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Relationship of Knowledge and Attitude to Pulmonary Tuberculosis Prevention Behavior in Home Contact in Batuputih Health Center Working Area in 2020

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Abstract. Tuberculosis is an infectious disease caused by mycobacterium tuberculosis. The disease is transmitted by air (airborne disease). Tuberculosis cases in Batuputih Health Center in the last 4 years have experienced a significant increase in cases. In 2017 there were 4 cases of tuberculosis and in 2020 there were 32 cases of tuberculosis. This study aims to analyze the relationship of knowledge and attitudes to tuberculosis prevention behavior in house contact at Batuputih Health Center. This research is an analytical survey research with a cross-sectional method. Samples in this study numbered 60 people. The data were analyzed using the chi-square test with a meanness level of α=0.05. The results showed that 81.9% of family members who were home with sufferers had positive preventive behavior. This study shows that there is a knowledge relation between tuberculosis prevention behavior (p=0.001) and attitude towards tuberculosis prevention behavior (p=0.002).

Keywords: *Tuberculosis, knowledge, attitude, preventive behavior*

Abstrak. Tuberkulosis adalah penyakit menular yang disebabkan oleh mycobacterium tuberculosis. Penyakit ini ditularkan melalui udara (airborne disease). Kasus Tuberkulosis di Puskesmas Batuputih dalam 4 tahun terakhir mengalami peningkatan kasus yang cukup signifikan. Pada tahun 2017 terdapat 4 kasus tuberkulosis dan pada tahun 2020 terdapat 32 kasus tuberkulosis. Penelitian ini bertujuan untuk menganalisis hubungan pengetahuan dan sikap terhadap perilaku pencegahan tuberkulosis kontak rumah di Puskesmas Batuputih. Penelitian ini merupakan penelitian survei analitik dengan metode cross sectional. Sampel dalam penelitian ini berjumlah 60 orang. Analisis data menggunakan uji chi-square dengan tingkat mean = 0,05. Hasil penelitian menunjukkan bahwa 81,9% anggota keluarga yang serumah dengan penderita memiliki perilaku preventif yang positif. Penelitian ini menunjukkan bahwa ada hubungan pengetahuan antara perilaku pencegahan tuberkulosis (p=0,001) dan sikap terhadap perilaku pencegahan tuberkulosis (p=0,002).

Kata kunci: *Tuberkulosis, pengetahuan, sikap, perilaku pencegahan*

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Introduction

Pulmonary tuberculosis is one of the infectious diseases caused by basil mycobacterium tuberculosis. Pulmonary tuberculosis is one of the diseases of the lower respiratory tract that is often found in the lungs and organs inside the body, among others: intestines, lymph nodes (lymph nodes) bones, brain, and others. Globally tuberculosis cases amounted to 6.4 million, equivalent to 64% of tuberculosis incidences (10.0 million). Tuberculosis remains the 10 highest cause of death in the world and tuberculosis deaths globally are estimated at 1.3 million patients (WHO, Global Tuberculosis Report, 2018). Indonesia is one of the countries with the largest tuberculosis burden among 8 countries, namely India (27%), China (9%), Indonesia (8%), Philippines (6%), Pakistan (5%), Nigeria (4%), Bangladesh (4%) and South Africa (3%). According to the Global Tuberculosis Report, the incidence of Tuberculosis in Indonesia is 319 per 100,000 inhabitants and the death rate is 40 per 100,000 inhabitants. The number of tuberculosis cases in Indonesia in 2018 was found to be 566,623 cases increased when compared to all tuberculosis cases found in 2017 as many as 446,732 cases.

According to data BPS (Central Statistics Agency), East Nusa Tenggara lung TB cases in the last 3 years experienced fluctuations from 2015-2018. in 2015 the total number of pulmonary TB cases amounted to 2,561 cases, in 2016 the number of pulmonary TB cases amounted to 1,320, in 2017 the total number of pulmonary TB cases amounted to 3,670 cases and in 2018 there were 6,583 cases of Pulmonary TB.

Central South Timor's BPS data (Central Statistics Agency) show the number of pulmonary TB cases in Public Health Center Batuputih in 2017-2020 experienced a fairly high increase in cases, in 2017 the number of tuberculosis cases as many as 4 cases then increased in 2018 to 10 cases, in 2019 increased quite high to 28 cases and in 2020 increased to 32 cases. Knowledge is the result of knowing and this happens after people have sensed a particular object, knowledge

occurs through the human senses, namely: the senses of vision, hearing, smell, taste, and touch. Most of the knowledge is obtained through the eyes and ears (Notoatmojo, 2011).

Research conducted by Darmin et al (2020) shows that there is a meaningful relationship between the level of education to the incidence of tuberculosis. The low level of education a person has makes the knowledge they have less so that it has an impact on their behavior. A person who is in frequent contact with the sufferer will be transmitted because it often breathes air containing TB bacteria, and enters the lungs so it has a risk of suffering from pulmonary TB. The history of contact with people with pulmonary TB has a 9.3 times greater risk of suffering from pulmonary TB compared to the no contact history of Darmin et al (2020). This study aims to analyze the relationship of knowledge and attitudes towards preventive behavior in house contact in the Working Area of Batuputih Health Center.

Method

This type of research is quantitative research with a cross-sectional approach. Research Place is the working area of Batuputih Public Health Center. This research was conducted in March 2021. The population in this study was all tuberculosis sufferers and family members of 112 people. How to take samples using purposive sampling techniques the number of samples 60. Data processing techniques in this study are editing, coding, entry, cleaning, and saving. Method collecting data from questionnaire sheets by interview method. The data collection method is divided into 2 primary and secondary data. Data analysis using univariate and bivariate using chi-square test using α= 0.05 and confidence interval of 95%. This research has been approved by the Ethics Commission of Public Health Faculty, the University of Nusa Cendana with registration number: 2020236-KEPK.

Results

Table 1.
Frequency Distribution of respondents based on age in the Work in Batuputih Health Center Working Area in 2020

No	Age (Years)	Frequency (f)	Percentage %
1.	17-25	22	36.7
2.	26-35	12	20.0
3.	36-45	19	31.7
4	46-55	4	6.7
5	56-65	1	1.7
6	66-72	2	3.3
Total		60	100

Based on table 1 shows that the age group of respondents varies between 17 years to 71 years. The highest number of respondents to families with pulmonary TB were 17-25 years old with 22 respondents (36.7%), while respondents with the age group 56-65 years old became at least 1 respondent (1.7%).

Table 2.
Distribution of Frequency of Respondents Based on Last Education in Work in Batuputih Health Center Working Area in 2020

No	**Education**	**N**	**%**
1.	Do not attend school	1	1,7
2.	Elementary school	16	26,7
3.	Junior high school	21	35,0
4.	High school	19	31,7
5.	College	3	5,0
	Total	**60**	**100**

Based on table 2 the education levels of respondents vary. The education level of most respondents was from junior high school which was 21 (35.0%) Respondents. Meanwhile, respondents with no school education level were at least 1 (1.7%) Respondents**.**

Table 3.
Distribution of Respondents' Frequency by Type of Work in Batuputih Health Center Working Area in 2020

No.	Work	N	%
1.	Housewife	21	35.0
2.	Farmer	21	35.0
3.	Student	7	11.7
4.	Private	8	13.3
5.	Honorary worker	1	1.7
6.	Civil servants	1	1.7
7.	Pensioner	1	1.7
	Total	**60**	**100**

Based on table 3 the highest types of respondents' jobs are IRT and Farmer with the number of 21 (35.0%) respondents while the type of work Honorary, Civil Servants, Retirees are at least 1 (1.7%) Respondents.

Table 4.
Distribution of frequency of respondents based on the level of knowledge of pulmonary TB prevention in house contact in the Working Area of Batuputih Health Center in 2020

No	Level of knowledge	Frequency	%
1.	Less	28	46,7
2.	Good	32	53,3
	Total	**60**	**100**

Based on table 4 out of 60 most respondents have good knowledge about Pulmonary TB disease and prevention as many as 32 respondents with percentage (53.3%) and respondents who have a level of knowledge about Pulmonary TB and prevention as many as 28 respondents with a percentage of 46.7%.

Table 5.
Distribution of frequency of respondents based on pulmonary TB prevention attitudes in house contact in Batuputih Health Center Working Area in 2020

No	Attitude	Frequency	%
1.	Negative	11	18,3
2.	Positive	49	81,7
	Total	**60**	**100**

Based on table 5 out of 60 respondents mostly have a positive attitude regarding Pulmonary TB disease and prevention, which is as many as 49 respondents with a percentage of 81.7%. 11

respondents had a negative attitude about pulmonary TB disease and its prevention with a percentage of 18.3%.

Table 6.
Distribution of frequency of respondents based on pulmonary TB prevention behavior in house contact in Batuputih Health Center Working Area in 2020

No	Behavior	Frequency	%
1.	Negative	23	38,3
2.	Positive	37	61,7
	Total	**60**	**100**

Based on table 6, most respondents had positive pulmonary TB prevention behavior, which is 37 respondents with a percentage of 61.7% and, negative lung TB prevention behavior with a percentage of 38.3%.

Table 7.
Distribution of Ventilation Frequency of Homes for People with Pulmonary TB in the Working Area of Batuputih Health Center in 2020

No	Ventilation	Frequency	%
1.	Exist	13	59,1
2.	Not	9	40,9
	Total	**22**	**100**

Based on table 7, it is known that most houses with Pulmonary TB have ventilation as many as 13 houses with a percentage (59.1%) while 9 houses do not have ventilation with a percentage of 40.9%.

Table 8.
Distribution of Home Lighting Frequency in Working Area of Batuputih Health Center in 2020

No	Lighting	Frequency	%
1.	Exist	14	63,6
2.	Not	8	36,4
	Total	**22**	**100,0**

Based on table 8, it is known that most houses with Pulmonary TB have lighting as many as 14 houses with a percentage of 63.6% and 8 houses do not have lighting with a percentage of 36.4%.

Table 9.

Distribution of residential density of houses with Pulmonary TB in Batuputih Health Center Area in 2020

No	Occupancy	Frequency	%
1.	Dense	4	18,2
2.	Not	18	81,8
	Total	**22**	**100.0**

Based on table 9, it is known that most of the houses with pulmonary TB are not densely populated, namely as many as 18 houses with a percentage of 81.8 while there are 4 houses with pulmonary TB that are densely populated with a percentage of 18.2%.

Discussion

1. Description of Ventilation In Homes For People with Pulmonary TB in Kejrad Public Health Center Batuputih Region in 2020

   Ventilation is very useful in the exchange of air in the house. Good air circulation makes the house not damp. This makes TB Bacteria can not last long in the room of the house (Agung et al. 2018). From the observations consisting of 22 houses, there were 13 respondents' houses (59.1%) ventilation and 9 houses (40.9%) that have no ventilation**.** In this study, no measurement of the floor area of the house with the area of ventilation researchers determined according to the observation only. Qualified ventilation makes good air exchange thus reducing the chances of transmission to house contact due to decreased concentration of bacteria.
2. Description lighting in the homes of people with Pulmonary TB in the working area of Batuputih health center in 2020

   One of the risk factors for the increase in lung TB cases is the physical environment factor of the house. The quality of an unhealthy home environment can support the transmission of Pulmonary TB disease (Hamidah et al. 2015). Pulmonary TB bacteria will die if exposed to sunlight. The study's findings are of natural melting that enters through windows and ventilation. In this study, the study was not measured using Lux but only in observation and in its own value by researchers. From the results of the study consisting of

22 houses respondents, there were 14 houses (63.6%) lighting and 8 houses (36.4%) that have no exposure**.**

3. Description of Residential Density in Homes with Pulmonary TB In The Working Area of Batuputih Health Center in 2020

   Houses with unqualified housing densities are bad for their residents. The denser the occupants make the humidity level increasingly shortened from sweat and also the breadth of residents who emit moisture. Moisture has a role to develop microorganisms including pulmonary TB bacteria. Indirectly, occupancy can increase the occurrence of pulmonary tuberculosis (Sacrul et al. 2019). Of the researchers' observations consisting of 22 houses respondents there were 18 houses (81.1%) undensely populated and 4 houses (18.2%) densely populated. In this study, no measurements were taken only by researchers.

Table 1.
Distribution of Frequency of Respondents Based on Knowledge of Lung TB Prevention Behavior in the Working Area of Batuputih Health Center in 2020

Family Head Knowledge Level	**Precautions**				**N**	**%**	***p-value***
	Negative		Positive				
	N	%	N	%			
Less	17	10,7	11	17,3	28	28,0	
Good	6	12,3	26	19,7	36	32,0	0,001
Total	**23**	**23,0**	**37**	**37,0**	**60**	**60,0**	

The table above shows that based on the results of bivariate analysis there is a meaningful relationship between knowledge and behavior of pulmonary tuberculosis prevention, namely with a p-value of 0.001. From the results of the study, most respondents have good knowledge also have positive preventive behavior while. The level of good knowledge of family members of people with Pulmonary TB is influenced by age factors, education level, and information about Pulmonary TB disease. The age category of most respondents is (17-25 years). At that age where a person is still in high school both junior high and high school who can capture information with a good mindset. Most of the education levels of lung TB family members are the junior high

and high school levels graduate. The higher one's education the easier it is to access information. Family members get access to information mostly from health workers and some get information from the internet. Education can affect one's learning process, the higher one's level of education, the easier it is for someone to receive and digest information. The better the knowledge, the better the attitude and behavior caused by a person, and vice versa the less knowledge possessed then the behavior that is caused also leads to negative (Rizki, 2017).

Table 2.
Distribution of Frequency of Respondents Based on Attitudes towards Lung TB Prevention Behavior in the Working Area of Batuputih Health Center in 2020

The attitude of the Head of The Family	**Precautions**				**N**	**%**	***p-value***
	Negative		Positive				
	N	%	N	%			
Negative	9	4,2	2	6,8	11	11,0	
Positive	14	18,8	35	30,2	49	49,0	0,002
Total	**23**	**23,0**	**37**	**37,0**	**60**	**60,0**	

The table above shows that there is a relationship between attitudes towards the prevention behavior of pulmonary tuberculosis, namely with the value P = 0.002. Most respondents with a positive attitude also had positive pulmonary tuberculosis prevention behaviors. A positive attitude is shown by family members of people with pulmonary tuberculosis that is very agreeable if people with pulmonary tuberculosis should have food equipment that is separate from other family members and also strongly disagree if people with pulmonary tuberculosis should be excluded from the family and society a positive attitude supported by several factors namely education, mass media or religion (Farida et al). The higher one's education, the more knowledge insights can increase so that it then influences the individual in behaving. On the contrary, one's lack of knowledge can be influential in behaving (Notoatmodjo, 2011).

Conclusion

It can be concluded that knowledge and prevention will form an attitude in a person with awareness of the attitude then a person will conduct a preventive behavior against threats to his health therefore knowledge and attitudes have a relationship to the behavior of prevention of pulmonary TB transmission. It is expected that the agency will educate the families of sufferers because they are a high-risk population of infection.

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