# THE RELATIONSHIP OF KNOWLEDGE WITH ADOLESCENT MEDICINE COMPLIANCE WITH PULMONARY TUBERCULOSIS IN THE PEDIATRIC OUTPATIENTS DEPARTMENT, SUBANG DISTRICT

**Research Report**

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### A B S T R A C T

***Introduction:*** *The increase in the number of Tuberculosis sufferers is caused by various factors, namely the lack of patient compliance for treatment and taking medication, expensive drug prices, the emergence of multiple resistances, lack of host resistance to mycobacteria and reduced bactericidal power of existing drugs. It also has other negative impacts, socially stigmatized and ostracized by the community.* ***Methods:*** *This research is quantitative type. The design of this research is design used in this research, which is a cross-sectional design with observation or data collection at once (point time approach). The sample in this study was 20 people. The sampling technique used in this study was census sampling, this research data collection used a questionnaire measuring instrument, and the data analysis used the chi-square test.* ***Results:*** *the results of the analysis showed a significant degree of $p < 0.000$ by setting the degree of significance $<0.005$; thus, the conclusion is that there is a relationship between knowledge and adherence to drinking pulmonary tuberculosis in adolescents.* ***Conclusions:*** *there is a relationship between knowledge and adherence to drinking pulmonary tuberculosis in adolescents in the pediatric outpatients department at the District Hospital Subang.*

## INTRODUCTION

Based on data from the Indonesian Lung Doctors Association, Indonesia is the country with the second number of people with TB in the world. The increase in the number of Tuberculosis patients is caused by various factors, namely the lack of patient compliance for treatment and taking medication, expensive drug prices, the emergence of multiple resistances, lack of host resistance to mycobacteria and reduced bactericidal power of existing drugs. also has other negative impacts, socially stigmatized and even ostracized by the community (Notoatmodjo, 2017).

Tuberculosis that attacks children is often difficult to cure, one of the factors is the patient's adherence to taking medication regularly. Several studies have concluded that adherence is a determining factor so that lung disease can be cured quickly. Many factors are associated with adherence to pulmonary TB therapy, including not taking medication. Based on a report by the World Health Organization (WHO), it is estimated that in adolescent pulmonary TB cases, the mortality and morbidity rates due to the bacterium Mycobacterium Tuberculosis are high. In 2018, 1.7 million people died from pulmonary TB disease. In addition, there

are 9.4 million new cases of pulmonary TB and a third of the world's population has been infected with pulmonary TB disease where most of the patients with pulmonary TB disease are of productive age, namely the age (15-55 years) WHO in 2018 also reported that there were more of 250,000 adolescents are affected by pulmonary TB with a mortality rate of 100 thousand adolescents per year. The number of pulmonary TB patients in adolescents reaches 10% to 12% of all TB cases in the world (WHO, 2018).

According to (Kadek (2019), Indonesia is the third largest country that contributes pulmonary TB patients in the world after India and China. The number of Indonesian population diagnosed with pulmonary TB by health workers in 2017 was 0.4%, which means that in 100,000 population there will be 400 people diagnosed with pulmonary TB. Based on the characteristics of the Indonesian population, the prevalence of pulmonary TB will tend to increase in adulthood, with low education, and in people with weak socio-economic conditions (Riskesdas, 2018).

There are 197 cases and inpatients at the Subang District Hospital. To deal with the problem of TB in children, various global level guidelines

have been published. TB in children is currently an important component in TB control, with an approach to high risk groups, one of which is children considering that TB is one of the main causes of death in children and infants in TB endemic countries (Kementerian Kesehatan, 2017).

There is no difference in the way of treatment for toddlers and adults. All patients are required to follow the treatment for 6 months in full with a combination of several types of drugs. It's just that the doses for toddlers and adults need to be differentiated. Doses are differentiated based on body weight. But the duration is the same, 6 months. The dose and duration must be appropriate, yes, it can't be random. administration of drugs with the right dose is the key to successful healing. Because if the dose is not right, Mycobacterium germs can form an immune system against drugs. The first two 2 months there is usually improvement. What had been coughing up blood was no longer bleeding. Children who have difficulty eating become lust again. Sometimes I think it's healed. Even though TB germs in the body are still there, but in small numbers. Once the drug is stopped, these germs undergo mutations that make the germs stronger, multiply and become resistant to the drug. For this reason, it is very important to take TB treatment until it is completely cured. Taking medicine must be on schedule and should not forget anything. The duration of treatment for 6 months is the most ideal for healing TB patients (Kadek, 2019).

Compliance with taking medication is a very important indicator of success for healing TB patients for 6-9 months where patients have to take medication non-stop, but in Indonesia there are still many drop out cases for various reasons such as side effects of drugs, lack of family support, socioeconomic conditions in TB patient treatment. If the patient takes medication irregularly or not finished, it will result in double immunity of pulmonary TB bacteria against pulmonary Anti TB Drugs (OAT), so that it will cause the impact of MDR TB (multi drug resistant), which in the end for the treatment the patient has to pay a lot of money. high/expensive and in a relatively longer period of time even lead to death

Based on the above background, the researchers are interested in carrying out a study entitled "The Relationship of Knowledge with Compliance with Taking Drugs in Adolescents with Pulmonary Tuberculosis in the Children's Clinic Clinic Room, RSUD Subang".

## MATERIALS AND METHODS

The type of research carried out is quantitative research with a Cross Sectional design at Ciereng Hospital, Subang Regency. Sugiono (2018) the cross sectional research design is a study to study the dynamics of the correlation between risk factors and effects, and with an approach, observation or data collection all at once (point time approach) (Notoatmodjo, 2017).

The population in this study were all patients diagnosed with pulmonary TB who came for treatment, treated by the Children's Clinic, Subang District Hospital. The number of pulmonary TB patients who seek treatment at the Pediatric Clinic in 2021 until now is 312 people and the last 2 months are 24 people.The sample of this study were patients with pulmonary TB who were treated during the study period. The researcher uses the census sampling technique because this sampling technique uses the entire population as a sample. The data obtained were processed using Univariate Analysis Bivariate Analysis.

In this study, the researcher used the census sampling technique because this sampling technique used the entire population as a sample. This is often done when the population is relatively small or less than 100 people. The researcher uses this sampling technique because it is seen from the total population in the last 2 months of 24 people

## RESULTS

The results of the study on the relationship between knowledge and adherence to medication in adolescent patients with pulmonary TB at the pediatric clinic of RSUD Subang. The results of the study are presented in tabular form and interpretation is given to each of the variables studied. The results and discussion of statistical tests on significance and a more meaningful relationship were used Chi-square test with a significance level of $p < 0.05$, meaning that if $p < 0.05$, the hypothesis was accepted, which means that there was a significant relationship between the variables measured.

### Demographic Data

Based on the inclusion and exclusion criteria that have been determined, the demographic characteristics of the respondents are obtained which are described in the table below. The demographic data of the respondents explained the characteristics of the 20 respondents regarding gender, age, education.

Table 1. Distribution data of respondents demographic

| Characteristics | f | % |
|---|---|---|
| **Gender** | | |
| Female | 9 | 45 |
| Male | 11 | 55 |
| **Age** | | |
| 10 | 5 | 25 |
| 11 | 1 | 5 |
| 12 | 4 | 20 |
| 13 | 4 | 20 |
| 14 | 4 | 20 |
| 15 | 2 | 10 |
| **Grade** | | |
| No School | 0 | 0 |
| Kids | 10 | 50 |
| Junior High School | 10 | 50 |

Based on table 1 regarding the characteristics of the respondents, it shows that the number is almost balanced between the male and female sexes, as many as 9 respondents for the female gender and 11 respondents for the male gender. Characteristics of respondents showed that most of the respondents belonged to the age of 10 years as many as 5 people. Characteristics of respondents at the level of education shows that the number is balanced between primary school education and junior high school as many as 10 respondents.

**Univariate Analysis**

Tabel 2. Distribution data of knowledge to respondents

| Category Variables | Category Variables | f | % |
|---|---|---|---|
| Knowledge | Good | 11 | 55 |
| | Sufficient | 8 | 40 |
| | Less | 1 | 5 |
| | **Total** | 20 | 100 |

Based on table 2, most of the respondents' knowledge is good, namely a total of 11 respondents (55%). As for the number of respondents with sufficient knowledge is 8 respondents (40%) and less knowledge of respondents is 1 respondent (5%).

Tabel 3. Distribution data of drug adherence to respondents

| Category Variables | Category Variables | f | % |
|---|---|---|---|
| Adherence | Good | 16 | 80 |
| | Sufficient | 2 | 10 |
| | Less | 2 | 10 |
| | **Total** | 20 | 100 |

Based on table 3 respondents compliance is dominated by obedience with a good number of respondents as many as 16 respondents (80%). While the respondents who are sufficient and less are 2 respondents (10%).

**Bivariate Analysis**

The results of statistical tests using Chi-square obtained a significance degree of $p < 0.000$ by setting a significance degree of $< 0.005$, the hypothesis is accepted, which means that there is a relationship between knowledge and adherence to drinking pulmonary TB in adolescents. In this section, data is presented in tabular form that explains the pattern of the relationship between variables, namely knowledge and adherence to taking pulmonary TB drugs in adolescents.

Table 4. distribution of knowledge relationship with pulmonary TB drug adherence in adolescents

| Knowledge | Medication Compliance | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Good | f | Sufficient | f | Less | f | | |
| Good | 1 | 100 | 0 | 0 | 0 | 0 | 1 | 5 |
| Sufficient | 0 | 0 | 4 | 100 | 0 | 0 | 4 | 20 |
| Less | 0 | 0 | 0 | 0 | 15 | 100 | 15 | 75 |
| Total | 1 | 100 | 4 | 100 | 15 | 100 | 20 | 100 |
| p < 0,000 | | | | | | | | |

## DISCUSSION
### Univariate analysis
1. Description of knowledge drug adherence for pulmonary TB patients in adolescents at pediatric clinic of RSUD Subang.

Based on research data about respondents' knowledge, most of them are good, namely 11 respondents (55%). As for the number of respondents with sufficient knowledge is 8 respondents (40%) and less knowledge of respondents is 1 respondent (5%). (Notoatmodjo (2017) explains that the source of information obtained from various sources then a person tends to have extensive knowledge. The knowledge about tuberculosis and its prevention efforts obtained by respondents came from various sources, such as books, mass media, counseling or education and through relatives. The existence of new information about something from the mass media provides a new cognitive foundation for the formation of knowledge about it (Amalia, 2020).

Good knowledge is expected to have a good attitude so that it can prevent the problem of tuberculosis. Sufficient public knowledge about tuberculosis will make people try to have a clean and healthy lifestyle. Lack of knowledge can occur due to lack of formal or non-formal information obtained by respondents and inadequate information obtained and received by respondent (Niranjan Banik, 2017). Based on the results of the study, the researchers assumed that good knowledge would affect pulmonary TB patients to be able to take medication regularly so that it could affect their behavior

Clarified by Niranjan Banik (2017) from the results of his research that lack of patient knowledge can worsen the condition of patients with pulmonary TB disease. Knowledge about the importance of taking medication regularly is often considered unimportant by people who have a low level of knowledge.

2. Description of drug adherence in adolescents with pulmonary TB with the level of adherence to pulmonary TB treatment at pediatric clinic of RSUD Subang.

Based on the results of research, respondents' compliance is dominated by obedient with a good number of respondents as many as 16 respondents (80%). While the

respondents who are sufficient and less are 2 respondents (10%). Suddarth (2012) stated that poor adherence or incomplete therapy are factors that contribute to individual resistance. Non-adherent patients need an explanation of the importance of medication adherence because if the patient does not comply with their treatment, the patient will be resistant to the previous drug Astuti (2013) one of the factors that influence their adherence to taking medication is family support in determining individual health beliefs and values and can also help determine the treatment program they can receive. Social support in the form of emotional support from other family members, friends, and time is an important factor in adherence to medical programs (Amalia, 2020).

The quality of the interaction between health workers and patients is an important part in determining the degree of compliance. Support from health workers is another factor that can influence behavior in the level of compliance. If monitoring is carried out during the treatment period, among others, through home visits by health workers, it is expected that pulmonary TB patients will be obedient and regular in treatment. The quality of interaction between health workers and patients is an important part in determining the level of compliance. This is where the family has a very important role for pulmonary TB patient compliance. Apart from being the party who always supports the patient's recovery, the family is also responsible as a Drug Drinking Supervisor (PMO) who will later play a role in monitoring and reminding pulmonary TB patients continuously so that patients take their medicine regularly and on time according to the dose prescribed. has been determined by the health officer (Mole, 2018).

Based on the results of the study, the researchers assumed that good compliance in this study consisted of respondents supporting the efforts to prevent tuberculosis, modes of transmission, and risk factors that cause tuberculosis to occur. Poor compliance in this study consisted of several respondents who did not support several prevention efforts and risk factors that could cause tuberculosis. This is because respondents lack information about

tuberculosis, have less experience about prevention efforts.

**Bivariate analysis**

The relationship between knowledge and adherence to medication for pulmonary TB patients in adolescents in RSUD Subang. The results of statistical tests using Chisquare obtained a degree of significance of $p < 0.05$ by setting the degree of significance $<0.05$ then the hypothesis is accepted which means there is a relationship between knowledge and adherence to drinking pulmonary TB in adolescents. In this section, data is presented in tabular form that explains the pattern of the relationship between variables, namely knowledge and adherence to taking pulmonary TB drugs in adolescents. Knowledge has a significant relationship with adherence to taking anti-tuberculosis drugs in the pediatric outpatients department of RSUD Subang. Respondents who have high knowledge tend to be obedient in taking anti-tuberculosis drugs.

This is in accordance with the results of Widianingrum (2017) there is a relationship between knowledge and adherence to taking anti-tuberculosis drugs. This is also supported by the results of research from Siswanti (2020) which states that there is a significant relationship between knowledge and adherence to taking anti-tuberculosis drugs in TB patients. Factors that affect knowledge in TB patients include internal factors including education, occupation and age, while external factors include social, cultural and economic environmental factors (Mientarini, 2018).

The researcher assumes that the better the level of patient knowledge, the higher the patient's adherence to taking medication, and conversely the less knowledge of the patient, the lower the patient's adherence to taking medication. It is known that the patient has good knowledge and obediently takes pulmonary TB medication.

**CONCLUSIONS**

Based on the results of the research that has been carried out and described in the discussion contained in the previous chapter, it can be concluded that the results of statistical tests using Chisquare obtained a significance degree of $p < 0.000$ by setting a significance degree of $< 0.005$ then the hypothesis is accepted which means there is a relationship between knowledge and adherence to drinking pulmonary TB in adolescents at the pediatric outpatients department at the District Hospital. Subang. Suggestions more enhanced socialization and counseling in providing information related to pulmonary TB treatment in adolescents to family members and health workers according to procedures so that compliance with pulmonary TB patients is high and optimal which will affect recovery.

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