Drugs in The Relapsed Pulmonary TB Patients/Jurnal Media Keperawatan: Politeknik Kesehatan Makassar/ Vol. 11	Two supervising families who swallowed pulmonary TB patient's medications in cases of relapses.	A qualitative descriptive study using interviews and observation methods on two families as supervisors of taking medication in pulmonary TB patients with relapse cases.	This study shows that the family plays a good motivator for relapsed pulmonary TB patients. The family still needs to be optimal in carrying out its role in reminding re-examination of the sputum of relapsed pulmonary TB patients. The family plays a good

		(1): 65-69			role as a supervisor of drug swallowing and as a companion providing education about pulmonary TB with relapse cases.
9.	Fitriani, D. and G. Ayuningty as /2019	Relationship Between The Family As Drug Supervisor (PMO) and The Level of Compliance in Lung TB Patients to Treatment Program in The Regency of Serpong 1 Public Health Center, South of Tangerang /Edudharma Journal/Vol. 3 (2): 17-23	120 respondents	This study used a descriptive-analytic research design with a cross-sectional approach, taking samples using Total Sampling and data collection using questionnaires and interviews.	The relationship between the family's role as a Medication Supervisor and the level of adherence of pulmonary TB patients to the treatment program in the Serpong 1 Public Health Center, South Tangerang, is very much related.
10.	Febrina, W. and A. Rahmi /2018	Analysis of the Role of the Family as Drug Taking Supervisor (PMO) for Pulmonary TB Patients/Jurnal Human Care/Vol. 3 (2): 118-129	Eight people consisting of 3 PMO people, three people with pulmonary TB patients, one person TB Pulmonary Health Center officers, 1 Head of Health Center.	Research taken by purposive sampling This research was conducted with in-depth interview s of participants to explore the roles of a family as Drinking Superintendent Drugs (PMO).	Based on the results of this study, four themes were found namely, the role as a motivator was optimal, the role in reminding sputum re-examination was optimal, the role of monitoring treatment was optimal, while the role of an educator has not been maximized. It can be concluded that the role of the family as PMO for Pulmonary TB patients in supervising, motivating, and ensuring examinations repeat sputum and provide education to TB patients will help the process treatment for pulmonary TB patients.

Discussion

According to Sriyanah (2022), family support is the actions and acceptance of the family towards supportive family members, always ready to provide help and assistance if needed. This support is in providing information, advice, and guidance¹³. According to Ibrahim (2022), pulmonary tuberculosis is still a global health problem where one-third of the world's population has been infected with tuberculosis, and most tuberculosis sufferers are of productive age. This disease can attack anyone, even within the farmer's family. Farmers who tend not to pay much attention to their children and have low education become a challenge in nursing. This causes nurses to have an essential role in educating farmer families regarding the support and role of the family as monitors for drug adherence in children with tuberculosis¹⁴.

The critical role in medication adherence is inseparable from the factors of health workers, families, and the community in supporting pulmonary tuberculosis patients to take medication correctly. In addition, the role of the drug-taking supervisor factor also plays a vital role in the regularity of taking pulmonary tuberculosis medication; the continuation of patient treatment requires a drug-taking supervisor. Drug-taking supervisors can come from family and non-family. However, drug-taking supervisors who come from family have emotional ties and greater responsibility to provide support and guidance to patients than non-family. This is done so that the patient is guaranteed recovery and prevented from drug immunity or resistance. The choice of drug-taking supervisor must be adjusted to the conditions where the patient live^{s15}.

Based on the journals that have been reviewed, the results show that most journals say that there is a relationship between family support as a drug-taking supervisor and medication adherence in pulmonary tuberculosis patients. The Hohedu et al. (2021) research explains that the family's support as a drug-taking supervisor will be in line with the value of a person's compliance in taking medication¹⁶. This is also in line with (Sundari et al., 2021) research, which shows that there is a relationship between the role of the family and adherence to taking anti-tuberculosis drugs. The role of the family as a drug-taking supervisor showed promising results, as much as 82.4%

with obedient subjects in taking medication¹⁷.

According to Fitriani (2019), the role of the family in motivating pulmonary TB patients has a very positive impact on the treatment of pulmonary TB patients¹². Also, Pratiwi et al. (2021) say there was a relationship between the role of the family as a drug-taking supervisor and medication adherence in pulmonary tuberculosis children¹⁸. According to Zhafirah and Palupi (2020), the role of the family as a drug-taking supervisor is needed in the successful treatment of pulmonary TB patients; the motivation given by the family is very influential on the patient's enthusiasm in carrying out the treatment¹⁹. Febrina (2018) states regular treatment is the primary key to achieving recovery. The role of the family in supervision is critical because TB treatment needs to check the availability of drugs, the regularity of taking drugs, and if there are symptoms of drug side effects that interfere with the patient's comfort in taking the drug. So it can be concluded that the supervisor's role has a strong influence on compliance with taking pulmonary tuberculosis medication because the drug-taking supervisor determines whether the drug that has been recommended is taken or not by tuberculosis sufferers, so it also determines whether or not pulmonary tuberculosis sufferers take pulmonary tuberculosis medication¹⁰.

Several factors can influence the success of drug-taking supervisors in curing pulmonary tuberculosis patients. According to (Aris et al., 2021), the family as a drug-taking supervisor with a female gender will have a good influence on its role as a housewife who can make decisions regarding the treatment of tuberculosis patients²⁰. In Ibrahim's (2022) study, it was also explained that several other factors could influence the successful role of drug-taking supervisors in patients with tuberculosis. The research shows that education and age factors can influence the role of the drug-taking supervisor, where respondents who have a high school and bachelor's degree and are >30 years old have a better role as drug-taking supervisor^{s14}. In line with that, Sriyanah (2022) stated that a drug-taking supervisor who knows and understands the diseases suffered by family members will tend to have an attitude to motivate families who suffer from tuberculosis to comply with the treatment carried out to achieve recovery for the patient¹³.

Conclusion

There is a relationship between the role of the family as a supervisor of taking medication and adherence to taking medication in pulmonary tuberculosis. There is a need to increase the role of the family as a supervisor of taking medication to improve compliance with taking medication in patients with pulmonary tuberculosis. The family must always accompany them until the treatment process is complete to avoid drug withdrawal or drug resistance. In addition, health workers also need to educate families on the process that they will go through while being a drug supervisor, what to do if there is an adverse effect, and what to do if side effects occur.

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Conflict of Interest

None

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