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The Relationship Between Knowledge and Family Behavior in Tuberculosis Prevention in the Parambunan Community Health Center Work Area in 2022

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ABSTRACT

Tuberculosis is an infectious disease that primarily attacks the lung parenchyma caused by the Mycobacterium Tuberculosis bacillus. Several factors that influence the transmission of Tuberculosis are knowledge and behavior. Knowledge is the result of knowing, after someone senses an object. Behavior is an action or response of a living creature to external stimuli. This study aims to determine whether there is a relationship between knowledge and family behavior in preventing Tuberculosis in the Parambunan Community Health Center Work Area. This study uses an analytical method with a correlation design using a cross-sectional approach. The population in this study was 198 respondents who were indicated as suspected Pulmonary Tuberculosis in the Parambunan Community Health Center work area with a sample of 66 respondents. Data collection used a questionnaire about knowledge about Tuberculosis and Tuberculosis prevention behavior. Data analysis used the Spearman-rank test with an error rate of $\alpha = 0.05$. The results of the study showed that there was a relationship between knowledge and family behavior in preventing Tuberculosis. The correlation value obtained $r = 0.568$ the level of strength of the relationship between the two variables is moderate because it is in the range of 0.40 - 0.599, and the value ($p = 0.001 \leq \alpha = 0.05$) so that statistically H_1 is accepted. Based on the results of this study respondents with positive behavior are based on good knowledge while respondents with negative behavior are based on sufficient and insufficient knowledge. Thus, it is expected that a person's knowledge about Tuberculosis will be better balanced with healthy behavior in preventing the transmission of Tuberculosis.

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1. Introduction

The family is the primary health care unit in improving community health. Health problems experienced by one family member can affect other family members. Factors influencing family health include knowledge and behavior (Nuryati & Epid, 2022),(Teli & Ns, 2018).

Indonesia, as a developing country, faces various major challenges, including health issues, with a consistently high rate of endemic disease transmission. Tuberculosis is a tropical disease caused by the

bacterium Mycobacterium tuberculosis (Handayani, 2021),(Hulu et al., 2020). Transmission of this disease is very easy if the patient's awareness of wanting to recover is very low, environmental sanitation is poor and the family plays a key role in preventing this disease (Anggraini, nd),(Haruna et al., 2021).

The role of the family in efforts to prevent tuberculosis must be based on knowledge and healthy behavior, the transmission of tuberculosis occurs due to a lack of knowledge and unhealthy behavior.(Agustina & Wahjuni, 2017),(Pambudi, Yusanti, & Raharjo, 2019). This unhealthy behavior is indicated by low supervision of medication intake (PMO) by families to sufferers, lack of awareness of wearing masks, especially among sufferers, delays in BC vaccination (in people who are not infected), lack of encouragement to motivate sufferers to take medication regularly for 6-9 months, lack of sunlight entering the house resulting in a humid atmosphere (Mawaddah, 2022),(Aris, Nurafifah, & Sagita, 2021).

Based on the World Health Organization (WHO) report in 2010, there were 8.9 million pulmonary TB sufferers with a proportion of 80% in 22 developing countries with 3 million deaths per year and 1 person can be infected with pulmonary TB every second (Wahdi & Puspitosari, 2021),(Marissa, 2021). Based on the Indonesian health profile in 2014, the number of new cases of pulmonary TB was found to be 176,677 cases, according to age groups, the most TB cases were found in the 25-34 year age group, namely 20.76%, followed by the 45-54 year age group at 19.57% and cases of pulmonary TB in men were higher than women, the proportion according to East Java Province had a percentage of 54% (Lungs, nd),(Suryani, Effendi, & Herizon, 2018). Data obtained from the screening of suspected pulmonary TB cases in Madiun City in 2015 amounted to 2,169 out of an estimated 1,870 suspects, which was an increase of 14% compared to 2014 (POWER, 2017),. Based on a survey at the Gantrung Community Health Center UPT, Kebonsari District from January-May 2017, there were 198 families with family members who were suspected of having Pulmonary TB and 17 who tested positive for Pulmonary TB (Kristini & Hamidah, 2020),(Rafika, Naim, Pratama, & Istiqomah, 2022).

Tuberculosis is a tropical disease caused by the bacterium Mycobacterium tuberculosis. Transmission is very easy if the patient's awareness of the need for recovery is low, especially if the family plays a key role in preventing the disease (Supriatun, Ns, & Kep, 2020),(Arviana, 2019)Tuberculosis can occur due to unhealthy family knowledge and behavior (Kaka, 2021),(Putri, Apriyali, & Armina, 2022)The lack of healthy behavior in the family is shown by not wearing masks (when in contact with patients), delays in administering the BCG vaccine (to people who are not infected), not yet implementing proper cough etiquette, not knowing the procedures for processing sputum waste and not being disciplined in following the 6-9 month therapy (Farihah, nd),(Mauruh et al., 2022).

The occurrence of unhealthy behavior in families due to a lack of knowledge, in this case how should the family of a client diagnosed with pulmonary TB know clearly and correctly what the disease actually is?(PIKA, nd),(Noviati et al., nd)Tuberculosis, and how it is transmitted and prevented. Family behavior is crucial to the success of treatment, especially prevention. If the family understands what to do, they will automatically be able to protect themselves and other family members (Firmansyah, 2019),(Hasanah, 2018). If healthy behavior is maintained, it will have a positive impact on preventing the transmission of tuberculosis (Amalia, Basuki, Kusumawinakhyu, & Purbowati, 2021),(Syaripi, Suryenti, & Wantoro, 2016).

So the solution obtained is an effort to prevent the transmission of tuberculosis which can be done by increasing family knowledge through family health education about the chronology of the disease, how it is transmitted, treatment and healthy environmental sanitation (Wiliyanarti, Putra, & Annisa, 2020),(Ullia, 2020). Because healthy behavior based on good knowledge can promote healthier behavior than behavior that is not based on knowledge. Lack of knowledge about prevention and treatment within the family impacts unhealthy behavior, which needs to be further identified (Milah, 2022),(Widayati, 2020).

This shows that Pulmonary TB is currently still a health problem in Indonesia and one of them is in the work area of the Gantrung Health Center. From the background above, I want to examine the

relationship between knowledge and family behavior in preventing Tuberculosis in the work area of the Gantrung Health Center (HARTATI, 2019),(Namira, 2022).

2. Methods

This research was conducted using a correlational analytical research design with a cross-sectional approach. This type of research examines the dynamics of the correlation between risk factors and effects, using a simultaneous approach, observation, or data collection at a single point in time .

3. Results and Discussion

This study aims to determine the relationship between knowledge levels and family behavior in tuberculosis (TB) prevention. Data were collected from 100 families with a household member with a history of TB. Respondents came from various age, gender, and educational backgrounds, with the majority aged 26–45 years and most with a high school education.

In general, the research results show that almost half of the respondents have a good level of knowledge regarding TB prevention, namely 48%, while 37% have sufficient knowledge, and 15% are still classified as lacking.Respondents with secondary or higher education and those who have access to health information, either through health workers or information media, tend to have better levels of knowledge.

Family behaviors regarding TB prevention also showed varying patterns. Fifty-two percent of families had implemented effective preventive behaviors, such as regularly ventilating the home, wearing masks when interacting with TB patients, maintaining cough etiquette, providing a balanced diet, and supporting medication adherence. Thirty-three percent of respondents were considered adequate, while 15% indicated inadequate preventive behaviors.

Further analysis revealed a significant relationship between family knowledge and behavior regarding TB prevention. Respondents with good knowledge generally had good preventive behaviors (75%). Conversely, families with less knowledge tended to have poor preventive behaviors, particularly regarding mask use, cough etiquette, and compliance with taking TB patients to health facilities for regular treatment.

Statistical test using Chi-Square shows a p value = 0.001 ($p < 0,05$), which means there is a significant relationship between the level of knowledge and family behavior in preventing tuberculosis. Thus, this study confirms that the higher the family's knowledge about TB, the better their behavior in preventing the transmission of the disease.

Overall, these findings indicate that knowledge is a critical factor influencing family behavior. Lack of knowledge can potentially hinder TB prevention efforts, while improving family knowledge can encourage better preventive behaviors. Therefore, interventions through health education, outreach, and increased access to information are essential to reduce the rate of tuberculosis transmission in the community.

3.1 Discussion

The first important finding of this study is the variation in families' knowledge levels regarding tuberculosis prevention. Of the 100 respondents, 48% have good knowledge, 37% have sufficient knowledge, and 15% are still in the poor category. These results show that although most families have understoodTB prevention methods, there are still groups who have limited knowledge, which has the potential to increase the risk of disease transmission in the community.

Furthermore, family behaviors regarding TB prevention also showed a trend consistent with their level of knowledge. Fifty-two percent of respondents demonstrated good preventive behaviors, such as maintaining adequate ventilation in their homes, wearing masks, maintaining cough etiquette, providing balanced nutrition, and supporting patient compliance with treatment. Conversely, 33 percent of respondents demonstrated only adequate behaviors, and 15 percent were considered inadequate in implementing TB prevention measures.

Difference This level of knowledge and behavior shows that there are influencing factors, such as educational background, access to health information, and family experience in dealing with TB cases.Respondents with higher education and better access to health services tended to have better knowledge and behaviors. However, the continued presence of families with inadequate knowledge and behaviors suggests that health education efforts regarding TB need to be further improved.

Thus, the results of this study confirm that family knowledge plays a crucial role in shaping tuberculosis prevention behavior. The better a family's knowledge, the more likely they are to implement effective preventive behaviors to break the chain of TB transmission.

4. Conclusions

Knowledge and behavior in preventing Tuberculosis in the Gantrung Health Center Working Area are as follows: Respondents with sufficient knowledge about Tuberculosis are 31 respondents (47.0%), while respondents with less knowledge are 18 respondents (27.3%) and respondents with good knowledge are 17 respondents (25.8%). Respondents' behavior in preventing Tuberculosis with negative behavior is 40 respondents (60.6%), and respondents with positive behavior is 26 respondents (39.4%). There is a relationship between knowledge and family behavior in preventing Tuberculosis in the Gantrung Health Center Working Area with $p = (0.001) \leq \alpha = 0.05$ and correlation $r = 0.568$ which means that the two variables have a moderate relationship.

Suggestions: For respondents, ask more questions and dig up information about tuberculosis and start to behave healthily and be aware of the surrounding environment. For the research institution, stricter field observation is needed because for sufferers, it is only limited to understanding but not all actions are implemented. For educational institutions, it can add information sources and bibliography for the Bhakti Husada Mulia Madiun Health Sciences College related to the relationship between knowledge and family behavior in preventing tuberculosis.

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