LEVEL OF KNOWLEDGE AND BEHAVIOR OF SMOKING HABITS ON THE INCIDENCE OF PULMONARY TB PATIENTS

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ABSTRACT

Tuberculosis is often referred to as the great imitator, a disease that has many similarities with other diseases that also give common symptoms such as weakness and fever. In people with good immunity, the TB germs in their bodies will not be active or are in a state of sleep. Due to the lack of public awareness on how to deal with tuberculosis, many people are still affected by pulmonary TB. One of the factors affecting pulmonary tuberculosis is knowledge and smoking behavior. This study used an analytic survey method with a cross-sectional approach. Sampling was conducted when respondents happened to be present or available at the research location. This study involved 32 respondents. Analysis. The results showed that there was a significant relationship between the level of knowledge and smoking behavior and the incidence of pulmonary TB, with a p value of 0.020 each. It is hoped that further research will examine the number of cigarettes consumed by patients with a level of knowledge about the adverse effects of smoking on patients with pulmonary tuberculosis.

Keywords: Knowledge, Smoking, Habits, TB

INTRODUCTION

Pulmonary tuberculosis is an infection of the vital respiratory tract, where the mycobacterium bacillus can enter the lung tissue through the airway system to the Alveoli and infection occurs. There is a primary lymph node complex called primary tuberculosis. Tuberculosis is often referred to as the great imitator, a disease that has many similarities with other diseases that also give common symptoms such as weakness and fever(1).

A person with good immune systems will not have active TB germs in their bodies or will be in a sleeping state. In this condition, people with latent TB infections do not have any symptoms. Tuberculosis germs are transmitted through the air. In the sputum of people with TB, there are lots of TB germs. These germs are present in sputum droplets called droplet nuclei. Very small droplets of sputum will float in the air and be able to penetrate and lodge in the lungs of people around them(2).

An infectious disease caused by the germ Mycobacterium tuberculosis is known as tuberculosis. People with tuberculosis can spread the germs through the air. These TB germs usually attack the lungs, but they can also attack organs outside the lungs, or extra-lungs. Almost a quarter of people worldwide are infected with the Mycobacterium tuberculosis germ. About 89% of adults suffer from TB, and 11% of children do. During the COVID-19 pandemic, TB is still the second leading cause of death after HIV/AIDS and is one of the top 20 leading causes of death worldwide. Indonesia has the third-highest number of TB patients in the world, after India and China. In 2020, it is estimated that 9.9 million people worldwide will suffer from TB(3). In 2021, the total number of tuberculosis cases was 397,377, up from 351,936 cases in 2020. Nationally and provincially, the number of cases is higher for males than females. The number of male cases is 57.5%, while the number

of female cases is 42.5%(4).

One of the sustainable health development goals (SDGs) is lung TB, as tuberculosis (TB) is still a public health problem in Indonesia and around the world. This encourages national tuberculosis control to continue to be carried out by improving, accelerating, expanding, and creating new programs. Palembang City has the highest number of TB cases with 5,023 cases, while the lowest is Pagar Alam City with 111 cases and OKU Regency with 471 cases(5). The treatment success rate of all tuberculosis cases in OKU district was highest based on the gender of males at 310 cases compared to females at 161 cases. The treatment success rate in the first to third order was Ibnu Sutowo Hospital with 102 cases, St. Antonio Hospital with 55 cases, and Kemalaraja Health Center with 36 cases(6).

Because of the lack of public awareness on how to manage tuberculosis, many people are still affected by pulmonary TB, and case finding continues to increase every year. Patients with BTA-positive TB who are highly positive have the potential to transmit TB disease to ten to fifteen other people, with the likelihood of close contacts, such as family members, being twice as high as that of casual contacts(7). Epidemiologically, disease occurrence is caused by the interaction of three factors: host, agents, and environment. On the host side, a person's immune system at the time greatly influences their susceptibility to Mycobacterium tuberculosis infection(8).

One of the factors affecting pulmonary tuberculosis is knowledge. If knowledge is good or bad, it will affect people with tuberculosis. Research conducted by Darmawansyah and Wulandari in the year 2021, found that there was a significant relationship between the level of knowledge and the assessment of pulmonary tuberculosis (p = 0.001). Research conducted by Zulaikhah, S.T., et al in 2019, found that there is a significant relationship between knowledge and the incidence of pulmonary tuberculosis transmission (p = 0.002). Likewise, research conducted by Sutriyawan, A., et al in 2022, found that there was a significant relationship between knowledge and the incidence of tuberculosis (p = 0.018) (9)(10)(11).

Another factor is smoking, which can worsen tuberculosis. Passive smokers are also more susceptible to infection with tuberculosis germs because cigarette smoke damages the lungs' resistance to bacteria(12). Smoking impairs the lung defense mechanism known as mucociliary clearance. In addition, cigarette smoke can cause mucus formation and decreased cilia movement, which results in mucosal hoarding and an increased chance of bacterial growth that can cause infection(13). Other sources state that cigarettes also alter the acquired and natural cellular immune systems, which can lead to an increase in the number of leukocytes and macrophages(14). Research conducted by Gulo, A., et al in 2020, found that there is a significant relationship between smoking status and the incidence of pulmonary TB (p = 0.006). Research conducted by Susilawati, N.M., and Therik, B.A., in 2022, found that there was a significant relationship between smoking habits and the incidence of pulmonary tuberculosis (p = 0.013), as well as research conducted by Sutriyawan, A., et al in 2022, found that there was a significant relationship between smoking habits and the incidence of pulmonary tuberculosis (p = 0.000)(15)(16)(11).

Based on this background, the researcher's aim is to study the level of knowledge of pulmonary TB patients and their smoking habits in the working area of UPTD Puskesmas Kemalaraja.

METHOD

This study used a cross-sectional analytic survey method. All research variables, namely the independent variables, knowledge level and smoking behavior, and the dependent variable, the incidence of pulmonary TB, were observed at the

same time. Sampling was conducted when respondents happened to be present or available at the research location. This study involved 32 respondents. The study was conducted in the area of UPTD Puskesmas Kemalaraja in Ogan Komering Ulu Regency. The research began in September 2022. To determine the frequency distribution, namely univariate analysis, level of knowledge, smoking habits, and pulmonary TB cases, univariate and bivariate analyses were used. Using the chi-square statistical test and a computerized system with a degree of significance (α) of 0.05 and a confidence level of 95%, bivariate analysis was used to determine whether there was a significant relationship between the level of knowledge and the incidence of pulmonary TB and between smoking behavior and the incidence of pulmonary TB with a p value ≤ 0.05.

RESULTS

Table 1. Frequency distribution of knowledge level, smoking behavior, and incidence of pulmonary TB

Variables	n (32)	% (100%)
Incidence of pulmonary TB		
Negative	14	44
Positive	18	56
Level of knowledge		
Good	13	41
Not good	19	59
Behavior of smoking habits		
No habit	13	41
There is a habit	19	59

The results of Table 1. show that 18 respondents (56%) had positive TB test result, poor knowledge level of 19 respondents (59%), and respondents who had smoking behavior of 19 respondents.

Table 2. Relationship between level of knowledge, behavior of smoking habits and incidence of pulmonary TB

Variables	Incidence of pulmonary TB				n (32)		*p value*
	Negative		Positive				
	f	%	f	%	f	%	
Level of knowledge							
Good	9	64	4	22	13	41	0,020
Not good	5	36	14	78	19	59	
Behavior of smoking habits							
No habit	9	64	4	22	13	41	0,020
There is a habit	5	36	14	78	19	59	

**Chi-square*

Table 2, The results of statistical tests found that the variable level of knowledge of respondents had a significant relationship with the incidence of pulmonary TB (p = 0.020). Respondents who had a poor level of knowledge with positive pulmonary TB examination results were 14 respondents (78%). These results are in line with research conducted by Sigalingging, I.N., et al 2019, which found that there was a significant relationship between the influence of knowledge and the incidence of pulmonary TB (p = 0.000). Research conducted by

Lestari, N.D., in 2019 found that there was a significant relationship between knowledge of pulmonary TB disease and the incidence of pulmonary TB (p = 0.002). Research conducted by Zulaikhah, S.T., et al in 2019 found that there was a significant relationship between knowledge and the incidence of pulmonary tuberculosis transmission (p = 0.002). Research conducted by Darmawansyah and Wulandari in the year 2021 found that there was a significant relationship between the level of knowledge and pulmonary tuberculosis (p = 0.001). Likewise, research conducted by Sutriyawan, A., et al in 2022 found that there was a significant relationship between knowledge and the incidence of tuberculosis (p = 0.018)(17)(18)(10)(9)(11).

Knowledge is the result of knowing about a certain object, according to Bloom in Notoatmodjo (2014). This opinion focuses on pulmonary tuberculosis, so it can be explained that someone who knows about pulmonary tuberculosis will do something to prevent its transmission, as happens if a person with pulmonary tuberculosis knows how to prevent its transmission by not spitting carelessly. Knowledge about pulmonary tuberculosis is very important for prevention. By using their attitude, a person can respond to the knowledge they have acquired(19). Individuals who do not have good knowledge about TB do not have consideration in determining attitudes and behaviors towards preventing TB transmission(20).

Respondents with poor knowledge about pulmonary TB will range or impact the transmission of pulmonary TB. People who do not know about prevention until treatment will endanger their immediate family or surrounding community. By increasing knowledge, attitudes will be formed towards the prevention of pulmonary TB.

The results of the statistical test of smoking behavior found that there was a significant relationship between smoking behavior and the incidence of pulmonary TB (p = 0.020). Respondents who have a habit of smoking with positive pulmonary TB examination results were 14 (78%). The results of the research that has been carried out are in line with the research of Kurniawan, I.M. In 2020, it was found that there was a relationship between smoking behavior and the incidence of pulmonary TB (p = 0.001). Research conducted by Gulo, A., et al 2020, found that there is a significant relationship between smoking status and the incidence of pulmonary TB (p = 0.006). Research by Darmin, Akbar, H., and Rusdianto, 2020 found that there was a significant relationship between smoking habits and the incidence of pulmonary tuberculosis (p = 0.006). Research conducted by Susilawati, N.M., and Therik, B.A., in 2022, found that there was a significant relationship between smoking habits and the incidence of pulmonary tuberculosis (p = 0.013), as well as research conducted by Sutriyawan, A., et al in 2022, found that there was a significant relationship between smoking habits and the incidence of pulmonary tuberculosis (p = 0.000) (21)(15)(22)(16)(11). The habit of smoking is a behavior and a habit that is often done among the community. The habit of smoking is widely practiced, starting from the age of children to entering adulthood, and even some have been smoking for years. Smokers find it difficult to stop smoking because they often do this bad habit because cigarettes have become part of their lives and they feel the pleasure of smoking. Almost all smokers realize that smoking is a bad habit, but most smokers are unable to get rid of the habit(22). Tobacco smoking can affect the recovery of lung tuberculosis treatment because it lowers the body's immune system(23). Smoking is one example of a habit that affects the immune system, as smoking impairs the lungs' defense mechanism known as muccociliary clearance. Cigarette smoke

damages the bristles and other parts of the lungs that work to prevent infection. Cigarette smoke increases airway resistance, making the blood vessels in the lungs leak easily. This damages macrophages, cells that have the ability to phagocytize pathogenic bacteria(24).

The results showed that the habit of smoking has long existed among respondents suffering from pulmonary TB. This habit can be caused by the surrounding environment and one's own will. The results of this study suggest that relevant health institutions, such as community health centers, should be more active in providing counseling to the general public, especially men, on how to control or reduce their smoking habits. They should also explain the long-term effects of such smoking behavior.

CONCLUSION

The results obtained showed that there was a significant relationship between the level of knowledge and behavior of smoking habits and the incidence of pulmonary tuberculosis (p = 0.020). Suggestions for further research are to examine the number of cigarettes consumed by patients with a level of knowledge about the adverse effects of smoking on patients with pulmonary tuberculosis.

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