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ORIGINAL ARTICLE

TUBERCULOSIS PREVENTION BEHAVIOR AND RELATED FACTORS (STUDY AT NAIBONAT PRIMARY HEALTH CENTER, KUPANG REGENCY, 2023)

Perilaku Pencegahan Tuberkulosis Dan Faktor-Faktor Yang Berkaitan (Studi Di Puskesmas Naibonat Kabupaten Kupang Tahun 2023)

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ABSTRACT

Background: Tuberculosis (TB) Tuberculosis (TB) is an infectious disease caused by Mycobacterium tuberculosis, which attacks the lungs and other organs. **Purpose:** To determine the relationship between the level of knowledge, attitudes, and preventive actions of Tuberculosis disease and TB incidence in the Naibonat Health Center working area 2023. **Methods:** The research design used was case-control by conducting analytical observations. Using a simple random sampling technique, the sample consisted of 41 cases and 41 controls. Data analysis used the chi-square test at a significance level of 95%. (α = 0.05). **Results:** Based on the research shows that there is a significant relationship between knowledge (p=0.00; OR=5.98), attitude (p=0.00; OR=4.66), TB prevention actions (p=0.01; OR=5.20) on the incidence of TB at the Naibonat Primary Health Center. **Conclusion:** The knowledge, attitudes, and preventive measures are significantly related to the incidence of pulmonary TB in the Naibonat Health Center working area. The community is expected to be able to pay attention to the environment where they live, have clean living behavior, and be able to participate in educational activities/socialization (counseling) related to Pulmonary TB conducted by health centers, NGOs, or health workers which help increase public knowledge.

ABSTRAK

Latar Belakang: *Tuberkulosis (TBC) merupakan salah satu penyakit menular yang disebabkan oleh Mycobacterium tuberculosis, dan mampu menyerang paru-paru serta organ lainnya.* ***Tujuan:*** *untuk menganalisis hubungan antara*

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tingkat pengetahuan, sikap dan tindakan pencegahan penyakit Tuberkulosis dengan kejadian TB di wilayah kerja Puskesmas Naibonat tahun 2023. ***Metode:*** *Penelitian ini menggunakan metode observasional analitik dengan menggunakan rancangan penelitian case control. Sampel sebanyak 41 kasus dan 41 kontrol dengan menggunakan teknik pengambilan sampling simple random sampling. Analisis data pada penelitian ini ialah analisis univariat dan analisis bivariat menggunakan uji chi-square dengan taraf signifikan 95% ((α = 0,05).* ***Hasil:*** *berdasarkan penelitian menunjukkan bahwa terdapat hubungan yang signifikan antara pengetahuan (p=0,00; OR=5,98), sikap (p=0,02; OR=4,66), ttindakan pencegahan TBC (p=0.01; OR=5,20) terhadap kejadian TBC di Puskesmas Naibonat.* ***Simpulan:*** *Variabel pengetahuan, sikap, dan tindakan pencegahan memiliki hubungan yang signifikan terhadap kejadian TB Paru di wilayah kerja Puskesmas Naibonat. Masyarakat diharapkan mampu memperhatikan lingkungan tempat tinggl, memiliki perilaku hidu bersih, dan mampu berpartipasi dalam kegiatan edukasi/sosialisasi (penyuluhan) terkait TB Paru yang dilakukan oleh pihak puskesmas, LSM, atau tenaga kesehatan yang berguna untuk meningkatkan pengetahuan masyarakat.*

INTRODUCTION

One of the public health problems that is still high throughout the world is the morbidity and mortality rate due to Tuberculosis (TB). New cases of tuberculosis are reported to number 10 million people worldwide and account for 1.2 million deaths worldwide each year (1). Indonesia is one of the 5 countries ranked 3rd as a contributor with the highest TB cases in the world, with 824 thousand cases and 93 thousand deaths occurring annually, or the equivalent of 11 deaths per hour (2).

Most of the population around the world has a risk of being infected with Mycobacterium tuberculosis bacteria, which is around 89% of TB incidents experienced by adults and 11% by children (2). The Indonesian Ministry of Health reports that TB is the highest contributor to death after HIV/AIDS and is one of the 20 leading causes of death worldwide (3).

In 2020, East Nusa Tenggara Province contributed 5,361 cases; in 2021, it contributed 5,051 cases. Kupang Regency is one of the 3 provinces that contribute the highest incidence of TB in NTT, along with Nagekeo Regency and Central Sumba. Based on the annual report of the Kupang District Health Office in 2022, there was an increase in TB cases from 293 cases in 2021 to 476 cases in 2022 (4). As many as 14 people experience treatment failure every year, and 40 cases of death every year. Naibonat Primary Health Center is one of the 3 health centers contributing to the highest incidence of Pulmonary TB, along with Taurus Primary Health Center and Oesao Primary Health Center. In 2022, there was an increase in cases of Pulmonary TB at the Naibonat Primary Health Center, where, in 2021, 34 cases increased to 68 cases in 2022. Naibonat Primary Health Center was ranked first, followed by Tarus Primary Health Center with 64 cases, and Oesao Primary Health Center with 38 cases in 2022. Many efforts from the health center have been routinely carried out, for example, early examination measures, socialization, and programs that support TB control in integrated health posts and the community environment. This increase shows a need for prevention efforts to prevent the incidence of pulmonary TB (5).

Knowledge, attitudes, and actions are among the factors that encourage a person to engage in preventive behavior against diseases that can attack human health (6–8). This study was conducted based on previous research showing that knowledge, attitudes, and preventive actions have a relationship with the incidence of pulmonary TB.

METHODS

This study is an analytic observational study that uses a case-control research design. The research was implemented in the Naibonat Health Center working area from June to September 2023. In 2022, 68 people were included as population cases, and 11,442 people were included as population controls from the residents with non-TB from Naibonat Primary Health Center.

The sample size was 82 respondents, the case sample was 41, and the control group was 41. The sampling technique used in this research was simple random sampling with matching. The independent variables are knowledge, attitudes, and actions, while the dependent variable is the incidence of TB. The data collection instrument uses a questionnaire. The questionnaire used has been validated, and its reliability was tested in one of the sub-districts in Kupang City, which involved 30 respondents. Data analysis in this study was univariate and bivariate analyses using the chi-square test with a significant level of 95% ($\alpha = 0.05$).

This study was approved by the Research Ethics Review Commission of the Faculty of Public Health, Nusa Cendana University (letter number 2023286-KEPK).

RESULTS

Characteristic of Respondents

The distribution of respondents based on age, gender, education, and type of occupation is shown in the Table 1. A total of 82 respondents consisting of 35 (42.68%) housewives and 26 (26%) farmers participated in this research. The highest proportion (36.59%) of respondents were in the 20-29year age group and 30-39year (31.70%), then 52.44% were male and 37.80% had a high school education.

Distribution of Respondents Based on Knowledge in the Naibonat Primary Health Center

It is known that of the 81 respondents, those with good knowledge were 45 (54.90%) consisted of 14 (34.10%) in the case group and 31 (75.60%) in the control group, while those with poor knowledge were 37 (45.10%) consisting of 27 people (65.90%) case group and 10 (24.40%) control group (Table 2). Based on research, the majority of respondents had a positive attitude, namely 43 (52.40%) respondents, consisting of 14 (34.10%) in the case group (34.10%) and 29 (70.70%) in the control group. Thirty-nine people (47.06%) respondents had a negative attitude, consisting of 27 (65.90%) respondents in the case group and 12 (29.30%) respondents in the control group.

The distribution of respondents on the action variable showed that out of 42 (51.20%) respondents, 13 (31.70%) respondents performed pulmonary TB prevention behavior from the case group and 29 (70.70%) respondents from the control group.

Meanwhile, 40 (48.8%) respondents did not perform Lung TB prevention behavior, consisting of 28 (68.3%) respondents in the case group and 12 (29.30%) respondents in the control group. 50% of respondents took more preventive measures by maintaining the house's cleanliness daily, namely by sweeping and mopping. In addition, preventive measures such as the use of masks were rarely carried out; 13.40% of respondents were able to apply the use of masks.

Table 2 shows that there is a significant relationship between the independent variable and the dependent variable with $p < 0.05$. There is a significant relationship between knowledge and the incidence of TB with a p-value of 0.000 (p-value < 0.05) and an Odds Ratio value of 5.97 (OR > 1), meaning that respondents who have poor knowledge have a risk of contracting pulmonary TB 5, 97. times greater than respondents with good knowledge. The results of the analysis show that there is a relationship between attitudes and the incidence of TB in the Naibonat Community Health Center working area with a p-value of 0.00 (<0.05), an Odds Ratio value of 4.66 (OR>1), meaning that respondents who have a negative attitude have a risk of developing Pulmonary TB 4.66 times greater than respondents with a positive attitude. The results of the analysis of the relationship between actions and the incidence of TB obtained a p-value of 0.001 (<0.05), meaning that there is a significant relationship between actions and the incidence of TB in the working area of the Naibonat Health Center with an Odds Ratio value of 5.20 (OR>1), p. This means that respondents who do not take preventive measures against pulmonary TB have a risk of developing pulmonary TB 5.20 times greater than respondents who take preventive measures.

DISCUSSION

Knowledge

The results of the analysis obtained an Odds Ratio value of 5.97 (OR value>1), meaning that respondents with poor knowledge had a risk of contracting Pulmonary TB 5.97 times greater than respondents with good knowledge. Knowledge is a state where a person manages to know about something through sensing the object to be observed (8). The more knowledge an individual has, the more knowledge they have. Knowledge has a great influence on a person's behavior, actions, and attitudes. Knowledge can be received through various information media, be it magazines, books, radio newspapers, TV, or other social media. The

availability of information and the ease of obtaining it can encourage and accelerate a person in increasing knowledge (9).

The knowledge a person has can influence that person's health condition. According to Lawrence Green's theory, which analyzes human behavior from the level of health, knowledge is one of the predisposing factors that drive behavior. The higher the knowledge a person has, the higher the person's awareness of living a clean and healthy lifestyle disease (10). The lack of knowledge of TB patients related to how to transmit, the dangers, and how to treat affects the attitude and behavior of these individuals when they are sick and become infectious to the people around them (9,11). TB patients with good knowledge of TB can protect themselves and avoid becoming infectious to people in the surrounding environment (12,13).

Table 1
Sociodemographic Characteristics of Respondent

Variable	Category		n	%
	TB	Non-TB		
Age				
20-29 years	15	15	30	36.59
30-39 years	13	13	26	31.71
40-49 years	7	7	14	17.07
50-59 years	6	6	12	14.63
Gender				
Male	21	18	39	47.56
Female	20	23	43	52.44
Education				
Elementary School	8	4	12	14.63
Junior High School	14	12	26	31.71
High School	13	18	31	37.80
Diploma/Bachelor	6	7	13	15.85
Occupation				
Housewife	18	17	35	42.68
Private sector	8	0	8	9.76
Student	3	3	6	7.32
Farmer	9	13	22	26.83
Self-Employee	3	4	7	8.54
Civil Servant	0	4	4	4.88

Table 2
Relationship between The Variables with TB Incidence in Working Area of Naibonat Primary Health Center

Variable	Category						OR; 95%CI	*p-value*
	Case		Control		Total			
	n	%	n	%	n	%		
Knowledge								
Poor	27	65.90	10	24.40	37	45.10	5.98 (2.28-15.64)	0.00
Good	14	34.10	31	75.60	45	54.90		
Attitude								
Negative	27	65.90	12	29.30	39	47.60	4.66 (1.83-11.84)	0.00
Positive	14	34.10	29	70.70	43	52.40		
Practice								
Did not perform lung TB prevention behavior	28	68.30	12	29.30	40	48.80	5.20 (2.03-13.33)	0.00
Performed lung TB prevention behavior	13	31.70	29	70.70	42	51.20		

Respondents knew the incidence of pulmonary TB, but some did not know about the incidence of pulmonary TB because respondents did not know the causes of pulmonary TB, the signs and symptoms of how pulmonary TB is transmitted, and who is vulnerable to pulmonary TB disease can be caused by limited dissemination of information from health workers. This is because counseling in the form of socialization conducted by the Primary Health Center as a source of information for the community is not evenly distributed because it is carried out once every 3 months. Besides, when visiting the Primary Health Centers, the community gets more information through conversations with friends and relatives. Therefore, efforts related to health promotion in order to increase public knowledge need to be improved, especially explanations related to pulmonary TB (14).

This study is in line with by Mayasari et al (15) and Fitriani (16), who state that there is a relationship between knowledge and the incidence of pulmonary TB. Knowledge is the basis for the formation of behavior; the lower the knowledge a person has, it can be the risk factor for exposure to Pulmonary TB; this is because individuals who have less knowledge have more risky behavior, and lack of knowledge related to Pulmonary TB can make individuals not aware of the factors of transmission of Pulmonary TB (17,18). With good knowledge, it is hoped that we will be able to prevent and treat Tuberculosis (TB). In contrast, low knowledge in preventing and treating Tuberculosis (TB) is a risk factor for Tuberculosis (TB) transmission. Therefore, increasing health service efforts by medical personnel and nurses by taking more preventive and promotive measures without neglecting curative and rehabilitative efforts and, emphasizing supervision of patients undergoing treatment, providing health education to sufferers and their families who are at risk of infection can prevent the chain of transmission (19,20).

Attitude

Attitude is included in predisposing factors that help respond to something observed negatively or positively. Attitudes are oriented towards a person's response, such as feelings to support or not support something. Attitudes are usually formed according to the individual's perception. The factor that influences the formation of attitudes is the knowledge that the individual has. The high level of one's knowledge will describe how the attitude is formed (21). Statistical analysis shows a relationship between attitude and the incidence of pulmonary TB in the working area of Naibonat Primary Health Center. Interviews conducted found that the community had positive and negative attitudes towards the incidence of pulmonary TB. Many respondents responded negatively regarding preventing TB transmission (19).

The more respondents have a positive attitude, the incidence of pulmonary TB will decrease, and conversely, the more respondents have a negative attitude, the more the incidence of pulmonary TB will increase in the work area of the Community Health Center. This research aligns with Pinto et al (22) and Mahmud et al (23), who state that there is a relationship between attitude and the incidence of pulmonary TB.

Practice

Action is the final stage of behavior, so if someone has good or bad actions, it happens because of the respondent's lack of knowledge and attitude. Tuberculosis disease occurs due to poor human action (1,18,23). There is a lack of knowledge and awareness regarding the importance of preventing pulmonary TB (24). The habits of laziness and shyness possessed by the community also affect the occurrence of Lung TB cases in the region.

Good action or practice usually comes from a positive attitude, but not all positive attitudes encourage good action. A person's increasing knowledge and attitude can produce good health behavior as well (25). This shows that various internal factors can cause poor preventive measures against Lung TB. Good attitudes do not necessarily produce good actions. Good deeds followed by knowledge and attitudes will produce good behavior. The higher the knowledge and attitudes, the more likely it is to produce good behavior, so there is synchronization between knowledge, attitudes, and actions in forming behavior This research is designed as a case-control information study, where retrospective experience and data are required so that the data may be incomplete due to information bias.

Health education activities by health promotion workers regarding the incidence of pulmonary TB need to involve more people in locations such as integrated health posts (posyandu) so that the community can pay more attention to the cleanliness of their residential environment, implement clean living behavior, and increase their health knowledge.

CONCLUSION

This study concludes that there is a significant relationship between knowledge, attitude, and action variables with the incidence of TB in the Naibonat Health Center Work Area.

CONFLICT OF INTEREST

None.

AUTHOR CONTRIBUTIONS

ERS: Concept, Methodology, Scripting, Data Analysis, Data Visualization, and Editing. YKS: Data Visualization, Analysis, Writing Review, Proofreading, Manuscript Examination, Final Approval of Research. ABS: Data Visualization, Analysis, Proofreading, Manuscript Examination.

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