

Correlation between Family Knowledge and Preventive Attitude Effort among Pulmonary Tuberculosis in Kadu Village

Jane Mannuela Mudeng^{a,1}, Margareta Putri Bistolen^{a,2}, Ruthnadya Agustin Krisnaningrum^{a,3}, Theresia^{b,4,*}, Erivita Sakti^{a,5}

^a Faculty of Nursing Universitas Pelita Harapan, Sudirman Boulevard, Karawaci, Tangerang, 15810, Indonesia

^b Program Studi Pendidikan Profesi Ners, Fakultas Kedokteran, Universitas Pendidikan Ganesha, Bali, Indonesia

¹ 01501210252@student.uph.edu; ² 01501210099@student.uph.edu; ³ 01501210111@student.uph.edu;

⁴theresia.theresia@undiskha.ac.id* ; ⁵ erivita.sakti@uph.edu

* Penulis Korespondensi : Theresia

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ABSTRAK

Tuberkulosis merupakan sebuah isu Kesehatan global dengan tingkat mortalitas yang tinggi. Prevalensi kasus tuberkulosis di desa Kadu. Pengetahuan keluarga dan perilaku merupakan faktor penting yang memengaruhi keefektifan Upaya pencegahan tuberkulosis. Tujuan penelitian ini untuk mengetahui hubungan tingkat pengetahuan dan perilaku keluarga dalam upaya pencegahan tuberkulosis paru. Studi ini menggunakan metode deskriptif korelasi dengan pendekatan potong lintang. Studi ini merekrut 44 responden yang merupakan populasi keluarga penderita tuberkulosis di desa Kadu dengan *sampling convenience*. Analisa data pada studi ini yaitu univariat dan bivariat. Hasil penelitian ini menunjukkan bahwa tidak terdapat hubungan yang signifikan antara tingkat pengetahuan dan perilaku keluarga penderita dalam melakukan pencegahan tuberkulosis paru di desa Kadu ($p > 0,05$). Studi selanjutnya dianjurkan pada sejumlah faktor lainnya seperti faktor sosial, kepercayaan, keberagaman kelompok umur responden.

ABSTRACT

Tuberculosis represents a significant global health concern, with high mortality rates. The prevalence of tuberculosis in Kadu Village is notably high. Family knowledge and attitude have been identified as key factors influencing the effectiveness of tuberculosis prevention efforts. The objective of this study was to determine the correlation between knowledge level and family attitude in preventing pulmonary tuberculosis. This study employed a descriptive correlational research method with a cross-sectional approach. This study used a descriptive research methodology with a cross-sectional approach. A total of 44 participants from the tuberculosis group in Kadu Village were included in the study using convenience sampling. Data analysis was conducted using questionnaires,

including univariate and bivariate analysis. The results of the study indicated that there was no statistically significant relationship between the level of family knowledge and attitude regarding the prevention of pulmonary tuberculosis in Kadu Village ($p > 0.05$). Further study is anticipated to incorporate additional factors, including social factors, trust, and variability, particularly across age groups.

1. Introduction

Pulmonary tuberculosis, caused by *Mycobacterium tuberculosis*, is an infectious disease that causes significant morbidity and mortality worldwide. The World Health Organization (WHO) has implemented a Sustainable Development Goals (SDGs) program to reduce deaths from pulmonary tuberculosis by 95% by 2015. The goal is to eliminate tuberculosis from the world. Pulmonary tuberculosis is a global health problem that accounts for half of all cases in Southeast Asia, with the highest prevalence rates in India, Indonesia, and China (WHO, 2022). According to Kementerian Kesehatan Republik Indonesia (2023), Indonesia ranks second in the world in terms of tuberculosis cases and deaths, with 969 thousand cases in 2022. The provinces with the highest number of cases are West Java, East Java, and Central Java, while the province of Banten ranks seventh with 38,200 cases. Tangerang City has the highest number of cases with 6,752 people diagnosed.

Based on the initial survey, it was found that new active pulmonary tuberculosis cases in October 2023 at the Curug Sub-district level in Kadu Village were around 25 patients, especially in large families aged 18-55. This could increase the risk of the disease spreading to more vulnerable populations. The majority of the population in Kadu Village has a high school education, with 9,189 people having a high school education and 7239 people having no school education. The total population is 25,696 with 12,313 people between the ages of 18 and 55 years. Most patients with pulmonary tuberculosis and their families rarely use masks, especially at home. Masks can help reduce the transmission of diseases, including pulmonary tuberculosis, but lack of knowledge and awareness about their use can increase transmission.

Previous research conducted by Kaka (2021) showed an equal distribution of data between three categories of variables, namely, good, sufficient, and deficient. This is an indication that there are variations in the data in connection with a significant relationship between knowledge and attitude. The research conducted by the researcher resulted in data distribution in the sufficient and good sections, while in the less part the data distribution was 0%. According to Madebo et al. (2023), homogeneity of distribution leads to reduced significance of both variables. The reason for the insignificance of the results of this study may be the lack of variability in the data. The lack of variability in the data may be the reason for the insignificance of the results in this study.

Pulmonary tuberculosis is a major global health problem, and family knowledge plays an important role in preventing its spread. Families with good knowledge of prevention tend to have positive attitudes toward preventing the spread of pulmonary tuberculosis (Ramadany et al., 2020). However, in Kadu Village, large families may increase the spread of pulmonary tuberculosis among vulnerable groups, especially those who rarely wear masks. There is a lack of research on the relationship between family knowledge and attitudes with pulmonary tuberculosis prevention, so the researchers plan to investigate this correlation.

2. Method

This study employed a quantitative correlational research method with a cross-sectional approach. The study was conducted in Kadu Village, located in Curug Subdistrict, Tangerang Regency, Banten, from January to May 2024. The sampling technique employed in this study was convenience sampling, with the population comprising 44 individuals who resided in Kadu Village and had close contact with pulmonary tuberculosis patients. The questionnaire utilized in this study was derived from research conducted by Kaka (2021) on "*Hubungan Tingkat Pengetahuan dan Sikap Keluarga dengan Perilaku Pencegahan Penularan Penyakit Tuberculosis (TBC)*".

In the questionnaire utilized, respondents were required to indicate their responses as either "True" or "False." For each correct response, a score of "1" was assigned, while the incorrect responses were assigned a score of "0." The total possible score ranged from 0 to 16, with three categories: 0-5, 6-10, and 11-16. In the attitude question, participants responded on a Likert scale of 1-4, with 1 indicating strong disagreement, 2 indicating disagreement, 3 indicating agreement, and 4 indicating strong agreement. The total score for the attitude question is categorized as poor if the score is less than 28, sufficient if the score is between 29 and 50, and good if the respondent scores between 51 and 64. The objective of this study was to ascertain the relationship between the level of knowledge and family attitudes in efforts to prevent pulmonary tuberculosis disease. Cronbach's Alpha value on the knowledge questionnaire 0.835 and attitude 0.895. The questionnaire consists of 16 knowledge questions and 16 attitude questions towards tuberculosis.

This research has been ethically approved by the Research Ethics Committee of the Faculty of Nursing, Universitas Pelita Harapan (No.010/KEPFON/I/2024R). Data were collected by researchers visiting respondents' homes (door-to-door). In this study, researchers employed univariate and bivariate analysis (*Spearman rank-order correlation coefficient*) and inferential statistics to conclude the results of the study.

3. Result and Discussions

Result

Table 1 Data Distribution Based on Respondent Characteristics in Kadu Village, May 2024 (N=44)

Variable	Frequency	Mean	SD
Age	44	34.89	10.85
Education			
Elementary School	5		

Variable	Frequency	Mean	SD
Junior High School	10		
Senior High School	17		
University	12		
Occupation			
Private Sector Employee	13		
Entrepreneur	2		
Doesn't work	7		
Others	22		
Had knowledge of Tuberculosis			
Yes	35		
No	9		
Source of Information			
No	9		
Family	6		
Social media	8		
Health Facilities	18		
Others	3		
Taking Family Member with Tuberculosis			
Yes	28		
No	16		
Duration of Treatment			
0.5 -1.5 months	31		
2 - 8 months	9	3.25	4.21
9 - 15 months	4		
Duration of Assistance			
0.5 -1.5 months	27		
2 - 8 months	8	2.16	2.65
9 - 15 months	9		
Respondent's symptoms during taking care of family member with TB			
Fever	6		
Cough for more than 2 weeks	7		
Decreased appetite	3		
Marked weight loss	3		
Others	1		
No symptoms	24		
Medical Checkup			
Ever	29		
Never	15		

Variable	Frequency	Mean	SD
Total	44		

Based on Table 1, the results obtained where were that 44 respondents participated in this research with the highest number of education at the high school level as many as 17 people, the highest occupation was outside of private employees and self-employed (others) as many as 22 people, and those respondents who knew about tuberculosis were 35 people, the largest source of information was from health facilities as many as 18 people, respondents who had taken their families to health facilities as many as 28 people, the highest duration of the patients was 0,5-1,5 months as many as 31 patients, most families do not experience symptoms of tuberculosis, and the majority of respondents had already had their health checked at a health facility, namely 29 respondents.

Table 2 Result of the level Family Knowledge Regarding Tuberculosis Prevention in Kadu Village, May 2024 (N=44)

Variable	Frequency	Percentage (%)	Mean	SD
Good	41	93.2		
Sufficient	3	6.8		
Less	0	0	11.95	1.38
Total	44	100		

Based on Table 2, the results of family knowledge in preventing pulmonary tuberculosis in Kadu Village showed that the majority of 41 (93.2%) respondents were in a good category.

Table 3 Result of the Family Attitude Regarding Tuberculosis Prevention in Kadu Village, May 2024 (N=44)

Variable	Frequency	Percentage (%)	Mean	SD
Good	30	70.5		
Sufficient	14	29.5	52.18	4.85
Less	0	0		
Total	44	100		

Based on Table 3, family attitudes in preventing pulmonary tuberculosis in Kadu Village showed that most 30 (70.5%) respondents were in a good category.

Table 4 Correlation between the Level of Family Knowledge toward Attitude in the Effort to Prevent Pulmonary Tuberculosis In Kadu Village, May 2024 (N=44)

Family Knowledge	Attitude						Total		r	P-value
	Less	%	Sufficient	%	Good	%	N	%		

Less	0	0	0	0	0	0	0	0		
Sufficient	0	0	1	33,3	2	66,7	13	29,5	0,020	0,885
Good	0	0	12	29,3	29	70,7	31	70,5		
Total	0	0	13	62,6	41	137,4	44	100		

The correlation between the level of family knowledge toward attitudes regarding the prevention of pulmonary tuberculosis disease transmission was analyzed using Spearman's correlation coefficient. The results of statistical tests conducted on the data indicated that there was no significant relationship between the two variables, with a p-value of 0.885.

Discussion

The majority of respondents in this study had an education level equivalent to high school. This study is in accordance with research conducted by Dewi et al. (2021) in Husnawati et al. (2023), which shows that there is no effect of education level on public knowledge. This indicates that increasing one's education does not always guarantee a better level of knowledge.

The study conducted in Kadu village demonstrated that the majority of respondents exhibited a satisfactory level of knowledge regarding tuberculosis prevention. The majority of respondents indicated that they possessed a comprehensive understanding of it. This finding is consistent with a similar study conducted in The Gambia, where 66.9% of respondents exhibited a comparable level of knowledge (Bashorun et al., 2020). This may be attributed to the respondents' frequent exposure to information on tuberculosis from various sources, including radio, television, family, and friends.

In this study, most respondents understood that tuberculosis is not a hereditary disease but an infectious disease that can be transmitted by coughing and sneezing. In addition, 90.9% of respondents knew that tuberculosis transmission can be prevented by BCG vaccination of infants. However, in this study, families who lived in rural areas and had close contact with tuberculosis patients had cramped and overcrowded houses, so some families had the misconception that overcrowded and shabby houses were conditions that could not cause tuberculosis.

From the results of research conducted on the relationship between family knowledge level and attitude in tuberculosis prevention efforts in Kadu village, it is known that the majority of respondents have a good attitude, as much as 70% of respondents, and those who have an attitude with a sufficient category are 14%. This finding aligns with research conducted in rural communities in Dikgale, Mamabolo, and Mothiba, which reported that 87% had a good attitude with patients while 12, 46% showed an unfavorable attitude (Seloma et al., 2023). This could be due to a lack of family awareness and a lack of health education interventions on tuberculosis prevention.

This study also demonstrated that the overall attitude with tuberculosis was more favorable compared to a study conducted in North Mecha country, where the majority of respondents (46.2%) indicated that tuberculosis cannot be transmitted from human to human (Kasa et al., 2019). This discrepancy may be attributed to

the fact that the study respondents originated from disparate countries, which may have discrepancies in health literacy, health education, and access to media or health workers.

The study also demonstrated that, when presented with 16 attitude questions, most respondents indicated disagreement with the statement that a very small and narrow room area would cause tuberculosis disease. However, when presented with other attitude questions, respondents demonstrated an ability to provide the correct response regarding tuberculosis prevention.

This study also showed that of the 16 attitudinal questions given, the majority of the respondents, as many as 15 respondents, disagreed that a very small and confined space would cause tuberculosis disease. However, for other attitudinal questions, respondents were able to provide the correct answer for prevention.

This indicates that the majority of respondents exhibit a positive attitude towards prevention. This finding is consistent with the findings of Bashorun et al. (2020), which demonstrated that the majority of respondents in Gambia had a positive attitude towards prevention, specifically in not being ashamed to seek care at a health facility if they had been diagnosed with tuberculosis.

Contrary, Junaid et al. (2021), which indicated that respondents had a moderate attitude with tuberculosis. In contrast, the majority of respondents did not actively take action to prevent tuberculosis, and only one-third were able to adequately prevent tuberculosis. Local tuberculosis control programs must intensify efforts to enhance family knowledge about the importance of tuberculosis prevention.

The results of the research conducted on the relationship between knowledge and attitude in tuberculosis prevention efforts in Kadu village, showed that there was no statistically significant relationship between family knowledge and attitude in pulmonary tuberculosis prevention. This finding is consistent with the findings of Hendesa et al. (2018), who found that there was no significant relationship between knowledge of pulmonary tuberculosis and attitude in treatment adherence. The results of this study indicate that the level of knowledge possessed by families does not necessarily influence their attitude in prevention efforts. This is because many factors, including individual self-awareness and the external environment, must be considered to encourage families to adopt attitudes compatible with prevention.

This study differs from a study conducted in Afghanistan by Essar et al. (2022), which demonstrated a significant relationship between knowledge and attitude with tuberculosis. The majority of respondents exhibited satisfactory levels of knowledge (87.7%) and favorable attitudes (96.5%) towards tuberculosis, with a total of 896 respondents. At the time of the study, the country was experiencing internal conflicts and external wars that adversely affected the health system. This suggests that internal and external circumstances influence an individual's attitude towards tuberculosis prevention, in addition to their knowledge.

The majority of respondents answered correctly on the question "Coughing chest pain, and fever are signs and symptoms of tuberculosis disease" on the knowledge questionnaire and answered correctly on the question "Taking anti-tuberculosis medication for six to twelve months diligently and regularly is the right action most

effective" on the attitude questionnaire. Most respondents answered incorrectly on the question "Housing that is too crowded and dirty is a condition that causes tuberculosis" on the knowledge questionnaire and answered incorrectly on the question "Rooms that are very small and cramped will cause disease" on the attitude questionnaire.

Previous research conducted by Kaka et al. (2021) demonstrated an even distribution of data between the three variable categories, namely good, sufficient, and deficient. This indicates that there is a variation in the data that is associated with a significant relationship between knowledge and attitude. The research carried out by the researcher produced a data distribution in the sufficient and good sections, while in the less section, the data distribution was 0 %. The research conducted by Madebo et al. (2023), stated that a homogeneous distribution of results in the significance of both variables decreasing. The lack of variability in the data may be the reason for the insignificant results of this study. This is evidenced by the relatively low mean and standard deviation values.

Conclusion and Recommendation

This study explored the relationship between family knowledge and attitude towards prevention of pulmonary tuberculosis and provided some important findings. First, the results showed a good level of family knowledge (93.2%) and a good family attitude (70.5%) in the prevention of pulmonary tuberculosis.

In addition, the results of the analysis showed no significant relationship between the level of family knowledge and attitude in preventing tuberculosis. The limited number of samples affected the significance of the results. It is expected that future research can find a strategic location, expand the characteristics of respondents and increase the number of respondents.

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