

ORIGINAL RESEARCH

# KNOWLEDGE, ATTITUDE, AND HEALTHCARE-SEEKING BEHAVIOR AMONG FAMILIES OF CHILDREN WITH TUBERCULOSIS

M. Reza Saputra<sup>1</sup>, Windy Rakhmawati<sup>2\*</sup>, Sri Hendrawati<sup>2</sup>, Fanny Adistie<sup>2</sup>

<sup>1</sup>Faculty of Nursing, Universitas Padjadjaran, Indonesia

<sup>2</sup>Pediatric Nursing Department, Faculty of Nursing, Universitas Padjadjaran, Indonesia

**\*Corresponding author:**

**Windy Rakhmawati, S.Kp., M.Kep., Ph.D**

Faculty of Nursing, Universitas Padjadjaran

Jl. Raya Bandung - Sumedang KM. 21,

Hegarmanah, Kec. Jatinangor, Kabupaten

Sumedang, Jawa Barat, Indonesia 45363.

Telephone (022) 7795596

E-mail: [windy.rakhmawati@unpad.ac.id](mailto:windy.rakhmawati@unpad.ac.id)

**Article Info:**

Received: 28 June 2020

Revised: 15 July 2020

Accepted: 5 August 2020

**DOI:**

<https://doi.org/10.33546/bnj.1156>

**Abstract**

**Background:** Poor family healthcare-seeking behavior may cause delays in pediatric tuberculosis management. Knowledge and attitude are among the basic factors that influence in the family healthcare-seeking behavior.

**Objective:** This study aimed to explore the knowledge, attitude, and healthcare-seeking behavior among families of children with tuberculosis.

**Methods:** This was a cross-sectional descriptive quantitative study using accidental sampling method. Eighty-three families of children with tuberculosis were recruited. World Health Organization's Knowledge, Attitude and Practice Survey guideline was used to develop the questionnaires used in this study. Data were analyzed using descriptive statistics.

**Results:** Results showed that 51.8% of the families had good knowledge and 53% had a positive attitude while 74.7% of the families did not do early screening, 67.5% preferred hospital for examinations, and 51.8% directly visited a health care facility when the child showed signs and symptoms of tuberculosis. In these families, 77.1% delayed taking the child for treatment for < 1 month, and the reason for the delay in 100% of these families was because they did not know that their children had signs and symptoms of tuberculosis.

**Conclusion:** In conclusion, more than half of the families had good knowledge, attitude, and practice in accessing healthcare services although screening practice was still poor. Thus, nurses are suggested to provide appropriate health-related education to achieve the desired behavioral change.

**KEYWORDS**

attitude; child; knowledge; patient acceptance of health care; tuberculosis

## BACKGROUND

Data from the World Health Organization in 2016 stated that 10.4 million people were diagnosed with tuberculosis (TB), with a mortality rate of 1.6 million. This figure makes TB as one of the global top 10 causes of death in the world and it has been one of the infectious diseases that cause most deaths, even more than HIV, since 2012 (WHO, 2019). The Ministry of Health of the Republic of Indonesia (MOH RI) in 2018 estimated that there were 360,770 cases in Indonesia. TB itself ranks third among the diseases that cause the most deaths in Indonesia, with 110,000 deaths in 2016 (MOH RI, 2018).

A study on TB inventory in 2017 by Siswanto (2018) suggested that there are around 310 thousand TB cases that have not yet been discovered, and the Ministry of Health Republic of Indonesia stated that one in three TB cases still goes undetected by the program. Of all provinces in Indonesia, there are still 26 provinces, including West Java, that have not been able to reach the national target for TB case finding (MOH RI, 2018).

Children are the age group that is currently often ignored in efforts to control TB because the result for the Acid Fast Bacillus (AFB) test for this group is usually negative and they are thought to only contribute to a small number of TB cases in the community (Djaja, Suriani, & Lolong, 2009), despite the fact that the population of children makes up 40-50% of the total global population (MOH RI, 2016). Children also have immature immunity, making them susceptible to infectious diseases and TB is no exception. Even when a child has received vaccinations, if he or she does not receive a balanced diet with adequate nutrition and a strong immune system, the risk for being infected with TB is still present (Nelson & Wells, 2004).

This notion is evident when considering the high incidence of TB in children. Of 7 million new TB cases worldwide, 11% of children aged 0-14 years were infected with TB in 2018 (WHO, 2019). The situation is not different in Indonesia, which has a quite high incidence rate for TB in children as reflected in the 2017 Indonesian Health Profile which revealed 36,348 children in Indonesia suffer from TB while the Case Notification Rate (CNR) or case finding in children is only 9% from the national target of 10-15%. These data partly describe the condition

of TB in children and the high number of undetected cases in this group (MOH RI, 2018).

West Java Province, as presented in the 2017 Indonesian Health Profile, has the highest number of TB cases in Indonesia, i.e. 78,698 cases. The West Java Health Profile data showed that the CNR for this province was 120 in 2016, which decreased from the previous year from 138. The number of TB suspects in Bandung City, which is the capital of West Java Province, was 7,363 cases in 2016. However, only 1,908 cases had a positive result in AFB. Of these, 398 were TB cases in children (0-14 years old) which made this city the fourth city/district with the highest number of pediatric TB cases in West Java (MOH RI, 2018). A similar situation was also seen in Bandung City in terms of the CNR. In 2017, the CNR for this age group was 93.64 in 2017, lower than the CNR in 2016 of 102.98 (MOH RI, 2018).

A low CNR in an area may be affected by various factors, including case finding efforts by health care workers, the performance of the recording and reporting system in the area, number of health care facilities involved in providing Directly-Observed Treatment Short-Course (DOTS), and the number of unreported TB cases due to inadequate access to health care facilities (MOH RI, 2018). There are two types of TB case findings: passive case finding (by health care workers) and active case finding (by patients). Of the two, the active case finding is the one that has not been implemented optimally (MOH RI, 2018). Screening is expected to enhance the performance of a TB case management reporting system, however, of 437 children who were eligible for screening, only 7.8% received early screening (Rutherford et al., 2013). This reflects that the healthcare-seeking behavior of patients to get early screening is still poor.

Healthcare-seeking behavior is one of the aspects that determine whether the treatment given to a child is on time or delayed (Ukwaja, Alobu, Nweke, & Onyenwe, 2013). According to Subchan and Iswanto (2009), delay in receiving anti-TB drugs is the most dominant factor that leads to the death of TB patients in Bantul District. In "The Cough To Cure Pathway" model from WHO (2008), individual, societal, and health care system barriers are stated as the factors that influence healthcare-seeking behavior. The individual barriers include barriers that come from the individual him/herself, which influence the development of his or her healthcare-seeking behavior. The Knowledge, Attitude, Practices (KAP) survey is a survey recommended by WHO to understand the knowledge and attitude of a person and their influence on healthcare-seeking behavior in relation to a TB control program.

Knowledge is one of the important aspects that influence a person's attitude and behavior. Family members are no exception, especially because they are the closest individuals to a child and their knowledge will influence their attitude and actions when faced with a child with TB signs and symptoms. Compared to adult TB, pediatric TB is often difficult to diagnose as it often does not show specific symptoms. If a family does not have good knowledge of TB signs and symptoms, the diagnosis of TB for a child will be delayed, which will also delay the treatment (Bakhtiar, 2016). Hidayat, Setiawati, and Soeroto (2017) stated that the biggest reason for the delay in TB patients getting treatment is the lack of knowledge on the degree of severity of the symptoms they experience. This is supported by Aritonang, Rintiswati,

and Ahmad (2013) that stated that knowledge is one of the factors that causes delays in the diagnosis of TB patients in Kebumen District.

In addition to knowledge, attitude is also important for TB control efforts. Basically, someone's knowledge will influence his or her attitude in making decisions while the attitude will influence the behavior as a response to a problem (Fitria & Seruni, 2014). Islamiyah (2015) stated that one of the reasons why patients experience a delay in TB diagnosis is because they consider the cough as a common cough that will disappear after some time. This is also stated in a study that showed attitude as the extreme factor that leads to a delay in diagnosis among patients in Montenegro during the period of 2015-2016 (Bojovic et al., 2018).

Secondary data collected from the DOTS clinic of Regional Public Hospital of Bandung City presented that of all pediatric patients in 2018, 290 children were detected as having TB and received treatment. Of these, 41 suffered from extrapulmonary TB, and two died because of TB. In addition, the scoring results also show that all children who suffer from TB are house contacts with adult active TB patients. Based on the interviews with several families of children with TB at the DOTS clinic of Regional Public Hospital of Bandung City, the majority experienced patient-delay for 4-5 weeks. This is because the family thought that the child was only experiencing a common cold. Furthermore, some family members admitted that their child was infected by an adult TB patient who lived in the same house as the child and that the child did not undergo screening immediately when his or her adult family member was diagnosed as an active TB patient. This was despite the Ministry of Health Republic of Indonesia having already announced that children are the main targets in contact investigation because they are the most vulnerable group that may contract TB from adults (MOH RI, 2016). The current data show that, despite the persisting high number of adult and child tuberculosis cases, the low number of case findings (CNR), and the results of the scoring which shows a child has been infected by a household contact, there is a delay in the diagnosis of tuberculosis and the screening of contact tuberculosis in the household is still low (Bandung City Health Office, 2019). This illustrates the problems in the health-care seeking behavior of family that has children with tuberculosis in Bandung City Hospital. There is limited study in this kind of research in Bandung or West Java or parts of Indonesia particularly related to health seeking behavior. This study aimed to describe knowledge, attitude, and healthcare-seeking behavior among families of children with TB visiting the Pediatric Clinic of Regional Public Hospital of Bandung City.

## METHODS

### Study Design

This research was a cross-sectional quantitative descriptive study.

### Participants

Participants in this study were one of the family members (caregivers at home: either father, mother, grandmother or grandfather) who have child in 0-14 years old with a tuberculosis diagnosis who visited the Pediatric Clinic of Bandung City Local Hospital. The sampling method used was total sampling with a sample size of 83 respondents.

**Instrument**

The questionnaire in this study was developed in Indonesian language based on several points of the WHO’s guideline entitled “A Guide to Developing Knowledge, Attitude and Practice Surveys” (WHO, 2008). The instrument used in this study was divided into four sections consisting of family and child demographic data, knowledge related to tuberculosis, attitudes towards tuberculosis and health care seeking with a total of 63 question items. Content validity testing was then performed by an expert in pediatric nursing and community nursing who has concerns for TB. A face validity test was also performed on this instrument in several respondents with similar characteristics as the study respondents. The results of the construct validity testing, which was performed on 20 respondents, presented correlations ranging from 0.345 to 0.659 for knowledge variables, 0.450 to 0.626 for attitude variables, and 0.461 to 0.660 for practice variables. Four statements were deemed invalid, thus eliminated from the questionnaire. The Cronbach’s alphas gained from the reliability testing were 0.744 for knowledge variables, 0.737 for attitude variables, and 0.713 and 0.705 for healthcare-seeking practice variables. Thus, this instrument could be considered to have a high reliability score.

**Data Collection**

Data collection was performed by the researcher from April to May 2019 at the Pediatric Clinic of Regional Public Hospital of Bandung City. Data were collected by recruiting the respondents, who were the caregivers of children with TB, among those who were visiting the clinic. The researcher explained the study and asked the respondents for their willingness to participate in the study.

**Data Analysis**

Before analyzing the data, a normality test was performed first using the Kolmogorov Smirnov test to determine the cut-off point for the categorization of the research results. If the results of the normality test on the knowledge and attitude variables indicate that the data are not normally distributed then the cut-off point used is the median value (Azwar, 2015). If the total score of knowledge and attitude were greater than or equal to the median, these showed good knowledge and positive attitude, and if the total score of knowledge and attitude were less than the median, these showed poor knowledge and negative attitude. Data analysis of service usage behavior variables was not calculated for the total score and was not categorized, but was only coded for each answer and the frequency distribution of each question was calculated and then described and related to previous theories and research.

**Ethical Consideration**

This study was approved by the Ethics Committee for Research of Universitas Padjadjaran with the issuance of the ethical clearance number 360/UN6/KEP/EC/2019. The researcher gained informed consent from the respondents who were willing to participate in the study.

**RESULTS**

**Characteristic of Respondents**

In this study, of the total participants, 75.9% of them were in early adulthood age (18-40 years old) and 24.1% were in middle adulthood

age (40-60 years old). Most of the participants were women (80.7%) and acting as the family caregivers.

**Family Knowledge of Tuberculosis**

From Table 1 below, it was revealed that half of the families of children with tuberculosis had good knowledge (51.8%) while the other half still had a poor knowledge level (48.2%).

**Table 1** Frequency Distribution of Family Knowledge (n=83)

Knowledge level	f	%
Good	43	51.8
Poor	40	48.2
Total	83	100

Table 2 depicts that most families have good knowledge of the cause of disease, risk factors, signs and symptoms, and treatment of the disease. Knowledge of the risk factor of tuberculosis in children had the highest percentage (90.4%) in those with good knowledge while the knowledge on the signs and symptoms of tuberculosis in children had the lowest percentage (59%) among those with good knowledge.

**Table 2** Frequency Distribution of Sub-Variables of Family Knowledge (n=83)

Sub-variable	Good		Poor	
	f	%	f	%
Cause of disease	62	74.7	21	25.3
Risk factor	75	90.4	8	9.6
Disease transmission	59	71.1	24	28.9
Signs and symptoms	49	59	34	41
Treatment	51	61.4	32	38.6

**Family Attitudes towards Tuberculosis**

Table 3 shows that more than half of the families of children with tuberculosis had a positive attitude towards tuberculosis (53%) while less than half still had a negative attitude towards tuberculosis (47%).

**Table 3** Frequency Distribution of Attitude of Families (n=83)

Attitude	f	%
Positive	44	53
Negative	39	47
Total	83	100

Table 4 shows that most families have a positive attitude towards the danger of disease, reaction to disease, concerns towards disease, early detection, and treatment of disease. The attitude towards early detection of pediatric tuberculosis had the highest positive percentage (81.9%) while the positive attitude towards the danger of tuberculosis in children had the lowest percentage (51.8%).

**Table 4** Frequency Distribution of Attitude’s Sub-Variables of Families (n=83)

Sub-variable	Positive		Negative	
	f	%	f	%
Danger of disease	43	51.8	40	48.2
Reaction to disease	49	59	34	41
Concerns towards disease	48	57.8	35	42.2
Early detection	68	81.9	15	18.1
Treatment of disease	49	59	34	41

### Healthcare-Seeking Behaviors

From Table 5, it is evident that most respondents did not do early screening (74.7%) with only a very small percentage who did early screening (7.2%). For early screening of children with TB signs and

symptoms, most families went to a public hospital (67.5%). Other places that these families also visited for this purpose were a health provider's private practice (18.1%) and Public Health Centers (14.5%).

**Table 5** Frequency Distribution of Healthcare-Seeking Behavior of Families ( $n=83$ )

Healthcare-seeking behavior	<i>f</i>	%
Screening practice		
Perform early screening	6	7.2
Do not undergo early screening	62	74.7
Not yet performed early screening (because there are no adults with TB)	15	18.1
Site of screening		
Public hospital	56	67.5
Private hospital	0	0
Public health center	12	14.5
Lung health clinic	0	0
Health provider's private practice	15	18.1
Healthcare-seeking behavior		
Go to health care facilities	43	51.8
Buy medicines in shop/pharmacy	30	36.1
Go to traditional healer/alternative medicine	3	3.6
Do not do anything	7	8.4
Others	0	0
Condition when being brought to health care facility		
When self-medication does not work	31	37.3
When symptoms have been more than 2 weeks	9	10.8
Immediately when aware of the signs and symptoms	43	51.8
Timing of initial health care facility visit		
< 30 days	64	77.1
≥ 30 days	19	22.9
Reason for delay in visiting health care facility ( $n=40$ )		
No money	17	41.5
Distance and difficult access	6	14.6
Do not trust health care workers	0	0
Cannot leave work/busy	18	43.9
Afraid that they will learn that something bad happens to the child	22	53.7
Do not know that the signs and symptoms are for TB	40	100
Others	12	29.3

Also in Table 5, it is listed that more than a half of the families directly brought the child to the health facility when they realized that the child had TB signs and symptoms (51.8%) while the remaining families chose to buy medicines in a shop/pharmacy (36.1%), did not take any action (8.4%), and went to a traditional healer/alternative treatment place (3.6%). Most families (77.1%) did not experience any delay (<30 days) in taking their child to a health care facility. Only a small number of respondents (22.9%) stated that they experienced a delay because they took the child to the health care facility after more than 30 days. Concerning the delay, each respondent has multiple reasons. However, all respondents selected 'do not know that the signs and symptoms were TB signs' and 'symptoms as the main reason of the delay'.

## DISCUSSION

### Family Knowledge of Tuberculosis

This study reveals that more than half of the families had good knowledge, with the other half had poor knowledge. This finding is in line with the findings of a study done in Pakistan where the respondents

were the families of child TB patients at the Pediatric Clinic of Karachi General Hospital who were under treatment. Their result showed that 75% of the respondents had good knowledge of TB disease while the other 25% had poor knowledge (Sheikh et al., 2012). The family's level of knowledge could be attributed to various factors, including educational level, information, sociocultural and economic status, environment, experience, and age of the family member (Budiman & Riyanto, 2013).

The first aspect of knowledge is knowledge related to the cause of TB. This study discovered that most families had good knowledge regarding the cause of TB in children. With a good knowledge on this aspect, families would adopt actions to prevent getting the disease. Febriansyah (2017) suggested that there is a connection between knowledge and prevention actions performed by the family against TB.

The next aspect of knowledge is related to the risk factors for the disease in children. In our study, most families already had good knowledge related to these risk factors that would have an impact on their awareness regarding whether their child was at risk. According to

a study conducted by [Gebregergs and Alemu \(2015\)](#) in Ethiopia, people with good knowledge of risk factors related to tuberculosis had better behavior because they are 2.17 times more likely to do early detection compared to those with poor knowledge.

Another aspect of knowledge is related to the transmission of TB in children, which most families in this study had good knowledge. Families who have good knowledge of this aspect will tend to do prevention action to prevent their child getting infected. This notion is supported by a study done in Lagoa Urban Village, Jakarta, in which the author presented a relationship between good knowledge and the community's efforts to prevent tuberculosis ([Astuti, 2013](#)).

The next aspect is the knowledge related to the signs and symptoms of TB in children, which some families already recognized these signs and symptoms. Good knowledge on this aspect will enable the family to immediately recognize the signs and symptoms of the disease in their children and act immediately. This is in line with the findings in a study conducted by [Sukmahadi \(2010\)](#) in Lembang, Bandung, West Java, Indonesia that stated people who did not understand TB signs and symptoms had a 3 times higher risk to get no treatment for TB compared to those with good knowledge of TB signs and symptoms.

Good knowledge related to treatment will also have an impact on healthcare-seeking behavior because when people know that if they are not treated immediately there will be negative impacts on their body, so they will go directly to the health care facility to get treatment ([Putra & Toonsiri, 2019](#)). A study in Bima City showed that there was a significant influence between knowledge and a person's behavior in accessing treatment. A person with poor knowledge had a 5.79 risk for not going to a healthcare facility compared to someone who had good knowledge ([Ruslan, 2013](#)).

It is, however, shown in this study that nearly half of the families still had poor knowledge. This means that these families could not play their role as a family of a child with TB optimally. The main task of the family in terms of family health is to recognize the health problems of each family member, so that the slightest change experienced by family members will indirectly raise a concern and the family will be responsible for the actions taken. Hence, families must have good knowledge related to the health of the family members that any illness experienced by them will be quickly recognized ([Friedman, 2010](#)).

Despite the health promotion efforts on TB that have been undertaken massively at the community level since 2005, the government needs to pay attention to the level of poor family knowledge on TB. The current TB health promotion program needs to be evaluated to make sure that the right method is applied for each target. It is expected that effective health promotion can increase knowledge and will have an impact on the increased diagnosis and treatment of TB at the health care facilities ([MOH RI, 2014](#)).

### **Family Attitudes towards Tuberculosis**

The results of this study indicated that more than half of families already had a positive attitude towards TB disease in children while the other half still had a negative attitude. This is similar to findings of Domingo and Lim in the Philippines on families of children with TB who seek treatment at Tarlac Provincial Hospital. In their study, most families already had a positive attitude towards TB disease (61%) with

about 39% still had a negative attitude. Families who had these negative attitudes mostly claimed to feel ashamed of the disease. They also had low self-esteem and were afraid of being ostracized by the community so they chose to hide their child's illness from others ([Bacay-Domingo & Ong-Lim, 2009](#)). In contrast, a different result was seen in a study conducted in India in 2017 on 40 families visiting the Department of Pediatrics of Rajendra Institute of Medical Science in the last 24 hours. The study showed that 65% of families had a negative attitude which the families claimed to feel ashamed of the illness that their child was experiencing so they hid it. They also felt that this disease also affected their relationship with others ([Verma, Verma, Narayan, & Verma, 2017](#)). Differences in attitudes among the participants of these studies might be attributed to various factors including the level of knowledge, personal experience, influence from important people, cultural influence, mass media, education, and emotional states ([Azwar, 2015](#)).

When the sub-variable on the danger of this disease was analyzed, almost half of families still showed a negative attitude. This needs serious attention because this attitude could have a negative impact on treatment. According to [Islamiyah \(2015\)](#), the reason that patients delay TB diagnosis is because they feel that the cough they are experiencing is just a common cough that will go away without treatment. In the sub-variable of reaction towards pediatric TB disease, more than half of the families already had a positive attitude. A negative reaction towards disease will affect healthcare-seeking behavior, as described by [Verma et al. \(2017\)](#) in India in 2015. In their study, most families felt ashamed of the illness experienced by their children and this impacted their behavior as reflected by the fact that 35% of families claimed not to visit health care workers ([Verma et al., 2017](#)). Just as reactions, concerns or worries also affect one's behavior, a study conducted in the Philippines showed that 92% of families claimed that they were not worried about the disease and did not hide the fact that the child had the disease. In this group, 85% of families went directly to seek care from the health care workers when they saw the symptoms in their children ([Bacay-Domingo & Ong-Lim, 2009](#)).

In this study, most families already had a positive attitude towards early detection of disease which influenced these families to undertake early screening when they knew that someone in their vicinity had TB. A study performed by [Pengpid et al. \(2016\)](#) stated that the families who had a family member with TB mostly had a positive attitude and also claimed to have screened for TB in health care facilities. In the present study, the attitude towards treatment was positive in more than half of the families, which would have a positive effect on healthcare-seeking behavior. A study in Nigeria in 2018 revealed that the majority of families who did not seek treatment immediately from the health care facilities stated that they did not do that because they feared that they would learn that a bad thing happened to their child, meaning that their attitude was negative ([Ebeigbe, 2018](#)).

Although most families already had positive attitudes towards TB, there were still some families with negative attitudes. These families with negative attitudes had not performed one of the family's tasks, which was to make the right decision when a family member was ill. Families are responsible for understanding how severe the family health problem they are facing, how the problem is felt by the family member, and to ensure that the family can get through it. Fear of health problems and negative attitudes towards health problems will affect the

family's decision making regarding the sick family members. This negative attitude can lead to inappropriate decision making when family members experience health problems (Friedman, 2010).

### Healthcare-Seeking Behaviors

#### *Screening behavior*

The results of this study indicated that most families did not screen their children immediately for TB when there were adult family members at home who were diagnosed as having TB. This contradicts the family demographic data which 81.9% of families had a family member in the same household suffering from TB. This illustrates the poor family practice in early screening despite the fact that almost all families in this study were at risk of contracting TB disease. According to the results of a study by Jaganath et al. (2013), one of the risk factors that make children infected with TB is sleeping on the same bed as an active adult TB patient. This means children living in the same house as the active TB patients have a high risk and need to be screened early.

The importance of early screening is emphasized as a preventive measure to prevent family members, especially children, from becoming infected with TB. If it is found that a child has been infected from an adult patient, treatment can be given earlier and delays in diagnosis can be prevented, which will also prevent the diseases to worsen and complications to occur (Jaganath et al., 2013). In addition, family screening is also one of the obligations of the family to maintain health and achieve a prosperous family. It is also the family's duty to take advantage of existing health services. When there is a family member who suffers from TB, the family should make use of the existing health services to do screening as a preventative measure for other family members (Friedman, 2010).

#### *Screening site*

In this study, the majority of the families brought their children to a public hospital for examination with the remaining families went to a private practice or public health center. The results of this study were in line with the results of a national survey conducted by the Ministry of Health Republic of Indonesia in 2010 that most people chose hospitals (63.89%) rather than public health centers (36.2%) when they needed to be tested for TB (MOH RI, 2011). On the contrary, Hidayat et al. (2017) stated that most respondents (62.5%) preferred the public health center to do TB testing. The reason why most of the respondents chose the public hospital, Bandung City Local Hospital, is because the hospital have TB diagnostic facilities, including those for sputum, x-ray, and blood tests. Most public health centers do not have adequate facilities to diagnose TB so referrals to the hospital are still needed.

#### *Healthcare-seeking behavior*

In this study, more than half of the families directly brought their children to the health care facility when they saw the signs and symptoms of TB, which indicated that half of the respondents had a positive behavior. This result is not much different from the results of a previous study conducted in Thailand, where 75% of families directly brought their children to the health care facility when they saw TB signs and symptoms (Jirapaiboonsuk & Chapman, 2010). In contrast, a study in West Sumatera showed that only a few families directly took their family to the health care facility when they saw TB signs and symptoms as most of them preferred to go to the traditional healers or use traditional remedies (Media, 2011).

This difference in healthcare-seeking behavior can be caused by various factors. According to the WHO's model of "The Cough to Cure Pathway", there are various factors affecting a TB patient in seeking treatment in healthcare facilities. The first factor is the individual factor, which consists of an individual's knowledge, attitude, demographics, social structure, family, community, and perception. The second factor is the social norms in the society. The last factor relates to the health care facilities, including distance to the facility, cost of health services, errors in diagnosis, existing human resource quality, and availability of drugs in the health care facility. In our study, although most families directly brought their children to the health care facility for treatment, the other half of the families took different actions to deal with the disease such as buying medicines from shop/pharmacy, doing nothing, and going to traditional/alternative medicine. This result is similar with the findings of a study done by Ukwaja et al. (2013) in Nigeria, West Africa. This might be due to various reasons such as financial issues, distance, and access to health care facilities, lack of trust in health workers, belief in traditional medicine, lack of time, have poor knowledge related to diseases, and other reasons.

This negative behavior indicates that the family had not done their task well in terms of maintaining the family's health. One of the tasks in maintaining the family's health is making the right decisions for the health of the family. This task consists of a major family effort to seek the right help according to the circumstances that the family member who has the ability to decide will decide on the family's action immediately and take the appropriate action to reduce and even overcome the health problem (Friedman, 2010).

#### *Condition when accessing healthcare facility*

In this study, most families brought their child directly to the healthcare facility when they become aware of the signs and symptoms of TB suffered by the child. This is in line with a study conducted by Aseeri et al. (2017) in Saudi Arabia, where 43.6% of families stated that they went directly to the health care facilities when their family member saw the signs and symptoms of TB. Other families (27.2%) went to the facility after the symptoms persisted for more than 2 weeks or after self-medication was proven to be ineffective (29.2%). The present study, however, also shows that some respondents went to the health care facility after they learned that self-treatment was ineffective and when symptoms were more than 2 weeks. This might be due to a wide variety of factors that could come from the individual, the health care facility, or the social environment as reflected in the "Cough to Cure pathway" from WHO.

#### *Timing of accessing health care facility*

In this study, the interval between the start of TB signs and symptoms in children and accessing healthcare facilities was less than 30 days in most families, which shows no delay in accessing health care. This is similar to the finding of a study in Vietnam that shows the majority (67%) of TB patients in the community accessed the health care facility in <24 days after signs and symptoms were seen (Bao, LaMontagne, Nhung, & Nga, 2012). Only a small portion of the respondents in this study delayed seeking treatment from healthcare facilities for 30 days or more. This could lead to various negative impacts, including extrapulmonary TB in children, as evident from 14.5% of children who had this type of TB and the two who died of TB in the preliminary study. This illustrates the adverse effect of prolonged delay, which

includes the worsening of the disease and death. Therefore, it is necessary to increase public awareness to do early screening for children when there are adult family members diagnosed with active TB and to bring children immediately to a healthcare facility when they show symptoms of TB ([Islamiyah, 2015](#)).

#### *Reasons for not taking children directly to healthcare facility*

In this study, there were still around half of the families who did not directly take their children to a healthcare facility when they first showed the signs and symptoms of TB. However, they eventually brought the children to the facility. There were many reasons for not directly taking the children to a healthcare facility, but the most widely expressed was that the family did not know that the signs and symptoms suffered by their child were signs and symptoms of TB. Many families assumed that it was just a normal cough so they tried to treat the child by themselves. This is consistent with the theory that the signs and symptoms of TB in children differ from adults. In children, many symptoms are not recognized as TB symptoms by the family because they are not typical and similar to those of other diseases ([Bakhtiar, 2016](#)). Thus, families stated that their reason for self-medication (buying medicine from shop/pharmacy) was because they did not recognize the symptoms as TB symptoms. This is supported by a study by [Hidayat et al. \(2017\)](#) where 90.6% of respondents did not know that the signs and symptoms experienced are TB signs and symptoms.

Another reason why the families did not take their child directly to the healthcare facility was because they were afraid of learning that something bad was being experienced by their child. This is in line with the theory that when a person feels that he or she is sick and he or she is anxious about how to deal with the illness, one of the responses is to withdraw from the environment and ignore the condition, thus there is fear to do testing ([Islamiyah, 2015](#)). In our study, unable to leave work or being busy was also one of the reasons why the family did not take the child directly to the healthcare facility. This reflects an unsupportive attitude towards TB, that the families were less alert to the signs and symptoms of TB in their children. In addition, financial issues and distance also became a barrier to access health services. This requires efforts of policymakers and health workers to promote more about health insurance and facilitate patients to have health insurance. The ownership of insurance will eliminate the cost as one of the factors that prevent people from getting treatment. Additionally, it is also necessary to increase the number of TB diagnostic facilities in primary health care facilities such as in the public health centers to make TB diagnosis more accessible to the community.

#### **Implications of this study**

Based on the biggest reason for the delay in seeking treatment in this study, which is a family's knowledge of TB, it is therefore suggested that the government and health care workers need to further promote and provide education to the community regarding the appropriate actions to take when dealing with TB, especially to those who have not been exposed to TB. This will prevent the disease to spread and prevent a long delay in accessing tests and treatment in health care facilities.

Nurses should also be a part of the treatment by providing health education regarding the signs and symptoms of the disease, ways of transmission, early detection and treatment of the disease to the family members as the closest persons with their children. The families may

need to take precautions so as not for TB to occur in their children, particularly if the actions taken by the family are appropriate and do not pose a danger to the health of the child. Another action that a nurse can perform is to maximize the nursing care when a patient gets sick that may change the community paradigm related to nurses and other health workers, specifically to build the trust and relationships between health workers and family members to deal with health problems.

#### **Limitation of Study**

The construct validity testing of the instruments with only 20 respondents might be considered the limitation in this study. Additionally, this study was conducted on families whose children were already undergoing treatment both in the intensive phase and advance phase, and that the answers to the questionnaire items were only based on the memory recall of the situation and conditions when the child first experienced the signs and symptoms resulting in participants being prone to giving inaccurate answers due to distorted memory. Furthermore, the knowledge and attitude of the family might also be influenced by the experience during treatment and this might affect the results of the study. Further studies should consider these limitations.

#### **CONCLUSION**

More than half of the families in this study already had good knowledge, attitude, and practice in terms of healthcare-seeking behavior. However, in terms of screening, the practice was still poor. Therefore, healthcare workers especially nurses should provide education and health promotion regarding TB and emphasize the importance of early detection. In addition, healthcare workers can also optimize their roles to treat and provide care to the patients by improving the patient's trust towards the health care workers, which will impact the healthcare-seeking behavior in the future.

#### **Declaration of conflict of interest:**

The authors declare no conflicts of interest.

#### **Funding statement**

The authors received no specific funding for this study.

#### **Acknowledgment**

Thanks to the Universitas Padjadjaran for supporting this study, to the Regional Public Hospital of Bandung City for providing us with access to their patients, and all respondents for participating in this study.

#### **Authorship contribution**

M.R.S. performed the data collection. All authors conceived of the presented idea, provided critical feedback, helped shaping the research and analysis, and discussed the results. All authors contributed and agreed with the final version of the manuscript.

#### **Author biographies**

**M. Reza Saputra, S.Kep** is a student of nurse profession program at Faculty of Nursing, Universitas Padjadjaran, Bandung, Indonesia.

**Windy Rakhmawati, S.Kp., M.Kep., Ph.D** is Head of Pediatric Nursing Department, Faculty of Nursing, Universitas Padjadjaran, Bandung Indonesia. ORCID iD: <https://orcid.org/0000-0001-7173-4886>

**Sri Hendrawati, S.Kep., Ners., M.Kep** is Lecturer at Pediatric Nursing Department, Faculty of Nursing, Universitas Padjadjaran, Bandung, Indonesia. ORCID iD: <https://orcid.org/0000-0003-1307-3519>

**Fanny Adistie, S.Kep., Ners., M.Kep** is Lecturer at Pediatric Nursing Department, Faculty of Nursing, Universitas Padjadjaran, Bandung, Indonesia. ORCID iD: <https://orcid.org/0000-0002-4092-457X>

## References

- Aritonang, Edwin Sovvan, Rintiswati, Ning, & Ahmad, Riris Andono. (2013). Factors associated with delayed diagnosis among tuberculosis patients in Kebumen District. *Tropical Medicine Journal*, 3(2), 136-141.
- Aseeri, Arwa Abdullah, Turkestani, Raghad Abdulaziz, Alamri, Mohammed Ali, Algabr, Ghadah Abdulrahman, Alobaysi, Saif Abdulrahman, Alghazal, ZohairRadi, . . . Asiri, Sultan Hassan. (2017). Assessment of knowledge, attitudes and practices regarding pulmonary tuberculosis among Saudi Arabia community in 2017. *The Egyptian Journal of Hospital Medicine*, 69(5), 2421-2425. <https://doi.org/10.12816/0041687>
- Astuti, S. . (2013). *Hubungan tingkat pengetahuan dan sikap masyarakat terhadap upaya pencegahan penyakit tuberkulosis di RW 04 Kelurahan Lagoa Jakarta Utara [The relationship between knowledge level and community attitude towards tuberculosis prevention efforts in RW 04 Lagoa Region, North Jakarta]*. Universitas Islam Negeri Syarif Hidayatullah, Jakarta, Indonesia. Retrieved from <http://repository.uinjkt.ac.id/dspace/bitstream/123456789/24321/1/SUMIYATI%20ASTUTI-fkik.pdf>
- Azwar, S. (2015). *Sikap manusia (teori dan pengukurannya) [Human attitude (theory and measurement)]*. Yogyakarta, Indonesia: Pustaka Pelajar.
- Bacay-Domingo, Maria Christina N., & Ong-Lim, Anna Lisa. (2009). A descriptive study of the knowledge, attitudes and practices on tuberculosis among treatment partners of pediatric patients in Tarlac City. *Pediatric Infectious Disease Society of the Philippines Journal*, 10(1), 28-34.
- Bakhtiar, Bakhtiar. (2016). Pendekatan diagnosis tuberkulosis pada anak di sarana pelayanan kesehatan dengan fasilitas terbatas [Approach to tuberculosis diagnosis in children in health care facilities with limited facilities]. *Jurnal Kedokteran Syiah Kuala*, 16(2), 122-128.
- Bandung City Health Office. (2019). *Health profile of Bandung city in 2018*. Bandung, Indonesia: Bandung City Health Office.
- Bao, V. N., LaMontagne, D. S., Nhung, N. V., & Nga, L. T. (2012). Barriers to access and use of public TB diagnostic services in Vietnam. In: Vietnam: USAID
- Bojovic, Olivera, Medenica, Milic, Zivkovic, Danko, Rakocevic, Bozidarka, Trajkovic, Goran, Kisc-Tepavcevic, Darija, & Grgurevic, Anita. (2018). Factors associated with patient and health system delays in diagnosis and treatment of tuberculosis in Montenegro, 2015–2016. *PLoS one*, 13(3), e0193997. <https://doi.org/10.1371/journal.pone.0193997>
- Budiman, & Riyanto, A. (2013). *Kapita selekta kuesioner: Pengetahuan dan sikap dalam penelitian kesehatan [Capita selekta questionnaire: Knowledge and attitudes in health Research]*. Jakarta: Salemba Medika.
- Djaja, Sarimawar, Suriani, Oster, & Lolong, Dina Bisara. (2009). Determinan upaya pengobatan tuberkulosis pada anak di bawah umur 15 tahun [Determinant factors of TB treatment practice of children aged less than 15 year-old]. *Indonesian Journal of Health Ecology*, 8(3), 1004-1014.
- Ebeigbe, Jennifer A. (2018). Factors influencing eye-care seeking behaviour of parents for their children in Nigeria. *Clinical and Experimental Optometry*, 101(4), 560-564. <https://doi.org/10.1111/cxo.12506>
- Febriansyah, R. (2017). *Hubungan tingkat pengetahuan keluarga dengan upaya pencegahan penularan tuberkulosis paru pada keluarga di wilayah kerja Puskesmas Nguter Sukoharjo [Relationship of family knowledge level with efforts to prevent lung tuberculosis transmission in families in the work area of Nguter Sukoharjo Health Center]*. Universitas Muhammadiyah Surakarta, Surakarta, Indonesia.
- Fitria, Revie, & Seruni, Arari. (2014). Peran pengetahuan dan sikap penderita terhadap perilaku pencarian pengobatan tuberkulosis paru di Puskesmas Kecamatan Jatinegara tahun 2013 [The role of knowledge and attitudes of patients towards the behavior of lung tuberculosis treatment search in the District Health Center in Jatinegara in 2013]. *Jurnal Persada Husada Indonesia*, 1(2), 34-45.
- Friedman, M. M. (2010). *Family nursing teaching book: Research, theory and practice* (5th ed.). Jakarta, Indonesia: EGC.
- Gebregergs, Gebremedhin Berhe, & Alemu, Wondmu Gebeyehu. (2015). Household contact screening adherence among tuberculosis patients in northern Ethiopia. *PLoS One*, 10(5), e0125767. <https://doi.org/10.1371/journal.pone.0125767>
- Hidayat, Dodi, Setiawati, Elsa Pudji, & Soeroto, Arto Yuwono. (2017). Gambaran perilaku pencarian pengobatan pasien tuberkulosis di Kota Bandung [Health-seeking behavior among tuberculosis patients in Bandung]. *Jurnal Sistem Kesehatan*, 3(2), 65-72.
- Islamiyah, F. (2015). *Karakteristik dan alasan patient delay pada kasus TB BTA (+) di wilayah kerja Puskesmas Kecamatan Kramat Jati Jakarta Timur tahun 2014 [Characteristics and reasons of patient delay in BTA (+) TB cases in the work area of Kramat Jati District, East Jakarta in 2014]*. Universitas Islam Negeri Syarif Hidayatullah, Jakarta. Retrieved from <http://repository.uinjkt.ac.id/dspace/bitstream/123456789/37767/1/FAIZATUL%20ISLAMIYAH-FKIK.pdf>
- Jaganath, Devan, Zalwango, Sarah, Okware, Brenda, Nsereko, Mary, Kisingo, Hussein, Malone, LaShaunda, . . . Mayanja-Kizza, Harriet. (2013). Contact investigation for active tuberculosis among child contacts in Uganda. *Clinical Infectious Diseases*, 57(12), 1685-1692. <https://doi.org/10.1093/cid/cit645>
- Jirapaiboonsuk, Suree, & Chapman, Robert S. (2010). Knowledge, attitude, and practice towards childhood tuberculosis in guardians of patients visiting the pediatric out-patient department, Sirindhorn Hospital, Bangkok. *Journal of Health Research*, 24(Suppl. 2), 101-106.
- Media, Yulfira. (2011). Pengetahuan, sikap dan perilaku masyarakat tentang penyakit tuberkulosis paru di Kecamatan Sungai Tarab, Kabupaten Tanah Datar, Sumatera Barat [Knowledge, attitudes and behavior of communities about pulmonary tuberculosis in Sungai Tarab District, Tanah Datar District, West Sumatra]. *Media Litbang Kesehatan*, 21(2), 82-88.
- MOH RI. (2011). *National guidelines for tuberculosis control*. Jakarta: Ministry of Health of the Republic of Indonesia.
- MOH RI. (2014). *National strategy for tuberculosis control in Indonesia 2010-2014*. Jakarta: Ministry of Health of the Republic of Indonesia.
- MOH RI. (2016). *Handbook of management pediatric TB*. Jakarta: Ministry of Health of the Republic of Indonesia.
- MOH RI. (2018). *Indonesia health profile 2017*. Jakarta: Ministry of Health of the Republic of Indonesia.
- Nelson, Lisa J., & Wells, Charles D. (2004). Tuberculosis in children: considerations for children from developing countries. *Seminars in Pediatric Infectious Diseases*, 15, 150-154. <https://doi.org/10.1053/j.spid.2004.05.007>
- Pengpid, Supa, Peltzer, Karl, Puckpinyo, Apa, Tiraphat, Sariyamon, Viripromgool, Somchai, Apidechkul, Tawatchai, . . . Mongkolchat, Aroonsri. (2016). Knowledge, attitudes, and practices about tuberculosis and choice of communication channels in Thailand. *The Journal of Infection in Developing Countries*, 10(07), 694-703. <https://doi.org/10.3855/jidc.6963>
- Putra, Kusuma Wijaya Ridi, & Toonsiri, Chanandchidadussadee. (2019). Factors related to the successful treatment of tuberculosis: A literature review. *Belitung Nursing Journal*, 5(4), 136-146. <https://doi.org/10.33546/bnj.749>
- Ruslan. (2013). *Pengaruh pengetahuan, sikap dan persepsi terhadap perilaku pencarian pengobatan penderita kusta pada fasilitas kesehatan di Kabupaten Bima [The influence of knowledge, attitudes and perceptions towards the behavior of medical lepers patient seekers in health facilities in Bima Regency]*. Retrieved from <http://pustaka.unpad.ac.id/archives/129460%0A>
- Rutherford, Merrin E., Ruslami, Rovina, Anselmo, Melissa, Alisjahbana, Bacht, Yulianti, Neti, Sampurno, Hedy, . . . Hill, Philip C. (2013). Management of children exposed to Mycobacterium tuberculosis: A public health evaluation in West Java, Indonesia. *Bulletin of the World Health Organization*, 91, 932-941A. <https://doi.org/10.2471/blt.13.118414>



- Sheikh, Munir Ahmed, Naqvi, Syed Ali Haider, Laghari, Taj Muhammad, Chaudhry, Faisal F., Siddiqui, Bismah, & Bokhari, F. (2012). Knowledge of tuberculosis among parents/guardians of children with tuberculosis attending the outpatient department of a tertiary care hospital in Karachi. *World Applied Sciences Journal*, 19(11), 1653-1658.
- Siswanto. (2018). *Data analysis of tuberculosis elimination acceleration, quality improvement of immunization coverage, and decreasing stunting*. Retrieved from [https://www.kemkes.go.id/resources/download/info-terkini/materi%20pra%20rakerkesnas%202018/02\\_Paparan%20Ka%20Badan%20Litbangkes.pdf](https://www.kemkes.go.id/resources/download/info-terkini/materi%20pra%20rakerkesnas%202018/02_Paparan%20Ka%20Badan%20Litbangkes.pdf).
- Subchan, Djadid, & Iswanto, SpP. (2009). *Faktor risiko kematian penderita tuberkulosis paru di Kabupaten Bantul [Risk factors for death of patients with pulmonary tuberculosis in Bantul Regency]*. (Thesis), Universitas Gadjah Mada, Yogyakarta. Retrieved from <https://repository.ugm.ac.id/83556/>
- Sukmahadi, T. . (2010). *Faktor-faktor yang berhubungan dengan perilaku pencarian pengobatan pertama tersangka penderita TB paru di wilayah kerja puskesmas DTP, Jayagiri, Lembang, Bandung [Factors related to the behavior of seeking treatment for the first suspect of pulmonary TB in the working area of DTP puskesmas, Jayagiri, Lembang, Bandung]*. (Thesis), Universitas Indonesia, Jakarta.
- Ukwaja, Kingsley N., Alobu, Isaac, Nweke, Chibueze O., & Onyenwe, Ephraim C. (2013). Healthcare-seeking behavior, treatment delays and its determinants among pulmonary tuberculosis patients in rural Nigeria: A cross-sectional study. *BMC Health Services Research*, 13(1), 25. <https://doi.org/10.1186/1472-6963-13-25>
- Verma, Amar, Verma, Anita, Narayan, Ravikant, & Verma, Manika. (2017). Random sample survey of knowledge, attitude and practices (KAP) about tuberculosis among parent of category -I pediatric patients. *IOSR Journal of Dental and Medical Sciences*, 16(10), 35–40.
- WHO. (2008). *Advocacy, communication & social mobilization (ACSM) for tuberculosis control: A guide to developing knowledge, attitude and practice surveys*. Geneva: World Health Organization.
- WHO. (2019). Global tuberculosis report 2019. Retrieved from [https://www.who.int/tb/publications/global\\_report/gtbr2017\\_main\\_text.pdf](https://www.who.int/tb/publications/global_report/gtbr2017_main_text.pdf)

**Cite this article as:** Saputra, M.R., Rakhmawati, W., Hendrawati, S., & Adistie, F. (2020). Knowledge, attitude, and healthcare-seeking behavior among families of children with tuberculosis. *Belitung Nursing Journal*, 6(4), 127-135. <https://doi.org/10.33546/bnj.1156>