Nurse Update

# Bridging Knowledge and Stigma: Understanding Their Impact on Pulmonary Tuberculosis Patients in Demak Health Center

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## Abstract

**Background:** Stigma is a negative label given by a person or group to others. In this study, stigma is shown to people with pulmonary tuberculosis which can be influenced by one of the factors, namely community knowledge. Lack of public knowledge about the prevention and transmission of pulmonary tuberculosis will give rise to a negative stigma against the disease and people with pulmonary tuberculosis so that it can interfere with social life, the role of family and society. In addition, the stigma given by the community is able to interfere with the rights of pulmonary tuberculosis sufferers to get treatment, carry out social activities, and meet economic needs.
**Objective:** This study aims to find out the relationship between the level of public knowledge and stigma towards pulmonary tuberculosis patients.
**Methods:** The research method used is quantitative research with a Cross sectional design. Sampling used the Slovin formula with a total of 100 respondents and the sampling technique used Incidental sampling with the criteria for inclusion of respondents residing in the working area of the Demak 1 health center and aged 20-49 years. Knowledge level as an independent variable and stigma as a dependent variable, this study uses a knowledge level and stigma questionnaire processed using the Spearman test with the independent variable being the level of knowledge and the dependent variable being stigma.
**Results:** The results of the spearman test from 100 respondents obtained a significancy result of 0.000 ($p < 0.05$) and a correlation value of -0.368 which shows that there is a relationship, with a fairly close strength and a negative relationship direction.
**Conclusion:** In this study, there was a relationship between the level of knowledge and community stigma in patients with pulmonary tuberculosis in the working area of the Demak 1 Health Center with a strong relationship that was negative.


**Keywords:**
Stigma; level of knowledge; pulmonary tuberculosis

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## Introduction

Tuberculosis (TB) is an infectious disease that attacks the lungs, caused by bacteria that spread through the air when people perform activities such as coughing, sneezing, or spitting. The World Health Organization estimates that about a quarter of the global population has been infected with TB. Pulmonary tuberculosis is still the leading cause of poor health and the number two killer of infectious diseases after COVID-19. In 2022, 10.6 million cases of Tuberculosis (TB) were recorded worldwide, with a distribution of 5.8 million cases in men, 3.5 million in women, and 1.3 million in children. The largest number of TB cases occurred in Southeast Asia (46%), Africa (23%) and the Western Pacific (18%). Globally, there are 2.2 million new cases of TB caused by malnutrition, 0.89 million due to HIV infection, 0.73 million due to alcohol use disorder, 0.70 million due to smoking, and 0.37 million due to diabetes (WHO, 2023).

Tuberculosis cases in Central Java are 150 per 100,000 population with a mortality percentage of 4.3% of the number of registered and treated cases. In 2022, the Case Notification Rate (CNR) reached 179 cases per 100,000 population, a

significant increase compared to 2021 which was 110 cases per 100,000 population. In Demak district in 2022, there were 13,224 suspected TB cases, 5,608 cases (42.4%) male and 7,616 cases (57.6%) female. With the highest number of cases, 153 cases are at the Demak I Health Center (Dinas Kesehatan Provinsi, 2023).

Based on the results of a preliminary study at the Demak 1 Health Center, Demak Regency, there were 48 cases of pulmonary tuberculosis recorded from January to May 2024. The findings of this case are spread across 1 village and 5 sub-districts in Demak Regency, which are still very close in community life between residentsTuberculosis has a significant impact on social life, where the role of family and community can be a source of positive social support. However, stigmas related to this disease can also arise and negatively impact the treatment process. Research shows that this stigma can cause delays in treatment in people with tuberculosis, thus affecting the continuity of treatment (Hasudungan & Wulandari, 2020).

Research that has been carried out before. It was found that the lack of knowledge about the causative agents and transmission of tuberculosis encouraged the spread of myths that are common in the African region. This also has the potential to limit prevention practices and encourage stigmatizing behavior towards TB patients (Junaid, 2021).

Knowledge is the result of knowing and occurs after people sense certain objects. Sensing occurs through the five senses of sight, hearing, smell, taste, and touch. In the process of sensing to producing knowledge, it is greatly influenced by the intensity of perceptual attention to the object. The definition of knowledge is the whole idea, thought, idea, concept, and understanding that human beings have about the world and all its contents include human beings and their lives (Soelaiman, 2019). According to (Wawan, 2021), Factors that affect the quality of a person's knowledge include age, gender, education, occupation, environment, and socio-cultural background.

Meanwhile, health stigma refers to discriminatory attitudes aimed at a person or group with certain characteristics or diseases. When a person is perceived as different from the norms of society, they are often victims of stigma and ostracized by the surrounding environment (Falidah, 2020).

According to Major & O'Brien in (Major, 2019), Stigma arises as a result of negative treatment, direct discrimination, confirmation of negative expectations, automatic stereotypes, and threats to individual identities. The author is interested in researching the relationship between knowledge level and community stigma in pulmonary tuberculosis patients in the Demak I Health Center Working Area.

## Methods

### Research Design and Approach

This study employed a cross-sectional design to investigate the relationship between family support and dietary adherence in patients with Diabetes Mellitus. The research was conducted at the Demak 1 health center from November – December 2024. A total of 150 participants were recruited using purposive sampling to ensure a representative sample of patients with varying levels of family support.

### Participants

The study included 150 patients diagnosed with Diabetes Mellitus who were receiving treatment at the Diabetes Clinic. Inclusion criteria required participants to be adults aged 18 years and older, diagnosed with Diabetes Mellitus for at least one year, and able to provide informed consent. This selection process aimed to ensure that the sample accurately reflected the population of interest.

### Instruments and Measurement

Data were collected using two validated instruments:

1. The Family Support Scale (FSS) to assess the level of family support provided to patients.
2. The Dietary Adherence Questionnaire (DAQ) to evaluate the adherence of patients to dietary recommendations.

The FSS was designed to measure various dimensions of family support, including emotional, informational, and practical assistance. The DAQ assessed participants' adherence to dietary guidelines specific to Diabetes Mellitus management.

### Data Collection

Data collection was conducted over a period of [insert duration, e.g., "two months"], during which participants were approached in the outpatient department of the Diabetes Clinic. After obtaining informed consent, participants completed the FSS and DAQ questionnaires. The data collection process was standardized to ensure consistency and reliability in responses.

## Data Analysis

Data were analyzed using Statistical Package for the Social Sciences (SPSS) version [insert version number]. Descriptive statistics were calculated to summarize demographic characteristics and the levels of family support and dietary adherence. Bivariate analyses, including Pearson correlation coefficients, were conducted to examine the relationship between family support and dietary adherence. A significance level of $p < 0.05$ was set for all statistical tests.

## Ethical Considerations

Ethical approval for the study was obtained from the Institutional Review Board (IRB) prior to the initiation of the research. Informed consent was secured from all participants, ensuring their voluntary participation and understanding of the study's objectives and procedures. Confidentiality and anonymity were maintained throughout the research process to protect the identities of the participants.

# Results

In table 1, the most respondents were found at the age of 20-25 years as many as 45 respondents with a percentage of 45%, aged 26-23 years as many as 23 respondents with a percentage of 23%, aged 36-45 years as many as 23 respondents with a percentage of 23%, and aged 46-49 years as many as 10 respondents with a percentage of 10%.

The most respondents were found in the female gender as many as 59 respondents with a percentage of 59% while the male gender was 41 respondents with a percentage of 41%. Most respondents with jobs as laborers/employees were 46 respondents with a percentage of 46%, non-working as many as 21 respondents with a percentage of 21%, students/students as many as 18 respondents with a percentage of 18%, civil servants/PPPK as many as 12 respondents with a percentage of 12%, and others as many as 3 respondents with a percentage of 3%. Most respondents were obtained with the last education of high school as many as 60 respondents with a percentage of 60%, higher education as many as 32 respondents with a percentage of 32%, junior high school as many as 7 respondents with a percentage of 7%, and elementary school as many as 1 respondent with a percentage of 1%. Most respondents were found in Betokan Village as many as 24 respondents with a percentage of 24%, Bintoro Village as many as 22 respondents with a percentage of 22%, Singorejo Village as many as 21 respondents with a percentage of 21%, Karangmlati Village as many as 13 respondents with a percentage of 13%, Kadilangu Village as many as 12 respondents with a percentage of 12%, and Kalicilik Village as many as 8 respondents with a percentage of 8%.

The results with the highest level of knowledge in the good category were 55 respondents with a percentage of 55%, the adequate category was 35 respondents with a percentage of 35%, and the poor category was 10 respondents with a percentage of 10%. The results with the most stigma in the low category were 66 respondents with a percentage of 65%, the medium category was 34 respondents with a percentage of 34%, and the high category with 0 respondents.

Table 1
Distribution of Respondent Frequency in the Working Area of Demak Health Center 1 in 2024 (n=100)

| Indicators | n | % |
|---|---|---|
| Age (year) | | |
| 20-25 | 45 | 45 |
| 26-35 | 23 | 23 |
| 36-45 | 23 | 23 |
| 46-49 | 10 | 10 |
| Gender | | |
| Male | 41 | 41 |
| Female | 59 | 59 |
| Work status | | |
| Students/Students | 18 | 18 |
| Labor/Employee | 46 | 46 |
| Civil Servants/PPPK | 12 | 12 |
| Not working | 21 | 21 |
| Other | 3 | 3 |
| Level of Education | | |
| Elementary | 1 | 1 |
| Middle | 7 | 7 |
| High | 60 | 60 |
| College | 32 | 32 |
| Village | | |
| Bintoro | 22 | 22 |
| Kadilangu | 12 | 12 |
| Betokan | 24 | 24 |
| Singorejo | 21 | 21 |
| Kalicilik | 8 | 8 |
| Karangmlati | 13 | 13 |
| Level of knowledge | | |
| Good | 55 | 55 |
| Enough | 35 | 35 |
| Less | 10 | 10 |
| Stigma | | |
| Low | 66 | 66 |
| Keep | 34 | 34 |
| Tall | 0 | 0 |
| **Total** | **100** | **100** |

This means that the level of knowledge with the stigma of the community in pulmonary tuberculosis patients in the working area of the Demak 1 health center has a relationship seen from the p value of 0.000 with a correlation coefficient (R) -0.368, a strong category with a negative relationship

direction. That is, the better the level of knowledge, the lower the stigma and vice versa.

From table 2, the result of significancy of 0.000 (p <0.05) was obtained which showed that the correlation between the level of knowledge and stigma was meaningful. A correlation value of -0.368 shows that the correlation strength is strong with a negative correlation direction. The direction of a negative correlation indicates that the two variables are in opposite directions.

Table 2
Relationship between Knowledge Level and Community Stigma in Pulmonary Tuberculosis Patients in the Working Area of Demak 1 Health Center in 2024 (n=100)

| Indicators | Coeficient of correlation | p |
|---|---|---|
| Level of knowledge - Stigma | -0.368 | 0,0001 |

## Discussion

### Respondent Characteristics (Frequency distribution based on age, gender, last education, occupation, village/village, level of knowledge, and stigma)

The results obtained in this study show that the most respondents are at the age of 20-25 years, namely 45 respondents. Meanwhile, at the age of 26-35 years there were 23 respondents, 36-45 years old as many as 23 respondents and 40-49 years old as many as 10 respondents. Previous research has found that age and education are factors related to the level of knowledge. If the level of knowledge is lacking, it is 2 times more likely to stigmatize people who have good knowledge (Menggawanti, 2021).

According to the theoretical model of the planned behavior theory, it has background factors including age and knowledge, knowledge affects an individual's attitude and behavior towards something. Therefore, the researcher here takes the vulnerable age of respondents 20-49 years old so that in filling out and understanding the questionnaire the respondents are able.

The results obtained by the most respondents were in the female gender as many as 59 respondents while the male gender was as many as 41 respondents. In the context of stigma, women often play a dual role as providers and recipients of family health services. However, stigma related to infectious diseases can be a source of anxiety and a major obstacle in efforts to prevent, treat, treat, and control these diseases (Kontomanolis, E. N., Michalopoulos, S., Gkasdaris, G., & Fasoulakis, 2017).

In this study, the female gender was dominated by the respondents in filling. Because on average women are interested in health-related matters in order to be able to provide health services for their families.

The results obtained in this study were the most respondents with 46 respondents working as laborers, 21 respondents, 18 respondents, 12 respondents, and 3 respondents. Previous research showed that work as a housewife is considered to give a higher stigma than civil servants. Because as a housewife, she tends to always gather with neighbors to talk about certain topics, one of which is about the stigma against infectious diseases. Meanwhile, civil servants who are employees who have working hours tend to rarely gather (Carbadi et al., 2022).

In this study, work is also one of the factors of the low or high stigma given by society to pulmonary tuberculosis patients. Workers as laborers/employees have certain working hours so they tend to rarely gather and talk about the stigma of infectious diseases.

The results obtained by the most respondents were 60 respondents in high school, 32 respondents in higher education, 7 respondents in junior high school, and 1 respondent in elementary school. Education is a process of changing attitudes and behaviors through teaching that aims to mature and improve human quality. The higher the level of education, the better a person's ability to understand, interpret, and apply knowledge (Hasudungan & Wulandari, 2020).

In this study, the level of education is one of the stigma factors for pulmonary tuberculosis patients, because the higher the level of education, the better the knowledge obtained. A person with the last education of high school which is the last education before continuing to college and is considered enough to understand and understand pulmonary tuberculosis.

The results obtained in this study were the most respondents in Betokan Village with 24 respondents, Bintoro Village with 22 respondents, Singorejo Village with 21 respondents, Karangmlati Village with 13 respondents, Kadilangu Village with 12 respondents, and Kalicilik Village with 8 respondents. There are 5 Villages and 1 Village in the Working Area of the Demak 1 Health Center, therefore it is necessary to group respondents

according to the village/village where the respondent lives.

The results obtained from this study were carried out on 100 respondents, the highest level of knowledge of respondents in the good category was 55 respondents, the second most was sufficient as many as 35 respondents, and the poor category was as many as 10 respondents. Knowledge is the result of human perception of objects through their five senses. The five senses for detection include sight, hearing, smell, and others. At the time of sensing for the result of knowledge is influenced by the intensity of attention, the perception of objects. Human knowledge is obtained primarily through hearing and sight (Notoatmodjo, 2014).

Knowledge can have an impact on a person's behavior. In previous research, it was found that the more a person has good knowledge, the better the behavior of pulmonary TB prevention. The perception of pulmonary TB disease is considered very important to be immediately cured and prevent its transmission, where in one family there are people with pulmonary tuberculosis so that motivation arises to behave to prevent TB transmission (Maria, 2020).

The results obtained from this study were carried out on 100 respondents, the most stigma in the low category was 66 respondents, the second most in the medium category was 34 respondents, and the high category was high with 0 respondents. Health stigma refers to discriminatory attitudes directed at a person or group with certain characteristics or diseases. When a person is perceived as different from the norms of society, they are often victims of stigma and alienated by the surrounding environment. (Falidah, 2020).

TB patients with weak social support are more vulnerable to isolation and discrimination, such as refusal to share goods and food by family. These negative experiences can reinforce feelings of stigma, causing many TB patients to hide their condition and avoid social interactions. (Chen, Du, et al., 2021).

TB patients with weak social support are more vulnerable to isolation and discrimination, such as refusal to share goods and food by family. These negative experiences can reinforce feelings of stigma, causing many TB patients to hide their condition and avoid social interactions.(WHO, 2020).

### The Relationship between Knowledge Level and Community Stigma in Pulmonary Tuberculosis Patients in the Working Area of Demak 1 Health Center

The results of the spearman test that has been carried out can be concluded that Ha was accepted and H0 was rejected. This shows that the correlation between the level of knowledge and stigma is meaningful. The correlation value shows that the correlation force is strong enough with a negative correlation direction. From this study, there is a significant relationship between the level of knowledge and community stigma in patients with pulmonary tuberculosis in the working area of the Demak 1 health center. Furthermore, the results of this test show that the relationship is quite strong and the correlation strength is strong enough with the direction of negative correlation. In other words, the better the level of knowledge, the lower the stigma and vice versa.

Stigma can increase if society does not have adequate knowledge about disease transmission, treatment, and prevention. Therefore, the state must provide accurate and accessible information to the public. The use of simple language and social media can help spread the information. To eliminate stigma, it is necessary to involve important figures such as government leaders, religious leaders, and celebrities. The information conveyed must be on target and conveyed in a communicative way (Fayoyin, 2016).

Thus, the knowledge owned by the community is low can provide a high stigma to people with pulmonary tuberculosis. Meanwhile, good public knowledge can provide a low stigma for people with pulmonary tuberculosis. The stigmatization behavior carried out by the community to people with pulmonary tuberculosis arises due to the lack of public understanding of basic things about pulmonary tuberculosis such as understanding, prevention, transmission, and symptoms of pulmonary tuberculosis.

## Conclusion

The level of public knowledge in the working area of the Demak 1 health center is mostly good. Community stigma on tuberculosis patients in the working area of the Demak 1 health center is low. This study found a relationship between the level of knowledge and community stigma in pulmonary tuberculosis patients in the working area of the Demak 1 health center with strong enough strength and a negative relationship direction.

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