Filipino Health Care Professionals' Knowledge, Attitude and Perception regarding Drug-Susceptible and Drug-Resistant Tuberculosis in a High TB Burden City in Central Luzon: A Cross- Sectional Study

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Abstract

Introduction: Tuberculosis (TB) is one of the major diseases responsible for the public health and economic crisis in low-income countries, with the Philippines as one of the eight countries in 2020 that accounted for two thirds of the new TB cases worldwide. Its three most populous regions which are the National Capital Region, Calabarzon and the Central Luzon Region reported the highest number of TB cases in 2015. One important consideration is that health care providers' knowledge, attitude and perception regarding TB largely affects the success of TB treatment.

General Objective: This study assessed the knowledge, attitude and perception among health care professionals who manage tuberculosis, using a validated questionnaire regarding drug-susceptible and drug-resistant tuberculosis in Cabanatuan City, Nueva Ecija.

Methodology: Cross-sectional study was used in this research. All health care professionals assigned in each identified health facility were asked to participate in the study. After obtaining informed consent, a self-administered questionnaire was given to all participants to answer. Descriptive statistics and Chi-square tests were used in data analysis.

Results and Discussion: A total of 113 participants were included in the study. Physicians, nurses and medical technologists were found to have good TB knowledge compared to pharmacists. Those who had training on TB DOTS were found to have good knowledge towards tuberculosis compared to those who had no training. Most participants, regardless of their profession, length of stay at TB DOTS Centers, and their training on TB DOTS, had a favorable attitude and perception towards patients infected with TB.

Conclusion: The lack of training may have largely contributed to the poor knowledge of HCPs which may possibly hinder the success of providing TB treatment. It is therefore of paramount consideration that prior to the HCPs' assignment in TB DOTS centers, all HCPs must first undergo training in order to manage TB treatment properly and successfully.

Keywords: Health Care Professionals, Knowledge, Attitude, Perception, Drug-Resistant Tuberculosis

Introduction

According to the World Health Organization (WHO) in 2018, tuberculosis (TB) remains one of the top 10 causes of mortality worldwide. Multidrug-Resistant Tuberculosis (MDR-TB) is a type of TB that is more difficult to treat and requires longer duration of treatment and use of alternative anti-TB drugs. The WHO estimates that there were 558,000 new cases with resistance to Rifampicin, one of the most effective first-line anti-TB drugs. About 82% of the new cases had MDR-TB.[1]

The Philippines is one of the eight countries worldwide that accounted for two thirds of the new TB cases in 2020. The WHO reported that more than three million people have TB and that healthcare workers play a major role in the success of TB treatment.[2] In the Philippines, the three most populous regions, the National Capital Region (Metropolitan Manila), Region IV-A (Calabarzon) and Region III (Central Luzon) reported the highest number of TB cases at 39% in 2015.[3]

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The success of treating tuberculosis of all forms is largely dependent on the health care providers.[2] In the Philippines, several studies have been made regarding tuberculosis but investigators focused mainly on external factors. For instance, a study was made by Sherpa et al in 2019 to assess the perspectives of private providers on current and future public-private engagement in delivering TB health care in Metro Manila.[4] Another study by Tupasi et al in 2012 explored the factors associated with loss to follow-up during treatment for MDR-TB in the Philippines.[5]

The knowledge and attitudes towards TB may also have a significant impact on TB care delivery in high burden areas in the Philippines like the Central Luzon Region which contributes to a significant portion of all TB cases. To our knowledge, no published reports on the knowledge, attitude and perception of HCPs regarding TB in high burden areas in Central Luzon have been made, hence the reason for this study.

General Objective. To assess the knowledge, attitude and perception regarding TB among Health Care professionals (HCPs) who are involved in delivery of TB care in Cabanatuan City, Nueva Ecija

Specific Objectives: To assess the following outcomes through a validated tool: 1. To determine the socio-demographic profile of HCPs in Cabanatuan City Nueva Ecija according to: Age, Sex, Religion, Health Facility Currently Affiliated with, Health Care Profession, Length of Affiliation with the DOTS, and Training Status on TB DOTS Provision; 2. To determine the knowledge of HCPs on TB diagnosis and nature of tuberculosis and MDR-TB diagnosis; 3. To determine the attitude of HCPs towards TB Control and TB Patients, 4. To determine the perception of HCPs towards tuberculosis patients; and 5. To determine the significance of the differences between overall TB knowledge of HCPs when they are grouped according to: Health Care Profession, Length of Affiliation with TB Health Care Facilities, and Training Status on TB DOTS Provision.

Methodology

Study Site. The study was conducted from September to December of 2019 at the identified TB health facilities in Cabanatuan City, Nueva Ecija. Based on the data gathered from Integrated Tuberculosis Information System (ITIS) of the Department of Health, there are about 1,822 health facilities in Region III as of September 2019. One-hundred forty-eight of these facilities are located in Nueva Ecija and 27 are in Cabanatuan City. These facilities include 10 hospitals, seven RHU's/Health Centers, nine laboratories, and one Quality Assurance Center.

Study Design and Sampling. The investigators employed a cross-sectional design where the participants were selected based on the inclusion and exclusion criteria. The study population involved only HCPs who were affiliated with the identified health facilities where patients seek health care for TB diagnosis, treatment and follow-up. Health care providers with history of past and/or present tuberculosis treatment were not included in the study. The sampling technique employed was a purposive sampling.

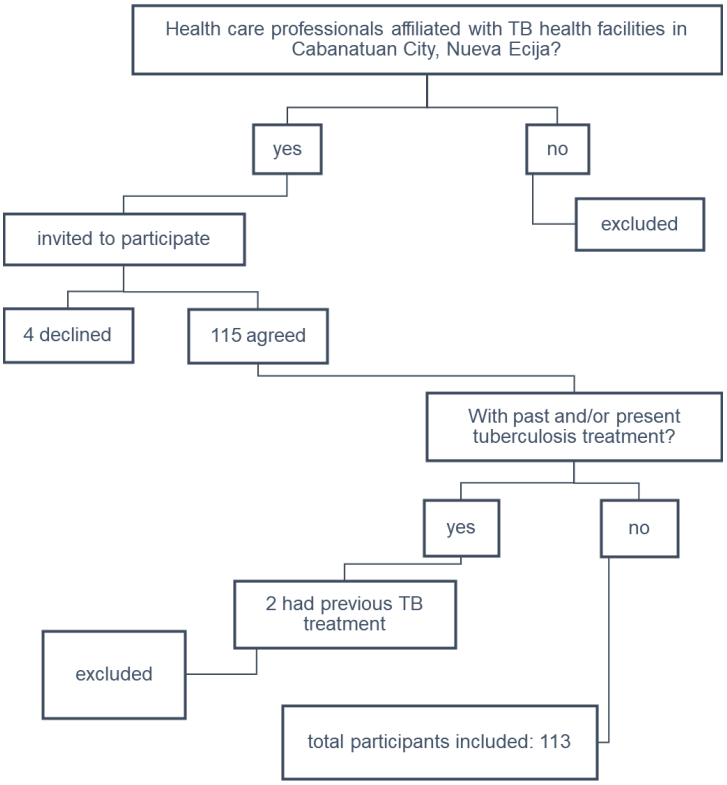

Figure 1. Selection of Study Participants through Purposive Sampling

Data Collection Procedure. The study was approved by the Institutional Review Board of Dr. Paulino J. Garcia Memorial Research and Medical Center. The tool for data collection was adapted from the questionnaire used by Bezawit et. al in their study published in 2019. Five research assistants were trained to facilitate informed consent and data collection. The questionnaires were administered by the research assistants to the participants at their most convenient time. The participants were allowed to ask for clarifications regarding the questionnaire. After the questionnaires have been

Table I. Socio-Demographic Profile of HCPs in Cabanatuan City Nueva Ecija

Variable	N	%
Age		
< 30 years old	48	42.5
30 to 40 years old	38	33.6
> 41 years old	27	23.9
Sex		
Male	34	30.1
Female	79	69.9
Health Facility		
Hospital	66	58.4
Rural Health Unit	41	36.3
Laboratory	6	5.3
Profession		
Physician	26	23.0
Nurse	53	46.9
Pharmacist	20	17.7
Medical technician	14	12.4
Length of Stay in TB Facilities		
Never	46	40.7
< 6 months	17	15.0
> 6 months	50	44.2
Training Status on DOTS		
None	53	46.9
Yes	60	53.1

Table II. Knowledge of HCPs on Diagnosis and Nature of Tuberculosis

Variable	N	%
Towards Nature of TB Disease		
Poor	54	47.8
Good	59	52.2
TB Diagnosis		
Poor	47	41.6
Good	66	58.4
Overall TB Knowledge		
Poor	49	43.4
Good	64	56.6

answered, the research assistants checked for the completeness of the items and made further clarifications as necessary.

Measurements. The instrument used contained questions on sociodemographic characteristics, TB knowledge, attitude and perception.

The Knowledge section had three subsections which were TB diagnosis (10 points), Nature of the Disease (12 points) and Treatment Duration (2 points). Correct responses generated a score from 0 to 24. The overall scores were median-coded and dichotomized resulting in categories of poor and good levels of knowledge. Scores ranging from 0 to 12 were considered poor and scores ranging from 13 to 24 were considered good. A question assessed the HCPs' ability to select the correct description of MDR-TB. The response was considered correct if the participant selected the first choice which describes Extensively drug-resistant TB (XDR-TB), a type of MDR-TB.

The Attitude section had two subsections which were 1) attitude towards TB patients (3 questions) and 2) attitude towards TB control system (7 questions). The attitude scores were added for each subsection and the overall attitude scores were also computed. Similarly, these scores were median-coded and dichotomized resulting in a category as unfavorable and favorable attitude. Scores ranging from 1 to 5 were considered unfavorable and scores ranging from 6 to 10 were considered favorable.

The Perception section had three subsections which were: 1) feelings about a person with TB, 2) perceived community feelings towards TB patients, and 3) feelings about being near a person with TB. The first subsection (feelings about a person with TB) was summed to create the overall stigma score towards TB patients which were then dichotomized to generate stigma scores as low or high levels of stigma.

Data Analysis. Descriptive statistics were used to describe the sociodemographic characteristics of the participants. Data gathered for the knowledge, attitude and perception sections were entered and analyzed using statistical software for social science (SPSS) version 23. Chi-square test was used to analyze the association between the outcome variables and the identified covariates. A $p<0.05$ was considered statistically significant for the differences.

Results

Results as seen in *Table I* showed that the majority of participants were less than 30 years of age (42.5%). Most participants were female (69.9%) and were affiliated with hospitals (58.4%). While 36.3% are working in rural health units. The largest number of participants (44.2%) had been in TB DOTS for more than 6 months. Most participants had training on TB DOTS (53.1%) and there were 53 participants who had no training on TB DOTS (46.9%). The study had a total of 113 participants and no missing data for each variable of interest were identified.

Table II shows the knowledge of HCPs on the diagnosis and nature of tuberculosis. It shows that the majority of participants had good knowledge on tuberculosis (52.2%). As for diagnosing tuberculosis, most participants had good knowledge in this particular area (58.4%). As for the overall TB knowledge, the largest fraction of HCPs had good knowledge (56.6%) and there were 43.4% who had poor knowledge on tuberculosis.

As for the attitude of HCPs towards patients with tuberculosis and control systems, the investigator found that 52.2% had favorable responses towards tuberculosis control (*Table III*). As for their attitude towards patients with tuberculosis, the most of the HCPs had a favorable response (85%).

Table IV shows the perception of HCPs towards tuberculosis. As for feeling about a person with tuberculosis, most of HCPs had compassion and a desire

Table III. Attitude of HCPs towards Patients with Tuberculosis and the TB Control Systems

Variable	N	%
Towards TB Control Systems		
Unfavorable	54	47.8
Favorable	59	52.2
Towards TB Patients		
Unfavorable	17	15.0
Favorable	96	85.0

Table IV. Perception of HCPs towards Tuberculosis

Variable	**N**	**%**
Feeling about a Person with TB		
I feel compassion and desire to help	108	95.6
I feel compassion but I tend to stay away from these people	5	4.4
TB is regarded as shameful disease		
No	110	97.3
Yes	3	2.7
Regard towards TB Patients		
Most people reject him or her	9	8.0
Most people are friendly but they generally avoid him or her	55	48.7
The community mostly support him or her	49	43.4
Feeling around a Person with Tuberculosis		
I feel like I would get infected so I will make my conversation short	10	8.8
I feel like I have to keep my distance	16	14.2
I feel like I have to be supportive	87	77.0

to help (95.6%). As for tuberculosis being regarded as a shameful disease, the largest number of HCPs were not in favor with the statement (97.3%).

In terms of attitude towards patients with tuberculosis, the largest number of participants have witnessed that most people were friendly but they generally avoided people who were infected (48.7%). In terms of being around a person with tuberculosis, the majority of HCPs believed that they needed to be supportive of the patients with tuberculosis (77%).

Table V presents the significant difference between knowledge on tuberculosis of HCPs and their socio-demographic profile. In the study, the largest number were nurses (46.9%). Among this group, a total of 36 or 31.9% had good TB knowledge. Physicians accounted for 23 % who participated, but only 15% of them were found to have good knowledge on tuberculosis. There were 17.7% pharmacists of whom 15% had poor knowledge on tuberculosis. There were 12.4% medical technologists and 7.1% of them were found to be knowledgeable about tuberculosis. There was a significant difference between TB knowledge when participants were grouped according to profession ($p<0.001$).

As for length of stay at TB Health Care Facilities, most had been at TB DOTS centers for more than 6 months (44.2%). There was no significant difference between tuberculosis knowledge when they were grouped according to length of stay at TB DOTS clinic ($p=0.148$).

Most participants had training on DOTS provision (53.1%) of whom 37.2% had good knowledge on tuberculosis. There were 46.9% participants who had no training at all and 27.4% of them were found to have poor knowledge on tuberculosis. Significant difference was noted between tuberculosis knowledge and training of participants on TB DOTS ($p=0.003$).

Table VI presents the significant difference between MDR-TB knowledge of HCPs and their socio-demographic profile. There were 23% physicians who participated in the study and 16.8% of these physicians were found to have good knowledge on MDR-TB. Significant difference was noted between MDR-TB knowledge and professions of HCPs who participated in the study ($p<0.000$).

In terms of length of stay at TB Health Care Facilities, there was no significant difference between knowledge on MDR-TB when HCPs were grouped according to length of stay ($p=0.085$). As for training on DOTS, majority of participants had training (53.1%) and 31% had good knowledge on MDR-TB. Almost half of the participants (46.9 %) had no training on TB DOTS and 32.8% were found to have poor knowledge on MDR-TB. There was a significant difference between MDR-TB knowledge and training on DOTS ($p=0.004$).

Discussion

Pulmonary tuberculosis (PTB) is one of the major diseases responsible for the public health and economic crisis in low-income countries.[6-7] The global incidence rate of TB per capita is growing by approximately 1.1% per year.[8] Of the 1.7 billion people estimated to be infected with TB, 1.3 billion live in developing countries.[9] Globally, the disease kills approximately 5000 people daily, with 98% of deaths occurring in the developing world, affecting mostly young adults in their most productive years.[10] The global targets and indicators for TB control have been developed with the framework of the Millennium Development Goals (MDGs), Stop TB partnership, and WHO.

These were developed to halt and reverse TB incidence by 2015, to reduce by half the prevalence and death rates by 2015, while by 2050, to totally eliminate TB as a public health problem with one case per one million population insinuated.[11]

Table V. Significant Difference between overall TB Knowledge of HCPs and the Socio-Demographic Profile

Parameter	TB Knowledge			P Value
	Poor	Good	Total	
Profession				
Physician	9 (8%)	17(15%)	26 (23%)	0.001
Nurse	17(15%)	36 (31.9%)	53 (46.9%)	
Pharmacist	17(15%)	3 (2.7%)	20 (17.7%)	
Medical Technologist	6 (5.3%)	8 (7.1%)	14 (12.4%)	
Length of Stay at TB Health Care Facilities				
Never	25 (22.1%)	21 (18.6%)	46 (40.7%)	0.148
< 6 months	6 (5.3%)	11 (9.7%)	17 (15%)	
> 6 months	18 (15.9%)	32 (28.3%)	50 (44.2%)	
Training on DOTS				
None	31 (27.4%)	22 (19.5%)	53 (46.9%)	0.003
Yes	18 (15.9%)	42 (37.2%)	60 (53.1%)	

Table VI. Significant Difference between MDR-TB Knowledge of HCPs and the Socio-Demographic Profile

	MDR-TB Knowledge			P value
	Poor	Good	Total	
Profession				
Physician	7 (6.2%)	19 (16.8%)	26 (23%)	0.000
Nurse	27 (23.9%)	26 (23%)	53 (46.9%)	
Pharmacist	20 (17.7%)	0 (0%)	20 (17.7%)	
Medical Technologist	8 (7.1%)	6 (5.3%)	14 (12.4%)	
Length of Stay at TB Health Care Facilities				
Never	31 (27.4%)	15 (13.3%)	46 (40.7%)	0.085
< 6 months	8 (7.1%)	9 (8%)	17 (15%)	
> 6 months	23 (20.4%)	27 (23.9%)	50 (44.2%)	
Training on DOTS				
None	37 (32.7%)	16 (14.2%)	53 (46.9%)	0.004
Yes	25 (22.1%)	35 (31%)	60 (53.1%)	

One major setback to the success of TB control in the country is the poor knowledge and stigma attached to the disease particularly in rural areas of the community. Achieving the country goals of the Stop TB strategy requires active community enlightenment in these rural communities by way of creating awareness on the etiology, symptomatology, management, preventive measures, and information of availability of services for TB.[12] It is in this regard that this investigation was conducted to assess the knowledge, attitude and perception among HCPs in Cabanatuan City, Nueva Ecija.

In this study, nurses and physicians were found to have good knowledge about drug-susceptible tuberculosis. However, when HCPs were asked about MDR-TB, physicians accounted for the majority of participants who were able to obtain the correct response. The results were found to run parallel with several studies pertaining to the overall knowledge of physicians about tuberculosis and MDR-TB. In these studies, among HCPs, physicians were found to be more technically competent with regard to tuberculosis diagnosis, management and treatment.[13-15]

As with statistical variation between training on DOTS and their knowledge about tuberculosis, it was found that those who had training on DOTS were more knowledgeable about tuberculosis compared to those who had no training at all. The results were equally supported by other studies where they revealed that training is essential in enhancing the knowledge of HCPs in treating and managing tuberculosis.[16-18]

This signifies that training on TB DOTS is vital especially when the government aims to provide competent health care in the community and to achieve success in the TB treatment.[19] With regard to the data obtained for attitude and overall perception/ stigma towards tuberculosis, the investigator found favorable data among HCPs. In this research, it was noted that these HCPs had a positive attitude towards tuberculosis and that the tendency to stigmatize TB patients is quite low.

HCPs are expected to have a favorable attitude towards TB patients. In one particular item in the research instrument however, it was found that the community generally was seen to be friendly to TB patients, however, due to the infectious nature of this condition, the community generally avoided them. The results could be

ascribed to the fact that still, among the community, a considerable number of its members show unfavorable attitude and perception towards patients with tuberculosis. Several studies have underscored these facts and that they found that those who had an unfavorable attitude towards tuberculosis could potentially form a ground for stigmatization of patients with tuberculosis in the community.[20-22]

While HCPs had favorable attitudes towards patients with tuberculosis, and the stigmatization by these allied health workers was found to be low, it is important that the community is properly educated about this condition in order to provide a safe and nonjudgmental environment for patients with tuberculosis.[23] Increasing the knowledge and improving attitude towards tuberculosis are important steps in effective treatment and management. The data in the present research showed that HCPs had low negative feelings towards patients with tuberculosis primarily because they had good knowledge about tuberculosis and favorable attitude towards this condition as well.

Conclusions and Recommendations

In this study, the following conclusions were made with following recommendations:

1 HCPs tend to have good knowledge about tuberculosis. However, pharmacists were found to have poor knowledge about it. Therefore, it would be vital for the department of Health to provide training for this group of HCPs to improve their knowledge about it.
2 As for knowledge on MDR-TB, it was found that physicians were the only HCPs who had good knowledge about it. Thus, consideration with regard to providing knowledge and enhancement training regarding MDR-TB for nurses, medical technologists and pharmacists is highly suggested.
3 Providing training on how to render effective counseling among tuberculosis patients may be considered. This will equip HCPs with the necessary ability to provide a caring and more comforting approach towards patients with tuberculosis.
4 Exploring the attitude and perception of the community towards patients with infectious diseases such as tuberculosis, HIV, among others could generate valuable information necessary to fully understand the effect of the disease on the overall perception of the community.

To summarize, it is therefore concluded that the lack of training may have largely contributed to the poor knowledge of HCPs as seen in this study which may possibly hinder the success of providing TB treatment. It is therefore a paramount consideration that prior to the HCPs assignment in TB DOTS centers, they must undergo training first in order to manage TB treatment properly and successfully.

Scope and limitations of the Study

The investigation focused on determining the knowledge, attitude and perceptions of various HCPs towards patients with Tuberculosis. One key strength of this investigation is that this is pioneering research that essentially explored HCPs' view of tuberculosis in a high TB burden region in the Philippines. In line with this, a standardized research instrument was used to assess this objectively. The investigation was limited with regard to the utilization of this research instrument. Due to the lack of available research instruments, this was considered. Further, a limited number of HCPs were included in the study. Including other HCPs across the country is deemed statistically ideal for this study.

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APPENDIX: QUESTIONNAIRE

This questionnaire is adapted from the study done by Bezawit et. al in 2019 entitled "Health care providers' knowledge, attitude and perceived stigma regarding Tuberculosis in a pastoralist community in Ethiopia: a cross- sectional study".

Direction: Circle the letter that corresponds to your answer.

Socio-demographic data

1. Age in years: _____
2. Sex: _____
3. Religion: _____
4. In which health facility do you currently work? _____
5. What is your profession? _____
6. How long have you worked at the DOTS clinic in this Health care facility?
   a. < 6 months
   b. 6months
   c. Never
   d. Others please specify: _____
7. Have you ever received training on DOTS provision?
   a. Yes
   b. No

Knowledge

1. Which one of human organs could be affected by TB? (Circle all possible answers.)
   a. Lung
   b. Bones
   c. Kidney
   d. Uterus
   e. Abdomen
2. What is the germ that causes TB?
   a. Mycobacterium Tuberculosis
   b. Mycobacterium pneumonia
   c. Mycobacterium avium
   d. Mycobacterium contagiousum
   e. Virus
3. What are the routes of TB transmission?
   a. Droplets during coughing and sneezing
   b. Sharing cups
   c. Handshaking
4. What do you think are the factors relevant to TB infection spread? (You can circle more than one)
   a. Household contacts
   b. Overcrowding
   c. Humidity
   d. Under nutrition
5. Which group of people is at high risk of developing TB? (You can circle more than one)
   a. People with HIV
   b. People who have close contact with a person having TB
   c. People with chronic disease (i.e., DM}
   d. Pregnant

6. Which type of TB do you think is high infection source for TB? (circle only one)
   a. Active pulmonary TB
   b. TB in other organs
   c. Contaminated organs

Tuberculosis Diagnosis

1. What are the signs suspicious for TB? (you can circle more than one)
   a. Cough ≥ 2 weeks
   b. Fever
   c. Hemoptysis
   d. Night sweating
   e. Loss of appetite
   f. Chest pain
   g. Loss of weight
   h. General weakness
2. When do we say a person has active pulmonary TB?
   a. When we have 2 or 3 positive smear tests
   b. One positive smear and positive X-ray
   c. Only chest positive x-ray
3. When do we say a person has relapse TB?
   a. Completed treatment, cured and returned with positive smear
   b. Under treatment, sputum remained positive after 5 months
   c. Interrupted treatment for 3 months, returned with positive smear
4. What is multi drug resistant TB or MDR-TB?
   a. it is when the bacillus is resistant to all currently available drugs to treat TB
   b. it is when the bacillus is resistant to at least isoniazid and pyrazinamide
   c. it is when the bacillus is very aggressive and you need at least 8 to 12 months of treatment

Tuberculosis treatment

1. How long should be a new active pulmonary TB treated?
a. 6 months
b. 9 months
c. 2-5 months
2. How long (in months) is the intensive phase treatment for a person with newly diagnosed drug-susceptible
a. 2 months
b. 6 months
c. 9 months
d. 12 months

Attitude towards TB control system (circle only one for each question)

1. New cases of TB are major challenge for TB control?
a. Strongly agree
b. Agree
c. Neutral
d. Disagree
e. Strongly disagree

2. It is important to take more action to involve the community in the prevention and control of Tuberculosis?
   a. Strongly agree
   b. Agree
   c. Neutral
   d. Disagree
   e. Strongly disagree
3. TB patients often find it difficult to understand why they have to keep taking pills after starting to feel better
   a. Strongly agree
   b. Agree
   c. Neutral
   d. Disagree
   e. Strongly disagree
4. There is a difference in in treatment compliance by the patient if administered under DOTS?
   a. Strongly agree
   b. Agree
   c. Neutral
   d. Disagree
   e. Strongly disagree
5. Resistant Tuberculosis is a major public health problem in this community?
   a. Strongly agree
   b. Agree
   c. Neutral
   d. Disagree
   e. Strongly disagree
6. A person having TB in this community often faces a significant stigma and shame?
   a. Strongly agree
   b. Agree
   c. Neutral
   d. Disagree
   e. Strongly disagree
7. The way a person having TB receive their TB pills should take into account the individual circumstances of each person?
   a. Strongly agree
   b. Agree
   c. Neutral
   d. Disagree
   e. Strongly disagree
8. The lack adequate knowledge of the community about TB makes it difficult for a person to seek treatment for TB?
   a. Strongly agree
   b. Agree
   c. Neutral
   d. Disagree
   e. Strongly disagree
9. TB treatment we use is acceptable by our clients?
   a. Strongly agree
   b. Agree
   c. Neutral

d. Disagree
e. Strongly disagree

10. Most staff at your facility had adequate training for its activity?
a. Strongly agree
b. Agree
c. Neutral
d. Disagree
e. Strongly disagree

Perception towards TB

1. Which statement is closest to feelings you have about a person having TB?
a. I feel compassion and desire to help
b. I feel compassion but I tend to stay away from this people
c. It is their problem and I cannot get TB
d. I feel fear because they may infect me
e. I have no particular feelings
f. Others please specify: _____
2. In your community, how is a person having TB usually regarded/treated?
a. Most people reject him or her
b. Most people are friendly, but they generally try to avoid him/her
c. The community mostly supports and help him/her
d. Others please specify: _____
3. Do you think TB is a shameful disease?
a. Yes
b. No
4. How do you feel when you are around a person having TB?
a. I feel like I would get infected so I will make my conversation short
b. I feel like I have to keep my distance
c. I feel like I have to be supportive
d. Others please specify: _____