

Knowledge, Perceptions, Attitudes, Motivation, and Behaviors Regarding TB Transmission Prevention and Treatment Among the Community in Semarang City: Study Cross-Sectional

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Abstract

Tuberculosis (TB) is a chronic infectious disease caused by Mycobacterium tuberculosis and remains one of the leading causes of death worldwide, particularly in developing countries like Indonesia. This study aims to determine the knowledge, perceptions, attitudes, motivations, and behaviors related to TB prevention in the community.

This research method used a descriptive observational research design with a cross-sectional approach. The survey and questionnaire distribution were conducted among the people of Semarang City to determine their sociodemographic characteristics, knowledge, perceptions, attitudes, motivations, and behaviors related to TB prevention. A sample of 64 respondents was selected based on inclusion and exclusion criteria. Data were analyzed descriptively using tables and narratives.

The results of the study showed that from the sociodemographic characteristics data, the majority of respondents were women (70.3%) and most were in the young productive age group of 17–25 years (31.5%). The majority of respondents' education level was high school (56.25%), while the most common occupation was housewives (35.94%). In addition, the majority of respondents (60.94%) had a history of contact with TB sufferers, indicating a potential risk of transmission in the immediate environment. The results showed that the level of knowledge of respondents regarding TB was mostly high (53%, 82.81%), with an average value of 8.14. Public perception was also in the good category (27%, 42.19%) with an average value of 33.9, although there was still a small number of respondents with low perception (6.25%). The majority of respondents' attitudes were positive towards TB prevention efforts, namely 29 (45.3%) with an average of (33.92), while the respondents' motivation was classified as good, namely 32 (50%) with an average of 37.92, which indicates a strong drive to take preventive measures. Respondents' behavior in TB prevention was also good, namely 37 (57.81%) with an average of 38.09.

In general, it can be concluded that the people of Semarang City have good knowledge, perceptions, attitudes, motivations, and behaviors regarding TB transmission prevention. However, a small group still has low levels of TB transmission in several variables that require attention. Therefore, ongoing health education efforts and community-based TB health promotion are needed to ensure the understanding and implementation of preventive behaviors are evenly distributed across all levels of society, as well as government support for early detection and TB control efforts, in an effort to achieve TB elimination by 2030.

Keywords: Knowledge, Perception, Attitude, Motivation and TB Prevention Behavior.

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1. Introduction

Pulmonary tuberculosis (TB) is a global and national public health problem caused by infection *Mycobacterium tuberculosis*. The WHO (2021) reports that there are approximately 10 million cases of TB worldwide, with 1.5 million deaths annually. Indonesia ranks second after India, with an estimated 824,000 new cases and 93,000 deaths due to TB. These figures indicate that TB remains a significant public health burden.

Pulmonary tuberculosis (TB) is a global and national public health problem caused by infection *Mycobacterium tuberculosis*. The WHO (2021) reports that there are approximately 10 million cases of TB worldwide, with 1.5 million deaths annually. Indonesia ranks second after India, with an estimated 824,000 new cases and 93,000 deaths due to TB. These figures indicate that TB remains a significant public health burden. Data Global Tuberculosis Report In 2020, the incidence of TB cases in Indonesia was estimated at 824,000, with an increase of 969,000 cases in 2021. This data places Indonesia in second place after India, followed by China, the Philippines, Pakistan, Nigeria, Bangladesh, and Congo (WHO, 2022; Ministry of Health, 2020).

National epidemiological data indicate that TB requires comprehensive management, focusing not only on medical interventions but also on mapping the social determinants that influence its transmission (Handayani, 2024; Nurjannah et al., 2022). Various studies have identified diverse risk factors for TB, ranging from vulnerability in

pediatric populations at the primary health care level to exposure to close contacts in the domestic environment (Apriliasari et al., 2018; Dduong et al., 2024). In urban areas, transmission of the disease is further complicated by social determinants such as community stigma that hinders screening behavior (screening behavior) as well as low citizen compliance (Humayun et al., 2022). TB is transmitted primarily through droplets expelled by an infected person when coughing or sneezing. Risk factors that increase susceptibility to TB include an unhealthy home environment, overcrowding, low nutritional status, smoking, a history of close contact, and low public awareness. Lack of knowledge about symptoms, transmission methods, and prevention efforts can exacerbate the spread of the disease, particularly in areas with high population density (Ministry of Health, 2017).

Spread of bacteria *Mycobacterium tuberculosis* is closely related to knowledge, attitudes, and habits of clean and healthy living within the family (Nurliani et al., 2024; Pranoto et al., 2025). Prevention efforts require effective educational communication strategies to increase patient and family awareness (Marhamah et al., 2021), as well as psychosocial support to reduce anxiety during the treatment process (Santoso & Sasmito, 2020). Furthermore, the effectiveness of TB prevention at the community level is determined by the success of disease screening programs and the strengthening of Clean and Healthy Living Behaviors (PHBS) (Kahar et al., 2021), where the level of knowledge underlies the consistency of community preventive behavior (Kahar & Wikandari,

2022).

The clinical challenges of TB management have become increasingly complex with the discovery of chronic comorbidities, particularly Diabetes Mellitus (DM), in pulmonary TB patients (Kahar et al., 2022). This metabolic-infectious relationship directly impacts clinical manifestations, such as the positivity rate of Acid-Fast Bacillus (AFB) in patient sputum (Novitasari, Kahar, & Irnawati, 2022), as well as the potential risk of renal and metabolic complications in the form of glucosuria and ketonuria due to long-term use of Anti-Tuberculosis Drugs (OAT) (Hafidsya & Kahar, 2024). Therefore, a holistic approach that combines health promotion, family behavioral interventions, and clinical-laboratory monitoring is absolutely essential for sustainable TB management.

Lack of understanding and misperceptions about TB often lead to delays in seeking health services (health-seeking behavior), social stigma, and low compliance with preventive measures. Sociodemographic factors, such as education level and family economic status, have been shown to be closely correlated with health literacy levels and community compliance with transmission prevention measures. Adequate formal education makes it easier for individuals to absorb medical information, understand the chain of transmission, and implement preventive measures such as cough etiquette and consistent mask use.

In the context of TB control, community-based health promotion interventions play a crucial role. Research conducted by Kahar et al. (2023) shows that a community empowerment approach through coaching Health Promotion Model (HPM) and training on proper sneezing and coughing etiquette have proven effective in significantly increasing community knowledge and preventive actions. This participatory and continuous outreach model not only transfers theoretical information but also shapes realistic risk perceptions and strengthens individuals' internal motivation to adopt Clean and Healthy Living Behaviors (PHBS).

Several studies in Indonesia have shown that family education and knowledge play a significant role in determining the level of community compliance with TB prevention and treatment. Putri et al. (2024), which states that adequate health knowledge is the main foundation for forming rational and consistent health behavior. From a health promotion perspective, knowledge acts as a trigger (enabling factor) that directs individuals to avoid the risk of infection. Furthermore, recent research emphasizes the

importance of ongoing health promotion interventions to raise awareness, foster healthy lifestyles, and accelerate the achievement of the 2030 TB elimination target.

Therefore, an in-depth analysis of the sociodemographic characteristics, knowledge, perceptions, attitudes, motivations, and behaviors for TB prevention in urban communities such as Semarang City is urgently needed. This research is crucial as a basis for planning more targeted health promotion interventions, particularly for highly vulnerable groups. A comprehensive mapping of these psychosocial factors is needed as a scientific basis for the government, health workers, and stakeholders in designing more targeted, adaptive, and sustainable health promotion strategies to break the chain of TB transmission at the community level.

Method

This research method uses a descriptive observational research design with a cross-sectional approach by conducting a survey and distributing questionnaires to respondents. The method used is to conduct a survey and distribute questionnaires. The population is the general public in the area, with a sample of 64 respondents selected using a purposive sampling technique, namely with the criteria of people who have had direct contact with TB patients even though not household contacts. The study was conducted in the Semarang City community to determine their sociodemographic characteristics, knowledge, perceptions, attitudes, motivations, and behaviors related to TB prevention and TB treatment. Sociodemographic data and variable scores were analyzed descriptively using frequency distributions and average values (means). Tables to present the results of the analysis using descriptive techniques accompanied by narratives. The collected data were processed and analyzed descriptively quantitatively using frequency distributions, percentages, and average values (means).

Primary data collection was conducted through a structured questionnaire that had been tested for validity and reliability. The questionnaire included sociodemographic variables (gender, age, education level, occupation, and history of TB exposure) as well as five main psychosocial and behavioral variables:

1. **Knowledge:** measured based on a score range of 0–10 (categories: Low [0–3.3], Medium [3.4–6.6], High [6.7–10]).
2. **Perception:** measured on a Likert scale with a score range of 8–50 (categories: Very Bad [8–16], Bad [17–

24], Neutral [25–32], Good [33–41], Very Good [42–50]).

3. **Attitude:** measured on a Likert scale with a score range of 8–50 (categories: Very Bad, Bad, Neutral, Good, Very Good).
4. **Motivation:** measured on a Likert scale with a score range of 8–50 (categories: Very Bad, Bad, Neutral, Good, Very Good).
5. **Preventive Behavior:** measured on a Likert scale with a score range of 8–50 (categories: Very Bad, Bad, Neutral, Good, Very Good).

From the results of the calculation of the reliability test of

the research instrument using Alpha Cronbach In the PSPP program, from the 5 research instrument variables, the r coefficient showed that the results of knowledge were 0.55, attitude 0.92, perception 0.77, motivation 0.89, and behavior 0.80. It can be concluded that the variables in the research instrument are considered valid and reliable and meet the standards as a research instrument.

Result

Based on the results of research in July - August 2025 conducted on the people of Semarang City from Genuk District, the following results were obtained:

Table 1 Respondent Characteristics Based on Sociodemographic Characteristics

No	Sociodemographic Characteristics	F	%
1	Gender		
	Woman	45	70.31%
	Man	19	29.69%
	Total	64	100%
2	Age		
	1. 15 – 25	20	31.25 %
	2. 26 – 36	15	23.44%
	3. 37 – 47	17	26.56%
	4. 48 – 58	6	9.38%
	5. 59 – 69	4	6.25%
	6. 70 – 80	2	3.13%
	Total	64	100%
3	Level of Education		
	1. Elementary School	12	18.75%
	2. Junior High School	8	12.50%
	3. Senior High School	36	56.25%
	4. University	8	12.50%
	Total	64	100%
4	Work		
	1. Civil servant	0	0%
	2. Private	17	26.56%
	3. State-owned enterprise	1	1.56%
	4. House Wife	23	35.94%
	5. others	14	21.88%
	6. Not Working	9	14.06%
	Total	64	100%
5	Contact TB		
	1. Yes	39	62.5%
	2. No	25	35%
	Total	64	100%

(Source: Primary Data, 2025)

Table 1 shows the characteristics of respondents, namely gender, age, and education level. Based on the results of

research conducted among the community in Semarang City, with a total of 64 respondents, respondent data based

on table 1 related to the characteristics of the respondents above, the majority of respondents were female, namely 45 respondents, while the rest were male, namely 19 respondents. Thus, the majority of respondents were female. The age category shows that the majority of respondents were aged 15-25 years, namely 20 respondents. Meanwhile, based on formal education, the

majority of respondents had a high school education, namely 36 respondents, while the respondents with the least education were bachelor's degrees, namely 8 respondents. In the occupation category, the majority of respondents were housewives, namely 23 respondents. The category of respondents who had contact with TB was 39 respondents.

Table 2 Frequency Distribution of Respondents Based on Knowledge

Value	Category	F	%	Mean Category
0 - 3,3	Low	1	1.56%	8.14
3,4 - 6,6	Medium	10	15.63%	
6,7 - 10	High	53	82.81%	
Total		64	100%	

(Source: Primary Data, 2025)

Based on table 2 the results of descriptive analysis of respondents' knowledge of health behaviors, the distribution was divided into three categories: low, medium, and high. In the low category (values 0–3.3) there was 1 respondent (1.56%), while in the medium category (values 3.4–6.6) there were 10 respondents (15.63%). The majority of respondents were in the high category (values 6.7–10), namely 53 respondents or 82.81%. Overall, the

mean value of the respondents' knowledge category was 8.14, which is included in the high category. This shows that although most respondents have high knowledge about health behaviors, the level of knowledge of respondents is still in the low or medium category. This distribution is also visualized in a pie chart that shows the dominance of the high category compared to the medium and low categories.

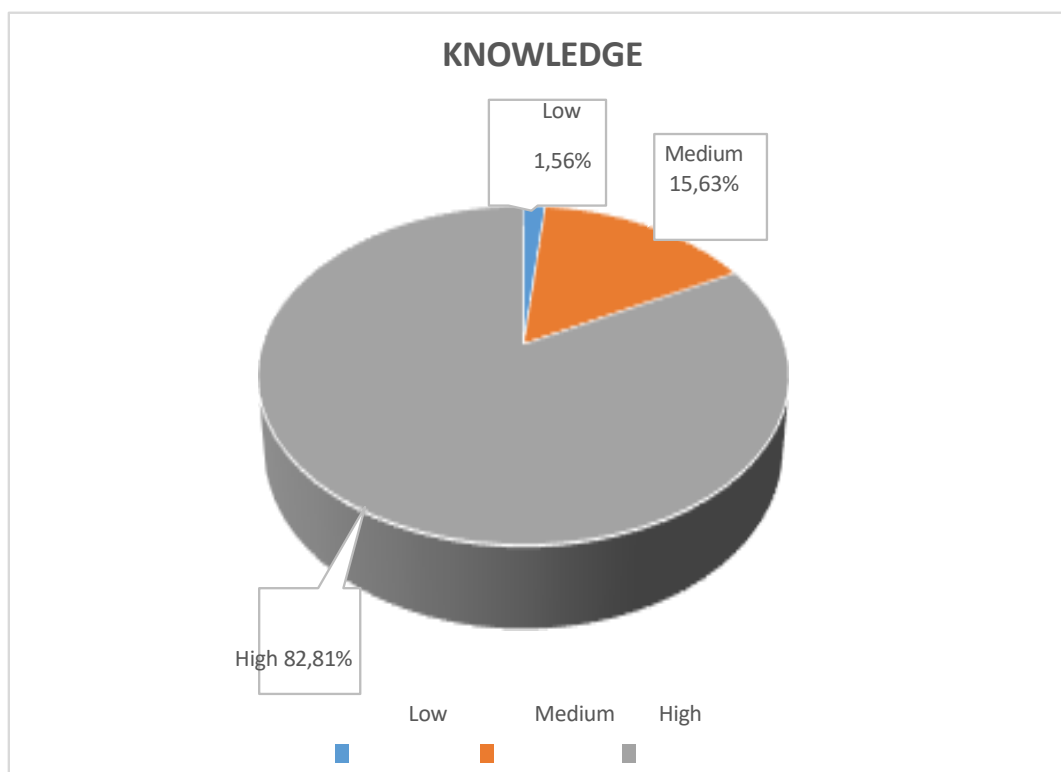


Table 3 Frequency Distribution of Respondents Based on Peception

Value	Category	F	%	Mean Category
8 -16	Very Bad	0	0.00%	33.92
17-24	Bad	4	6.25%	
25-32	Neutral	27	42.19%	
33-41	Good	27	42.19%	
42- 50	Very Good	6	9.38%	
Total		64	100%	

(Source: Primary Data, 2025)

Based on table 3 the results of descriptive analysis of respondents' perceptions, the distribution was divided into five categories: very bad, bad, neutral, good, and very good. In the very bad category (values 8–16) there were no respondents (0%). In the bad category (values 17–24) there were 4 respondents (6.25%). The majority of respondents were in the neutral category (values 25–32) with 27 respondents (42.19%) and the good category (values 33–41) also with 27 respondents (42.19%). Meanwhile, in the very good category (value 42–50) there were 6 respondents (9.38%).

Table 4 Frequency Distribution of Respondents Based on Attitude

Value	Category	F	%	Mean Category
8 -16	Very Bad	3	4.7%	33.92
17-24	Bad	3	4.7%	
25-32	Neutral	5	7.8 %	
33-41	Good	29	45.3%	
42- 50	Very Good	24	37.5%	
Total		64	100%	

(Source: Primary Data, 2025)

Based on table 4 the descriptive analysis of respondent attitudes, the distribution falls into five categories: very poor, poor, neutral, good, and very good. In the very poor category(scores 8–16), there were 3 respondents (4.7%), and in the poor category (scores 17–24), there were also 3 respondents (4.7%). Five respondents (7.8%) fell into the neutral category (scores 25–32), while 29 respondents (45.3%) fell into the good category (scores 33–41). Meanwhile, 24 respondents (37.5%) were in the very good category (scores 42–50).

Overall, the mean attitude score was 33.92, placing it in the good category. This indicates that while the majority of respondents held attitudes ranging from good to very good, the average attitude level remained within the good category. This distribution can also be visualized in a pie chart, which highlights the dominance of the good and very good categories over the others.

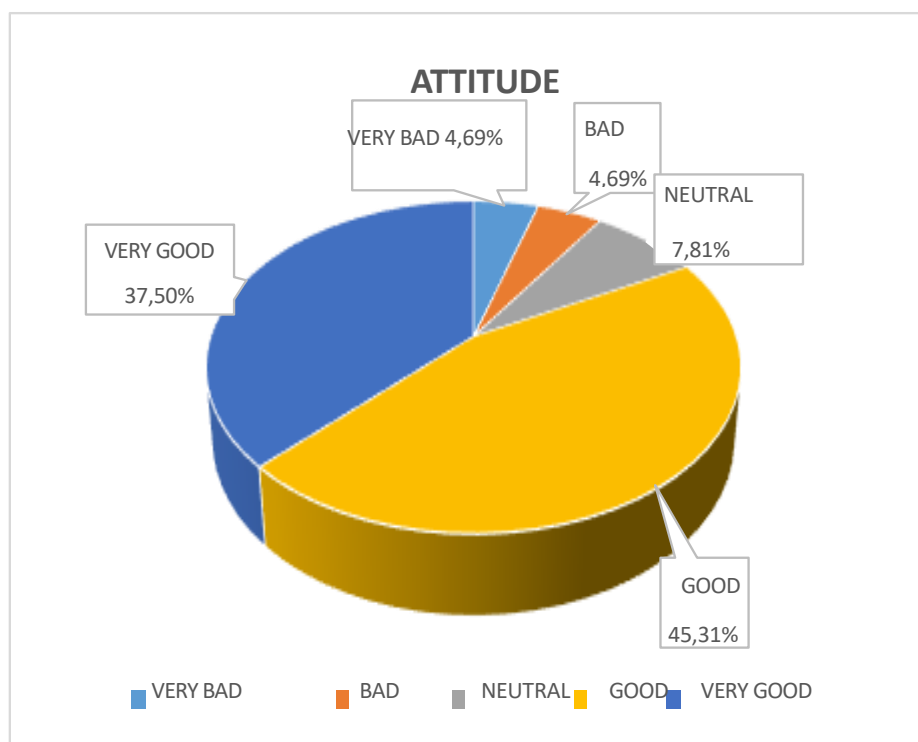
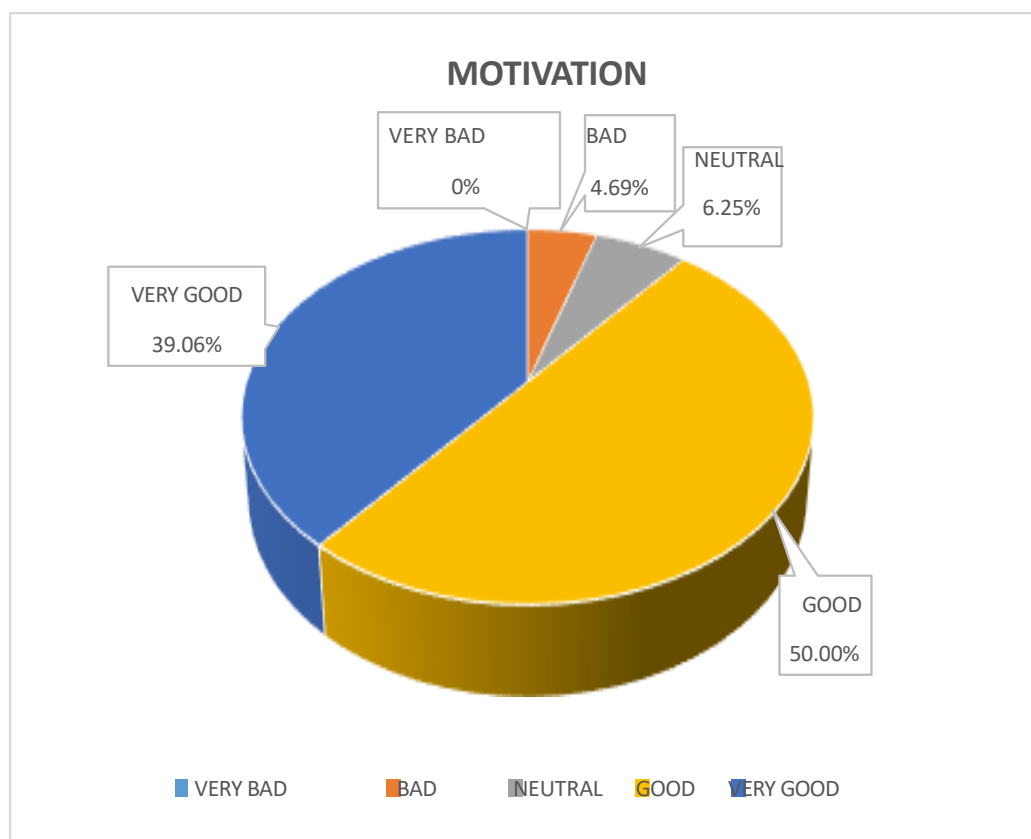


Table 5 Frequency Distribution of Respondents Based on Motivation

Value	Category	F	%	Mean Category
8-16	Very Bad	0	0.00%	37.92
17-24	Bad	3	4.69%	
25-32	Neutral	4	6.25%	
33-41	Good	32	50.00%	
42-50	Very Good	25	39.06%	
Total		64	100%	

(Source: Primary Data, 2025)

Based on table 5 the descriptive analysis of respondents' motivation, the distribution was divided into five categories: very bad, bad, neutral, good, and very good. In the very bad category (values 8–16) there were no respondents (0%). In the bad category (values 17–24) there were 3 respondents (4.69%), while in the neutral category (values 25–32) there were 4 respondents (6.25%). The majority of respondents were in the good category (values 33–41), namely 32 respondents (50.00%). Furthermore, in the very good category (values 42–50) there were 25 respondents (39.06%). Overall, the mean value of respondents' motivation was 37.92, which is included in the good category. Overall, the mean value of respondents' motivation was 37.92, which is included in the good category. This shows that although most respondents had good to very good motivation, with the average motivation level still in the good category. This distribution can also be visualized in a pie chart, which shows the dominance of the good and very good categories compared to the other categories



Tabel 6 Frequency Distribution of Respondents Based on Behavior

No	Value	Category	F	%	Mean Category
1.	8-16	Very Bad	1	1.56%	38.09
2.	17-24	Bad	1	1.56%	
3.	25-32	Neutral	7	10.94%	
4.	33-41	Good	37	57.81%	
5.	42-50	Very Good	18	28.13%	
Total			64	100%	

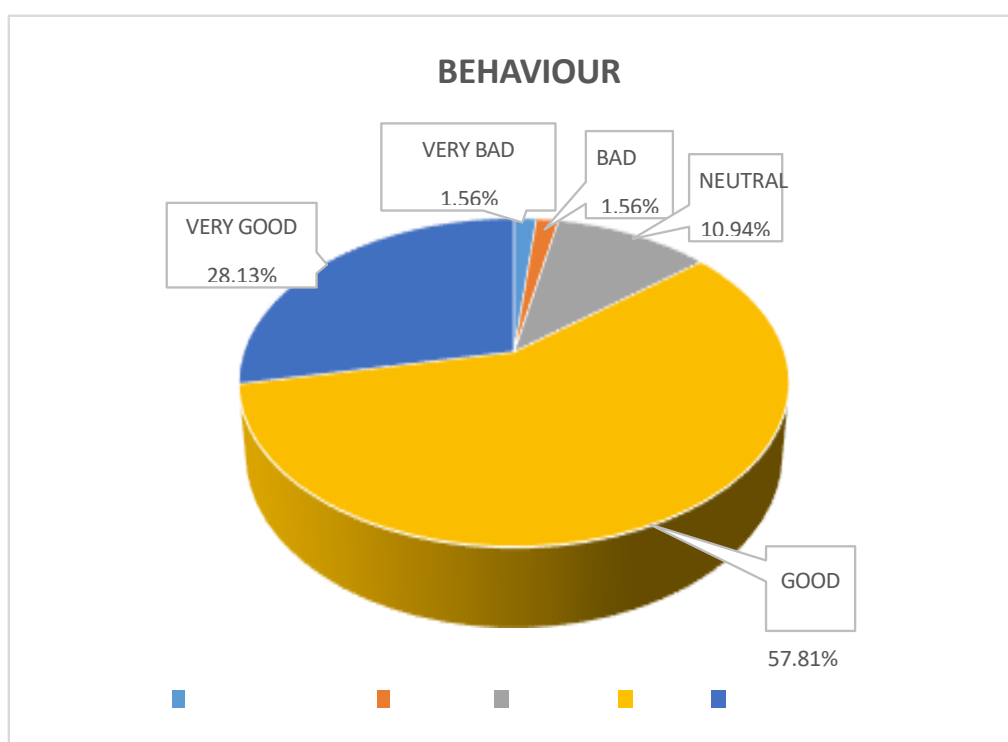
(Source: Primary Data, 2025)

Based on table 6 the descriptive analysis of respondents' behavior, the distribution was divided into five categories: very bad, bad, neutral, good, and very good. In the very bad category (scores 8–16) there was one respondent (1.56%), while in the bad category (scores 17–24) there

was also one respondent (1.56%). In the neutral category (scores 25–32) There were 7 respondents (10.94%). The majority of respondents were in the good category (values 33–41), namely 37 respondents (57.81%). Furthermore, in the very good category (values 42–50) there were 18

respondents (28.13%). Overall, the mean value of respondents' behavior was 38.09 which is included in the good category. This shows that although most respondents have good behavior, the average level of respondent

behavior is still in the good category. This distribution can also be visualized in a pie chart that shows the dominance of the good category compared to other categories.



Discussion

1. Sociodemographic Profile and Risk of Transmission in Vulnerable Groups

The study in Semarang City included 64 respondents, predominantly female (70.31%), aged 15-25 years (31.25%), high school education (56.25%), and housewife occupation (35.94%), of whom 62.5% had contact with TB patients. This profile reflects a highly strategic social group in society because women, especially housewives, as family managers, play a key role in implementing health behaviors. This is in line with the findings of Kahar et al. (2023) that the Health Promotion Model (HPM) program successfully increased public awareness, especially for productive women, of the importance of TB prevention knowledge. Adequate education makes it easier for people to understand disease transmission and practice coughing and sneezing etiquette (Muhammad, 2019). Socioeconomic conditions and gender roles also play a role in accessing health information and services; women

often experience economic and cultural barriers in accessing health facilities even though the risk of contracting TB does not decrease (Chowdhury & Howard, 2014; Humayun et al., 2022). Moreover, the productive age group, which is vulnerable to TB, has significant economic and social impacts if left untreated, so prevention programs must specifically target this segment. This requires participatory, sustainable education and communication strategies tailored to the socio-cultural profile of the community (Kahar et al., 2023). These characteristics reflect a highly strategic social structure in the realm of public health. Women, especially housewives, play a central role as family health managers (family health gatekeeper) who are directly responsible for managing household sanitation, fulfilling nutritional needs, and monitoring the hygiene habits of family members. This finding aligns with the study by Kahar et al. (2023), which confirmed that a community-based mentoring program targeting productive women successfully increased collective family awareness of TB prevention

measures.

The majority of respondents' education levels were secondary school (high school), providing adequate psychological and cognitive capital for receiving and internalizing medical health information. Highly educated individuals tend to be more open to changes in preventive behavior and better understand the mechanisms of germ transmission. *Mycobacterium tuberculosis* However, the finding that the majority of respondents (60.94%) had a history of contact with TB sufferers indicates a very high potential risk of local transmission in the domestic environment and among immediate neighbors. As stated by Sutrisna and Rahmadani (2022) and Andayani (2020), Long-term exposure to close contact is the most dominant epidemiological predictor of TB transmission. Therefore, preventive interventions should not only focus on individuals but should also be based on a family approach and contact monitoring (contact tracing) which is strict.

2. Level of Knowledge and Behavior of TB Prevention

Based on the research results, the majority of respondents had a relatively high level of knowledge regarding TB (82.81% with an average score of 8.14). This is directly proportional to the description of the respondents' preventive behavior, which was mostly in the good category (57.81%) with an average score of 38.09. This positive correlation explains that a good understanding of clinical symptoms, transmission through phlegm droplets, and the importance of sunlight and home ventilation encourages individuals to actively implement preventive measures. These concrete actions are realized through wearing masks when sick, implementing correct coughing and sneezing etiquette, and maintaining a clean living environment.

This finding is in line with research Putri et al. (2024), which states that adequate health knowledge is the main foundation for forming rational and consistent health behavior. From a health promotion perspective, knowledge acts as a trigger (enabling factor) that directs individuals to avoid the risk of infection. However, challenges remain in disparities in access to health information and literacy, especially in communities with low education or challenging socioeconomic conditions. Therefore, in addition to increasing knowledge, facilitating a healthy environment that supports preventive behavior must be developed so that behavior change is not only temporary but sustainable and effective (Kahar et al., 2023; Wahyuningsih, 2016). Furthermore, Kahar et al. (2023)

demonstrated that educational interventions packaged interactively through the use of visual media, educational videos, and practical demonstrations of cough etiquette can significantly improve people's theoretical understanding while converting it into practical daily skills. However, the presence of a small proportion of respondents with low (1.56%) and moderate (15.63%) knowledge indicates that there is still a disparity in information that needs to be bridged through personal and ongoing education.

3. Attitudes, Perceptions, Motivations and Healthy Behaviors

In addition to knowledge, the affective and conative dimensions, including attitudes, perceptions, and motivation, play a crucial role in the sustainability of TB prevention measures. The analysis showed that the majority of respondents' attitudes were positive/good (45.31% in the good category and 37.50% in the very good category). This positive attitude reflects the community's mental readiness and acceptance of public health recommendations. According to Mujahidah (2023) and Izzudin (2017), attitudes which is conducive to being formed by life experiences, social compliance, and intensive exposure to health information.

Positive attitude as much as 45.31% of respondents indicated psychological readiness, which strongly influences the implementation of TB preventive measures such as mask use, medication adherence, and healthy environmental management. Attitudes formed through experience, ongoing education, and community outreach can improve discipline in implementing healthy behaviors, as explained by Mujahidah (2023), Izzudin (2017), and Kahar et al. (2023), who identified that coaching programs involving local cadres play a significant role in strengthening positive community attitudes. A positive attitude should be seen as the main psychological capital for building social resistance against stigma and discrimination against TB sufferers, which often become psychosocial barriers in TB management. Active mentoring and warm educational communication can further improve the acceptance of healthy attitudes into daily behavior (Marhamah et al., 2021; Kahar et al., 2023).

Meanwhile, respondents' perceptions were mostly distributed in the neutral (42.19%) and good (42.19%) categories with an average score of 33.92. This diversity of perceptions indicates that although the public understands the threat of TB, some individuals are still hesitant in assessing the extent of their personal vulnerability (perceived susceptibility) and the severity of the impact of

the disease (perceived severity) on their lives. As explained by Wahyuningsih (2016) and Genakama et al. (2019), Adequate danger perception is absolutely necessary to prevent individual alertness from decreasing. A local cultural approach and empathetic risk communication are essential to correct misperceptions in the community. Kahar et al. (2023) demonstrated that HPM successfully created better perceptions through a collaborative approach involving community leaders and cadres, resulting in a greater awareness of the risks of TB and the importance of maintaining preventive behaviors. Community knowledge and personal experience are key to forming realistic and optimistic perceptions. A local cultural and linguistic approach to risk communication is crucial for truly shifting public perceptions toward a healthy and preventative mindset (Artanti et al., 2023; Kahar et al., 2023).

From the motivational aspect, the research results noted that 89.06% of respondents had motivation in the good to very good category (average value 37.92). Motivation is a psychological driver (internal drive) which connects what is known (knowledge) and what is believed (attitude) into real actions (behavior). Ridho et al. (2023) suggests that without strong motivation, preventive behavior tends to be temporary and easily abandoned when environmental obstacles arise. Family social support, cadre appreciation, and self-efficacy (self-efficacy) built through community mentoring programs has proven effective in maintaining the stability of community motivation to consistently carry out prevention and regular health checks (Kahar et al., 2023).

Strong motivation links knowledge and attitudes with actual behavior, as Ridho et al. (2023) and Wahyuningsih (2016) explained that without motivation, healthy behaviors are difficult to implement even if knowledge and attitudes are positive. Social support, appreciation, and a personalized approach in the HPM program. Kahar et al. (2023) emphasized the importance of psychological and social empowerment in increasing community motivation. Motivation is one factor that can support patient sustainability in undergoing tuberculosis treatment. Therefore, strengthening motivation needs to be done continuously, especially when facing various obstacles during therapy, including drug side effects. (Savitri et al., 2021).

In general, the integration of high levels of knowledge, positive perceptions, conducive attitudes, and strong motivation are key pillars in realizing effective TB prevention behaviors in Semarang City. Although the

average indicator performance has shown good results, the presence of marginalized groups with low scores on several variables underscores the need for a holistic, sustainable, and community-based health promotion strategy. (community-based health promotion) to support the achievement of TB elimination by 2030.

TB transmission in the community is strongly influenced by the surrounding social and epidemiological determinants. Epidemiological analysis findings in Indonesia confirm that the TB burden is evenly distributed, with variations in social determinants, such as socioeconomic conditions, residential density, and access to health services (Handayani, 2024; Nurjannah et al., 2022). This vulnerability does not only occur in the adult group, but also in children who have a history of close contact with positive BTA sufferers in the household environment (Apriliasari et al., 2018). In urban areas, social stigma is a major psychosocial barrier that limits citizen participation in TB screening and early detection (Humayun et al., 2022).

To overcome these barriers, family- and community-based interventions play a crucial role. and the attitudes of family members have been shown to be directly related to the implementation of TB transmission prevention behavior at home (Duduong et al., 2024; Nurliani et al., 2024). Structured education in orphanages and crowded environments shows that increasing health literacy significantly reduces the risk of infection transmission (Pranoto et al., 2025). Furthermore, a communicative educational approach can increase patient awareness (Marhamah et al., 2021), while the combination of group discussions (syndicate group discussion) and physical exercise have been proven to be effective in reducing the anxiety levels of TB patients (Santoso & Sasmito, 2020). The implementation of PHBS socialization and massive health screening in the community is also an important instrument in strengthening infection prevention in the community (Kahar et al., 2021), considering that a good understanding of health is the main foundation for forming consistent preventive behavior (Kahar & Wikandari, 2022).

Conclusion

Based on the research results, it can be concluded that the majority of respondents have a high level of knowledge about TB, but there are still respondents with low and moderate levels of knowledge, especially regarding prevention. Respondents' perceptions were mostly neutral or positive, but there were still doubts about assessing the

dangers and impacts of the disease. Respondents' attitudes toward TB were generally positive, although a small number remained negative. The majority of respondents' motivation was high, but on average, the motivation was not strong enough to encourage real behavioral change. Respondents' behavior on generally Good, although part small Still There is show behavior bad in TB prevention. However, a small proportion of the population still has low levels of knowledge, perception, and behavior. Given the high percentage of TB contact history in the community, integrated, sustainable, and community-based health promotion strategies need to be continuously improved. This is crucial to accelerating the achievement of Indonesia's TB elimination target by 2030.

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