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**“An Observational survey on the quality of life and social Impact of tuberculosis patients in Dhaka City”**

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**B. Pharm (Honors) Project Report**

[In the partial fulfillment of the requirements for the degree of Bachelor of Pharmacy]

**Submitted To**

Department of Pharmacy  
Faculty of Allied Health Science  
Daffodil International University

**Submitted By**

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# APPROVAL

This is to certify that this project titled “**An Observational survey on the quality of life and social Impact of tuberculosis patients in Dhaka City**” submitted to the Department of Pharmacy, Faculty of Allied Health Science, Daffodil International University for the partial fulfillment of the requirements for the degree of Bachelor of Pharmacy and approved as to its styles and contents.

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## A C K N O W L E D G E M E N T

Foremost, I would like to express my heartfelt gratitude to ALLAH the Almighty, for the wisdom he bestowed upon me, the strength, peace of my mind, and good health, and for letting me through all the difficulties to finish this project, Alhamdulillah.

I owe my deepest gratitude and thanks to my respected teacher **Ms. Tahmina Afroz**, Assistant Professor, Department of Pharmacy, Daffodil International University, for his tremendous support, guidance, and motivation in the completion of my project work. I will never forget his support and kindness.

I would like to express my special thanks of gratitude to **Prof. Dr. Muniruddin Ahmed**, Professor and Head, Department of Pharmacy, Daffodil International University, for his valuable support and assistance in the continuous development of the Department of Pharmacy, Daffodil International University. I am privileged and fortunate enough to have you as our teacher as well as the Head of the Department.

I am eternally grateful to my **parents** for supporting me spiritually throughout my life. Any attempt at any level can't be satisfactorily completed without the support and guidance of my parents.

I am extremely thankful for and fortunate enough to get constant encouragement, support, and guidance from all of my respected teachers from the Department of Pharmacy, Daffodil International University.


I am thankful for my batchmate Shohel Miah, who helped me to collect survey data and gather the necessary information for my project work.

My thanks and appreciations also go to my beloved friends and well-wishers who have always trusted me and provided support and unconditional inspiration.

## DECLARATION

I am MD. ABID-UR-RAHMAN, hereby declare that this project work entitled “**An Observational survey on the quality of life and social Impact of tuberculosis patients in Dhaka City**” has been carried out through my efforts and facts arrived at my observation under the supervision of **Ms. Tahmina Afroz**, Assistant Professor, Department of Pharmacy, Daffodil International University, for the partial fulfillment of the requirements for the degree of Bachelor of Pharmacy. I also declare that this work has not been previously submitted, in whole or in part, to any other university or institute for the award of any other degree or professional qualification except as specified.

### Supervised By



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Ms. Tahmina Afroz

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MD. ABID-UR-RAHMAN

Student ID: 191-29-226

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# **DEDICATION**

**To Almighty Allah & My Family**

For their abundant support, for their patience and understanding and for their love.

# Abstract

**Background:** Tuberculosis, or TB, is an infection that is moved via inhaling particles from an infected person's coughs or sneezes. Lungs, abdomen, glands, bones, and the nervous system are each impacted. Tuberculosis is a global disorder. Tuberculosis is prevalent in nations with moderate to low incomes such as Bangladesh, India, the Republic of the Philippines, Pakistan as a whole and South Africa. Bangladesh remains one of the world's most severe impacted TB countries. Objective: The knowledge, treatment and practices of Bangladeshi people about tuberculosis are investigated in this study.

**Methods:** This is a cross-sectional investigation in which survey reports from 74 patients with tuberculosis were collected via TB hospitals between February and March 2023.

**Result:** A total of 74 persons took part in the research. The majority of responders (63.24%) were women, while 36.76% were men, over 50 percent the people who took part in this survey (59.6%) said they had heard of TB previously.

**Conclusion:** Our findings suggest that healthcare professional teams should focus more on the public so that people know more about the causes of the spread of the disease. If education campaigns are focused at women, for example, TB awareness can be greatly enhanced.

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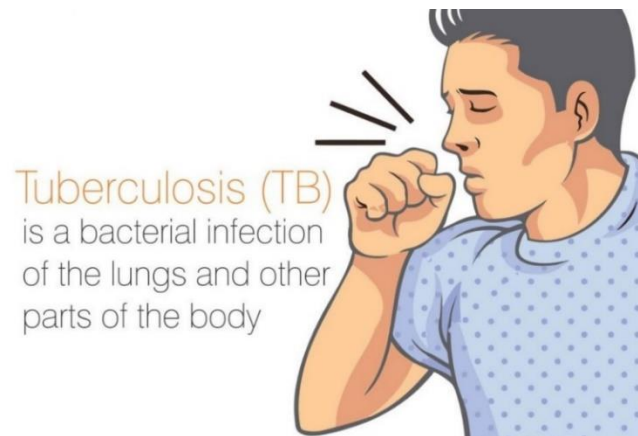
# **Chapter 1**

## **Introduction**

## **1. Introduction:**

Mycobacterium tuberculosis, or M. tub is a type of bacteria that causes tuberculosis, an infectious disease (TB). According to estimates, M. tuberculosis affects one-third of the population of the world and kills almost 3,000,000 individuals each year. Interest in worldwide TB control has increased due to the persistently high prevalence of TB infection in parts of Southeast Asia, Africa, and Russia.

Although tuberculosis usually strikes the lungs, it might harm various organs of the body. Latent TB occurs if an infection goes undiagnosed. If left untreated, almost fifty percent of the individuals via engaged disease—which develops from about 10% of latent infections—die. Cough, a high temperature, sweating during the night, and weight loss are all symptoms of active TB. Too Much weight loss can increase the risk of getting sick in other organs.



Active TB patients can spread the disease by wheezing, vomiting, talking, and sneezing.

Latent TB carriers don't spread the disease. Those who smoke and those with HIV/AIDS are more likely to be actively infected.

### **1.1. Name:**

Mycobacterium tuberculosis may have existed for 3 million years before Schoenlein suggested the term "tuberculosis."

Phthisis, tabes, as well as schachepheth were Greek or Roman names for TB. TB was introduced to us as "the white plague" in the 1700s because of how pallid the sufferers were. Even after Schonlein known as its tuberculosis, TB was frequently referred to as "consumption" during the 1800s. TB was commonly referred to as the "Captain of all these men of death" at this time.

## 1.2. History:

Tuberculosis has distinctly been called to as use, phthisis, alongside the White Plague. It is generally accepted that Mycobacterium TB, the disease's cause, descended from earlier species of the same genus Mycobacterium. Based on 2014 DNA research of a TB genome that was reconstructed from bones in southern Peru, the disease might have existed only for a short time of time - It lasted nearly 6,000 years. Regardless of whether researchers suspect it originated in Africa sometime between 5,000 and 6,000 years ago<sup>[1]</sup>, The first identified TB infection occurred some 9,000 years ago, based on the data.<sup>[2]</sup> Along trade routes, many more individuals were exposed to it. The disease was spread who travel the African continent to South America by seals and sea lions. The first humans to develop the illness there would have been hunters.<sup>[1]</sup>

## 1.3. Etymology:

Any infectious disease in influencing people or other animals to was passed on by bacteria from the genus Mycobacterium. The disease has existed around since cattle seemed domesticated as well. Since 4000 BC, the disease was discovered in human remains such as bones and mummies. Humans have been successfully immunized with Mycobacterium bovis bacillus Calmette-Guerin since 1921, and streptomycin's invention in 1946 allowed it to be feasible to cure tuberculosis rather than prevent it. However, due to the rise of resistant to medicine M. TB forms in the 1980s, hopes of a disease's abolition have dimmed<sup>[4]</sup>

## 1.4. Signs and symptoms:

When Tb germs attack into the lungs than it is called pulmonary TB. It is basically spread through the air.

Lung TB disease can show up as signs like

- ❖ A bad cough will last for two weeks or more.
- ❖ There will be a discomfort in the ribs. \
- ❖ spitting up the blood or sputum

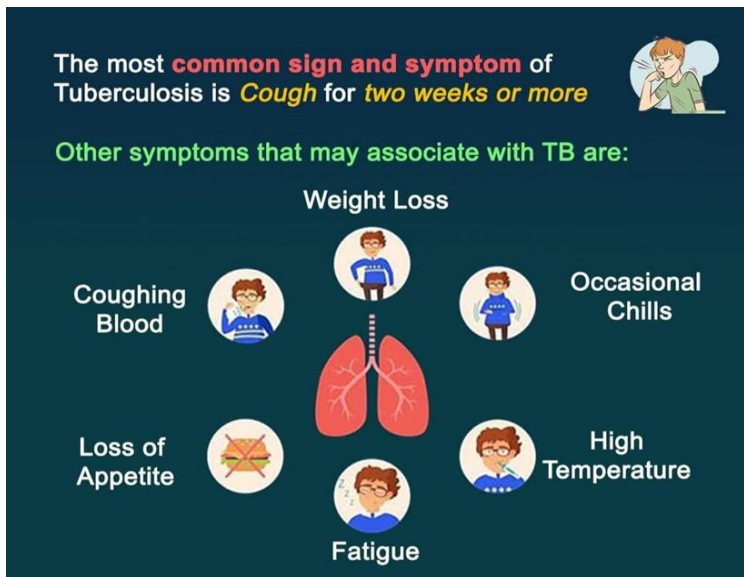
### Additional symptoms of TB involve

- ❖ tiredness or fragility
- ❖ weight loss
- ❖ Insufficient appetite
- ❖ chills

- ❖ fever
- ❖ sweating throughout the nighttime

### People who have latent TB infection

- ❖ One won't feel ill
- ❖ Perform not show any symptoms
- ❖ can't distribute TB in others.



**Figure:** Sign and symptom for TB

### 1.5. Types:

There are two fundamental groups for tuberculosis infections.

- Active tuberculosis
- Latent tuberculosis

People who have active tuberculosis can infect others with the disease.

Latent tuberculosis is a disease that cannot be slipped on to others, but it can eventually develop into active tuberculosis.

Tuberculosis can be further classified based on organ effects.

For example

- pulmonary tuberculosis

- Extra pulmonary tuberculosis

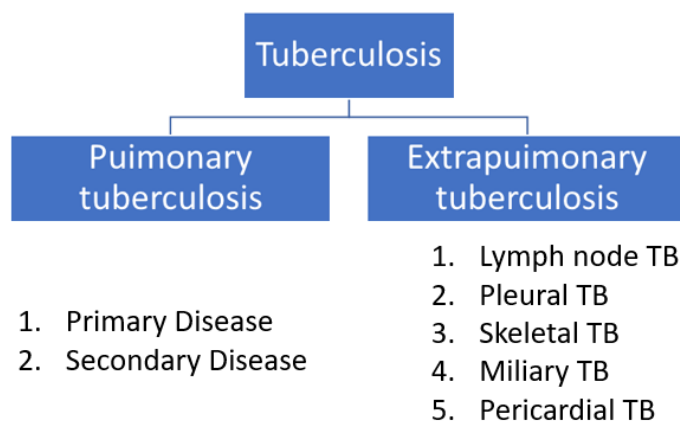
### ❖ pulmonary tuberculosis

If the bacteria affect the lungs, then it is called pulmonary tuberculosis.

When the disease does become active (which happens in approximately ninety percent of cases), the lungs are most frequently affected<sup>[5]</sup> and<sup>[6]</sup> its Symptoms can be chest pain and an ongoing cough which yields sputum. A majority of people (i.e., the individuals who remain asymptomatic) might not display symptoms at all<sup>[5]</sup> People sometimes cough up small amounts of blood, and these may lead to massive bleeding<sup>[7]</sup>.<sup>[8]</sup> The upper regions of the lungs can get severely damaged as a consequence of TB. Function of the lung could improve just like a consequence for improved lymph drainage and airflow<sup>[7]</sup>.

### ❖ Extra pulmonary tuberculosis

If the bacteria affect other body parts of the body such as – bone, Spine, Brain, kidney. In 15–20% of active cases, the infection spreads outside the lungs, causing other kinds of TB.[10] These are collectively denoted as extrapulmonary tuberculosis.[11] Extrapulmonary TB occurs more commonly in people with a weakened immune system and young children. In those with HIV, this occurs in more than 50% of cases [11]. Notable extrapulmonary infection sites include the pleura (in tuberculous pleurisy), the central nervous system (in tuberculous meningitis), the lymphatic system (in scrofula of the neck), the genitourinary system (in urogenital tuberculosis), and the bones and joints (in Pott disease of the spine), among others. A potentially more serious, widespread form of TB is called "disseminated tuberculosis", it is also known as miliary tuberculosis [7]. Miliary TB currently makes up about 10% of extrapulmonary cases. [12]

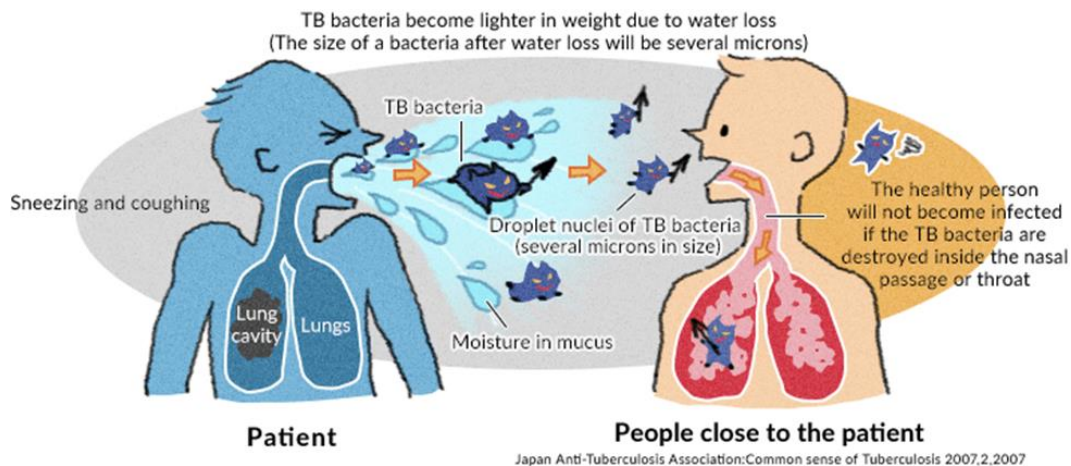


## 1.6. Cause:

The primary manifestation of tuberculosis is MTB. [7] Pathogens had distinctive clinical features are caused by its higher fat content. [13] When compared to other bacteria, which typically split in less than an hour, it divides at an incredibly slow pace every 16 to 20 hours. [14] Mycobacteria's outer cell membrane is encased in a lipid layers. [15] Due to its substantial lipids and lactic acid content, it does not keep dye. [16] Although MTBC is made up of four mycobacteria that cause TB, it consists of a fast to acid bacteria that may be detected via tissue stains.

## 1.7. Transmissions

When people who have active pulmonary tuberculosis breathe, sneeze, talk, chant, or spew, droplets of infectious aerosol a value of to 5.0 meters in diameter are discharged. An individual sneeze can discharge up to four hundred thousand particulates. [18] As a result, each of these particles has only a small infectious dose of TB, they could all spread the disease.



**Figure:** Transmission process of tuberculosis

### 1.7.1 Risk of transmissions

A higher probability of infection exists in people who fall into long-lasting, typical, or close association with TB. [20] Over the course of a year, an active tb person can spread these diseases to 10 – 15 people if tuberculosis is untreated. [21] Individuals with active tuberculosis ought to spread the disease; those with latent illness should not. [9] The amount of infectious droplets ejected by the individual receiving air flow, length of contact, strain virulence, and uninfected person immunity all impact the possibility of transmission. [22] TB can be prevented by isolating

people with active tuberculosis and giving them on anti-TB drugs once two weeks of successful therapy. [22]

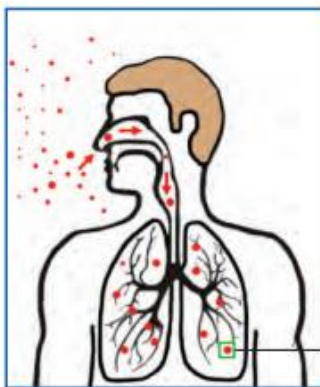
### 1.7.2 Risk factors for tuberculosis

Risk factors for tuberculosis include HIV, smoking, diabetes mellitus, Hodgkin's lymphoma, end-stage renal illness, persistent lung disease, starvation, or alcohol abuse, as well as genetics, are all factors to think about.

### 1.8 Pathogenesis

Tubercle bacilli are ingested by alveolar macrophages and then released when the macrophages die, causing them to disseminate to remote tissues and organs. This dissemination system trains the immune system for an extended reaction. The following figure shows the physiology of LTBI (latent tuberculosis infection) and TB disease in further detail:

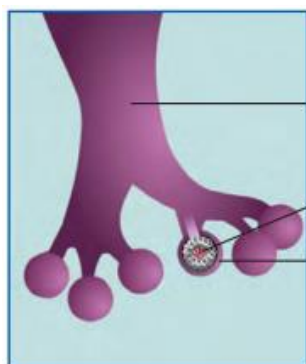
1.



Area of detail for boxes 2, 4, and 5

Inhaled droplet nuclei carrying tubercle bacilli reach the lungs and move to the alveoli.

2.

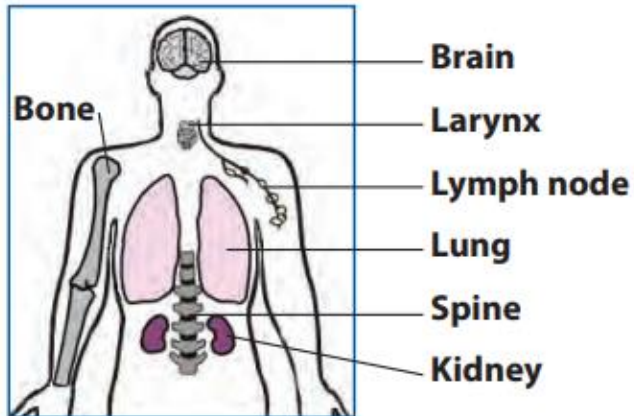


Bronchiole  
Tubercle bacilli  
Alveoli

Tubercle bacilli proliferate in the lungs.

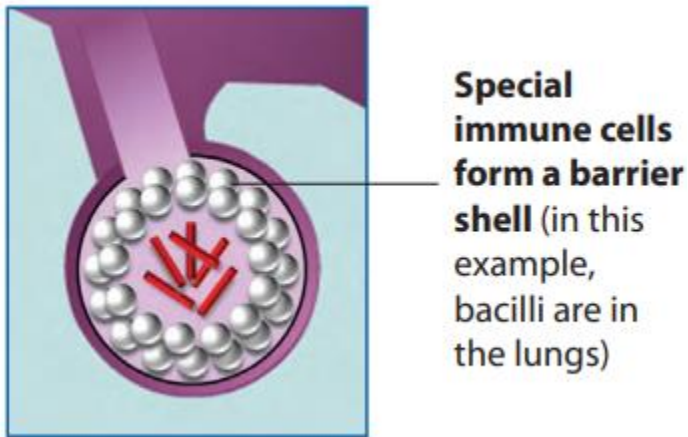


3.



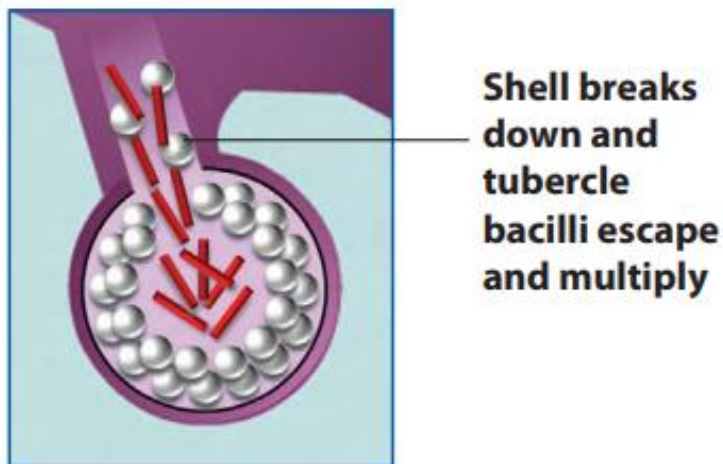
Tubercle bacilli penetrate the circulation and migrate throughout the body, resulting in tb to form in regions where it is more likely.

4.



To keep bacilli consisted of and under control, macrophages form granules

5.



The body's immune system fails to regulate tubercle bacilli, which results in TB disease.

## **1.9 Diagnosis:**

Two types of tests are conducted for the tb test in the body, they are: **TB skin tests (TST) and TB blood tests**. A positive tb test demonstrates a bacteria-based infection. It doesn't notify one if there is latent tuberculosis infection (LTBI) or TB disease. Other tests also done such as a chest x-ray and a sample of sputum are needed for tb disease identification.

### **Skin test:**

Tuberculin is injected into the wrist area to evaluate the immune system's response to tuberculosis, with a positive test showing either inactive or active tuberculosis infection.

### **Blood tests:**

A researcher obtains a blood sample. Certain immune system cells are examined in a facility to determine if they can "recognize" TB. A good test results in either a dormant or active TB illness or condition. Determine you're healthy or have an ongoing medical condition with the aid of extra blood tests. If the result is negative than it is clear that no TB disease presence.

### **X-ray**

A chest X-ray may show irregular areas in the airways that are characteristic of active tuberculosis.

### **Sputum tests**

Sputum can be examined in the lab to detect active TB illness and to show the existence of drug-resistant TB bacteria. Providers of healthcare can make the best treatment options via this knowledge.

### **Other lab tests:**

A number of extra tests may be asked for:

- Breathing test
- A special tube is used to empty sputum from the lungs.
- Urine analysis.
- Analysis of the fluid that circulates around the vertebral column and brain, known as cerebrospinal fluid.

## **1.10 Prevention:**

Tuberculosis control and prevention efforts depend mainly on infant vaccination and the identification and management of current cases.<sup>[5]</sup> With better Therapies and a slight decline in terms of case numbers, the World Health Organization (WHO) has seen some progress<sup>[5]</sup>.

### **Vaccines:**

Tuberculosis (TB) vaccines are drugs used to prevent tuberculosis. Robert Koch proposed immunotherapy as a TB defense strategy in 1890.<sup>[25]</sup> The Bacillus Calmette-Guérin (BCG) vaccine, it was first employed on people in 1921, is the only effective TB vaccine in widely used today.<sup>[26]</sup> It reduces the possibility of infection in children by 20% & the potential of infection advancing to active disease by approximately 60%.<sup>[27]</sup> It is the world's most commonly administered vaccination, with in excess of ninety percent of all infants inoculated<sup>[5]</sup>. In contrast with BCG medications, the intradermal MVA85A vaccination is not successful in curing tb.<sup>[28]</sup>

### **Public health:**

The World Health Organization (WHO) declared tuberculosis (TB) a global health crisis and started an effort to decrease deaths and incidence. For this -

- Developing and putting in place a general TB control plan and policy.
- Keeping a surveillance system in place to ensure prompt and accurate reporting of people with suspected or proven tuberculosis illness.
- Data collection and analysis for the purpose of compiling municipal, state, and national information and reporting to stakeholders, Should be maintain.

# **CHAPTER 2**

## **OBJECTIVE**

## **2.1. Main Objective**

- To analyze the social impacts and quality of life of TB patients.

## **2.2. Specific objective**

- To find out how patients feel about the tuberculosis diseases.
- To understand more about Tuberculosis in the world.
- To find out whether TB patients are worried about their disease or not.
- To identify whether the TB patients are well concerned about this disease.
- To evaluate the overall comfort and their affordability of tuberculosis therapy.
- To find out the quality of life of tb patients.

# **CHAPTER 3**

## **LITTERATURE REVIEW**

### **3.1 Aggarwal, A.N., 2019. Quality of life with tuberculosis. Journal of clinical tuberculosis and other mycobacterial diseases, 17, p.100121.<sup>[27]</sup>**

Tuberculosis diagnosis and therapy are now centered on clinical aspects and microbiology, but the emphasis should move to quality of life (QOL). Scores in QOL scales show all aspects of deviations, and results differ across states and patient groups. Reduced ability to labor, societal stigma, and psychological problems, in particular, impair QOL in tuberculosis patients. Even the fact that QOL has been found to improve following regular anti-tubercular treatment, numerous individuals continue to have residual impairment. To mitigate QOL impairment, authorities and program managers must increase socio-cultural changes and health education, as well as give extra incentives to patients.

#### **Summary:**

Tuberculosis diagnosis and therapy are currently focused on its clinical features and microbiology, but the emphasis needs to shift to quality of life. Scores on QOL scales indicate a broad spectrum of deviations, and results differ across nations and patient groups. Reduced ability to labor, societal stigma, and psychological problems, in particular, impair QOL in tuberculosis patients. To counteract QOL impairment, governments and administrators of programs need to speed up sociocultural changes and health education.

### **3.2 Chen, X., Xu, J., Chen, Y., Wu, R., Ji, H., Pan, Y., Duan, Y., Sun, M., Du, L., Gao, M. and Wang, J., 2021. The relationship among social support, experienced stigma, psychological distress, and quality of life among tuberculosis patients in China. Scientific Reports, 11(1), p.24236.<sup>[28]</sup>**

This study examined the connections between social support, stigma, mental disorders, and the level of quality of life (QOL) in tuberculosis (TB) patients. A longitudinal study was done near Dalian, Liaoning Province, in Northeast China, during November of 2020 and March 2021. A structured survey was used to collect data from 473 TB patients. The hypothetical model was examined using structural equation modeling, and the research model suited the observed data well. All of the study's theories had been accepted: (1) social support was correlated via QOL; (2) faced stigma completely mediated its effect on psychological distress; three (3) mental health fully mediated its effect in QOL; as well as (4) observed stigma and psychological creatures' distress were sequential intermediaries between social promote and QOL.

#### **Summary:**

This study studied connections between social support, disgrace, psychological suffering, and quality of life (QOL) in TB patients in Dalian, Liaoning Province, Northeast China. The hypothetical model was investigated using modeling of structural equations, and all hypothesis tested were verified.

**3.3 Brown, J., Capocci, S., Smith, C., Morris, S., Abubakar, I. and Lipman, M., 2015. Health status and quality of life in tuberculosis. International Journal of Infectious Diseases, 32, pp.68-75.<sup>[29]</sup>**

TB, which is a major driver of morbidity around the globe, yet there is little data on its influence on the standard of life and medical status. Systematic assessments of the standard of life are required in some populations, such as individuals with extrapulmonary TB, a drug-resistant illness, HIV co-infection, a latent strain of and children with TB.

**Summary:**

Tuberculosis, or TB, is an important cause of all around the globe deaths, yet there is barely any information on the effects on how people's life and medical status. Systematic assessments of quality life expectancy are required in certain populations, such as individuals with extrapulmonary tuberculosis (TB), drug-resistant illness, HIV co-infection, latent tuberculosis (TB), and children with TB.

**3.4 Sharma, R., Yadav, R., Sharma, M., Saini, V. and Koushal, V., 2014. Quality of life of multi drug resistant tuberculosis patients: a study of north India. Acta Medica Iranica, pp.448-453.<sup>[30]</sup>**

Tuberculosis (MDR TB) is an urgent issue for the public due to drug resistance to treatment for tuberculosis (ATT). Using a representative sample of 60 patients, this study was designed to examine the influence of MDRTB on QOL. MDRTB patients reported more severe QoL than PTB parallels, with psychological and ecological domains affecting more than social and physical domains. The disease and people with PTB were the worst sufferers financially, but both groups were socially damaged due to the disease's social stigma. There's a need to develop an appropriate, accurate measure for tackling quality concerns methodically, as well as relevant actions to improve patient and program quality.

**Summary:**

Due to the development of drug tolerance to anti-tuberculosis treatment (ATT) medications, multi-drug-resistant tuberculosis (MDR TB) has grown to be a serious public health issue and a sample size of 60 cases and a pre-designed questionnaire using the WHOQOL BREF measure, this research examined the effects of MDRTB on QOL. The findings demonstrated that MDRTB patients' QoL was lower than that of their PTB peers, with psychological and environmental domains being more adversely impacted than bodily and social domains. To more effectively handle the problems of quality, it is necessary to develop interventions that will raise the standard of care for both individuals and the program.



**3.5 de Souza Neves, L.A., Castrighini, C.D.C., Reis, R.K., Marin Da Silva Canini, S.R. and Gir, E., 2018. Social support and quality of life of people with tuberculosis/HIV. Enfermería Global, 17(2), pp.21-29.<sup>[31]</sup>**

To assess the relationship between quality of life and social support among individuals with tuberculosis/HIV. A qualitative study was conducted on outpatients with TB and HIV in Ribeiro Preto, state of So Paulo, Brazil. The WHOQOL-HIV BREF Scale, the Social and Cultural Interaction Scale for those living with HIV/AIDS, and a questionnaire to collect diagnostic and sociodemographic information were used to collect data. Data analysis used descriptive and inferential statistics.

**Summary:**

This WHOQOL-HIV BREF Scale, Community Support Measure, and questionnaire were used to gather data on comfort of life & social support among individuals with tuberculosis/HIV.

**3.6 Al-Qahtani, M.F., Mahalli, A.A.E., Al Dossary, N., Al Muhaish, A., Al Otaibi, S. and Al Baker, F., 2014. Health-related quality of life of tuberculosis patients in the Eastern Province, Saudi Arabia. Journal of Taibah University Medical Sciences, 9(4), pp.311-317.<sup>[32]</sup>**

The objectives of this research are to benchmark the level of quality life expectancy (QOL) of patients with tuberculosis that is drug-resistant (DR-TB) to that of non-DR-TB patients, investigate any possible associations among QOL categories and epidemiological and clinical characteristics, and identify QOL predictors.

**Summary:**

The intention of this research is to examine the quality life expectancy for those with and without DR-TB, and also to look into potential links and QOL factors.

# **CHAPTER 4**

## **METHODS**

#### **4.1. Method Design:**

This present study was designed to be a questionnaire-based observational study conducted by direct interviewing patients with the help of self-structured questionnaires patterns. This survey was conducted in two renowned hospitals in Dhaka City, Bangladesh. These are-

1. National Centre of Tuberculosis and Research Shyamoli, Dhaka and
2. National Institute of Diseases of the Chest and Hospital (NIDCH) Mohakhali, Dhaka.

This survey was conducted from 26 February 2023 to 11 March 2023 among patients who have tuberculosis diseases. The total data collected for this study was 74.

#### **4.2. Questionnaire:**

This survey was conducted by interviewing patients using a questionnaire form. The structured survey questionnaire form was self-developed by reviewing previous studies from various sources such as online scholarly databases, google searches, etc. The questionnaire form consists of 24 questions that took approximately 12-15 minutes to fill up by interviewing patients. The questionnaire form of this study has the following questions:

1. Name
2. Age
3. Gender
4. Residence
5. Profession
6. How could you know that you had the tuberculosis disease?
7. Have you had tuberculosis before?
8. What type of TB disease you are suffering from?
9. How long have you been suffering from TB disease?
10. How long have you been taking medication for TB.
11. Is there any disease other than TB.
12. If yes, mention the name of the diseases.
13. What type of medicines you are taking for tuberculosis?
14. Have you ever used non-prescribed medications for your TB disease?
15. Did you face any side effects after taking these medications?
16. If yes, mention the side effects of medicines that you often faced?
17. Are you maintaining non-pharmacological management? (Lifestyle, food habits, physical activity).
18. Are you worried about your diseases?
19. Are you getting proper support from your family member?
20. Are you getting support from your society?
21. Are you suffering from any financial problems due to this disease?
22. Has this disease affected his quality of life?
23. Is he suffering from any mental illness due to this disease?
24. Are you suffering from any financial problems with this disease?

25. Are you satisfied with the treatment that your physician provided?

### **4.3. Participants:**

Participants in this study have to be 16 years old or older. Local Bangladeshi nationals were the intended participants. Because this study is only available to Bangladeshis, subsequent responses were excluded.

### 4.4 Statistical Analysis

The statistical analysis was carried out with the help of Microsoft (MS) Excel. All data have been entered in the MS Excel sheet and calculated for the percentage, proportion, and/or ratio by developing pie-chart, columns, etc.

# **CHAPTER 5**

## **RESULT AND**

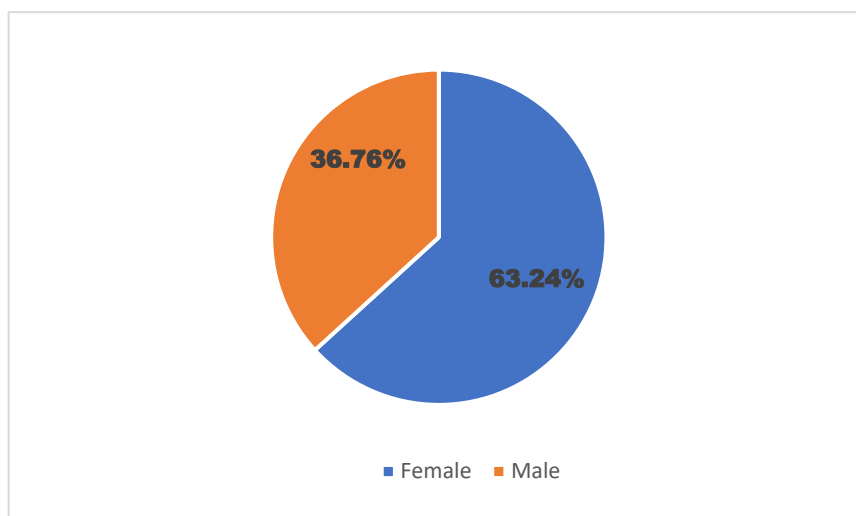
## **DISCUSSION**

## 5.1. Result

❖ Number of patients (respondents), n = 74

### ➤ Gender

Gender  
74 responses



**Figure:** Percentages of the respondents by gender.

According to this survey, 74 TB patients responded to the questions about their salutation, with 36.76% male tb patients and 63.24% female tb patients.

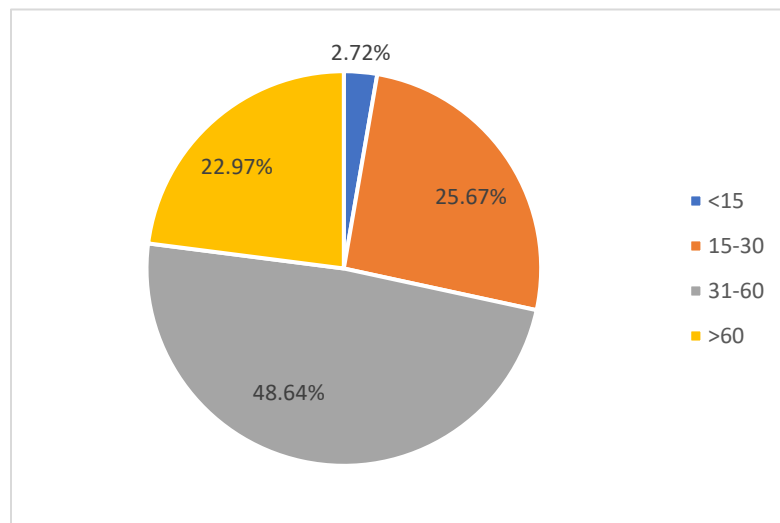
❖ Age

Listed the respondents in this survey based on age (range)

Age (Range)	Responders	
	Male	Female
<15	0	2
15-30	11	8
31-60	14	22
>60	7	10

Age

74 responses



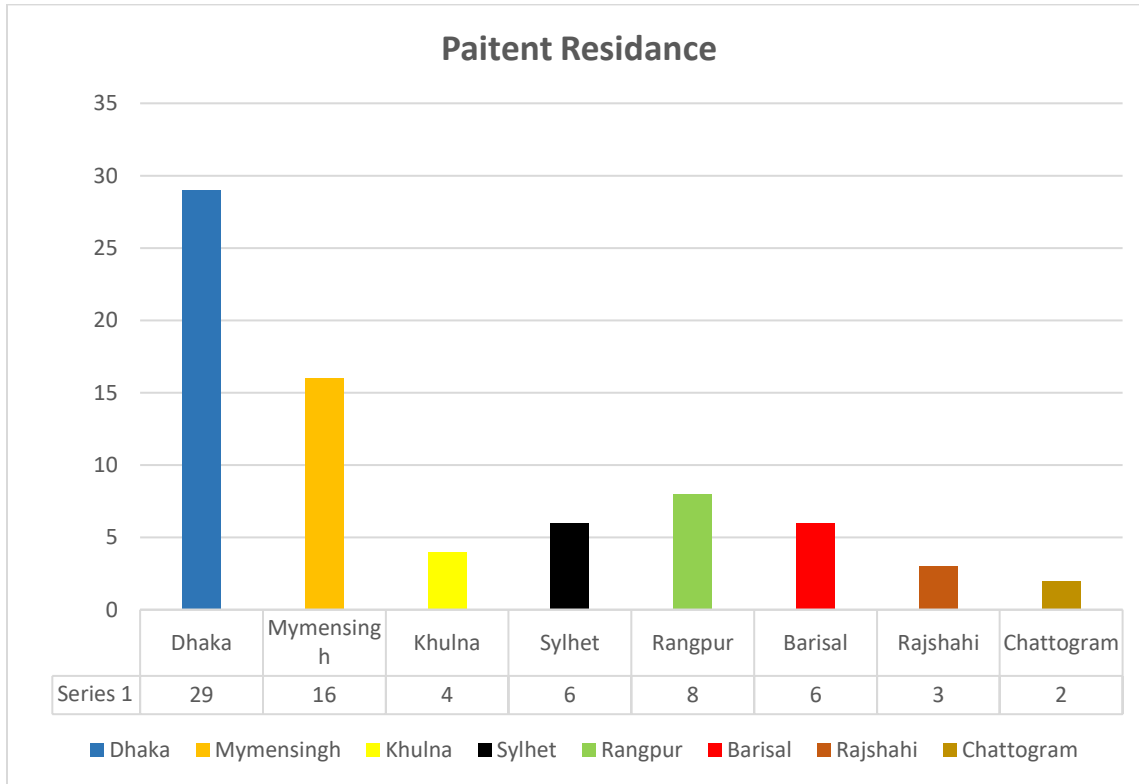
**Figure:** Percentage of respondents by age ranges

The majority of respondents have ages ranging from 31 to 60 years old which is 48.64% (mostly female). However, it has been observed that 25.67% of tb patients are in 15-30 years and 22.97% of tb patients are over 60 years old, while 2.72% of patients are under 15 to 30 years old range.

## ❖ Residence

### Residence

74 responses



**Figure:** Diagram of the percentage of living areas of the respondents.

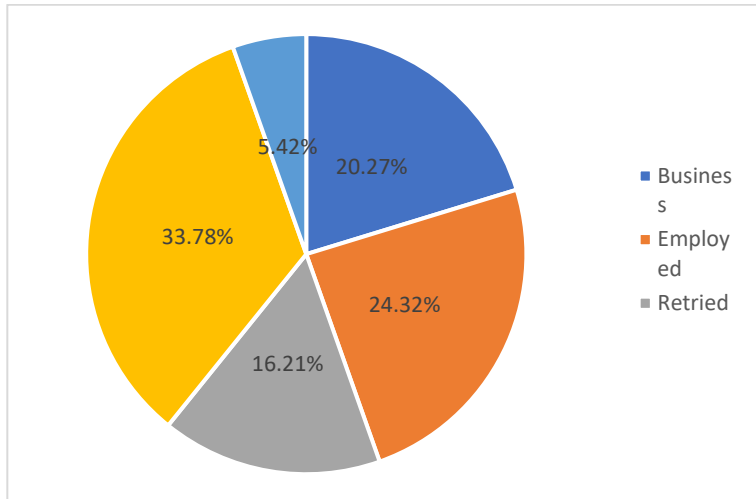
Residence	Number of patients, n=74	Percentage
Dhaka	29	39.19%
Mymensingh	16	21.62%
Khulna	4	5.41%
Sylhet	6	8.11%
Rangpur	8	10.81%
Barisal	6	8.11%
Rajshahi	3	4.05%
Chattogram	2	2.70%



## ❖ Profession Status

Professional status

74 responses

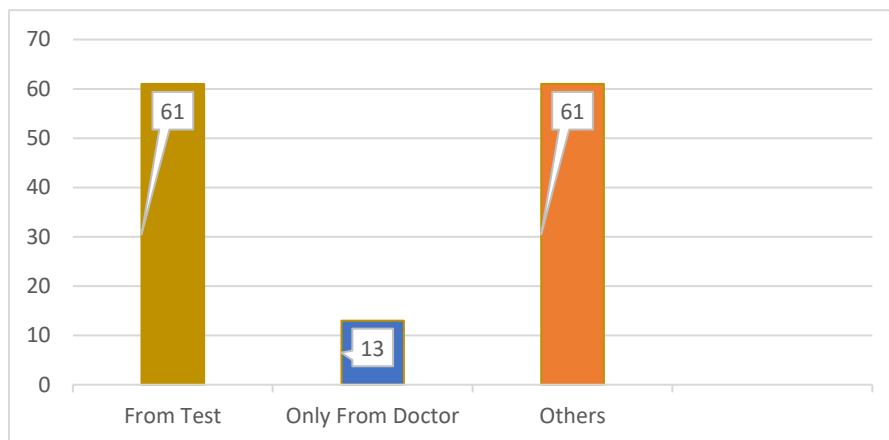


**Figure:** Percentages of the respondents based on occupational status.

According to this survey, the majority of male TB patients, almost 16.21% were currently unemployed or, retired. 33.78% of female TB patients were housewives.

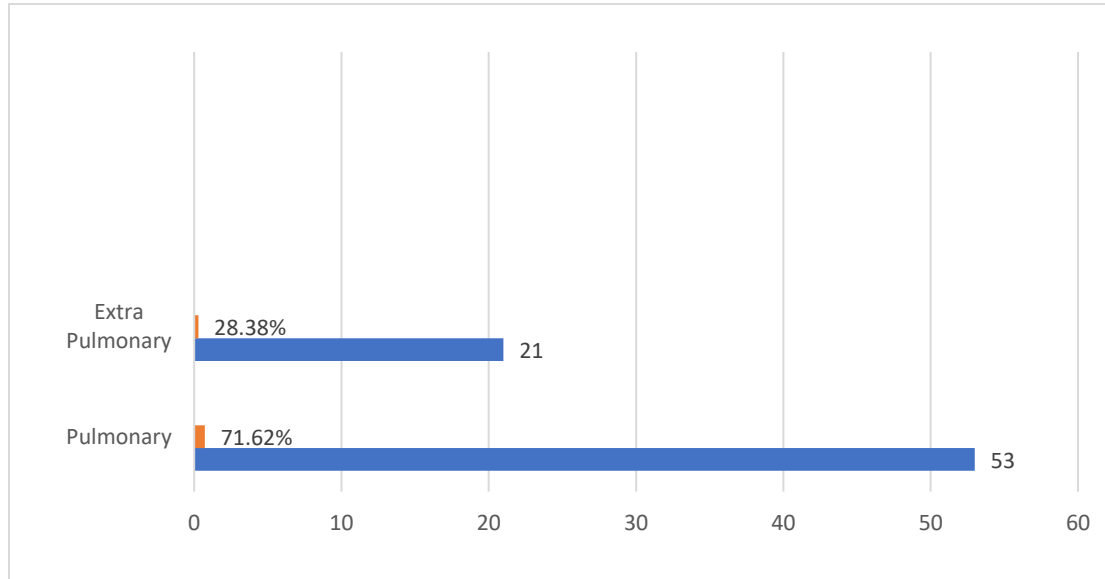
## ❖ How could you know that you had the TB disease?

74 Responses



**Figure:** Sources from which respondents received their confirmation of having the TB disease.

❖ **What type of TB disease you are suffering from?**

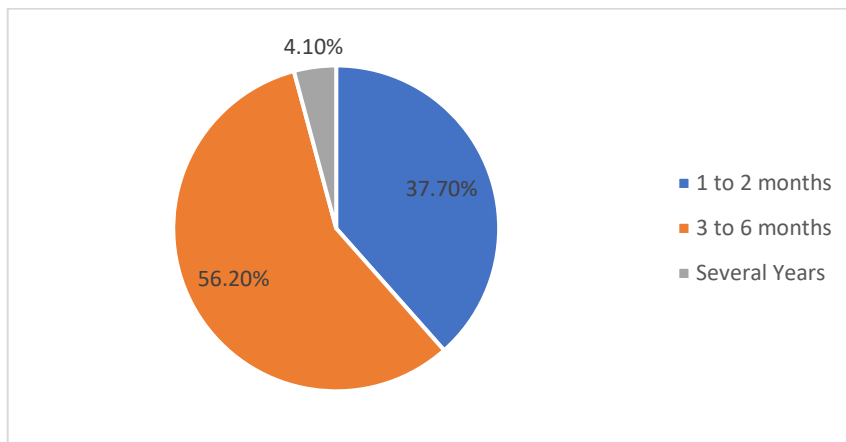


	Pulmonary TB	Extra Pulmonary TB
Percentage	71.62%	28.38%
Number of Response, N=74	53	21

**Figure:** Percentages of the respondents based on the type of TB diseases

❖ **How long have you been suffering from Tuberculosis disease?**

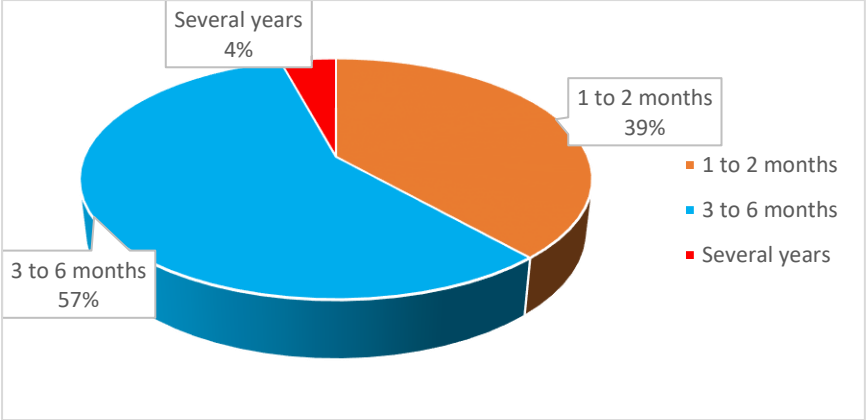
74 responses



**Figure:** Percentages of the respondents based on the duration of time they had experienced the TB diseases.

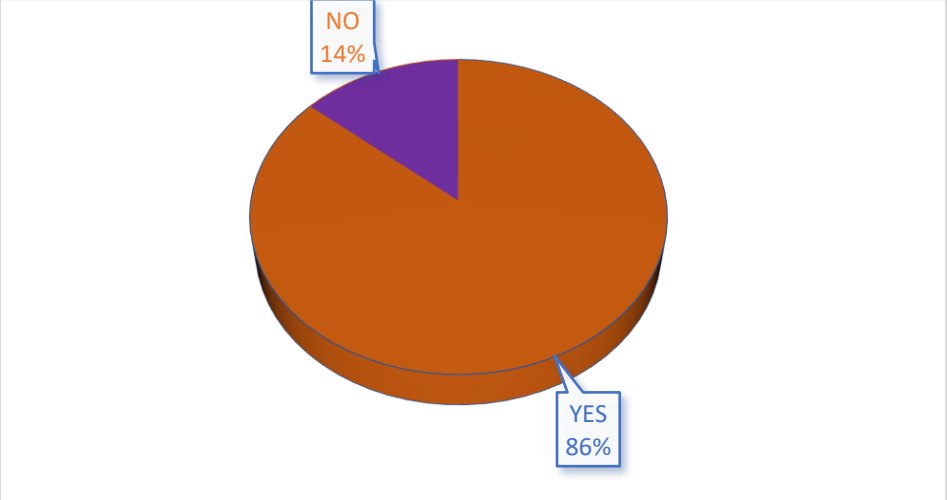
❖ **How long have been taking tuberculosis medicines?**

74 responses



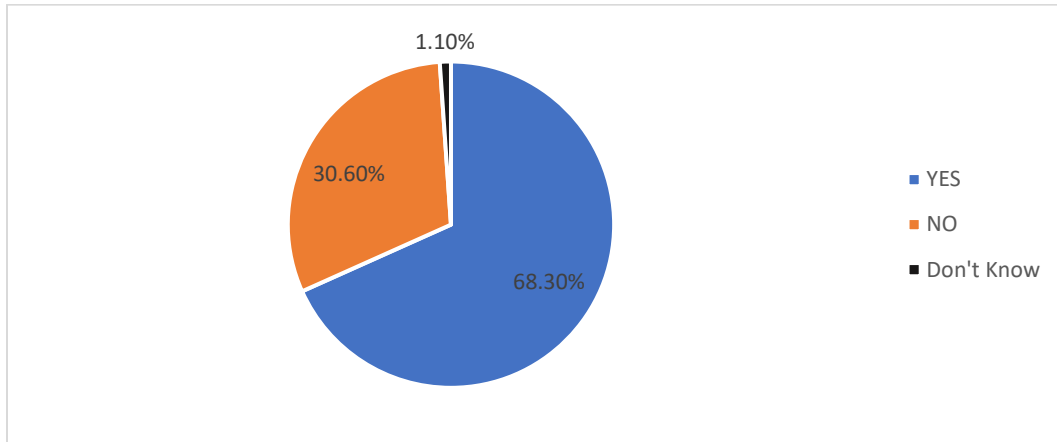
**Figure:** Percentages of respondents who had taken TB medications for how long.

❖ **Is this the first time you've caught TB sickness?**



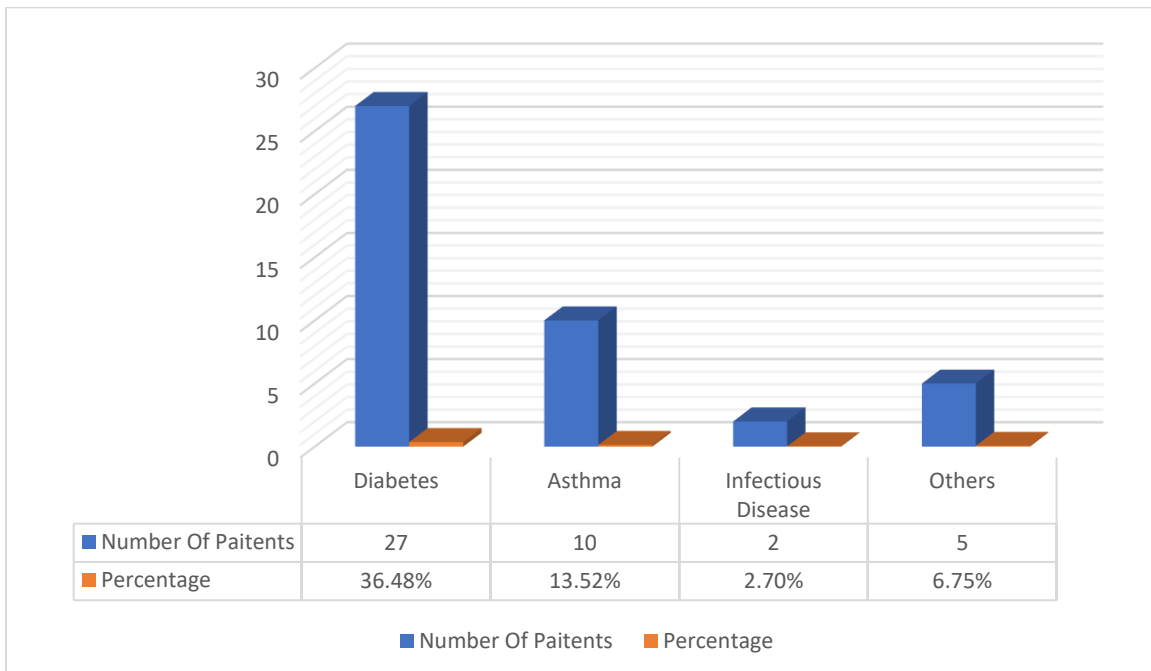
**Figure:** Percentages of respondents whether they have first time TB diseases.

❖ **Do you have any other diseases along with TB disease?**



**Figure:** Proportion of the respondents who also have other diseases along with the TB disease.

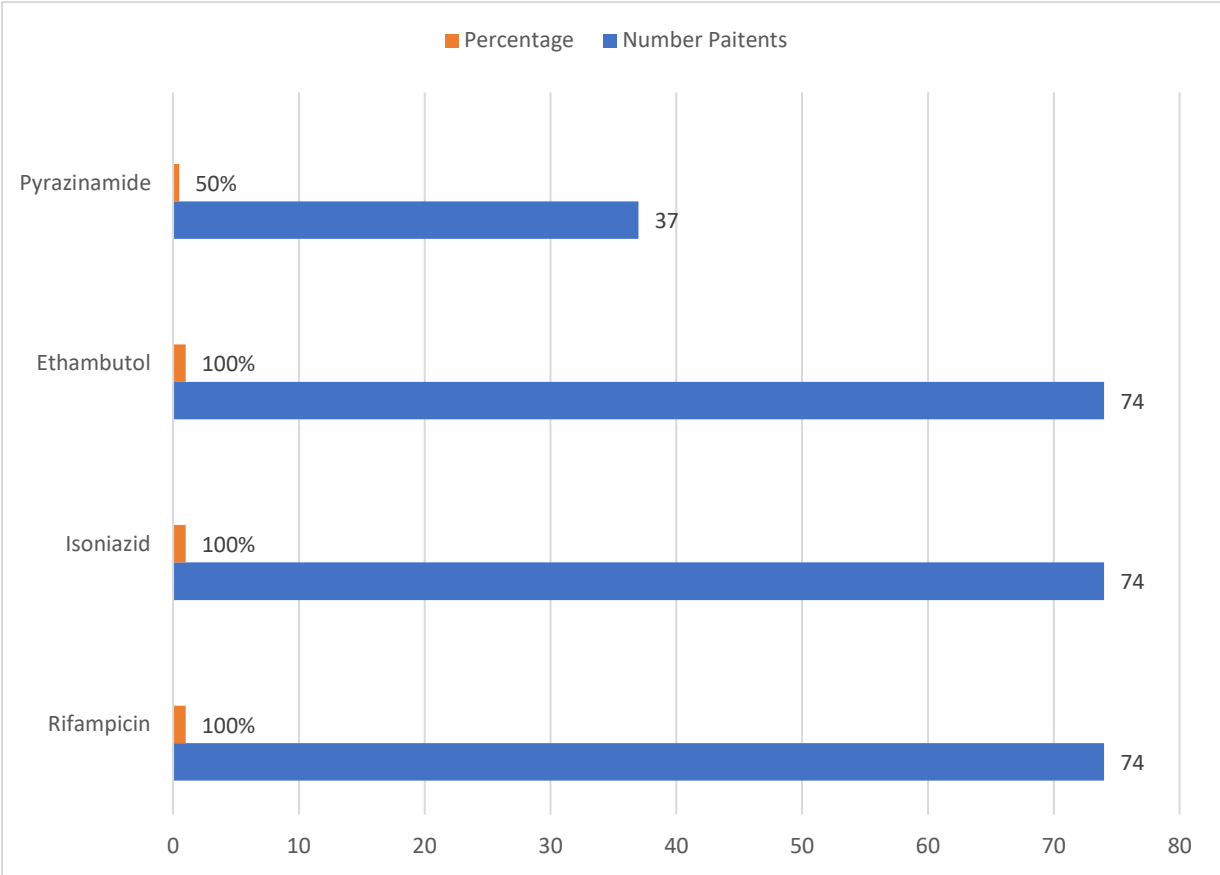
❖ **If yes, mention the name of the disease.**



**Figure:** Diagram of other diseases that the respondents had experienced along with TB diseases.

❖ **What type of medicines you are taking for tuberculosis?**

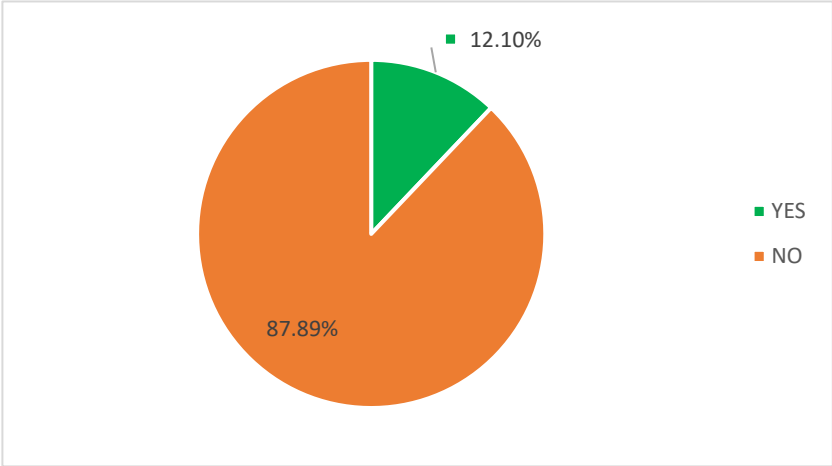
74 responses



**Figure:** Diagram of medicine are taking for tuberculosis by the responders

❖ **Have you ever used non-prescribed medications for your TB disease?**

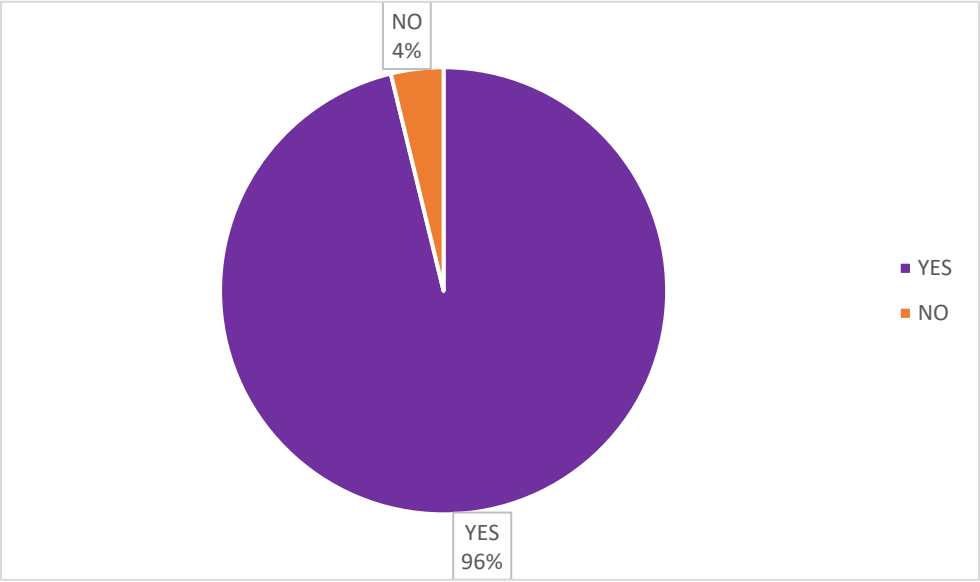
74 responses



**Figure:** Percentages of the respondents who used non-prescribed medicines.

❖ **Do you follow prescriptions guideline strictly?**

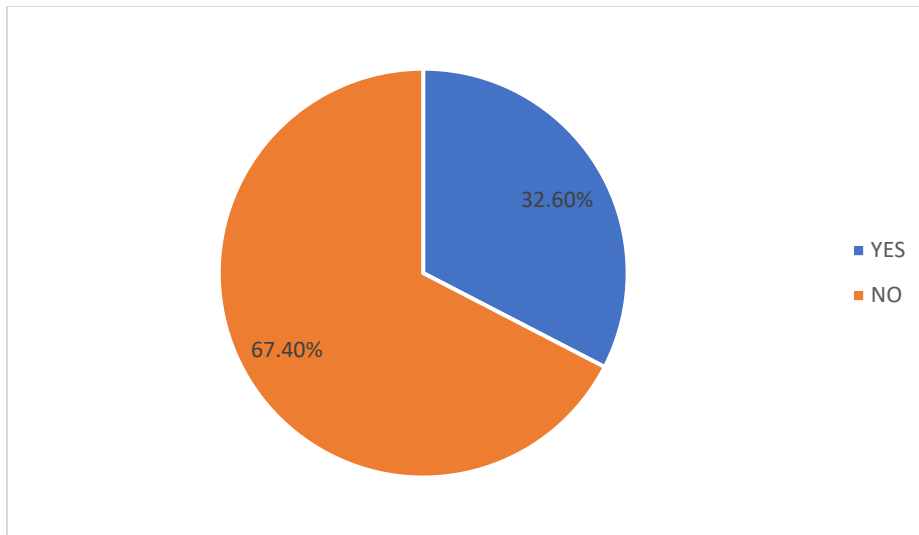
74 Responses



**Figure:** Percentages of the respondents who correctly maintained prescriptions guidelines.

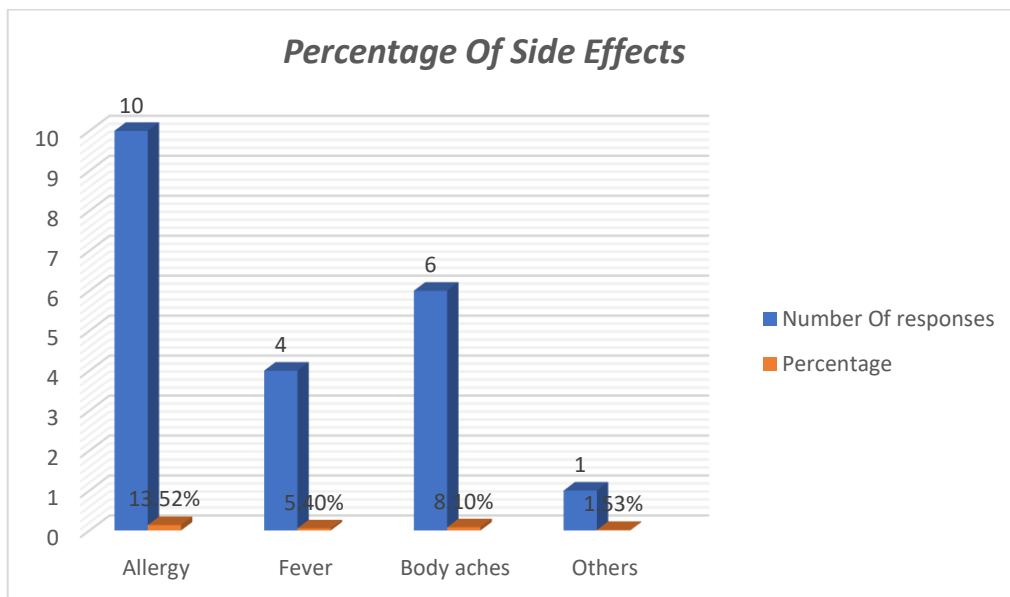
❖ **Did you face any side effects after taking these medications?**

74 RESPONSES



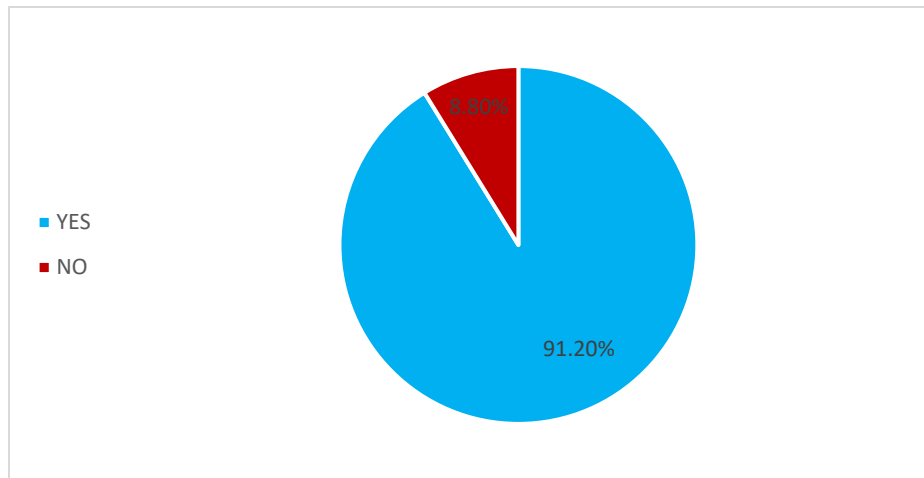
**Figure:** Percentages of the respondents who faced side effects after taking medications.

❖ **If yes, mention the side effects of medicines that you often faced.**



**Figure:** Ratio of the common side effects faced by the respondents after taking TB medicines.

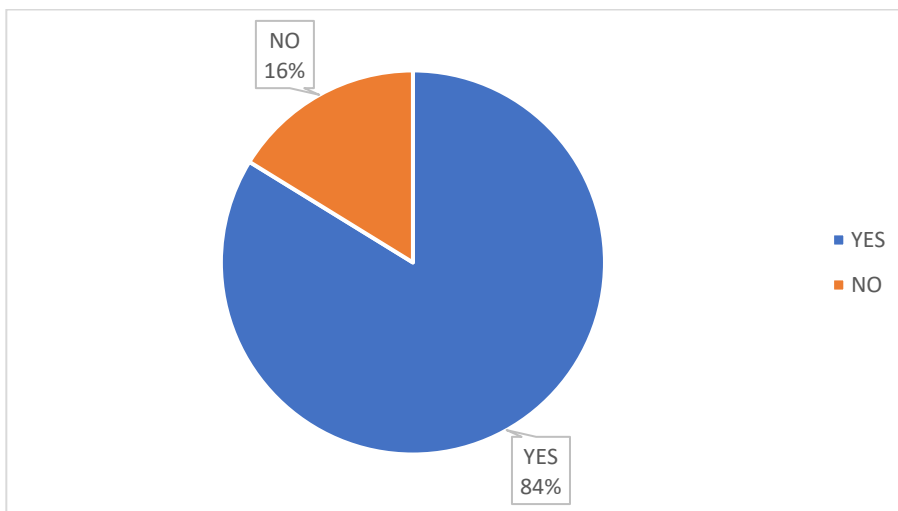
❖ **Are you well informed about the lifetime continuation of these tuberculosis medications?**



**Figure:** Percentages of the respondents based on how well they were informed about the lifetime.

❖ **Are you worried about your disease?**

74 RESPONSES

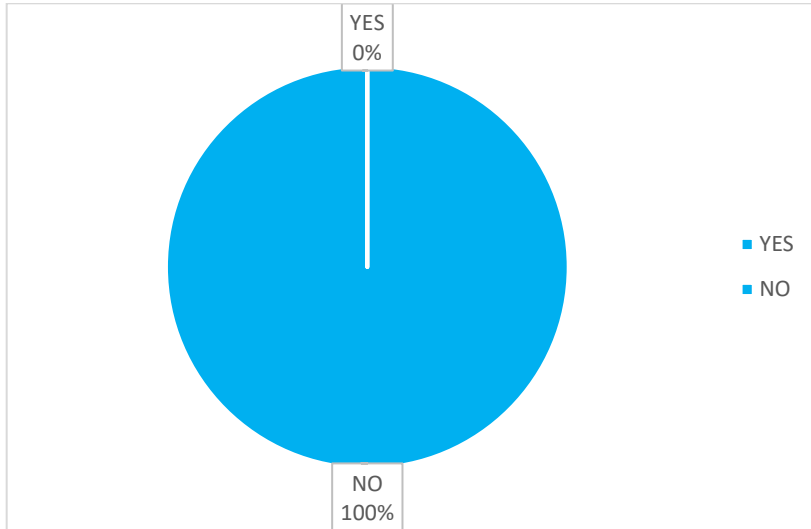


**Figure:** Percentages of the respondents based on how worried they are about their disease.



❖ **Are you facing any financial problems to buy these medications?**

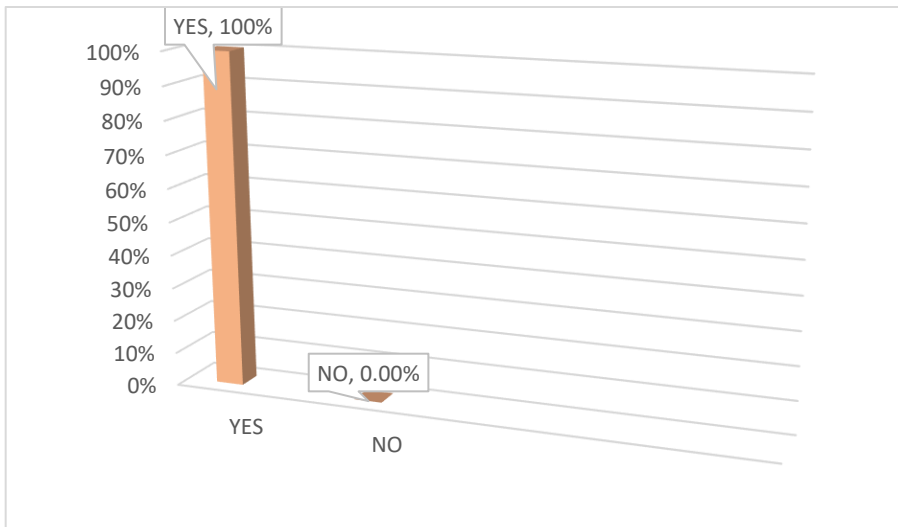
74 RESPONSES.



**Figure:** Percentages of the respondents based on the affordability of buying tuberculosis medicines.

❖ **Are you satisfied with the treatment that your physician provided?**

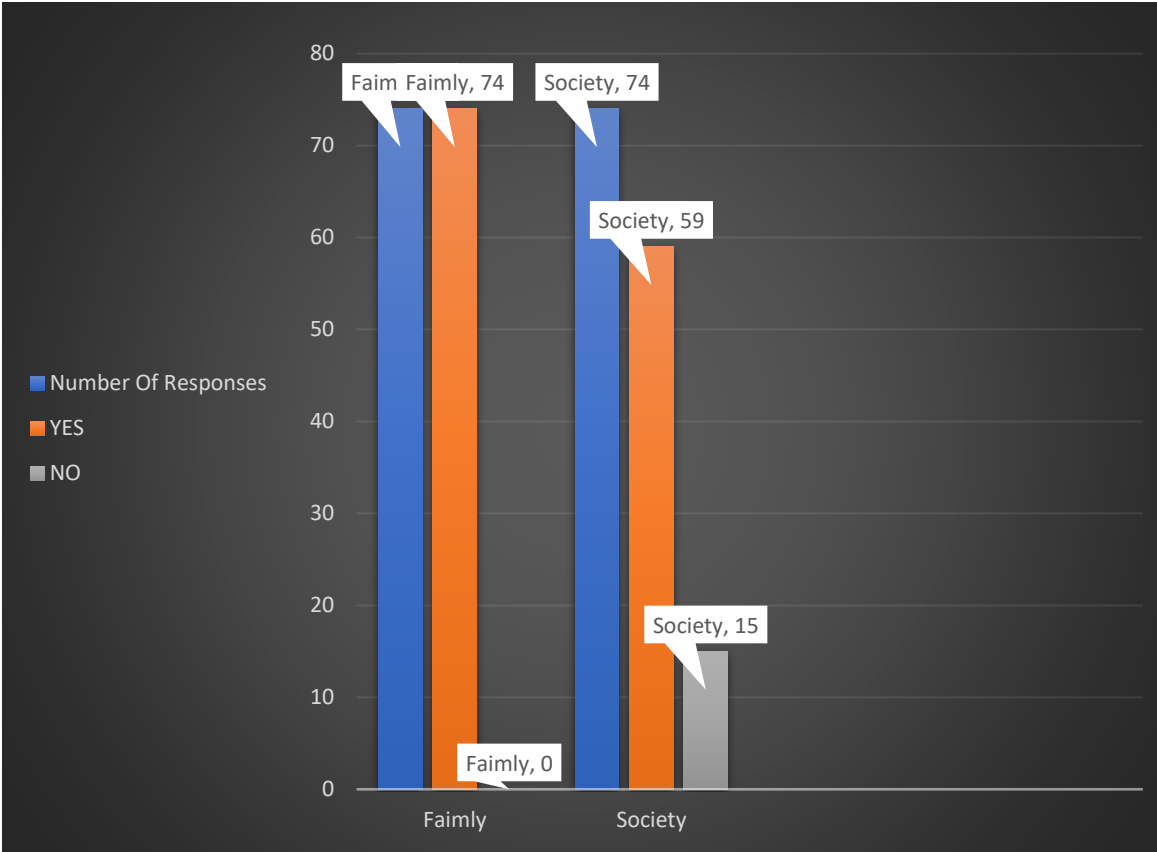
74 responses



**Figure:** Satisfaction level of the respondents with the TB treatment.

❖ Are you getting proper support from family members and Society?

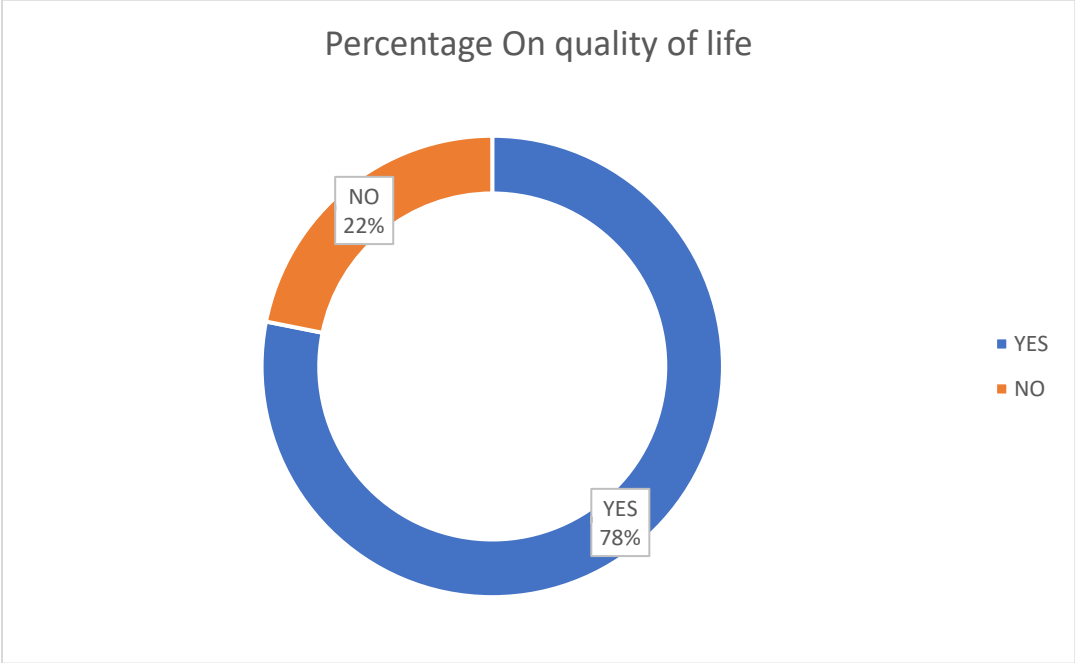
74 RESPONSES



**Figure:** Number of the respondents based on the support they are getting from family members and society.

❖ **Has this disease affected your quality of life?**

74 responses



**Figure:** Percentage of the respondents based on whether their quality of life has been affected.

## 5.2. Discussion:

Discussion is carried out according to the statistical analysis report:

### ➤ **Gender/Age/Residence:**

Based on the results of this survey, a large number of respondents were Female, whilst the minority were Male patients. While conducting this survey, it was observed that more females are admitted to the hospital than males. So, it may conclude that females are the most susceptible to tuberculosis disease than males. 48.64% of the respondents were within the (31-60) years age range, followed by ages above 60 years (22.97%). The majority of patients came from Dhaka city whereas a minority of the patients were from rural areas. People from all divisions in Bangladesh almost came to visit those two hospitals located in Dhaka for their TB diseases treatment maybe because of the treatment facility and due to low-cost treatment

### ➤ **Type:**

Here most of the TB patients are affected with pulmonary tuberculosis, which is approximately 71.62%. Where 28.38% people are affected with Extra pulmonary tuberculosis.

### ➤ **Preferred combination drugs:**

Rifampicin+ Isoniazid+ Ethambutol+ Pyrazinamide these four drugs are combined in tablet form and given to the patient according to their body weight. Each patient receives 3 to 5 tablets according to body weight.

### ➤ **Non-pharmacological management:**

81% of the respondents in this study were maintaining non-pharmacological management (lifestyle, food habits, physical activity) of TB care.

### ➤ **Affordability of medicines:**

This study revealed that No respondents did not face any financial problems to buy prescribed cardiac medicines. It may conclude that the overall scenario of affordability in buying TB medicines seems satisfactory.

### ➤ **Overall satisfaction and support:**

This study concluded that overall, 100% of respondents were satisfied with the treatment that physicians provided for TB care and they got proper support from their families.

# **CHAPTER 6**

# **CONCLUSION**

## 6.1. Conclusion

The current study's low to moderate **quality of life** (QL) results are driven by clinical signs and the dread of the stigma associated with both illnesses, which suggests alterations in social interactions.

If the support of friends, family members, and healthcare professionals' increases confidence and treatment adherence, it will reduce the stigma of both positions and increase patient's' quality of life.

# **Chapter 7**

## **Reference**

## **Reference:**

1. Carl Zimmer, "Tuberculosis Is Newer Than Thought, Study Says", New York Times, 21 August 2014
2. Hershkovitz, Israel; Donoghue, Helen D.; R, David E.; Besra, Gurdyal S.; Lee, Oona Y-C.; Gernaey, Angela M.; Galili, Ehud; Eshed, Vered; Greenblatt, Charles L. (15 October 2008). "Detection and Molecular Characterization of 9000-Year-Old Mycobacterium tuberculosis from a Neolithic Settlement in the Eastern Mediterranean". *PLOS ONE*. 3 (10): e3426. Bibcode:2008PLoS...3.3426H. doi: 10.1371/journal.pone.0003426. PMC 2565837. PMID 18923677.
3. Carl Zimmer, "Tuberculosis Is Newer Than Thought, Study Says", New York Times, 21 August 2014
4. Dorland's illustrated medical dictionary. 30th ed. Philadelphia: Saunders; 2003; Merriam-Webster's collegiate dictionary. 11th ed. Springfield (MA): Merriam-Webster Incorporated; 2003; and <http://www.wikipedia.org>
5. Lawn SD, Zumla AI (July 2011). "Tuberculosis". *Lancet*. 378 (9785): 57–72. doi:10.1016/S0140-6736(10)62173-3. PMID 21420161. S2CID 208791546. Archived from the original on 27 August 2021. Retrieved 31 January 2020.
6. Behera D (2010). *Textbook of Pulmonary Medicine* (2nd ed.). New Delhi: Jaypee Brothers Medical Publishers. p. 457. ISBN 978-81-8448-749-7. Archived from the original on 6 September 2015
7. Adkinson NF, Bennett JE, Douglas RG, Mandell GL (2010). *Mandell, Douglas, and Bennett's principles and practice of infectious diseases* (7th ed.). Philadelphia, PA: Churchill Livingstone/Elsevier. p. Chapter 250. ISBN 978-0-443-06839-3.
8. Halezeroğlu S, Okur E (March 2014). "Thoracic surgery for haemoptysis in the context of tuberculosis: what is the best management approach?". *Journal of Thoracic Disease*. 6 (3): 182–85. doi: 10.3978/j.issn.2072-1439.2013.12.25. PMC 3949181. PMID 24624281
9. Kumar V, Robbins SL (2007). *Robbins Basic Pathology* (8th ed.). Philadelphia: Elsevier. ISBN 978-1-4160-2973-1. OCLC 69672074.
10. Jindal SK, ed. (2011). *Textbook of Pulmonary and Critical Care Medicine*. New Delhi: Jaypee Brothers Medical Publishers. p. 549. ISBN 978-93-5025-073-0. Archived from the original on 7 September 2015.



11. Golden MP, Vikram HR (November 2005). "Extrapulmonary tuberculosis: an overview". *American Family Physician*. 72 (9): 1761–68. PMID 16300038
12. Habermann TM, Ghosh A (2008). *Mayo Clinic internal medicine: concise textbook*. Rochester, MN: Mayo Clinic Scientific Press. p. 789. ISBN 978-1-4200-6749-1. Archived from the original on 6 September 2015.
13. Southwick F (2007). "Chapter 4: Pulmonary Infections". *Infectious Diseases: A Clinical Short Course*, 2nd ed. McGraw-Hill Medical Publishing Division. pp. 104, 313–14. ISBN 978-0-07-147722-2.
14. Jindal SK (2011). *Textbook of Pulmonary and Critical Care Medicine*. New Delhi: Jaypee Brothers Medical Publishers. p. 525. ISBN 978-93-5025-073-0. Archived from the original on 6 September 2015.
15. Niederweis M, Danilchanka O, Huff J, Hoffmann C, Engelhardt H (March 2010). "Mycobacterial outer membranes: in search of proteins". *Trends in Microbiology*. 18 (3): 109–16. doi: 10.1016/j.tim.2009.12.005. PMC 2931330. PMID 20060722
16. Madison BM (May 2001). "Application of stains in clinical microbiology". *Biotechnic & Histochemistry*. 76 (3): 119–25. doi:10.1080/714028138. PMID 11475314
17. Cole EC, Cook CE (August 1998). "Characterization of infectious aerosols in health care facilities: an aid to effective engineering controls and preventive strategies". *American Journal of Infection Control*. 26 (4): 453–64. doi:10.1016/S0196-6553(98)70046-X. PMC 7132666. PMID 9721404.
18. Ahmed N, Hasnain SE (September 2011). "Molecular epidemiology of tuberculosis in India: moving forward with a systems biology approach". *Tuberculosis*. 91 (5): 407–13. doi:10.1016/j.tube.2011.03.006. PMID 21514230
19. Tuberculosis Fact sheet N°104". World Health Organization (WHO). November 2010. Archived from the original on 4 October 2006. Retrieved 26 July 2011.
20. Core Curriculum on Tuberculosis: What the Clinician Should Know" (PDF) (5th ed.). Centers for Disease Control and Prevention (CDC), Division of Tuberculosis Elimination. 2011. p. 24. Archived (PDF) from the original on 19 May 2012.
21. Prabowo, S. et al. "Targeting multidrug-resistant tuberculosis (MDR-TB) by therapeutic vaccines." *Med Microbiol Immunol* 202 (2013): 95–1041. Print

22. White, A. et al. "Evaluation of the Safety and Immunogenicity of a Candidate Tuberculosis Vaccine, MVA85A, Delivered by Aerosol to the Lungs of Macaques." *Clinical and Vaccine Immunology* 20 (2013): 663–672. Print.
23. Roy A, Eisenhut M, Harris RJ, Rodrigues LC, Sridhar S, Habermann S, et al. (August 2014). "Effect of BCG vaccination against Mycobacterium tuberculosis infection in children: systematic review and meta-analysis". *BMJ*. 349: g4643. doi:10.1136/bmj.g4643. PMC 4122754. PMID 25097193
24. Kashangura R, Jullien S, Garner P, Johnson S, et al. (Cochrane Infectious Diseases Group) (April 2019). "MVA85A vaccine to enhance BCG for preventing tuberculosis". *The Cochrane Database of Systematic Reviews*. 2019 (4): CD012915. doi:10.1002/14651858.CD012915.pub2. PMC 6488980. PMID 31038197
25. Aggarwal, A.N., 2019. Quality of life with tuberculosis. *Journal of clinical tuberculosis and other mycobacterial diseases*, 17, p.100121.
26. Chen, X., Xu, J., Chen, Y., Wu, R., Ji, H., Pan, Y., Duan, Y., Sun, M., Du, L., Gao, M. and Wang, J., 2021. The relationship among social support, experienced stigma, psychological distress, and quality of life among tuberculosis patients in China. *Scientific Reports*, 11(1), p.24236.
27. Brown, J., Capocci, S., Smith, C., Morris, S., Abubakar, I. and Lipman, M., 2015. Health status and quality of life in tuberculosis. *International Journal of Infectious Diseases*, 32, pp.68-75.
28. Sharma, R., Yadav, R., Sharma, M., Saini, V. and Koushal, V., 2014. Quality of life of multi drug resistant tuberculosis patients: a study of north India. *Acta Medica Iranica*, pp.448-453.
29. de Souza Neves, L.A., Castrighini, C.D.C., Reis, R.K., Marin Da Silva Canini, S.R. and Gir, E., 2018. Social support and quality of life of people with tuberculosis/HIV. *Enfermería Global*, 17(2), pp.21-29.
30. Al-Qahtani, M.F., Mahalli, A.A.E., Al Dossary, N., Al Muhaish, A., Al Otaibi, S. and Al Baker, F., 2014. Health-related quality of life of tuberculosis patients in the Eastern Province, Saudi Arabia. *Journal of Taibah University Medical Sciences*, 9(4), pp.311-317.