Factors Of Compliance with Medication in Leprosy Clients in Pamekasan District

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Article Info	ABSTRACT
  Corresponding Author: Mufidatul Hijriyah Faculty of Health, Nurul Jadid University Email: mufidatulhijriyah09@gmail.com	As an infectious disease that affects the skin and peripheral nerves and is caused by the bacteria mycobacterium leprae as the causative agent. This leprosy is chronic characterized by the presence of white and reddish spots, as well as thickening of the inflamed nerves and impaired nerve function so that it can cause paralysis of the peripheral nerves. This disease first attacks the nervous system, can attack the skin, mucosa (mouth), upper respiratory tract. This bacteria enters the body through the skin or nose. Signs and symptoms of this disease are skin lesions and peripheral nerves that can cause numbness, deformities and permanent disabilities. Objective: To determine the factors of medication adherence in leprosy patients in the Pamekasan area. Method: The design of this study is a cross-sectional study, namely research to determine the relationship between risk factors and disease. In cross-sectional studies, independent variables or risk factors (effects) are assessed simultaneously at one time. Results. obtained in the bivariate test obtained a significance value of 0.000 <0.05 on family support, knowledge, attitudes, environment, and health workers towards leprosy. Conclusion: There is a relationship between family support, knowledge, attitudes, environmental conditions, health workers, and compliance with taking medication in leprosy clients. ***Keywords:*** Family support, knowledge, attitudes, environment, health workers, leprosy

1. INTRODUCTION

Leprosy is a chronic disease characterized by white and reddish patches, thickening of inflamed nerves, and impaired nerve function that can lead to peripheral nerve paralysis. Leprosy primarily affects the nervous system and can affect the skin, mucous membranes (mouth), and upper respiratory tract. Bacteria enter the body via the skin or nose. Signs and symptoms of this disease include skin and peripheral nerve lesions that can cause numbness, deformities, and permanent disability [1].

Based on data from the World Health Organization (WHO) in 2019, cases of leprosy This represents a total of 202,262 newly detected leprosy cases, with a prevalence of 177,155 cases [2]. The three countries with the highest global prevalence of leprosy are India, Brazil, and Indonesia. India contributed as much as 120,334 cases, while Indonesia contributed 17,017 cases, both of which contributed 92% of the cases in Southeast Asia.

The Pamekasan Regency ranks fifth out of 38 regencies and cities in East Java with the most leprosy sufferers in 2017-2018 reaching 600 people, and according to the Head of the Pamekasan Regency Health Office, in Pamekasan Regency there are 20 community health centers spread across 13 sub-districts. In 2019, Pamekasan Regency experienced a decline; in 10,000 residents, there were only five people with leprosy. In 2022, leprosy patients increased again and ranked third after the Sumenep and Sampang regencies [3].

Several previous studies have examined the factors influencing patient adherence to medication. First, family support. Research conducted by Mantovani, Ningsih, and Tambunan showed that good family support can influence regular treatment adherence in patients, which is expected to contribute to their recovery [4]. Furthermore, Siregar and Siregar demonstrated a relationship between family support and adherence to leprosy medication [5].

However, Mando, Widodo, and Sutriningsih showed no relationship between family support and medication adherence [6]. Second, they are related to knowledge. Research conducted by Fatmala showed a relationship between knowledge and adherence to leprosy medications [6]. Third, it relates to attitudes. Research conducted by Siregar and Ratnawati showed a relationship between attitude and medication adherence in leprosy patients [7].

Fourth, there are environmental factors. Research conducted by Firmawati, Biahimo, and Mohi showed a direct and indirect positive influence between environmental conditions and patient medication adherence [8]. Fifth, there are healthcare personnel factors. Research conducted by Fitriah and Putri showed a relationship between healthcare personnel and patient medication adherence (Sonya 2020). Furthermore, research by Setyaji, Marsanti, and Ratnawati also showed a relationship between healthcare personnel and medication adherence [9].

Based on the introduction above, the following problem can be formulated: What are the factors related to medication adherence in patients with leprosy?

2. METHOD

Research design is a crucial step in providing direction for research problems. The research design is an overall plan that addresses the complete design aspects of the study type, the data collection approach, and the statistical approach to the data sample. Research design is necessary to guide researchers in terms of the types of data that can be used, applicable collection methods, appropriate methods for the problem at hand, and ability to obtain concrete results.

This study design is cross-sectional, meaning that it aims to determine the relationship between risk factors and disease. In cross-sectional studies, independent variables or risk factors (effects) are assessed simultaneously at a single point in time.

This study uses a sampling technique approach carried out with non-probability sampling, namely, not giving equal rights to every member of the population to become a sample.

A population is a complete group of elements, usually people, objects, transactions, or events, that a researcher is interested in studying or creating research objects. The population is the total number of subjects studied by the researcher [10]. The population in this study was 156 leprosy clients in the Pamekasan Regency.

3. RESULTS AND DISCUSSION

3.1. Research result

This was a correlative analytical study with a cross-sectional design. The study was conducted in the Pamekasan Regency. This study aimed to determine the relationship between family support, knowledge, attitudes, environmental conditions, and health workers on medication adherence among leprosy patients in the Pamekasan Regency. The study sample consisted of 112 patients with leprosy in the Pamekasan Regency. Primary data were collected through questionnaires administered to the respondents.

3.1.1. Univariate Analysis

Based on 112 respondents through questionnaire distribution, the following characteristics were obtained

Table 1. Respondent Characteristics Based on Gender

Gender	Frequency	Percentage
Man	62	55.40%
Woman	50	44.60%
Total	112	100%

Based on the table above, noted that 112 respondents totaling 62 respondents with a percentage of 55.4% were male and 50 respondents with a percentage of 44.6% were female. In this regard, it is known that some respondents were male.

Table 2. Respondent Age Description

Mean ± SD Min Age	Median	Min	Max	95% CI	
					Max
28.47 ± 2.83	25.00	12	66	26.07	30.87

Based on the table above, from 112 respondents, the mean value was 28.47 with a standard deviation of 12.83, a median value of 25, a minimum value of 12, and a maximum value of 66. The 95% Confidence Interval value for the lower was 26.07 and the upper was 30.87.

Table 3. Respondent Characteristics Based on Education

Education	Frequency	Percentage
Elementary school	39	34.8%
Junior high school	47	42%
Senior High School	20	17.9%
College	6	5.4%
Total	112	100%

Based on the table above, as many as 39 respondents (34.8%) had an elementary school education, 47 respondents (42%) had a junior high school education, 20 respondents (17.9%) had a senior high school education, and as many as six respondents (5.4%) had a college education. In this regard, it is known that most respondents in this study had junior high school education.

Table 4. Respondent Characteristics Based on Employment Status

Work	Frequency	Percentage
Doesn't work	39	34.8%
Work	73	65.2%
Total	112	100%

Based on the table above, it is known that 39 respondents with a percentage of 34.8% are unemployed, and 73 respondents with a percentage of 65.2% are employed. In this regard, the majority of respondents in this study were employed.

Table 5. Description of Respondents Based on Length of Leprosy Suffering Mean± SDMMedianMinMax 95 % CI

Long Suffering						Min	Max
9.7 ± 5.16	9.00	3	21	8.74	10.68		

Based on the table above, from 112 respondents, the mean value was 9.7 with a standard deviation of 5.16, a median value of 9, a minimum value of 3, and a maximum value of 21. The 95% Confidence Interval value for the lower was 8.74 and the upper was 10.68

Based on the respondents' responses to the questionnaire, the following variable categorization was obtained:

Table 6. Family Support Categorization

Category	Frequency	Percentage
Not enough	13	11.6%
Enough	44	39.3%
Good	55	49.1%
Total	112	100%

Based on the table above, it is known that out of 112 respondents, 13 respondents with a percentage of 11.6% have family support in the insufficient category, 44 respondents with a percentage of 39.3% have sufficient family support and 55 respondents with a percentage of 49.1% have family support in the good category. In this regard, most respondents have family support in the good category.

Table 7. Knowledge Categorization

Category	Frequency	Percentage
Not enough	2	1.8%
Enough	97	86.6%
Good	13	11.6%
Total	112	100%

Based on the table above, of the 112 respondents, two respondents (1.8%) had knowledge in the poor category, 97 respondents (86.6%) had knowledge in the adequate category, and 13 respondents (11.6%) had knowledge in the good category. Therefore, it is known that the majority of respondents have adequate knowledge related to leprosy.

Table 8. Attitude Categorization

Category	Frequency	Percentage
Enough	95	84.8%
Good	17	15.2%
Total	112	100%

Based on the table above, of the 112 respondents, 95 (84.8%) had a fair attitude, and 17 (15.2%) had a good attitude. Therefore, it can be seen that the majority of respondents had a fairly good attitude toward leprosy.

Table 9. Categorization of Environmental Conditions

Category	Frequency	Percentage
Enough	46	41.1%
Good	66	58.9%
Total	112	100%

Based on the table above, of the 112 respondents, 46 respondents (41.1%) had environmental conditions in the sufficient category, and 66 respondents (58.9%) had environmental conditions in the good category. Therefore, it is known that the majority of the respondents in this study had environmental conditions in the good category.

Table 10. Categorization of Health Workers

Category	Frequency	Percentage
Low role	42	37.5%
High role	70	62.5%
Total	112	100

Based on the table above, it is known that out of 112 respondents, Forty-two respondents, or (37.3%) had health workers in the low-role category, and 70 (62.5%) had health workers in the high-role category. This indicates that the majority of the respondents had health workers in the high-role category.

Table 11. Compliance Categorization

Category	Frequency	Percentage
Low	84	75%
Currently	23	20.5%
Tall	5	4.5%
Total	112	100%

Based on the table above, it is known that as many as 84 respondents (75%) had medication adherence in the low category, 23 respondents (20.5%) had medication adherence in the medium category, and 5 respondents (4.5%) had medication adherence in the high category. Related to this, respondents' medication adherence was still in the low category.

3.1.2. Bivariate Analysis

Before conducting bivariate analysis, the researcher first conducted a data normality test, with the aim of determining whether the data is parametric or non-parametric. Data normality testing was conducted to determine whether the data were normally distributed. The normality test used in this study was the Kolmogorov-Smirnov test, which can be declared normal if it obtains a significance value of more than 0.05. It is known that the variables of family support, knowledge, attitudes, environmental conditions, health workers, and compliance were significant (*Asymp.Sig*) at less than 0.05. Therefore, bivariate analysis in this study used nonparametric data with the Wilcoxon test.

The following are the results of *the crosstabs* and *chi-square tests* to determine the relationship between family support and medication adherence.

Table 12. Relationship between Family Support and Compliance

P value variable	
Family support with compliance	0.007

Based on the table above, it is known that respondents who have family support in the low category have a low category of compliance (as many as nine respondents), a medium category of two respondents, and a high category of two respondents. As many as 33 respondents with sufficient family support had medication adherence in the low category, nine respondents in the medium category, and two respondents in the high category. Meanwhile, respondents with good family support had medication adherence in the low category as many as 42 respondents in the medium category and 12 respondents in the high category of 1 respondent. Based on the results of hypothesis testing, a significance value of 0.007 <0.05 was obtained. This indicate that there is a significant relationship between family support and medication adherence.

The following are the results of *the crosstabs* and *chi-square tests* to determine the relationship between knowledge and medication adherence:

Table 13. Relationship between Knowledge and Compliance

P value variable	
Knowledge with compliance	0.009

Based on the table above, it is known that respondents with knowledge in the low category have a low compliance category of two respondents, a moderate category of zero respondents, and a high category of zero respondents. Respondents with sufficient knowledge had medication compliance in the low category (72 respondents), 21 in the moderate category, and 4 in the high category.

Meanwhile, 10 respondents with good knowledge had low medication adherence, 2 respondents had moderate adherence, and 1 respondent had high adherence. Based on the results of the hypothesis testing, a significance value of 0.009 <0.05 was obtained. This implies a relationship.

The following are the results *of the crosstabs* and *chi-square tests* to determine the relationship between knowledge and medication adherence:

Table 14. Relationship between Attitude and Compliance

P value variable	
Attitude with compliance	0.006

Based on the table above, it is known that respondents who have attitudes in the sufficient category have a low compliance category of 73 respondents, a moderate category of 18 respondents, and a high category of four respondents. Elven respondents with good attitudes had medication adherence in the low category of 11 respondents, five respondents in the moderate category, and one respondent in the high category. Based on the results of hypothesis testing, a significance value of 0.006 <0.05.

was obtained. This means that there is a significant relationship between attitudes and medication adherence. The following are the results of *the crosstabs* and *chi-square tests* to determine the relationship between environmental conditions and medication adherence:

P value variable	
Environmental conditions with compliance	0.010

Based on the table above, it is known that respondents with environmental conditions in the sufficient category have a low compliance category of 34 respondents, a moderate category of 10 respondents, and a high category of 2 respondents. Respondents with good environmental conditions had medication adherence in the low category (50 respondents, 13 respondents in the moderate category and 3 respondents and high category. Based on the results of the hypothesis testing, a significance value of 0.010 <0.05 was obtained. This means that there is a significant relationship between environmental conditions and medication adherence.

The following are the results of *the crosstabs* and *chi-square tests* to determine the relationship between environmental conditions and medication adherence:

P value variable	
Health workers with compliance	of 0.007

Based on the table above, it is known that respondents who have the role of health workers in the low category have a low category of compliance (as many as 33 respondents), a medium category of seven respondents, and a high category of two respondents. Respondents with the role of health workers in the high category had medication adherence in the low category for as many as 51 respondents, 16 respondents in the medium category, and 3 respondents in the high category. Based on the results of the hypothesis testing, a significance value of 0.007 <0.05 was obtained. This indicates that there is a significant relationship between the role of health workers and medication adherence.

3.2. Discussion
3.2.1. The Relationship Between Family Support and Medication Compliance in Leprosy Clients in Pamekasan Regency

Based on the results of the bivariate test, a significance value of 0.000 was obtained <0.05. This means that with better family support for patients, compliance with taking medication in leprosy patients in the Pamekasan Regency will increase, so H1 is accepted. The existence of family support obtained by leprosy patients can provide benefits and encouragement for strong patients in carrying out routine treatment and preventing feelings of depression in leprosy patients.

This is in line with a study conducted by Mantovani, Ningsih, and Tambunan, which found that family support plays a crucial role in encouraging patients to consistently take their medications as directed [11]. The family's role is crucial in the treatment process. Family members must support each other so that patients with leprosy are motivated to complete treatment until they are cured. Family serves as social support, not only in the form of moral support but also in spiritual and material support.

3.2.2.   The Relationship Between Knowledge and Medication Compliance in Leprosy Patients in Pamekasan Regency

Based on the results of the bivariate test, a significance value of 0.009 was obtained at p<0.05. This means that with better patient knowledge, compliance with taking medication in leprosy patients in the Pamekasan Regency will increase, so that H2 is accepted. Knowledge is the result of the human sensing process, or the results obtained by an individual based on their senses. The respondents' knowledge in question is about leprosy that is given directly by health workers when leprosy patients are undergoing treatment, so that leprosy patients hope to be able to change their behavior to comply with taking medication so that the goal of treatment, namely obtaining healing, can be achieved. Intensive counseling, both directly and indirectly, can increase the knowledge of patients with leprosy. Where every patient has good knowledge regarding leprosy, the desire to get better increases, which is proven by the increasing compliance with medication.

This is in line with a study conducted by Fatmala, who found that knowledge significantly correlated with medication adherence [12]. Knowledge of leprosy refers to patients' knowledge of the disease, including its causes, transmission, and treatment.

This is consistent with the study conducted by Siregar and Ratnawati, where knowledge was the main dimension in increasing compliance with taking medication.

patients [5]. The more information leprosy sufferers receive about the disease, the better their knowledge of the disease, and particularly the importance of treatment for its cure. This will motivate them to seek regular treatment.

3.3.3. The Relationship Between Attitudes and Medication Compliance in Leprosy Clients in Pamekasan Regency

Based on the results of the bivariate test, a significance value of 0.006 was obtained at <0.05. This means that with better attitudes towards patients, medication adherence among leprosy patients in the Pamekasan Regency will increase, so H3 is accepted. Attitude is an individual's closed response to a stimulus or particular object that involves factors of opinion and emotion that are interrelated. Compliance in patients taking medication is often interpreted as an effort made by patients to control their behavior and attitudes to follow the recommendations and directions of health workers carried out in order to obtain a cure for leprosy.

In line with the study conducted by Tatiana Siregar and Diah Ratnawati, which obtained the result that attitude is significantly related to medication adherence in leprosy sufferers [5]. The attitude of leprosy sufferers who want to comply with treatment is proven by their ability to carry out personal care, identified as their ability to meet basic human needs, control their living environment, use personal protective equipment, skin and wound care, prevent disability, and participats in self-care groups. Attitudes in everyday life are emotional reactions to social stimuli. Attitude is not an action or activity, but a predisposition to action/psychomotor behavior.

This is consistent with a study conducted by Katimenta at al., which found that attitude significantly correlated with patient medication adherence [12]. Attitude is a general evaluation made by humans or others based on reactions or responses to stimuli that evoke feelings accompanied by actions appropriate to the object. This moderate level of attitude can occur becaused of the respondent's awareness or desire to maintain, heal, or improve health.

3.2.4. The Relationship Between Environmental Conditions and Medication Compliance in Leprosy Clients in Pamekasan Regency

Based on the results of the bivariate test, a significance value of 0.010 was obtained < 0.05. This means that the better the patient's environmental conditions, the higher the compliance of leprosy patients in the Pamekasan Regency with taking medication, so H4 is accepted. The patient's environment is conducive and encourages them to be more obedient to all applicable rules. For Example, the condition of the house (cleanliness) reflects a greater motivation for patients to recover. Beyond the home environment, community environment also plays a role in patient recovery.

This is in line with a study conducted by Firmawati, Biahimo, and Mohi, which found that the environment has a significant relationship with patient adherence to medication [8]. The community environment can mitigate the effects of stress, thereby reducing the incidence of disease. Community support is an important source of stress management, along with the constitution, intelligence, financial resources, religion, hobbies, and aspirations.

This is consistent with a study by Sabrina et al., who found that environmental factors significantly impacte patient adherence to medication [13]. A common issue in society is the negative stigma surrounding patients with leprosy. Social support, resulting from interactions between patients and their environment, influences well-being and motivates recovery. Without environmental support, the patients' drive for recovery decreases, leading to poor adherence to medication.

Positive environmental conditions are a motivating factor for patients to be more compliant with medication. A conducive environment encourages patients to adhere to prescribed regimens. For example, a clean home reflects greater motivation to recover quickly. The community environment can mitigate the effects of stress, thereby reducing the incidence of disease. Community support is a source of stress management, along with the constitution, intelligence, financial resources, religion, hobbies, and aspirations.

3.2.5. The Relationship Between Health Workers and Medication Compliance in Leprosy Patients in Pamekasan Regency

Based on the results of the bivariate test, a significance value of 0.007 was obtained at<0.05. This means that with the better role of health workers, the compliance of taking medication in leprosy patients in the Pamekasan Regency will increase, so that H5 is accepted. Effective counseling carried out by health workers will provide motivation so that leprosy patients can comply with taking medication. The role of health workers is to be able to provide good information about the length of the treatment period, rules for taking medication, information about leprosy delivered with appropriate sentences adjusted to the level of education so that it can be easily understood, as well as providing transportation facilities for leprosy patients who have experienced disabilities or who have not yet accessed treatment.

This is in line with a study conducted by Fitriah and Putri, who found that support from healthcare professionals significantly contributed to patient medication adherence. Support from healthcare professionals is crucial for patients, as they provide much information about their illnesses. This support includes providing information, good service, and a positive attitude during the treatment process.

This is consistent with a study conducted by Makatindu, Nurmansyah, and Bidjuni, which found that healthcare workers play a significant role in patient medication adherence [14]. Healthcare workers can provide information on the frequency and timing of medication intake, the benefits of medication adherence, and receptivity to patient complaints. With the information provided by healthcare workers, patients will strive to comply with and consistently follow instructions and rules for taking their medication.

4. CONCLUSION

Based on the discussion in the previous chapter, the following conclusions can be drawn: There is a significant relationship between family support and medication compliance, in leucorrhea clients in Pamekasan Regency, H1 was accepted, There is a significant relationship between knowledge and compliance in taking medication in leprosy clients in Pamekasan Regency, H2 is accepted, There is a significant relationship between attitudes and compliance in taking medication in leprosy clients in Pamekasan Regency, H3 is accepted, There is a significant relationship between environmental conditions and medication adherence in leprosy clients in Pamekasan Regency, H4 is accepted, There is a significant relationship between health workers and medication adherence in leprosy clients in Pamekasan Regency, H5 is accepted..

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