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## KNOWLEDGE LEVEL RELATIONSHIPS FAMILY AT TUBERCULOSIS DISEASE IN RURAL PITU, WORK AREA PUBLIC HEALTH CENTER PITU, DISTRICT CENTRAL TOBELO, NORTH HALMAHERA

Astri Abdul Rahman<sup>1\*</sup>, Alexander O. Maengkom<sup>1</sup>, Helti Candra Petrus<sup>1</sup>

<sup>1</sup>STIKMAH Tobelo.

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#### \*Correspondence to Author:

Astri Abdul Rahman  
STIKMAH Tobelo.

#### E-mail:

astriarahman@gmail.com

### ABSTRACT

Tuberculosis is a chronic infectious disease caused by bacteria transmitted (*Mycobacterium tuberculosis*). Germs are usually entered into the human body through the air (breathing) into the lungs, then spread from the lungs to other organs through the bloodstream, namely: the lymph nodes, respiratory or direct spread to other organs. Knowledge is essentially all known to man regarding a particular object that is a repertoire of mental wealth obtained through rational and experience. What is known, or the result of the workout.

The purpose of this study with a view to determine the relationship of the level of knowledge on the disease Tuberculosis family. This type of research with cross-sectional analytic.

From the results of Table 7 were obtained from 30 respondents, 19 of them with a percentage (63.3%) get a good knowledge level 7 of them with a percentage (23.3%) get enough knowledge level, and 4 of them with a percentage (13.3%) earn less knowledge level. While the category of tuberculosis that Suspect total of 11 people with a percentage of 36.7%, while a positive amount to 19 people with a percentage of 63.3%, results of the analysis of statistical tests (SPSS) using the chi-square test is known that the value ( $p = 0.00 < \text{sig. } 0, 5$ ).

It can be concluded that the level of knowledge of family on tuberculosis acceptable. Based on the research results have shown that there is a relationship of knowledge with the patient's family.

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## INTRODUCTION

Pulmonary tuberculosis is an infectious disease caused by the bacterium *Mycobacterium tuberculosis*, the bacterium is a bacterium bacillus that is so strong that it takes a long time to heal. Pulmonary tuberculosis continues to be a health problem in the world, especially country berkembang.<sup>1</sup>

*World Health Organization* declared the 22 countries with the world's highest burden of Pulmonary Tuberculosis 50% are from the countries of Africa and Asia, and the Americas (Brazil). Almost all ASEAN countries in the category of 22 countries except Singapore and Malaysia.<sup>2</sup>

Tuberculosis disease has caused some 2,000 deaths per day, of which 40% of Tuberculosis cases worldwide occurred in the Southeast Asia region. Tuberculosis disease after India, China, South Africa, and Nigeria, namely India (2.0 million), China (1.3 million), South Africa (530 thousand), Nigeria (460 thousand), and Indonesia (460 thousand).<sup>3</sup>

The number of new cases of Tuberculosis in Indonesia as many as 420 994 cases in 2017. By sex, the number of new cases of Tuberculosis Year 2017 in men 1.4 times greater than in women. Even based on the Prevalence of Tuberculosis Prevalence Survey in men 3 times higher than in women. So also is the case in other countries. This is likely due to men are more exposed to Tuberculosis risk factors such as smoking and lack of non-compliance with taking medication. The survey found that of all male participants who smoked as much as 68.5% and only 3.7% of participants were women smoking.<sup>4</sup>

Health research database (Riskesdas) 2018 mention that Tuberculosis has been diagnosed in the age group <1 year by 2%, aged group 1-4 years at 4%, 5-14 years age group by 0.30%, whereas in the group other adult age also showed a similar prevalence of 3%.<sup>5</sup>

Based on data obtained from health profile Regency / City Year of 2011, known prevalence of Tuberculosis in the province of North Maluku In 2011 was 104 per 100,000 population consisting of prevalence in males as much as 91 per 100,000 and 68 per 100,000 population in perempuan.<sup>6</sup>

Health offices in North Halmahera 2018 Tuberculosis patients 190 patients (50%) the achievement of a decline of 32% from the year lalu.<sup>7</sup>

Based on preliminary data taken from Public Health Center Pitu, the number of Tuberculosis patients from 2015 to 2018 amounted to 92 patients, and January to June 2019 patients with Pulmonary Tuberculosis patients were 30 women and 48 men amounted to 74 orang.<sup>8</sup>

## Formulation of the problem

Based on preliminary data taken from the Center for Public Health Pitu, can be formulated problems in this study is whether there is a relationship between the level of family knowledge on Pulmonary tuberculosis disease in the working area Public Health Center Pitu, District Central Tobelo, North Halmahera District.

## Research purposes

To determine the level of knowledge on the disease Tuberculosis family.

## Benefits of Research

This research is expected to be useful for:

- Educational institutions as reference further research related to the level of knowledge about family relationships Tuberculosis disease.
- Halmahera STIKMAH student can learn anything that can be associated with the level of knowledge about the disease Tuberculosis.
- For the author, useful to determine the level of knowledge about the disease Tuberculosis family and as a follow-up references for further research.

## Literature review

Tuberculosis is a chronic infectious disease caused by bacteria transmitted (*Mycobacterium tuberculosis*). Germs are usually entered into the human body through the air (breathing) into the lungs, then spread from the lungs to other organs through the bloodstream, namely: the lymph nodes, respiratory or direct spread to other organs. Tuberculosis is an infectious disease caused by the bacteria directly Pulmonary Tuberculosis. Active pulmonary tuberculosis cough, sneeze, talk or laugh. Tuberculosis germs die quickly in direct sunlight but can survive several hours in the dark and damp. In body tissues, these germs can fall asleep long (domaint) for several tahun.<sup>9</sup>

*Mycobacterium Tuberculosis* a Gram-positive, spore-forming agent that does not exist between tuberculosis disease in both humans and animals. These bacteria damage the lungs, central nervous system, the lymphatic system, and circulatory system darah.<sup>10</sup>

Tuberculosis is a disease of the respiratory tract infection caused by the bacterium *Mycobacterium tuberculosis* (MTB). To diagnose the disease radiographic examination dada.<sup>11</sup>

## Tuberculosis Etiology

Pulmonary Tuberculosis is an infectious disease caused by the bacterium *Mycobacterium tuberculosis* bacilli that have special properties that are resistant to acid staining (Basil Hold acid) for Tuberculosis bacilli have lipid cell. Tuberculosis bacilli are vulnerable to sunlight so that in a few minutes will die. Tuberculosis bacilli will also be killed within minutes if exposed to

alcohol 70% and 50%. Tuberculosis bacilli may take 12-24 hours to perform mitosis, it provides intermittent drug delivery (2-3 days).<sup>12</sup>

### Pathophysiology

Tuberculosis is a contagious disease caused by the bacteria Tuberculosis (*Mycobacterium tuberculosis*). Most germs Tuberculosis attacks the lungs but can also know the other organs.

1. Mode of transmission
  - a. Source of infection is tuberculosis BTA positive patient.
  - b. At the time you cough or sneeze, patients spread germs into the air in the form of droplets (droplet nuclei). Once the cough can produce about 3,000 droplets.
  - c. Generally, transmission occurs in the room where the droplets are in a long time. Ventilation can reduce the amount of spark, While direct sunlight can kill germs. Sprinkling can last for several hours in the dark and damp.
  - d. Power transmission of a patient is determined by the amount of germs were removed from the lung. The higher the degree Plus sputum examination results, the more infectious the patient.
  - e. Factor that allows someone exposed to Tuberculosis germs are determined by the concentration and duration spark in air-breathing air tersebut.<sup>13</sup>

### Signs and symptoms

The main symptoms of Tuberculosis patients are:

1. Coughing up phlegm for 3 weeks or more.
2. Sputum mixed with blood
3. coughing up blood
4. Out of breath
5. weakness
6. Decreased appetite
7. Weight loss
8. Mailase
9. Sweating at night without physical activity
10. Fever chills more than 1 month.

### Factors Affecting Pulmonary Tuberculosis

1. Nutritional status  
Nutrition is a process by which organisms use in the consumption of food normally through the process of digestion, the absorption, transport, the storage, metabolism, and expenditure of substances that are not used to sustain life, growth and normal functioning of the organs and produce energy.

Poor nutritional status will cause decreased immunity, making it easier to Tuberculosis infection.

2. Contact With Patients with Pulmonary Tuberculosis  
A history of contact is their relationship with the patient is the source of transmission of Tuberculosis BTA (+) when sneezing or coughing. Patients spread germs into the air in the form of droplet or droplets. Transmission power of a person is determined by the number of patients discharged from His lungs germs.
3. BCG immunization  
Immunization is a way to improve one's immune actively against an antigen so that when later he was exposed to the same antigen, the disease does not occur. Preventing a disease, including pulmonary tuberculosis disease, is by immunization. Immunization is intended to reduce morbidity, mortality, disability, and where possible obtain eradication in an area or country. BCG immunization is part of the immunization factor analyzed to predict the occurrence of pulmonary TB in children. BCG immunization protects against meningitis and Tuberculosis Tuberculosismiliary with degree of protection around 86%.
4. cigarette  
The relationship between smoking and Tuberculosis has been studied in several systematic reviews. Bates and colleagues in the meta-analysis of 24 studies on the effects of smoking revealed a high Tuberculosis Tuberculosis risk in smokers than non-smokers with. Smoking is a risk factor Tuberculosis infection and disease as well as additional risk of death for a person with active pulmonary tuberculosis. due to nicotine content in cigarettes is the reason increasing vulnerability of pulmonary tuberculosis caused by cigarette

### Clinical manifestations

1. Fever  
High temperatures are not too fever that lasts longer, usually felt at night accompanied by night sweats. Sometimes fever-like influenza and are intermittent.
2. Coughing more than 3 weeks may be accompanied by blood.
3. In case of partial bronchial obstruction (channel leading to the lungs) due to compression of the lymph nodes are enlarged, would create noise "wheezing" sound accompanied by shortness of breath weakened.
4. Chest pain If there is fluid in the pleural cavity (wrapping lungs), can be accompanied by complaints of chest pain.

5. Malaise is a general feeling unhealthy, uncomfortable or sluggish ( "malaise")<sup>14</sup>

### **Treatment of Tuberculosis**

Currently, active pulmonary tuberculosis treated with combination therapy consisting of three or more drugs (usually four). During treatment, patients with Tuberculosis active generally given isoniazid (INH), rifampicin (RIF), pyrazinamide (PZA) and ethambutol (EMB) for 2 weeks which is a phase of intensive Then therapy followed by administration of isoniazid and rifampicin for 4 months (phase advanced) to destroy the rest of the bacteria that have entered into a dormant state. The initial purpose of the combination therapy is to minimize the development of resistance to streptomycin after the drug was first introduced. Currently, the standard treatment for drug-sensitive Tuberculosis infection is very effective in cleaning bacteria.

### **Understanding Knowledge**

Knowledge is essentially all known to man regarding a particular object that is a repertoire of mental wealth obtained through rational and Experience. What is known, or the result of the workout. Work out is a result of the known, conscious, aware, understand, and clever. So all that knowledge is the property of the content of thought. So knowledge is the result of the process of human effort to tahu.<sup>15</sup>

### **Knowledge level**

- a. Know (Know)  
Know interpreted remember a previously learned material. Which included recall a specific phase of the overall material is learned or stimuli. So the idea is that the lowest level of knowledge.
- b. Understand (Comprehension)  
Understanding is defined as the ability to explain properly the object known and can correctly interpret the material. People who have understood the object or material must be able to explain said.
- c. Application (Application)  
Application is defined as the ability to use a material that has been studied in a situation or condition of real (true).
- d. Analysis (Analysis)  
Analysis is the ability to describe the material of an object within the organizational structure of the dam is still no relation to one another. Capabilities can be attributed to the analysis of the uses of the verb as a verb such as describe, separating, classifying and forth about things that are important.
- e. Synthesis (Synthesis)  
Synthesis showed an ability to lay or connect the parts in a whole new form, in other words, the

synthesis of an ability to develop a new formulation of an existing formulation.

- f. Evaluation (Evaluation)  
Evaluations related to the knowledge to do research on a material or object.

### **Factors Influencing Knowledge**

1. Age  
Age is the length of life in a matter of time (years).
2. Education  
Education is a learning process that never reached formally in educational institutions.
3. Resources  
The source of information is everything becomes an intermediary in the delivery of information, stimulate the mind and ability.

### **Research methodology**

This type of analytic research with cross-sectional approach with the aim of the study was to determine the relationship of the level of knowledge on the disease Tuberculosis family.

### **Location And Time Research**

1. Research sites  
This research was conducted at the Center for Public Health Pitu Pitu precisely in the village.
2. Research time  
The research was conducted on July 11, 2019.

### **Population and Sample**

#### **Population**

Population is a generalization region consisting of objects/subjects that have certain qualities and characteristics defined by the researchers to learn and then drawn conclusions. Based on preliminary data obtained from the Center for Public Health Pitu, Amount known population of 122 People.<sup>17</sup>

#### **Samples**

The sample is part of a particular selected population that is considered to represent the population.

1. Inclusion criteria
  - a. Tuberculosis patient's family who came in Public Health Center Pitu.
  - b. Tuberculosis families who are willing to become respondents and 25-50 years age limit.
2. Exclusive criteria
  - a. Tuberculosis patient's family who are not willing to be the respondent
  - b. Tuberculosis patient's family outside the working area of the Public Health Center Pitu.

### **Data collection technique**

Data were collected from primary data interviews (interview) researchers conducted interviews directly to the respondents to obtain data to support this research. Secondary data obtained from research journals related to this research, as well as data obtained from the data Public Health Center Pitu.

### Data processing

Data processing is the process of preparing, setting up and processing of data Reached within the following steps:

1. Editing  
At this stage, researchers examine the data to see the correctness and completeness of the answers to questionnaires from respondents.
2. coding  
Researchers gave coding on the data to make it easier to process the data, all the variables were coded in other words coding is an activity to change the form of data that is more compact by using certain codes.
3. Tabulating  
The activities include the research data into the table and then processed by computer.
4. Entering  
It is a process of entering data into the computer which then analyzes the data using SPSS (statistical program for social science).
5. cleaning  
Is to ensure that all data entered into the data processing machine is in conformity with the actual or data cleansing process.

### Data analysis

Analysis of the data is Simplification process the data into a form that is easier to read and interpret. Statistics used in this process, which is one of its functions Simplify large amounts of data into information that is simple and easy to understand. The value of the data obtained for each variable, which was then analyzed descriptively using univariate and bivariate analysis. Statistical analysis of the data used for categorical with Chi-square test is said to be significant if  $p < 0.05$ . Analyzes were performed using SPSS for Windows version 2.5

1. Univariate analysis  
A univariate analysis performed to get an overview of the distribution and frequency of dependent and independent variables. The data is presented in tabular form and intrepestatied.
2. The bivariate analysis  
Bivariate analysis was conducted to see the relationship between the independent variables (relationship level of knowledge on the disease Tuberculosis family) with the dependent variable

(Patient Tuberculosis) whether these variables had a significant relationship or a relationship just by chance.

## DISCUSSION

Based on the research results of respondents age that most of the respondents with age > 50 years as many as 11 people (36.7%), while respondents aged 25-30 years as many as 10 people (33.3%) and the age of the respondent at least is to the age of 35- 45 Years as many as 9 people (30.0%).

Age influence and Tuberculosis disease most often found in the productive age of 15-50 years with current demographic transition occurs causing higher elderly age, why for the elderly over 55 years of systems imonologis someone down, making it very vulnerable to various diseases including Tuberculosis disease.

At the age of 15-55 years is the age group that has a high mobility so that they may be exposed to bacteria pulmonary tuberculosis mycobacteria larger. may occur in old age.

Based on the results of the study Gender, respondents consisting of Male 19 respondents (63.3%), while the female respondents 11 respondents (36.7%). The results showed that the number of male respondents more than women. According to the research that I got on the same field with the theory I read that the male sex is at greater risk for pulmonary tuberculosis disease than women. Why this is so because men are more likely to smoke and drink alcohol than women, smoking and alcohol can lower the body's immunity so more susceptible to lung tuberculosis.

Characteristics of respondents by education level is known that the majority of respondents' education in high school (SMA) of 16 respondents with a percentage (53.3%), the higher one's education more easily receive information, and ultimately knowledge possessed more and more low education will be making one slow to receive information. Because of the level of education a person can affect the ability to absorb information, and can easily resolve the problem that happened to her child either the disease or the other.

Characteristics of respondents by job, most of the IRT's work as much as 11 respondents with a percentage (36.7%) In the everyday life of work is the main thing that the better a job where someone can affect a person's life quality.

### **The correlation between family knowledge on pulmonary tuberculosis disease in the village of Pitu, Work Area Public Health Center Pitu, District Central Tobelo, Halmahera north**

The results based on a family relationship Knowing Level Tuberculosis disease with a good

amount of knowledge level with a percentage of 19 respondents (63.3%), sufficient knowledge 7 respondents with a percentage (23.3%) and lack of knowledge as much as 4 respondents with a percentage (13.3%).

Based on the chi-square analysis of 30 respondents was obtained  $p = 0.00$   $p$ -value where value is smaller than the sig  $<0.05$  shows that there is a relationship of family knowledge on lung tuberculosis.

This study is in line with research Hermawan Hamidi From the research results show that there is a weak correlation between maternal knowledge about pulmonary tuberculosis disease prevention is less, the risk of pulmonary TB has 8.25 times compared with children who have a mother with pulmonary TB disease knowing about either. The relationship between the mother's knowledge about disease prevention of pulmonary tuberculosis with lung TB incidence in children aged 0-14 BP4 Salatiga ( $p = 0.12$   $CC = 0.349$  and  $OR = 8.25$ ).

This study is in line with research Ferry Andreas Nugroho From the research based on results of multiple logistic regression statistical test based on the significance level  $\alpha = 0.05$  was obtained  $p = 0.253$  where  $p > \alpha$  then  $H_0$  is accepted so no knowledge level relationship with the prevention of tuberculosis transmission behavior lung on the family in the working area of Public Health Center for the northern city.

## CONCLUSION

The correlation between family knowledge on pulmonary tuberculosis disease in the village of Pitu, work areas Public Health Center Pitu.

1. The knowledge level ie families with the highest percentage of 19 respondents 63.3%, insufficient knowledge 7 respondents with a percentage of 23.3% and less knowledge of 4 respondents with a percentage of 13.3%.

The results of the chi-square test analysis showed that there was a relationship of family knowledge on lung tuberculosis that of 30 respondents was obtained, ( $p =$ , where  $p 0,00$  where the  $p$ -value less than the value sig  $<0.05$ ).

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