



The relationship between the level of knowledge and family attitudes towards efforts to prevent tuberculosis disease in the pulmonary disease Clinic Vita Insani Pematangsiantar

Dawson Zulveritha

Akademi Keperawatan, Pemerintah Kabupaten Tapanuli Utara, Sumatera Utara, 20151, Indonesia

ARTICLE INFO

Article history:

Received Nov 15, 2023

Revised Nov 20, 2023

Accepted Nov 26, 2023

Keywords:

Attitude;
Knowledge;
Tuberculosis Prevention Efforts;
Tuberculosis.

ABSTRACT

Tuberculosis (TB) is an infectious disease caused by the Mycobacterium tuberculosis. The number of TB cases recorded in the pulmonary clinic of Vita Insani Hospital in 2023 reached 67 cases. The purpose of this study was to determine the relationship between the level of knowledge and family attitudes towards efforts to prevent tuberculosis disease. This study is a quantitative study with a cross sectional design, the sample in this study were pulmonary TB patients obtained by total sampling technique. Data analysis used was univariate and bivariate analysis. Bivariate analysis using the Spearman correlation test. The results of univariate analysis showed that 71.7% of the majority of families had good knowledge of TB prevention efforts, 55% of families had a positive attitude towards TB prevention efforts and 66.7% of families had good TB prevention efforts. Bivariate analysis with the Spearman Correlation test with $\alpha=0.05$, the results of the analysis showed that there was a relationship between knowledge and efforts to prevent TB disease (p value=0.000), and there was a relationship between respondents' attitudes and efforts to prevent TB disease (p value=0.003). TB disease prevention efforts that can be carried out by families as against TB disease are increased health promotion.

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Corresponding Author:

Dawson Zulveritha,

Akademi Keperawatan,

Jl. Agus Salim No 2 Tarutung Kabupaten Tapanuli Utara, Sumatera Utara 20151, Indonesia

Email: dawsonhutaaruk@gmail.com

1. Introduction

Tuberculosis (TB) remains a global health problem. One-third of the world's population is already infected with tuberculosis, with the majority of TB sufferers being of working age (15-55 years). It causes ill health among millions of people every year and is the second leading cause of death from infectious diseases worldwide, after Human Immunodeficiency Virus (HIV)/AIDS (Acquired Immune Deficiency Syndrome) (Linda, 2008).

The mortality and morbidity rates due to Mycobacterium tuberculosis in Indonesia are very high. In 2009, 1.7 million people died from tuberculosis, including 600,000 women and 1.1 million men, while there were 9.4 million new cases of tuberculosis, including 3.3 million women and 6.1 million men. In 2010 Indonesia has succeeded in reducing the incidence, prevalence, and mortality rate of TB (Lubis & Kes, 2019).

The results of the 2020 TB prevalence survey on knowledge, attitudes and behaviors showed that 96% of families cared for family members with TB and only 13% hid their presence. Although 76% of families had heard of TB and 85% knew that TB was curable, only 26% could name the two main signs and

symptoms of TB. How TB is transmitted was understood by 51% of families and only 19% knew that free TB drugs were available. The survey results show that there are still families who do not have sufficient knowledge about tuberculosis disease (Sumiati Astuti, 2013).

Preliminary studies that have been conducted with further interview methods regarding the attitudes of families visiting the pulmonary disease clinic of Vita Insani Hospital regarding tuberculosis disease obtained results from 3 questions, namely Eight families said that they did not care much about TB prevention measures because they thought that as long as they did not interact with people with TB, they would not contract TB. Families also said that when sneezing and coughing, they do not cover their mouths, and there are still families who throw saliva or phlegm in any place.

Many studies on tuberculosis have been conducted in Indonesia, but most of them are limited to the successful treatment of tuberculosis. The research that will be conducted by the researcher is about tuberculosis prevention efforts as a whole. Knowledge about tuberculosis prevention efforts for families is very important to know and understand so that families can avoid tuberculosis disease.

Based on this background, the researcher wants to know whether there is a relationship between the level of knowledge and family attitudes towards efforts to prevent tuberculosis in the Pulmonary Disease Poli Vita Insani Pematangsiantar.

2. Methods

The type of research conducted was quantitative research using analytic research design and cross sectional design. This research design is used to examine an event at the same time (one time). The independent variables in this study were the level of knowledge and family attitudes towards tuberculosis prevention efforts, and the dependent variable in this study was tuberculosis prevention efforts. The variables in this study were bivariate, namely family knowledge and attitude towards tuberculosis prevention efforts at the pulmonary disease clinic of Vita Insani Hospital Pematangsiantar. The research was conducted at the pulmonary disease clinic of Vita Insani Hospital Pematangsiantar in August-April 2023. The population in this study was an average of 60 families per month who came to visit the internal medicine clinic of Vita Insani Hospital Pematangsiantar. The sampling technique used in this study is Total sampling is a sampling technique where the number of samples is the same as the population. The reason for taking total sampling is because the population is less than 100. So the number of samples in this study was 60 people. Primary data collection was carried out using a questionnaire method filled out by the family.

3. Results dan Analysis

3.1 Analysis

Analisa Univariat

According to Hastono (2007), univariate analysis was conducted to describe the characteristics of each variable studied (Priantoro, 2018). Univariate analysis on categorical data such as age, education, occupation, gender, which is presented in the form of a frequency distribution using percentages (proportions).

Analisa Bivariat

Bivariate analysis conducted on 2 variables that are suspected of being related or correlated. Bivariate analysis to see the relationship between family knowledge and attitudes with tuberculosis prevention efforts in the pulmonary disease clinic of Vita Insani Hospital Pematangsiantar Hypothesis testing to make decisions about whether the hypothesis proposed is convincing enough to be rejected or accepted using the Chi-Square test statistical test. At the confidence level used is 95%, it is said to be significant if ($p < 0.05$).

3.2 Results

Univariate Results

Table 1
Distribution of family characteristics results on tuberculosis disease prevention efforts in the pulmonary disease poly vita insani pematangsiantar

No.	Family Characteristics	F	%
1.	Gender		
	Male	40	66.7
	Female	20	33.3
	Total	60	100.0
2.	Education		
	SD	15	25
	SMP	39	65
	SMA	6	10
	Total	60	100.0
3.	Knowledge		
	Good	43	71.7
	Fair	16	26.7
	Less	1	1.7
	Total	60	100.0
4	Preventive Measures		
	Good	40	66.7
	Fair	20	33.3
	Less	0	0
	Total	60	100.0

The data in table 1 above shows that family characteristics based on gender are 40 people (66.7%) male and 20 people (33.3%) female. 3%), family characteristics based on education level, elementary education as many as 15 people (25%), high school education as many as 39 families (65%) and high education as many as 6 families (10%), family knowledge of tuberculosis prevention efforts in the family had good knowledge as many as 43 people (71.7%), Family attitude towards tuberculosis prevention efforts had a positive attitude as many as 33 people (55%), and a negative attitude as many as 27 people (45%), tuberculosis prevention efforts included a good category as many as 40 people (66.7%) and a sufficient category as many as 20 people (33.3%).

Bivariate Results

Based on the conceptual framework, bivariate analysis has examined the relationship one by one between the independent variable and the dependent variable. The independent variables are the level of knowledge and family attitude towards tuberculosis prevention efforts. This bivariate test used the Spearman Correlation test using $\alpha = 5\%$.

Table 2

Knowledge relationship		
Variable	Sig	r
Knowledge of Preventive Efforts	0.000	0.541

Based on table 2 above, it can be seen that out of 60 families, using SPSS 16, the Spearman Correlation test results obtained a p value = 0.000, where the p value < 0.05 , which means there is a significant relationship between knowledge and efforts to prevent tuberculosis. The coefficient correlation value is 0.541, which means that there is a moderate relationship between knowledge and efforts to prevent tuberculosis disease.

Table 3
Attitude relationship

Variable	Sig	r
Attitude of Preventive Measures	0.003	0.378

The results of the Spearman Correlation test obtained a p value = 0.003, where the p value <0.05, which means there is a significant relationship between attitudes and efforts to prevent tuberculosis disease. The coefficient correlation value is 0.378, which means there is a weak relationship between attitude and tuberculosis prevention efforts.

Overview of Knowledge about Tuberculosis Disease and Tuberculosis Disease Prevention Efforts

Knowledge is the result of knowing and this occurs after a person senses a certain object. Most human knowledge is acquired through the eyes and ears. Knowledge is needed as support in generating confidence as well as attitudes and behaviors every day, so it can be said that knowledge is a very important domain for the formation of one's actions according to Notoatmodjo in (Dr. Vladimir, 2020). Knowledge in this study is that families are able to know about tuberculosis disease and efforts to prevent tuberculosis disease.

Notoatmodjo (2017) explains that sources of information obtained from various sources, a person tends to have broad knowledge (Khairunnisa z et al., 2021). Knowledge about tuberculosis disease and its prevention efforts obtained by families comes from various sources, such as books, mass media, counseling or education and through relatives. The existence of new information about a matter from the mass media provides a new cognitive foundation for the formation of knowledge on that matter.

The results of the study on 60 families showed that the level of family knowledge about tuberculosis disease and efforts to prevent tuberculosis disease was good at 71.1%, sufficient knowledge at 26.7% and poor knowledge at 1.7%. The results showed that most families had good knowledge of tuberculosis disease and efforts to prevent tuberculosis disease. The good knowledge was obtained through various factors, such as books, mass media, counseling from Vita Insani Hospital Pematangsiantar and from the closest relatives who told them about TB disease and its prevention efforts.

Good knowledge in this study is the insight or understanding that families have about TB disease and its prevention efforts which include understanding, causes, transmission, signs and symptoms, complications, risk factors and TB disease prevention measures. While sufficient knowledge in this study can be interpreted that the family has sufficient understanding of TB disease and its prevention efforts such as understanding, signs and symptoms, transmission and several prevention efforts. Insufficient knowledge in this study means that families have a poor understanding of TB disease and its prevention efforts such as understanding, complications, risk factors and several prevention efforts. This is because families do not get enough information about tuberculosis disease from the mass media or from Vita Insani Hospital Pematangsiantar because families rarely participate in health education activities at the pulmonary disease clinic of Vita Insani Hospital Pematangsiantar.

Good knowledge about tuberculosis prevention efforts will greatly influence family behavior in making tuberculosis prevention efforts. Families with good knowledge are expected to make appropriate tuberculosis prevention efforts. Awareness will grow in the family to make efforts to prevent tuberculosis if the family has good knowledge.

The results of this study are in line with the research of Wahyuni (2008), the level of family knowledge about tuberculosis disease and the behavior of preventing the transmission of tuberculosis disease in Sidorejo village obtained a percentage value of 42.5% with good knowledge. This study also reported that good knowledge was influenced by several factors, such as mass media, experience, age and environment. (Sumiati Astuti, 2013).

This is in accordance with this study where family knowledge is obtained through mass media, books, family experience, counseling from Vita Insani Hospital, and information about TB disease and prevention efforts obtained from closest relatives. In Notoatmodjo (2007) that the educational

background of the family also affects knowledge, namely the majority of family education is high school. In accordance with the theory, the higher the level of education of a person, the better the level of knowledge (Sumiati Astuti, 2013).

This research does not align with Madania (2023), The level of family knowledge about TB disease and its prevention behavior in Solok city obtained a percentage of 63.6% who had low knowledge. The low level of knowledge in Putra's research can be caused by the family's lack of understanding of TB disease and its prevention efforts. The samples taken by Putra were patients with pulmonary TB recorded by the Solok City Health Office.

Notoatmodjo (2020) The study revealed that the higher the level of education is one of the factors that influence a person's perception to more easily accept new knowledge and the higher a person's education, the better their knowledge. This is in accordance with the results obtained by the researchers, the majority of families have good knowledge (71.7%) of tuberculosis disease and tuberculosis disease prevention efforts with the majority of family education characteristics are high school (65.0%).

Overview of Family Attitudes about Tuberculosis Disease Prevention Efforts

Attitude is the readiness to react to objects in a particular environment as an appreciation of the object (Notoatmodjo, 2007). The process of attitude formation can occur due to stimuli, such as family knowledge about TB prevention. The stimulus stimulates the family to give a response, which can be in the form of a positive or negative attitude, which will eventually be manifested in behavior or not. According to Azwar (2013), everyone who has positive feelings towards a psychological object is said to like the object or have a favorable attitude towards the object, while individuals who have negative feelings towards a psychological object are said to have an unfavorable attitude towards the object of the attitude. Family attitude in this study is how the family behaves towards tuberculosis prevention efforts, either supporting or rejecting them. (Crystallography, 2016).

The results of this study on 60 families showed that families who had a positive attitude towards tuberculosis prevention efforts were 55% and a negative attitude was 45%. Positive attitudes towards tuberculosis prevention efforts tend to accept and know about it, while negative attitudes tend to reject tuberculosis prevention efforts. Attitude is an internal ability that plays a role in taking action, especially if the attitude is open, it is likely to be reflected in the actions shown.

Azwar (2013) explains the factors that influence attitudes, namely personal experience, the influence of other people who are considered important, the influence of culture, mass media, educational institutions and religious institutions and the influence of emotional factors (Sulaksono et al., 2014). This is in accordance with research where family attitudes are influenced by several factors, such as personal experience, the influence of others, the culture of the family and family education, where most of the family education in the research is high school so that they have a good understanding of TB prevention efforts that can affect the family's attitude. This is in line with Djannah's (2009) research, family attitudes about the behavior of preventing tuberculosis disease transmission in Sleman Yogyakarta were found to have a good attitude (Nainggolan, 2021).

Sikap positif dalam penelitian ini terdiri dari keluarga mendukung dengan upaya pencegahan penyakit tuberculosis, cara penularan, dan faktor risiko yang menyebabkan penyakit tuberculosis terjadi. Sikap negatif dalam penelitian ini terdiri dari beberapa keluarga kurang mendukung dengan beberapa upaya pencegahan dan faktor risiko yang dapat menyebabkan penyakit tuberculosis. Hal ini disebabkan keluarga kurang informasi tentang penyakit tuberculosis, memiliki pengalaman yang kurang tentang upaya pencegahannya dan dapat juga disebabkan oleh pengaruh orang lain atau kebudayaan dalam pengambilan sikap dari keluarga.

The results of this study are not in line with the research Asiah (2014), families who have a negative attitude about the prevention of tuberculosis infectious diseases as much as 54.5%. This is caused by several factors, namely personal experience, emotional factors, family support factors, and age, where some of the families in the study were <36 years old who have emotions that sometimes (lazy) to go for treatment. The samples taken were families of tuberculosis patients in the Pulmonary Clinic of Arifin Achmad Hospital, Riau Province. Most families have a positive attitude towards TB

prevention efforts, which means that most families support or accept efforts to prevent TB disease. With a positive attitude, families can reduce the incidence of TB disease.

According to Azwar (2013) in Suci R (2021), one of the factors that influence a person's attitude is his knowledge. The higher the knowledge possessed will contribute to the formation of a good attitude. The formation of attitudes cannot be separated from the existence of influencing factors such as personal experience, culture, other people who are considered important, mass media, and emotional factors from individuals.

Overview of Tuberculosis Disease Prevention Efforts

Disease prevention is an important component of health care. Preventive care involves health promotion activities including specialized health education programs, which are designed to help clients reduce their risk of illness, maintain maximum function, and promote good health-related habits (Maha, 2019). Tuberculosis prevention efforts are made to reduce the mortality rate caused by tuberculosis disease. Tuberculosis prevention efforts in this study are actions taken by the family to prevent tuberculosis.

The results of this study on 60 families showed that families who had good tuberculosis disease prevention efforts were 66.7% and those who had sufficient tuberculosis disease prevention efforts were 33.3%. This is due to the knowledge and attitude factors possessed by the family. The results of research on knowledge found that most families have good knowledge while the results of research on attitudes found that most families have a positive attitude towards TB disease prevention efforts so that the prevention efforts made by families are good.

Prevention efforts made by families to prevent tuberculosis disease such as using masks when talking to people with TB, consuming nutritious food, maintaining environmental hygiene, providing adequate ventilation and sunlight and not disposing of phlegm in any place. The results of this study are in line with Djannah's research (2009) in Nainggolan (2021), 54.1% of families have high motivation to make efforts to prevent tuberculosis. The results of this study are not in line with Putra (2011), which found that the level of preventive measures for pulmonary TB by TB patients in Solok city is generally considered insufficient with a value of 81.8%.

Relationship between family knowledge level and tuberculosis prevention efforts

Based on the results of data processing using the Spearman Rank correlation calculation with the help of a computer program, the probability value of 0.000 is smaller than the value of $\alpha = 0.05$, so it can be concluded that H_0 is rejected, which means that there is a significant relationship between knowledge and tuberculosis prevention efforts. The coefficient correlation value of 0.541 states that there is a moderate and unidirectional relationship between knowledge and tuberculosis prevention efforts, which means that the better the level of knowledge, the better the tuberculosis prevention efforts.

The results obtained from 43 people with a good level of knowledge, 83.7% had good tuberculosis disease prevention efforts and 16.3% had sufficient tuberculosis disease prevention efforts. Families who have sufficient knowledge as many as 16 people, 25% have good tuberculosis disease prevention efforts and 75% have sufficient tuberculosis disease prevention efforts. Families who had insufficient knowledge were 1 person with sufficient efforts to prevent tuberculosis.

This study is in line with research that concluded that there is a significant relationship between knowledge and behavior to prevent the transmission of tuberculosis disease in the work area of the Prof. Dr. Sulianti Saroso Infectious Disease Hospital (Kurniasih & Widianingsih, 2018). The better the level of knowledge, the higher the prevention of tuberculosis transmission.

And this research is also in line with the research of Wahyuni (2008) which concluded that there is a significant relationship between the attitude of respondents and the behavior of preventing tuberculosis disease transmission in the Bendosari Health Center working area. The probability value obtained is significant, namely $0.000 < 0.05$. The value with the coefficient correlation obtained is 0.755, meaning that the correlation is strong and unidirectional. the more positive the attitude of the community, the better the prevention actions taken. (Sumiati Astuti, 2013).

Based on the results of the analysis of the relationship between knowledge level and tuberculosis prevention efforts in Lagoa village families, it can be concluded in accordance with the theory and related research that families with a good level of knowledge have better tuberculosis prevention actions compared to families with less and sufficient knowledge. This can be interpreted that knowledge is a very important domain for the formation of a person's actions because good knowledge can create good behavior. (Notoatmodjo, 2020).

Relationship between family attitude towards tuberculosis prevention efforts

The results of data processing using Spearman Rank correlation calculation resulted in a probability value of 0.003 smaller than the value of $\alpha = 0.05$, so it can be concluded that H_0 is rejected, which means that there is a significant relationship between family attitudes towards tuberculosis prevention efforts. The coefficient correlation value of 0.378 states that there is a weak and unidirectional relationship between family attitudes and tuberculosis prevention efforts, which means that the more positive a person's attitude is, the better the tuberculosis prevention efforts he/she makes.

The results of the study obtained from 33 people with positive attitudes, 69.7% had good tuberculosis prevention efforts and 30.3% had sufficient tuberculosis prevention efforts. There were 27 families with negative attitudes, 63% had good prevention efforts and 37% had adequate prevention efforts.

This study is in line with Wahyuni's (2008) research which concluded that there is a significant relationship between family attitude and the prevention of tuberculosis transmission behavior at Vita Insani Bendosari Hospital. The probability value obtained was significant at $0.000 < 0.05$. The coefficient correlation value obtained is 0.755, meaning that the correlation is strong and unidirectional. The more positive the family's attitude, the better the preventive measures taken.

Benjamin Bloom (1908) in Notoatmodjo (2017) states that the domains of behavior are knowledge, attitudes and actions (Nisa, 2020). Roger (1974) in Notoatmodjo (2007) has the same opinion that attitudes and practices that are not based on adequate knowledge will not last long in a person's life, while adequate knowledge if not balanced by sustainable attitudes and practices will have no meaningful meaning for life. (Diajukan et al., 2013).

Based on the results of the analysis of the relationship between family attitudes towards tuberculosis prevention efforts in Lagoa urban families, it can be concluded in accordance with theory and related research that families with good knowledge levels and positive attitudes have good tuberculosis prevention actions. This can be interpreted that knowledge and attitudes are a support in carrying out healthy behavior. (Notoatmodjo, 2020).

4. Conclusion

Based on the results of research and discussion conducted on the relationship between the level of knowledge and family attitudes towards tuberculosis disease prevention efforts in the pulmonary clinic of Vita Insani Hospital Pematangsiantar in 2013, it can be concluded as follows that most families have good knowledge about tuberculosis disease prevention efforts by 71.7%, most families have a positive attitude towards tuberculosis disease prevention efforts by 55%, most families have good tuberculosis disease prevention efforts by 66.7%. There is a significant relationship between family knowledge and tuberculosis disease prevention efforts with a p value of 0.000 and has a moderate positive relationship with an r value of 0.541, meaning that the better the level of knowledge, the better the tuberculosis disease prevention efforts by 66.7%. There is a significant relationship between family knowledge and tuberculosis disease prevention efforts with a p value of 0.000 and has a moderate positive relationship with an r value of 0.541, meaning that the better the level of knowledge, the better the tuberculosis disease prevention efforts in the family, there is a significant relationship between family attitudes and tuberculosis disease prevention efforts with a p value of 0.003 and has a weak relationship with an r value of 0.378, meaning that the more positive one's attitude, the better the tuberculosis disease prevention efforts in the family.

In this study, researchers have tried their best to get optimal results and various efforts have

been made by researchers to achieve these results. Nevertheless, there are still various things that hinder or are difficult to control so as to make the limitations of this study on the collection of respondent data require more time because of looking for respondents who are willing and who are in accordance with the inclusion of respondents in this study taken respondents undergoing Pulmonary Tuberculosis treatment who are willing to become respondents with an unrestricted treatment period. Recommended for future researchers is that the research area can be developed with a larger population and the number of variables studied is also added, so that it can produce more accurate results. Data analysis used for future research is not only on univariate and bivariate analysis, but multivariate analysis can be done.

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