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THE RELATIONSHIP OF PARENT KNOWLEDGE AS CLOSED CONTACT ABOUT TUBERCULOSIS WITH BEHAVIOR TO PREVENT TUBERCULOSIS TRANSMISSION

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ABSTRACT
Pulmonary Tuberculosis is a disease with a very fast transmission rate. The bad impact of tuberculosis infection is death. The increase in pulmonary TB sufferers in Indonesia is caused by unhealthy living behavior and lack of knowledge about the management of precautionary measures for pulmonary tuberculosis transmission. This study aims to determine the relationship between parents' knowledge as close contacts about tuberculosis and behavior to prevent tuberculosis transmission in the Pungkuran Pleret area of Bantul. This quantitative research uses observational research with a cross sectional approach. The population in this study were close contact families of TB sufferers in the Pungkuran Pleret area. The sampling technique used purposive sampling and obtained 30 respondents. Data was collected by checking questionnaires that had been tested as valid and reliable. Meanwhile, the data analysis technique uses the chi-square test. The results of the research can be concluded that the majority of respondents have good knowledge about tuberculosis, 13 respondents (43.34%), but it appears that the majority of respondents still have poor or negative TB prevention behavior, 20 respondents (66.67%). The most cross tabulation results were that there were 10 respondents (33.33%) with the analysis having good knowledge about tuberculosis and having behaved positively in preventing TB. A total of 10 respondents (33.33%) with analysis had insufficient knowledge about tuberculosis and preventive behavior in the negative category. However, in total, the majority of close contact parent respondents in the Pungkuran Pleret area have behavior that is still in the negative category in preventing TB. The results of the chi-square analysis test showed a p-value of 0.000, which means there is a relationship between parents' knowledge as close contacts about tuberculosis and behavior to prevent tuberculosis transmission in the Pungkuran Pleret area.

Keywords: close contact of tb patients; knowledge; parents; preventive behavior; tuberculosis

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INTRODUCTION

The Global TB Report states that Tuberculosis (TB) is still a health problem in the world today. TB will become the second highest cause of death in the world after COVID-19 in 2022 and data shows that more than 10 million people contract TB disease every year (WHO, 2023). Tuberculosis (TB) is an infectious lung disease caused by infection with the bacteria Mycobacterium tuberculosis (Sharma et al., 2017). Apart from attacking the lungs, the mycobacterium tuberculosis bacteria also spreads to parts of the body such as the spine, skin, brain, lymph nodes and heart. (Moule & Cirillo, 2020). Deaths due to TB have high data, at least 1.6 million people died from TB (Minggarwati et al., 2023). The number of people newly diagnosed with TB globally is 7.5 million in 2022. Thirty countries with a high TB

burden account for 87% of world TB cases in 2022 and two-thirds of the global total occurs in eight countries: India (27%), Indonesia (10%), China (7.1%), Philippines (7.0%), Pakistan (5.7%), Nigeria (4.5%), Bangladesh (3.6%) and Democratic Republic of Congo (3 .0%). In 2022, 55% of TB patients will be men, 33% will be women, and 12% will be children (aged 0–14 years) (WHO, 2022).

In Indonesia, TB is estimated to reach 1,060,000 TB cases and 134,000 deaths due to TB per year, which means that 17 Indonesians die from TB every hour. Without treatment, the death rate from TB is high (around 50%). Globally in 2022, TB causes around 1.30 million deaths (WHO, 2023). Symptoms in TB patients are not always visible, someone infected with TB disease usually appears in the form of a cough, sometimes accompanied by blood spots, weight loss, night sweats and fever. Tuberculosis bacteria that enter the lungs can cause sufferers to experience shortness of breath accompanied by a chronic cough (Pralambang & Setiawan, 2021). Symptoms of TB that need to be watched out for include a severe cough that lasts more than two weeks and pain in the chest area (Wahjoedi et al., 2018). TB disease is divided into 2 types, namely latent TB and active TB. When someone suffers from active TB, symptoms such as coughing, fever, night sweats, or weight loss appear (Luies & du Preez, 2020).

A person infected with TB occurs because the body's immune system is weakened due to disease or consumption of certain drugs. If the immune system can no longer suppress the presence of the bacteria that cause TB, what happens is that the bacteria that cause TB that infect it replicate themselves and cause symptoms to appear and is called active tuberculosis (Kemenkes RI, 2020). TB is more at risk in people with a weak immune system, children, the elderly, and people who had the infection in the previous 2 to 5 years (Wijaya et al., 2021). The incidence of active TB is also caused by the failure to provide medical intervention to people who are infected with the bacteria that cause TB quickly and appropriately (Ma et al., 2018). An active TB sufferer can infect 5-15 other people within a year through close contact (Nortajulu et al., 2022). TB treatment must be carried out immediately after the TB diagnosis is made, the sufferer will receive combination anti-TB drug (OAT) treatment for several months which must be carried out regularly and must not be interrupted (Kemkes, 2016). Apart from speeding up the healing process of the disease, this is also done to prevent the disease from developing into drug-resistant TB or Multi Drugs Resistance TB (MDR TB). When a TB sufferer has not been declared cured (failed) or has experienced a relapse even though he has undergone TB treatment according to the correct prescription and rules for taking medication, the sufferer can be suspected of suffering from MDR TB, namely TB that is ineffective (resistant/resistant) to various types of drugs (WHO, 2022). MDR TB sufferers must undergo treatment again from the start with a higher combination of drugs within a period of 18 - 24 months (Jang & Chung, 2020).

TB bacteria are transmitted and spread from person to person through infected droplets in the air. When pulmonary tuberculosis sufferers cough, sneeze, talk or spit, the sufferer is spreading TB bacteria into the air. When the droplets enter the air, anyone who inhales these bacteria can become infected with TB (Mar'iyah & Zulkarnain, 2021). With one cough, a patient can expel 3000 droplets of phlegm containing up to 3500 Mycobacterium tuberculosis germs. Meanwhile, one sneeze releases 4500 - 1 million Mycobacterium tuberculosis germs (Migliori et al., 2021). The body's immune reaction will occur 6-14 weeks after infection. Lesions generally heal completely, but germs can remain alive in the lesion in a dormant state and one day they can become active again depending on the body's immune system (Alsayed & Gunosewoyo, 2023). People infected with Mycobacterium tuberculosis have a 5-10 percent

risk of developing tuberculosis during their lifetime (Jha et al., 2017). Seeing the very high incidence and transmission rates, it is necessary to be vigilant when coming into contact with TB sufferers (Kristini & Hamidah, 2020). Close contact with pulmonary TB sufferers refers to a situation where a person has had high potential exposure to the bacteria Mycobacterium tuberculosis, which causes TB (Sari, 2014). This close contact generally includes people who have close contact with active TB sufferers including family members, close friends, co-workers, or other people who have ongoing contact with active TB sufferers. Exposure to TB can occur through the air when a sufferer coughs or sneezes, so the bacteria can be spread in the air and inhaled by other people around them (Kemenkes RI, 2019).

When effective infection control procedures are not implemented, cases of TB transmission can be inhibited. The success of TB control will greatly depend on the performance of the TB control program, so it is very important to monitor individuals at risk of TB including latent TB along with active TB cases. TB control efforts can begin by providing correct knowledge to the community, both sufferers and people in close contact. The results of the preliminary study showed that there were 8 cases of pediatric TB reported in the Pungkuran Pleret area. Cadre stated that the patient had received routine treatment for 6 months from the Community Health Center. Observation results showed that 8 children with TB cases still had symptoms of coughing, weakness, sweating. Parents stated that the condition had occurred for more than 2 weeks. The family said the child regularly takes medicine, the child continues to play as usual without wearing a mask. Parents do not provide information to playmates about their child's condition. Parents said they had received information about using masks for their children but did not do so. Parents know that TB is very susceptible to infection in children. While playing, children are seen coughing without covering their mouths. Seeing the existing problems, this research aims to analyze the knowledge of parents as close contacts about tuberculosis with behavior to prevent the transmission of tuberculosis in the Pungkuran Pleret area of Bantul.

METHOD

This quantitative research is a type of observational research with a cross sectional approach. The population in this study were close contacts of TB sufferers in the Pungkuran Pleret area. The sampling technique used purposive sampling and obtained 30 respondents. The inclusion criteria in this study were parents of children who had close contact with TB sufferers, respondents who lived in the Pungkuran Pleret area, respondents who were willing to take part in the research until the end. Meanwhile, the exclusion criteria are parents who are not willing to be respondents. Data was collected by checking questionnaires that had been tested as valid and reliable. The analysis test uses univariate analysis and bivariate analysis which is tested with the chi-square-test.

RESULTS

Table 1.
Characteristics of Parent Respondents as Close Contacts of TB Sufferers (n=30)

Respondent Characteristics	Category	f	%
Age (years)	<20	0	0
	20 – 40	13	43,33
	41 – 60	17	56,67
	>60	0	0
Gender	Male	2	6,67
	Female	28	93,33
Education	Low	2	6,67
	Intermediate	12	40
	High	16	53,33

Work	IRT	8	26,67
	Laborer	5	16,67
	Private employees	4	13,33
	Government employees	2	6,67
	Self-employed	11	36,66

Table 1, it shows that the majority of respondents were in the 20-40 year age range with 13 respondents (43.33%). The majority of respondents were women, 28 respondents (93.33%) with the highest level of education, namely 16 respondents (53.33%), who worked as entrepreneurs or had their own business, 11 respondents (36.66%).

Table 2.
Univariate Test Results of Parents' Knowledge as Close Contacts About Tuberculosis and Behavior to Prevent Tuberculosis Transmission

Variabek	Category	f	%
Knowledge	Good	13	43,34
	Enought	7	23,33
	Not Good	10	33,33
Preventive Behavior	Positive	10	33,33
	Negative	20	66,67

Table 2 shows that the majority of respondents have good knowledge about tuberculosis, 13 respondents (43.34%), but the majority of respondents appear to still have poor or negative TB prevention behavior, 20 respondents (66.67%).

Table 3.
Cross Tabulation of Parents' Knowledge as Close Contacts About Tuberculosis and Behavior to Prevent Tuberculosis Transmission

Variable		Preventive Behavior				Total		p-value
		Positive		Negative				
		f	%	f	%	f	%	0,000
Knowledge	Good	10	33,33	3	10,00	13	43,33	
	Enought	0	0,00	7	23,33	7	23,33	
	Not Good	0	0,00	10	33,33	10	33,33	

Table 3 shows that the most cross-tabulation results were that there were 10 respondents (33.33%) with the analysis having good knowledge about tuberculosis and having behaved positively in preventing TB. A total of 10 respondents (33.33%) with analysis had insufficient knowledge about tuberculosis and negative category prevention behavior. However, in total, the majority of close contact parent respondents in the Pungkuran Pleret area have behavior that is still in the negative category in preventing TB. The results of the chi-square analysis test showed a p-value of 0.000, which means there is a relationship between parents' knowledge as close contacts about tuberculosis and behavior to prevent tuberculosis transmission in the Pungkuran Pleret area.

DISCUSSION

Tuberculosis (TB) is a lung disease that can result in death. The high death rate means there is a need for prevention efforts as early as possible. In this study, the majority of respondents had good knowledge about TB, the majority of respondents had good attitudes towards TB prevention and there were also those who still had negative attitudes towards TB prevention. The research results also show that the majority of respondents as a whole are still among the respondents who carry out negative behavior in preventing TB. TB prevention behavior was studied by asking respondents several questions. Preventive behaviors studied include willingness to seek information about TB, doing regular exercise, drying bedding so it doesn't get damp and protected from bacteria, not smoking, giving BCG vaccine injections to children aged 5 years to avoid serious TB through health workers, using masks. When you have a cold,

use a mask when a friend has a cold, don't use cutlery at the same time, open the windows so that the house gets enough sunlight and fresh air, eat healthy and nutritious food to increase your immune system, and immediately see a doctor if you have any problems. complaints of pain. The majority of respondents answered no to the items: doing regular exercise, drying bedding so it doesn't get damp and protected from bacteria, smoking, using a mask when you have a cold, using a mask when a friend has a cold, opening the windows so the house gets enough sunlight and air. fresh, and immediately consult a doctor if you complain of pain.

Regular exercise for TB patients is recommended to stay fit while increasing body endurance. A study published in the journal Mind and Medical Science in 2019 found that regular exercise can help restore lung function that is impaired due to TB (Ismail et al., 2023). In line with community service activities carried out by Rahmawati et al., (2023) which carries out efforts to control TB through health promotion activities with the theme "Prevent TB Transmission with "Cute". The abbreviation COMEL is designed so that children can easily remember how to prevent the transmission of Tuberculosis (TB), which consists of: C: Wash your hands with soap; O: exercise regularly; M: Consume Healthy food; E: Coughing and sneezing etiquette, and L: Protect yourself with a mask. This educational activity aims to provide knowledge to children to break the chain of transmission of infectious diseases, so that Indonesian children will become healthy and high-quality children in the future.

Drying the bedding so that it is not damp and free from bacteria is also a recommended step to prevent TB transmission. In line with research Pangestika et al., (2019) routinely drying bedding and routinely opening windows every day so that sunlight comes in and the air is not damp is the prevention of TB with PHBS where TB bacteria will die from light. Smoking is a negative behavior that disrupts the health of smokers and those around them. Based on the 2023 Global TB Report, smoking is the second risk factor for TB in Indonesia after malnutrition. Research shows that people who smoke have a 73 percent higher risk of being infected with TB and more than twice as much chance of developing active TB as people who don't smoke (Yulianti & Khairuddin, 2023). Mycobacterium tuberculosis (M.tb) bacteria contained in saliva or phlegm spread quickly through the air from an active TB sufferer to someone who is healthy, either when talking, sneezing or coughing. The still high number of TB cases in Indonesia is inseparable from risk factors that are closely linked to daily habits, one of which is smoking (Arliny, 2023).

Early prevention can also be done by giving BCG vaccine to children aged 5 years to avoid severe TB. In line with research Yitbarek et al., (2020) findings show that BCG vaccine has a strong protective effect against upper and lower acute respiratory tract infections. Additionally, the BCG vaccine has been shown to protect against infections such as the deadly influenza A virus, pandemic influenza (H1N1), and other acute respiratory infections. BCG increases the human body's immune response involving antigen-specific T cells and memory cells. Using a mask when coughing and cold and maintaining distance is also recommended to prevent TB transmission. InfoSehat FKUI, (2021) stated that wearing masks and maintaining distance during the pandemic is better known as a way to prevent COVID-19, however, experts say that these steps can also prevent TB disease, where TB is also transmitted through phlegm or droplets that come out through coughing. With 60 percent of people now complying with wearing masks during the COVID-19 pandemic, this can also help reduce the spread and break the chain of TB transmission to people around them. So this mask is important for reducing the transmission of all diseases transmitted through respiratory transmission.

Sharing eating utensils also clearly allows for transmission or transfer of TB bacterial infection. Zahra, (2017) is a doctor who states that TB is a bacterial infection called Mycobacterium tuberculosis which can attack the lungs or outside the lungs. TB transmission is through droplets. Droplets are body fluids from the respiratory tract that are released when coughing. Droplets are different from saliva, so TB is not transmitted through sharing eating utensils, such as spoons or glasses. because transmission is through droplets. However, it is still recommended that sharing cutlery with friends or other people is not a good idea. Because when you eat, there are possible droplets that can spread through the air. Searching for information about TB is very necessary in order to get accurate and reliable information. Good knowledge about TB disease is also one of the steps to avoid contracting TB. The majority of respondents fell into the category of having good knowledge about TB. Family knowledge about TB prevention is generally obtained from the results of counseling provided at the toddler posyandu.

Respondents were able to answer correctly regarding the definition and causes of TB. However, there are still respondents who do not know about how TB is transmitted and preventive behavior. Seeing this is in line with the respondent behavior variables above which state that the majority of respondents have negative attitudes towards TB prevention. The more information the family has, the higher the knowledge they have and this can indirectly influence the family's behavior in preventing TB transmission. The results of the correlation test showed that there was a relationship between parents' knowledge as close contacts about TB and behavior to prevent TB transmission with a value of p = 0.000. The results show that there is a close relationship that leads to positive, namely the better the respondent's knowledge, the better their behavior in preventing TB transmission. In line with research from Zatihulwani et al., (2019) stated that the results of the research were that most respondents (56.6%) had good knowledge about pulmonary TB and almost all respondents (80.0%) had a positive attitude about preventing the transmission of pulmonary TB. It was also concluded that there was a relationship between the level of family knowledge and attitudes towards preventing transmission pulmonary tuberculosis with a p value of 0.000.

CONCLUSION

The results of the research can be concluded that the majority of respondents have good knowledge about tuberculosis, 13 respondents (43.34%), but it appears that the majority of respondents still have poor or negative TB prevention behavior, 20 respondents (66.67%). The most cross tabulation results were that there were 10 respondents (33.33%) with the analysis having good knowledge about tuberculosis and having behaved positively in preventing TB. A total of 10 respondents (33.33%) with analysis had insufficient knowledge about tuberculosis and negative category prevention behavior. However, in total, the majority of close contact parent respondents in the Pungkuran Pleret area have behavior that is still in the negative category in preventing TB. The results of the chi-square analysis test showed a p-value of 0.000, which means there is a relationship between parents' knowledge as close contacts about tuberculosis and behavior to prevent tuberculosis transmission in the Pungkuran Pleret area.

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