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**THE RELATIONSHIP BETWEEN THE LEVEL OF KNOWLEDGE OF
PULMONARY TUBERCULOSIS PATIENTS ON MEDICATION ADHERENCE IN
THE PULMONARY POLYCLINIC OF THE ARIFIN ACHMAD REGIONAL
GENERAL HOSPITAL PEKANBARU**

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ABSTRACT

Tuberculosis (TB) is an infectious disease caused by infection with the bacterium Mycobacterium tuberculosis. One of the determinants of the success of tuberculosis management is patient compliance with therapy or medication. Factors that can affect a person's level of compliance to take medication is knowledge. The existence of knowledge of the benefits of a thing will cause the patient to have a positive attitude towards it. This study aims to determine the relationship between the level of knowledge of pulmonary tuberculosis patients with medication adherence in the pulmonary polyclinic of the Arifin Achmad Regional General Hospital Pekanbaru. This type of research is a quantitative research with a cross sectional approach. The number of samples is 50 people with purposive sampling technique. The statistical test used was Chi-square and obtained p value = 0.011 ($p < 0.05$). These statistical results indicate that there is a relationship between the level of knowledge of pulmonary tuberculosis patients and adherence to medication at the pulmonary polyclinic of the Arifin Achmad Regional General Hospital Pekanbaru. It is hoped that in the future nurses will be able to become educators in health education about TB at the Pulmonary Polyclinic in order to improve drug adherence in TB patients.

Keywords: Knowledge, Pulmonary Tuberculosis, Medication Adherence

INTRODUCTION

Pulmonary tuberculosis (TB) is an infectious disease caused by Mycobacterium tuberculosis. Transmission of pulmonary TB disease through splashes of patient's sputum. Pulmonary tuberculosis if not treated properly can cause progressive tissue damage and cause death. Pulmonary TB is one of the 10 causes of death in the world, Indonesia is in the 3rd highest country in the world with the most cases of pulmonary TB after China and India (Kemenkes, 2021).

World Health Organization (WHO), 2020 Global TB Report there are 10 million people with TB worldwide, 1.2 million die each year. Data on TB cases in India are 27%, China 9%, Indonesia 8%, Philippines 6%, Pakistan 5%, Nigeria and Bangladesh each 4% and South Africa 3% of all TB cases in the world. In Indonesia there are 845,000 TB patients with a mortality rate of 98,000 people, 67% are found and treated while the other 33% have not been treated and are at risk of transmitting it. According to Riau Province Health profile data (2020), 36,154 people with TB receive health services in Riau Province out of a total population of 6,971,745 people in Riau. Pekanbaru is the area with the most pulmonary TB sufferers, namely 8,645 people, followed by the Rokan Hilir area with 4,939 people and Kampar with 4.3.40 people.

Pulmonary TB treatment is a combination of several types of drugs in sufficient quantities and the right dosage within a period of 6-8 months, if the treatment is not complete, there is a risk of resistance to TB germs (Octavienty, 2019). One of the determinants of success for the treatment of pulmonary TB is adherence to treatment of pulmonary TB patients (WHO, 2019). Compliance is an attitude that will appear in a person as a reaction to something in the regulations that must be carried out (Notoatmodjo, 2018). Compliance with taking anti-pulmonary TB drugs, namely following the rules of treatment according to the prescription including the time and dose set so that the treatment is effective (Danusantoso, 2012).

Factors that can affect adherence to taking medication are knowledge, age, occupation, free time, supervision, types of drugs, drug dosages, attitudes and counseling by health workers (Darmanto, 2014). Knowledge is one of the factors in determining a person's adherence to taking medication. Knowledge and compliance have a positive relationship, with knowledge about treatment it can influence the perception of sufferers to have a positive attitude (Notoatmodjo, 2018).

According to Pasek and Made (2013) factors that can change attitudes and compliance are knowledge, communication, health facilities, sufferers including individual perceptions and motivation. According to Herlina, by 2020 individuals who have high knowledge have a greater chance of obeying and utilizing health facilities, so that information about health will be easier to obtain. Individual knowledge about disease affects health behavior because it will lead to high self-awareness and motivation for health to recover.

Research on adherence to taking anti-TB medication was conducted by Novita (2018) with the results showing that there was a moderate positive relationship between the level of knowledge and adherence to taking medication for TB sufferers, more than half (53.3%) had a good level of knowledge and 66.7% adhered to taking medication. Pulmonary TB medicine. Nurses have an important role in their duties, namely managing and managing TB patients as educators, counselors, and facilitators in providing nursing care to TB patients. Nurses as educators have a duty to increase the knowledge of pulmonary TB patients about the causes, symptoms, and also the treatment program that must be carried out and also explain the purpose and reasons why the treatment must be carried out regularly. The purpose of the nurse's role as an educator on the other hand is also to change the behavior of the client so that he can carry out regular treatment so that it will improve the client's health and accelerate the client's recovery from TB (Widianingrum, 2017).

The Arifin Achmad Pekanbaru General Hospital is one of the largest patient referral centers in Riau Province with a total of 407 TB patients from January to December 2021. Based on the results of interviews that researchers conducted at the Pulmonary Polyclinic, Arifin Achmad General Hospital Pekanbaru on 21-23 November 2021 with 10 pulmonary TB patients, data obtained that 4 TB patients still hid their health problems from their surroundings, then 6 TB patients admitted that they had never following pulmonary TB counseling from health workers so that they did not know the consequences of patient non-compliance in taking TB medication would lead to germ resistance to the drugs they had consumed, 5 TB patients admitted not taking TB medication regularly because they were tired of taking medication continuously. This boredom indicates a lack of response from patients to TB drugs given by health workers, which results in treatment failure. Based on the background above, the authors are interested in conducting research on "The Correlation of Knowledge Level of Pulmonary Tuberculosis Patients to Compliance with Taking Medication at the Pulmonary Polyclinic, Arifin Achmad Pekanbaru Regional General Hospital.

RESEARCH METHODS

This type of research is a quantitative study with a cross sectional approach. This study assessed the relationship between the level of knowledge of pulmonary tuberculosis patients and adherence to taking medication at the pulmonary polyclinic at the Arifin Achmad Regional General Hospital, Pekanbaru. The research was conducted at the pulmonary poly at the Regional General Hospital Arifin Achmad Pekanbaru. The population in this study were all pulmonary TB patients, with a total sample of 50 people. The sampling technique was taken using a purposive sampling technique with the following criteria: willing to be a respondent, respondents in the age category of late teens, adults and the elderly (18 years to > 60 years), respondents in a state of compos mentis, pulmonary TB patients who go to the pulmonary polyclinic Arifin Achmad Pekanbaru Regional General Hospital, pulmonary TB patients who have undergone treatment for at least 1 month.

The data collection instrument used a knowledge questionnaire and a medication adherence questionnaire adopted from the research questionnaire Morisky Medication Adherence Scale-8 (MMAS-8). The MMAS-8 questionnaire is a questionnaire scale with 8 questions related to medication adherence. The questionnaire has been validated in tuberculosis and can be used in a wide range of other treatments. The results of the questionnaire consist of high compliance (score 8), moderate compliance (score 6-7) and low compliance (score 0-5).

RESULTS AND DISCUSSIONS

Table 1. Level of Knowledge of Pulmonary Tuberculosis Patients at the Pulmonary Clinic Arifin Achmad Pekanbaru General Hospital in 2022

Knowledge level	F	%
Not enough	0	20
Enough	17	34
Well	23	46
Total	50	100

Based on table 1. that the level of knowledge of pulmonary tuberculosis patients at the pulmonary polyclinic at the Arifin Achmad Pekanbaru Regional General Hospital is good as many as 23 people (46%).

Table 2. Compliance with Taking Medication for Pulmonary Tuberculosis Patients at the Pulmonary Polyclinic at the Arifin Achmad Pekanbaru Regional General Hospital in 2022

Medication Compliance	F	%
Low	14	28
Currently	23	46
Tall	13	26
Total	50	100

Based on table 2, it is known that adherence to taking medication at the pulmonary polyclinic at the Arifin Achmad Pekanbaru Regional General Hospital was moderate, as many as 23 people (46%).

Table 3 Relationship of Knowledge Level of Pulmonary Tuberculosis Patients With Compliance with Taking Medication in the Pulmonary Polyclinic of a General Hospital Arifin Achmad Pekanbaru in 2022

No	Knowledge level	Medication Compliance						Total		<i>P value</i>
		Low		Currently		Tall		f	%	
		f	%	f	%	f	%			
1	Not enough	7	70	1	10	2	20	10	100	0.011
2	Enough	4	23,5	10	58,8	3	17,6	17	100	
3	Well	3	13	12	52,2	8	34,8	23	100	
Total		14	28	23	46	13	26	50	100	

Based on the results of the Chi Square test, the p value = 0.011 ($\alpha < 0.05$), there is a relationship between the level of knowledge of pulmonary tuberculosis patients and adherence to taking medication at the Pulmonary Polyclinic, Arifin Achmad Pekanbaru Regional General Hospital in 2022.

DISCUSSION

Level of Knowledge of Pulmonary Tuberculosis Patients at the Pulmonary Polyclinic at the Regional General Hospital Arifin Achmad Pekanbaru

Based on the results of the study, it was found that the knowledge level of pulmonary tuberculosis patients at the pulmonary polyclinic at the Arifin Achmad Pekanbaru Regional General Hospital was good as many as 23 people (46%). According to Sarmen (2017), knowledge is the result of curiosity, then finding out the truth and making it an experience. From experience, a person can solve the problems he faces so that knowledge is an important factor in one's actions.

The results of this study are in accordance with research conducted by Putri (2020) where it was obtained data that some respondents had a good level of knowledge as many as 15 respondents (42%), enough as many as 19 respondents (53%) and less as many as 2 respondents (5%). The researcher assumes that the patient's very low knowledge can determine the irregularity of the patient taking medication because of the lack of information provided by health workers about pulmonary TB disease, how to treat it, the dangers of not taking medication regularly and its prevention.

Compliance with Taking Medication for Pulmonary Tuberculosis Patients at the Pulmonary Polyclinic at the Regional General Hospital Arifin Achmad Pekanbaru.

Based on the results of the study, data on adherence to taking medication at the pulmonary polyclinic at the Arifin Achmad Pekanbaru Regional General Hospital was moderate, as many as 23 people (46%). Patient non-compliance with the provisions and length of treatment on a

regular basis to achieve recovery as a result of the low level of public knowledge. There are several factors that can affect a person's level of adherence to taking medication, which include: age, work, free time, supervision, type of drug, drug dosage, and counseling from health workers (Widiyanto, 2017).

This research is in line with the research of Dhiyantari and Trasia (2014), where it was found that respondents who were in the advanced phase of OAT treatment also showed a high level of medication adherence, which was 86.67%. In addition, the level of adherence to the sputum examination schedule and drug taking was obtained at 100%. Compliance with taking medication is a key factor for the success of treatment. Researchers assume that the recovery process for tuberculosis patients is quickly realized, if the cooperation between patients and their families and health care providers is well established. Treatment nonadherence increases the risk of treatment failure and relapse, and is considered to be one of the most important causes of emergence of drug-resistant TB.

Correlation between the Knowledge Level of Pulmonary Tuberculosis Patients and Medication Compliance in the Pulmonary Polyclinic at the Regional General Hospital Arifin Achmad Pekanbaru

Knowledge has a significant relationship with medication adherence at the pulmonary polyclinic at the Arifin Achmad Pekanbaru General Hospital. Respondents who have high knowledge tend to be obedient in taking anti-tuberculosis drugs. Based on the results of the study, it was found that out of 10 respondents who had a low level of knowledge, 7 of them had low medication adherence (70%) and of the 17 respondents who had a sufficient level of knowledge, 10 of them had moderate medication adherence (58.8%).), whereas of the 23 respondents who had a good level of knowledge, 8 of them had high medication adherence (34.8%) and 12 of them had sufficient medication adherence (52.2%). The results of the chi square test obtained a p value = 0.011 ($\alpha < 0.05$) so there is a relationship between the level of knowledge of pulmonary tuberculosis patients and adherence to taking medication at the pulmonary polyclinic at the Regional General Hospital Arifin Achmad Pekanbaru.

Compliance is a person's tendency and willingness to understand and accept something. Factors that influence adherence to taking medication are individual characteristics (age, gender, social support, emotional support, individual personality, individual beliefs about the illness), cultural norms and the character of the relationship between patients and health workers (Kusumadewi, 2012). Age affects knowledge and is finally manifested in the form of attitude, namely obedience. The more old a person is, the more mature and more trusted a person's ability to think will be, so that it will be related to things that the respondent knows about the disease and its treatment. All pulmonary TB patients, without being limited by age, have the desire to recover from their disease, so they are obedient to follow the drug guidelines given, even though it takes a long time so that it does not rule out the possibility. Older people tend to follow doctor's recommendations, have more responsibility, are more orderly. more conscientious, more moral and more devoted than at a young age.

Compliance with TB patients in taking medication is closely related to the level of knowledge supported by the educational background of the respondents themselves. Through research, it was found that the majority of respondents were at the end of high school education as many as 25 people (50%), so it can be concluded that the majority of respondents' education in this study was good. This is in accordance with the theory of Notoadmojo (2017), which says that a person's knowledge is influenced by education, the higher a person's education, the easier it is for a person to receive information.

Through the research of Himawan et al (2015) it is known that a person's knowledge is supported by educational background, the longer a person has been in education, the better one's level of knowledge will be. A good educational factor will make it easier for someone to catch information or counseling by health workers about pulmonary TB disease that has been given by health workers. Knowledge is a determining factor for a person's adherence to taking medication. Knowledge and compliance have a positive relationship, knowledge of the benefits of something will cause sufferers to have a positive attitude towards it (Notoatmodjo, 2018). Someone who has high knowledge is likely to be more obedient and make use of existing health facilities, so that information about health will be easier to obtain.

The results of this study are in line with the research of Octavienty, Hafiz & Khairani (2019), where there is a relationship between the level of knowledge and adherence to taking medication in pulmonary TB patients at UPT Puskesmas Simalingkar City of Medan, where this is evidenced by the significant asymp p value of 0.002 p value < 0.05, there is a relationship between the level of knowledge and medication adherence in pulmonary tuberculosis patients.

Researchers assume that a person's high knowledge of the disease will affect a person's health behavior. Someone who is highly knowledgeable has a high self-awareness about health and has a high motivation to get well. Patient knowledge that is very low can determine the irregularity of the patient taking medication because of the lack of information provided by health workers about pulmonary TB disease, how to treat it, the dangers of not taking medication regularly and how to prevent it

CONCLUSION

The level of knowledge of pulmonary tuberculosis patients at the pulmonary polyclinic at the Arifin Achmad Pekanbaru General Hospital was good as many as 23 people (46%). Compliance with taking medication at the pulmonary polyclinic at the Arifin Achmad Pekanbaru Regional General Hospital was moderate as many as 23 people (46%). There is a relationship between the level of knowledge of pulmonary tuberculosis patients and adherence to taking medication at the pulmonary polyclinic at the Arifin Achmad Pekanbaru Regional General Hospital (p value = 0.011 ($\alpha < 0.05$)). It is hoped that in the future nurses will be able to become educators with better methods in conducting health education about pulmonary TB so that it can improve adherence to taking medication in patients.

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