

# An Assessment of Knowledge, Attitudes and Practises on TB Preventive Treatment in Chipinge District Zimbabwe 2024.

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## ABSTRACT

Tuberculosis (TB) is a leading infectious disease cause of death worldwide. TB preventive treatment (TPT) is critical to reducing TB incidence, yet uptake remains suboptimal in many settings. Understanding knowledge, attitudes, and practices (KAP) related to TPT is important to inform strategies to improve access and adherence. A cross-sectional KAP survey was conducted among a representative sample of adults in Chipinge District Manicaland province between January to June 2024. Participants were interviewed using structured questionnaires to assess their knowledge of TB and TPT, attitudes towards TPT, and self-reported practices related to TPT uptake and completion. Descriptive statistics and regression analyses were used to identify factors associated with TPT knowledge, attitudes, and completion. The study population was stratified into three risk groups (Health workers, People living with HIV/AIDS, contacts of TB cases) A total sample of 20 was extrapolated from the population. This sample represented 30% of the study population 8(40%) respondents were contacts of TB cases, 6 (30%) respondents were Health workers and 6(30%) respondents were HIV positive patients. Findings indicated that 2 (10%) of the respondents were knowledgeable and 18(90%) of the respondents were not knowledgeable about TB preventive treatment. In order to get more information about knowledge on TB from causative agent, signs and symptoms as well prevention and control level of misconception were further asses and showed that 18(90%) respondents had misconceptions while 2(10%) respondents do not have misconceptions towards TB preventive treatment activities. On misconceptions 12(60%) of respondents were from contacts of TB cases, 4 (20%) of respondents were HIV positive patients and 2(10%) of respondents were Health workers to make a total of 18(90%) respondents with misconceptions towards TB preventive treatment. 3(15%) of respondents had positive attitudes while 17(85%) respondents had negative attitudes towards TB preventive Treatment, 16(80%) respondents had stigma and fear while 4(20%) respondents were with no stigma and fear, 6 (30%) respondents have trust in the Health care system and 14 (70%) respondents do not have trust in health care system. On practices towards TB prevention and control measures 5 (25%) of the respondents had optimal practices and 15(75%) of respondents had suboptimal practices on TB preventive treatment. 5(25%) respondents had good adherence and 15(25%) respondents had poor adherence to TB preventive treatment regiments. 5(25%) respondents had good uptake and 15(75%) respondents had bad uptake of TB preventive treatment. On uptake study further revealed that 1(5%) from the HIV positive, 6(30%) health workers and 8(40%) contacts of TB index cases to make a total of 15(75%) respondents that had bad uptake of TB preventive treatment. This study reveals important gaps in knowledge, negative attitudes, and incomplete uptake of TPT in this setting. The findings underscore the need for multi-faceted interventions to improve TPT awareness, acceptability, and adherence within this population. Targeted education, community engagement, and health system strengthening are recommended to overcome the identified barrier.

## ABBREVIATIONS

**TB** - Tuberculosis

**MDR-TB** - Multidrug-resistant Tuberculosis

**XDR-TB** - Extensively Drug-Resistant Tuberculosis

**DOTS** - Directly Observed Treatment, Short-course

**DRTB** - Drug-Resistant Tuberculosis

**INH** - Isoniazid (a TB drug)

**RIF** - Rifampicin (a TB drug)

**EMB** - Ethambutol (a TB drug)

**PZA** - Pyrazinamide (a TB drug)

**ART** - Antiretroviral Therapy

**HIV** - Human Immunodeficiency Virus

**AIDS** - Acquired Immunodeficiency Syndrome

**IPT** - Isoniazid Preventive Therapy

**TST** - Tuberculin Skin Test

**IGRA** - Interferon Gamma Release Assay

**CXR** - Chest X-ray

**DST** - Drug Susceptibility Testing

**EPTB** - Extra Pulmonary Tuberculosis

**LTBI** - Latent Tuberculosis Infection

**TPT** - TB Preventive Treatment

**3HP** - 3 months of weekly rifapentine and isoniazid

**3HR** - 3 months of daily rifampicin and isoniazid

**4R** - 4 months of daily rifampicin

**6H** - 6 months of daily isoniazid

**KAP** - Knowledge, Attitudes, and Practices

**HCP** - Healthcare Provider

**HCW** - Healthcare Worker

## INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by the bacterium *Mycobacterium tuberculosis*. It affects the lungs (pulmonary TB) but can also affect other parts of the body like the lymph nodes, intestines, spine, and brain (extra pulmonary TB). The main cause of TB is airborne transmission from person to person when infectious TB bacteria are coughed or sneezed into the air (Shapiro et al., 2019). Common signs and symptoms of active pulmonary TB include cough for any duration, chest pain, coughing up blood or sputum, weakness or fatigue, weight loss, fever, and night sweats (WHO, 2020). Without treatment, each person with active TB will infect an average of 10-15 people every year through close contact (Chi Batata et al., 2021). Zimbabwe has adopted the preventive treatment for the prevention of TB on high risk groups.

This Chapter is going to give detailed background to the study problem, the problem statement, Justification, hypothesis, main objective, specific objectives, research questions, limitations, delimitations, definition of terms and lastly the summary.

## Background

Tuberculosis TB is a communicable disease that is a major cause of ill health and one of the leading causes of death worldwide. Until the corona virus (COVID 19) pandemic, TB was the leading cause of death from a single infectious agent ranking above HIV / AIDS. Without treatment the death rate from TB is very high (about 50%) but with currently recommended treatment about 85% of people can be cured. According to the 2022 World Health Organization (WHO) Global TB report it is estimated that 10.6 million people fell ill with TB in 2021 globally, a 4,5 increase from 10.1 million in 2020. The TB incidence rate (new cases per 100000 populations per year) rose by 3,6 % between 2020 and 2021 reversing declines of about 2% per year for most of previous two decades. The burden of drug-resistant TB (DR-TB) is also estimated to have been increased between 2020 and 2021, with 450000 new cases of rifampicin resistant TB (RR-TB) in 2021.

In Zimbabwe the TB epidemic is largely fueled by the parallel HIV epidemic, with TB –HIV co-infection as high as 50% among notified cases as in other countries in the region. The country's health care system facing challenges in recent years with the advent of COVID 19 further worsening the plight. Chipinge is one of the most affected district with TB. The disruptive impact of the pandemic led to decline in TB case detection with

an estimated 14,000 missed incident cases in 2021. There were estimated 780 incident cases of drug resistant TB (DR-TB) in 2021, against 243 (31%) detected cases. While treatment success rate for drug –susceptible TB cases has sustained an upward trajectory to 88% in 2020, outcomes for DR-TB patients have worsened over time, to 43 % in the latest cohort of 2019. The focus of TB care and control is to detect TB cases early, particularly the bacteriologically positive cases and provide them with effective treatment in a patient- centered manner, so as to reduce associated morbidity and mortality as well as the risk of development of drug resistance.

Tuberculosis (TB) is a highly infectious disease caused by the bacterium *Mycobacterium tuberculosis*. It is a major global health concern, especially in low- and middle-income countries. TB preventive therapy (TPT) is a crucial strategy for reducing the transmission and burden of TB, particularly among individuals who are at high risk of developing active TB disease. To effectively implement TPT programs, it is important to understand the knowledge, attitudes, and practices of both healthcare providers and the general population towards TPT. This research study aims to assess the knowledge, attitudes, and practices towards TB preventive therapy among the target population.

### Statement of the Problem

Despite the availability of effective preventive treatment for tuberculosis, there remains a significant gap in knowledge, attitudes, and practices regarding its utilization and adherence. This knowledge gap hampers the effectiveness of TB prevention strategies and undermines efforts to reduce the burden of the disease. Limited awareness, misconceptions, and negative attitudes towards TB preventive treatment among the general population, healthcare providers, and other stakeholders contribute to low uptake and poor adherence to preventive regimens. This knowledge gap also perpetuates stigma and discrimination associated with TB, further impeding prevention efforts. Consequently, there is an urgent need to assess the knowledge levels, attitudes, and practices towards TB preventive treatment to identify specific areas of improvement, address misconceptions and stigma, and develop targeted interventions to enhance awareness, understanding, and adherence to preventive treatment regimens. By addressing these knowledge gaps and improving attitudes and practices, we can optimize the impact of TB prevention programs and contribute to the reduction of TB incidence and transmission in the population.

### Justification

According to Chipinge district hospital outpatient department and health information department statistics show that they highly recorded cases of TB as from 2020 up to 2023. Most cases were from exposed health workers and contacts of identified index cases despite being initiated on TB preventive treatment. Assessing knowledge, attitudes, and practices towards tuberculosis (TB) preventive treatment is essential for understanding the effectiveness of interventions and identifying areas for improvement. Here are several justifications for conducting such an assessment:

**Public health planning:** Assessing knowledge, attitudes, and practices towards TB preventive treatment provides crucial information for public health planning. It helps policymakers and healthcare providers understand the level of awareness and understanding among the population, identify misconceptions, and design targeted interventions to improve prevention and control measures.

**Program evaluation:** An assessment of knowledge, attitudes, and practices towards TB preventive treatment allows for the evaluation of existing programs and interventions. By determining the effectiveness of current strategies, policymakers and program managers can make informed decisions on resource allocation, program adjustments, and implementation improvements.

**Identifying knowledge gaps:** Assessing knowledge levels about TB preventive treatment helps identify specific areas where gaps exist. This information can guide the development of educational campaigns, training programs, and communication strategies aimed at increasing awareness and understanding of TB preventive treatment among the general population, healthcare workers, and other relevant stakeholders.

**Addressing stigma and misconceptions:** TB is often associated with stigma and misconceptions, which can hinder prevention efforts. Assessing attitudes towards TB preventive treatment helps in identifying prevailing

misconceptions, discriminatory attitudes, and social barriers that impede the uptake of preventive measures. This knowledge can inform targeted interventions to address stigma and promote positive attitudes towards TB prevention.

**Enhancing patient-provider communication:** Knowledge, attitudes, and practices assessments can shed light on the quality of patient-provider communication regarding TB preventive treatment. Understanding patients' perceptions, concerns, and preferences can help healthcare providers tailor their communication strategies, improve counseling techniques, and adapt their approaches to ensure better patient understanding and adherence to preventive treatment regimens.

**Monitoring progress:** Regular assessments of knowledge, attitudes, and practices towards TB preventive treatment provide a means of monitoring progress over time. By conducting repeated assessments, policymakers and stakeholders can track changes in knowledge levels, attitudes, and practices, identify trends, and evaluate the impact of interventions and awareness campaigns.

## Hypothesis

**Lack of accurate knowledge:** It is hypothesized that a significant portion of the target population may have limited awareness and knowledge regarding TB preventive treatment. This lack of accurate knowledge may include misconceptions about the purpose, benefits, and side effects of preventive treatment, as well as misconceptions about TB transmission and prevention in general.

**Negative attitudes:** The hypothesis assumes that negative attitudes towards TB preventive treatment may exist. These negative attitudes could include stigma, fear, and beliefs that undermine the perceived importance or efficacy of preventive treatment. Negative attitudes may also stem from cultural or social factors, such as a lack of trust in healthcare systems or concerns about the cost and accessibility of preventive treatment.

**Suboptimal practices:** The hypothesis suggests that there may be suboptimal practices related to TB preventive treatment. This could include low uptake of preventive treatment among eligible individuals, poor adherence to treatment regimens, and inadequate follow-up and monitoring of individuals receiving preventive treatment. Suboptimal practices may arise due to a lack of awareness.

## Research Objectives:

### Main Objective

To assess the knowledge, attitudes and practices of health care workers and general population towards TB preventive treatment

### Specific Objectives

1. To evaluate the level of knowledge regarding TB preventive therapy among healthcare providers and the general population.
2. To explore the attitudes towards TB preventive therapy among healthcare providers and the general population.
3. To assess the practices related to TB preventive therapy among healthcare providers and the general population.

## Methodology

The study will employ a cross-sectional research design, involving both quantitative and qualitative data collection methods. The target population will include healthcare providers (doctors, nurses, and other healthcare professionals) and individuals at high risk of developing active TB disease, such as household contacts of TB patients, people living with HIV/AIDS, and other immune-compromised individuals.

1. Quantitative data will be collected through structured questionnaires, which will be administered to the participants. The questionnaires will include sections on demographic information, knowledge about TB and TPT, attitudes towards TPT, and practices related to TPT.
2. Qualitative data will be collected through in-depth interviews and focus group discussions with selected participants. The interviews will provide a deeper understanding of the participants' attitudes, beliefs, and experiences regarding TB preventive therapy. Thematic analysis will be employed to analyze the qualitative data.

### **Ethical Considerations:**

The study will adhere to ethical guidelines, ensuring the privacy, confidentiality, voluntary participation of the participants, informed concern, minimization of harm, equity and cultural sensitivity.

## **LITERATURE REVIEW**

### **Introduction**

Tuberculosis remains a global public health concern, and preventive treatment plays a vital role in reducing the burden of the disease including the study area. This literature review aims to assess the existing knowledge, attitudes, and practices related to TB preventive treatment. The researcher reviewed the work done by other researchers guided by the objectives of this particular study.

### **Knowledge on Tuberculosis Preventive Treatment**

Studies have highlighted varying levels of knowledge among different populations regarding TB preventive treatment. Many individuals, particularly in resource-limited settings, may lack awareness of the availability and benefits of preventive treatment. Misconceptions and gaps in knowledge about TB transmission, prevention, and treatment regimens are common barriers that need to be addressed as follows:

Knowledge Gaps: Dr. Anthony. Harries (2016) has identified specific knowledge gaps among different populations. These gaps can include misconceptions about TB transmission, symptoms, and the availability of preventive treatment. Lack of awareness about the importance of screening for latent TB infection (LTBI) and the benefits of preventive treatment can also hinder uptake.

Information Sources: Understanding the sources of information about TB preventive treatment is crucial. Dr. Knut Lonnroth (2019) states that healthcare providers play a significant role in disseminating information, but additional sources such as media campaigns, community health workers, and peer networks can also contribute to knowledge acquisition.

Educational Interventions: Educational interventions have been utilized to improve knowledge about TB preventive treatment. These interventions can include informational campaigns, community workshops, and the use of print or digital media to disseminate accurate and culturally appropriate information. Tailoring educational materials to the target population's literacy level, language, and cultural context can enhance knowledge acquisition.

Health System Factors: According to Dr. Salla Atkins (2021) the knowledge of healthcare providers is crucial in promoting TB preventive treatment. Ensuring that healthcare providers have up-to-date information and training on LTBI screening, diagnosis, and treatment guidelines is essential. Integrating TB preventive treatment into routine clinical practices and providing healthcare providers with resources and tools for effective counseling can enhance patient education and knowledge.

Targeted Education Campaigns: Dr. Ronny Zachariah (2019) stated that tailoring educational campaigns to specific populations can be effective in improving knowledge. For example, focusing on high-risk groups such as healthcare workers, people living with HIV, or individuals with close contacts who have active TB can help address their specific informational needs.



**Digital Health Solutions:** According to Dr. Madhukar Pai (2015) utilizing digital health solutions, such as mobile applications or interactive websites, can enhance knowledge dissemination. These platforms can provide easily accessible and interactive educational materials, videos, and quizzes to improve understanding of TB preventive treatment.

**Community Engagement:** According to Dr. Madhukar Pai (2015) engaging community leaders, local organizations, and community health workers can help disseminate accurate information about TB preventive treatment. Community-based interventions, such as peer education and support groups, can facilitate knowledge sharing and address cultural beliefs and misconceptions.

### **Attitudes towards Tuberculosis Preventive Treatment:**

According to Dr. Salla Atkins (2021) attitudes towards TB preventive treatment can significantly influence an individual's willingness to initiate and complete treatment. Stigma and fear associated with TB, as well as concerns about potential side effects and the duration of treatment, can negatively impact attitudes. Understanding and addressing these concerns are crucial to improve treatment acceptance and adherence. Studies have shown attitudes towards Tuberculosis preventive treatment can be addressed in various ways which include the following:

**Stigma and Fear:** Dr. Ronny Zachariah (2019) mentioned that stigma associated with TB can lead to negative attitudes and discrimination against individuals with the disease or those at risk. Fear of social isolation and negative societal perceptions can affect the willingness to access preventive treatment services. Addressing Stigma and fear in community will health to increase positive attitudes in risk population towards TB preventive treatment.

**Perceived Benefits and Risks:** Dr. Anthony. Harries (2016) said that attitudes towards preventive treatment are influenced by perceived benefits and risks. Communicating the potential benefits of treatment, such as reducing the risk of developing active TB and protecting close contacts, can positively influence attitudes. Addressing concerns about side effects, treatment duration, and disruptions to daily life is also crucial.

**Social Support:** According to Dr. Madhukar Pai (2015) recognizing the role of social support in shaping attitudes towards TB preventive treatment is important. Family, community, and peer support can positively influence individuals' attitudes and motivation to initiate and complete treatment. Engaging community leaders, support groups, and community health workers can help foster supportive environments.

**Patient-Centered Approaches:** Dr. Knut Lonnroth (2019) states that adopting patient-centered approaches in TB preventive treatment programs can improve attitudes. Taking into consideration patients' beliefs, values, and preferences when designing treatment plans can enhance treatment acceptance and adherence. Involving patients in shared decision-making and addressing their concerns through effective communication can promote positive attitudes.

**Empowerment and Engagement:** Dr. Anthony. Harries (2016) find out that empowering individual by involving them in decision-making processes and discussing their treatment preferences can positively influence attitudes. Engaging patients as partners in their own care can enhance treatment acceptance and adherence.

**Addressing Stigma:** According to Dr. Salla Atkins (2021) addressing TB-related stigma through awareness campaigns and community dialogues can help change negative attitudes. Promoting understanding, dispelling myths, and fostering empathy towards individuals with TB or those at risk can reduce stigma and discrimination.

**Health System Support:** Dr. Ronny Zachariah (2019) said that providing supportive and patient-friendly healthcare services can improve attitudes towards TB preventive treatment. Ensuring respectful and non-judgmental interactions between healthcare providers and patients, as well as addressing privacy concerns, can foster positive attitudes.

### **Practices related to Tuberculosis Preventive Treatment:**

Adherence to TB preventive treatment regimens is essential to achieve optimal outcomes. However, studies have

shown suboptimal adherence rates in various settings. Factors such as forgetfulness, lack of social support, and challenges in accessing healthcare services can contribute to poor treatment practices. Strategies like directly observed therapy and patient education programs have been implemented to enhance treatment adherence. Studies have shown the following strategies in addressing negative practices towards TB preventive treatment

Treatment Initiation: According to Dr. Madhukar Pai (2015) encouraging individuals at high risk of developing active TB to seek preventive treatment is essential. Identifying and targeting key populations, such as close contacts of TB patients, healthcare workers, and individuals living with HIV, can help improve treatment initiation rates.

Treatment Completion: Dr. Knut Lonnroth (2019) states that adherence to the full course of TB preventive treatment is critical for its effectiveness. Various factors can affect treatment completion, including forgetfulness, challenges in accessing healthcare services, and competing priorities. Implementing strategies like reminder systems, patient education, and community-based support can help improve treatment completion rates.

Health System Strengthening: According to Dr. Salla Atkins (2021) strengthening health systems is crucial for improving practices related to TB preventive treatment. This includes ensuring access to affordable and quality healthcare services, establishing effective referral systems, and reducing barriers to care, such as long waiting times and transportation costs. Integrating TB services with other healthcare programs, such as HIV care or maternal and child health services, can also enhance treatment practices.

Adherence Support: Dr. Ronny Zachariah (2019) said that implementing strategies to support treatment adherence is vital. These strategies can include patient education and counseling, reminder systems (text messages or phone calls), directly observed therapy (DOT), and the provision of incentives or enablers to overcome practical barriers to adherence. Engaging family members or other social support networks in the treatment process can also improve adherence.

Simplifying Treatment Regimens: According to Dr. Madhukar Pai (2015) simplifying treatment regimens, such as reducing the frequency or duration of medication intake, can improve treatment practices. Shorter treatment courses or alternative delivery methods, like weekly or monthly directly observed therapy, can enhance treatment adherence.

Integrated Service Delivery: Dr. Knut Lonnroth (2019) states that integrating TB preventive treatment services with other healthcare services, such as primary care or antenatal care, can improve treatment practices. This approach reduces the burden on patients and enhances access to preventive treatment.

Patient Support Programs: Dr. Anthony .Harries (2016) mentioned that implementing comprehensive patient support programs can address practical barriers to treatment practices. These programs may include providing transportation assistance, nutritional support, and socioeconomic interventions to improve treatment adherence.

### **Socioeconomic Factors:**

Some studies have also shown that socioeconomic disparities can impact knowledge, attitudes, and practices related to TB preventive treatment. Limited access to healthcare, low health literacy, poverty, and unstable living conditions can all contribute to suboptimal knowledge and practices.

### **Policy and Programmatic Considerations:**

Integrating TB preventive treatment Integrating TB preventive treatment into existing healthcare systems and policies have been found to be crucial for sustainable implementation. Strengthening healthcare infrastructure, training healthcare providers, and ensuring the availability of diagnostic tools and medications are important considerations.

Monitoring and Evaluation: Regular monitoring and evaluation of knowledge, attitudes, and practices related to TB preventive treatment can help identify gaps and measure the impact of interventions. Collecting data on treatment uptake, completion rates, and patient experiences can inform programmatic improvements. 3.

### Practices:

**Simplifying Treatment Regimens:** Simplifying treatment regimens, such as reducing the frequency or duration of medication intake, can improve treatment practices. Shorter treatment courses or alternative delivery methods, like weekly or monthly directly observed therapy, can enhance treatment adherence.

**Integrated Service Delivery:** Integrating TB preventive treatment services with other healthcare services, such as primary care or antenatal care, can improve treatment practices. This approach reduces the burden on patients and enhances access to preventive treatment.

**Patient Support Programs:** Implementing comprehensive patient support programs can address practical barriers to treatment practices. These programs may include providing transportation assistance, nutritional support, and socioeconomic interventions to improve treatment adherence.

### Research and Innovation:

**Implementation Research:** Researchers have found that conducting implementation research can provide insights into the factors influencing knowledge, attitudes, and practices related to TB preventive treatment. This research can explore the effectiveness of different interventions, assess the impact of contextual factors, and identify barriers and facilitators to implementation at the community and health system levels.

**Technological Innovations:** Leveraging technological advancements can enhance knowledge dissemination and treatment support. Mobile health (mHealth) applications, telemedicine, and digital platforms can be utilized to provide information, deliver reminders, track treatment adherence, and facilitate communication between patients and healthcare providers.

### Interventions to Improve Knowledge, Attitudes, and Practices:

To address the gaps identified in knowledge, attitudes, and practices related to TB preventive treatment, several interventions have been implemented. These include community education programs, engagement of healthcare providers, and integration of TB services into existing healthcare systems. Additionally, leveraging technology, such as mobile health applications, has shown promise in improving treatment adherence and monitoring.

### Limitations and Future Directions:

The literature review acknowledges certain limitations, such as the heterogeneity of study populations, varying measurement tools, and the limited representation of certain regions. Future research should focus on evaluating the impact of targeted interventions tailored to specific populations and exploring innovative approaches to improve knowledge, attitudes, and practices related to TB preventive treatment.

### Conclusion

The literature review highlights the importance of assessing knowledge, attitudes, and practices regarding TB preventive treatment. Improving knowledge levels, addressing negative attitudes, and promoting positive treatment practices are crucial for successful implementation of preventive treatment strategies and reducing the burden of tuberculosis.

## RESEARCH DESIGN AND METHODOLOGY

### Introduction

Assessing knowledge, attitudes, and practices (KAP) towards TB preventive treatment requires a systematic research design and methodology. Here's an outline of the research design and methodology used for conducting such an assessment:

### Research Objective:

- To assess knowledge, attitudes, and practices towards TB preventive treatment in Chipinge district.



**Study Population:**

- The study Population included the healthcare professionals, TB patients, community members, any group at risk of TB.

**Study Design:**

Cross-sectional Surveys: Cross-sectional surveys were used to assess knowledge, attitudes, and practices related to TB preventive treatment. These surveys involve collecting data at a specific point in time from a representative sample of individuals or populations.

**Theory Of Planned Behavior / Health Belief Model:**

Theoretical frameworks such as the Theory of Planned Behavior and Health Belief Model were utilized to guide the design and analysis of the study. These frameworks provide a theoretical lens through which to interpret the findings and identify factors influencing knowledge, attitudes, and practices towards TB preventive treatment.

**Sampling Strategy**

Random Sampling: Random sampling techniques, such as simple random sampling or stratified random sampling were used to ensure the representativeness of the study population.

Convenience Sampling: Convenience sampling were also used when specific populations or settings are targeted due to practical considerations, such as limited resources or accessibility.

**Data Collection Tools:**

Questionnaires: Structured questionnaires were often used to collect data on knowledge, attitudes, and practices. These questionnaires included closed-ended questions with response options, allowing for quantitative analysis.

Interview Guides: Semi-structured or structured interview guides were used for face-to-face and telephone interviews, allowing for in-depth exploration of participants' perspectives and experiences. ensure that it covers relevant topics related to TB preventive treatment were covered in interview guides which include knowledge about TB transmission, symptoms, diagnostic methods, treatment options, and preventive measures. Attitudes towards TB preventive treatment were also assessed by asking about perceptions, beliefs, and opinions. Practices were evaluated by inquiring about behaviors related to TB prevention, such as adherence to treatment regimens or utilization of preventive services.

Qualitative Interviews / Focus Group Discussions: In addition to surveys, qualitative interviews / focus group discussions were conducted to gain a deeper understanding of participants' perspectives, experiences, and reasons behind their knowledge, attitudes, and practices. These qualitative methods provide rich, contextual information that complements quantitative data.

**Pilot Testing:**

This step helps ensure the clarity and reliability of the questions. Before deploying the questionnaires or interview guides, were pre-tested with a small sample of individuals who represent the target population. This helps identified any ambiguities, inconsistencies, or difficulties in understanding the questions. Adjustments and refinements were then made based on the feedback received.

**Data Collection:**

Healthcare Facilities: Data collection was done within healthcare facilities allowing for direct interaction with healthcare providers and patients, enabling the assessment of knowledge and practices in clinical settings.

Community Settings: Conducting interviews or surveys in community settings was done and this helped to capture a broader perspective and reach individuals who may not be accessing formal healthcare services.

### **Ethical Considerations:**

Appropriate ethical approvals were obtained from relevant institutional review boards and ethics committees before conducting the study. Informed consent was obtained from participants, ensuring their understanding of the study's purpose, voluntary participation, confidentiality, and data privacy.

Research Ethics Approval: Obtaining ethical approval from relevant institutional review boards or ethics committees is essential to ensure the protection of participants' rights and well-being.

Informed Consent: Informed consent should be obtained from all study participants, explaining the purpose of the study, voluntary participation, and confidentiality.

Confidentiality and Anonymity: Ensuring the privacy and anonymity of participants' data is crucial in maintaining confidentiality and data protection.

### **Translation And Cultural Adaptation:**

The study involved populations with diverse languages, cultural backgrounds hence there was translation and cultural adaptation of the research instruments. This ensures that the questions and statements are linguistically and culturally appropriate, making them understandable and relevant to the study participants.

### **Data Validation:**

To enhance the validity of the data collected, techniques such as triangulation or data validation were employed. Triangulation involves using multiple sources or methods to gather data, which helps ensure data accuracy and reliability. Data validation involves checking the consistency and accuracy of responses by cross-verifying information from different respondents or sources.

### **Data Analysis:**

Descriptive Analysis: Descriptive statistics, such as frequencies, percentages, means, and standard deviations, were used to summarize and describe the knowledge, attitudes, and practices of the study population.

Inferential Analysis: Inferential statistical tests, such as chi-square tests, t-tests, or regression analysis, were employed to examine associations between variables and identify factors influencing knowledge, attitudes, and practices.

Qualitative Analysis: Qualitative data collected through interviews and open-ended questions, was analyzed through thematic analysis and content analysis to identify key themes and patterns in participants' responses.

Subgroup Analysis: Subgroup analyses were conducted to explore variations in knowledge, attitudes, and practices based on demographic factors (age, gender, education level) or other relevant variables. This analysis can provide insights into specific areas where interventions or targeted educational programs may be needed.

### **Interpretation Of Findings:**

Interpret the research findings in light of the study objectives. Identify key trends, patterns, and gaps in knowledge, attitudes, and practices towards TB preventive treatment among the study population.

### **Variables And Measures:**

Knowledge: Knowledge was assessed through questions about TB transmission, symptoms, risk factors, and preventive treatment options. Multiple-choice questions and true/false statements were commonly used to measure knowledge levels.

Attitudes: Attitudes were assessed using Likert scale-based questions, where participants rate their agreement or disagreement with statements related to TB preventive treatment. Attitudes towards treatment benefits, risks, and social perceptions were explored.

**Practices:** Practices were accessed through self-reported behaviors related to TB preventive treatment, such as treatment initiation rates, completion rates, or adherence. Self-reporting was complemented by objective measures like medical records or pill counts.

### Recommendations:

Based on the findings, provide recommendations for interventions, policies, or educational programs that can improve knowledge, attitudes, and practices related to TB preventive treatment. These recommendations should be evidence-based and practical.

### Dissemination Of Findings:

Share the research findings through scientific publications, reports, or presentations to relevant stakeholders, including healthcare professionals, policymakers, and the community. This step promotes awareness and facilitates evidence-based decision-making.

### Data Analysis Techniques:

- Quantitative data collected through questionnaires can be analyzed using statistical software, such as SPSS or STATA. Descriptive statistics, correlation analysis, regression analysis, or multivariate analysis can be performed to examine relationships and associations between variables.
- Qualitative data obtained through interviews or open-ended questions can be analyzed using thematic analysis, content analysis, or framework analysis. This involves coding and categorizing the data to identify recurring themes and patterns.

### Limitations And Challenges

It is important to acknowledge potential limitations and challenges in this type of research, such as recall bias, social desirability bias, and self-reporting inaccuracies. Researchers should make efforts to mitigate these limitations through appropriate study design, data collection techniques, and analysis.

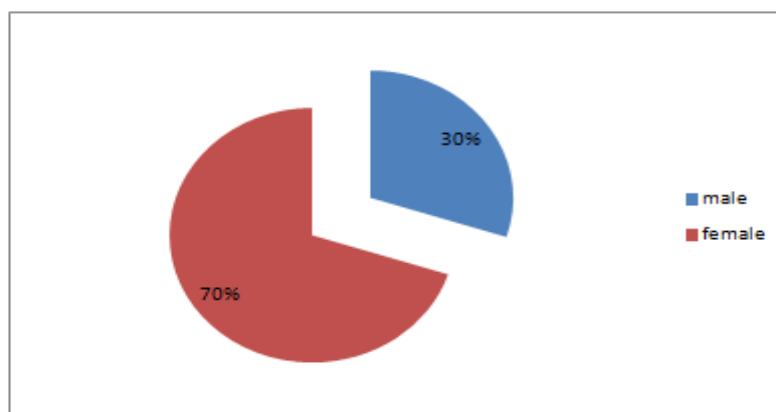
## RESULTS AND STATISTICAL ANALYSIS

### Introduction

The unit focused on study findings presentation and interpretation. Collected data was organized and summarized based on the findings from the field study. Tables, bar graphs, cross tabulations, Pearson correlation analysis was used and narrations were used to interpret the data.

### Results of Questionnaires

**Fig.1 Gender & sex of respondents**



The pie chart above indicates that the respondents who responded to the questionnaires, 14 (70%) were females while 6 (30%) were males.

**Table 1. Type of TB exposure on respondents**

| EXPOSURE TYPE           | NUMBER | PERCENTAGE |
|-------------------------|--------|------------|
| contacts of index cases | 8      | 40%        |
| Health workers          | 6      | 30%        |
| HIV positive patients   | 6      | 30%        |
| TOTAL                   | 20     | 100%       |

The above table shows that 8(40%) respondents were contacts of TB cases, 6 (30%) respondents were Health workers and 6(30%) respondents were HIV positive patients

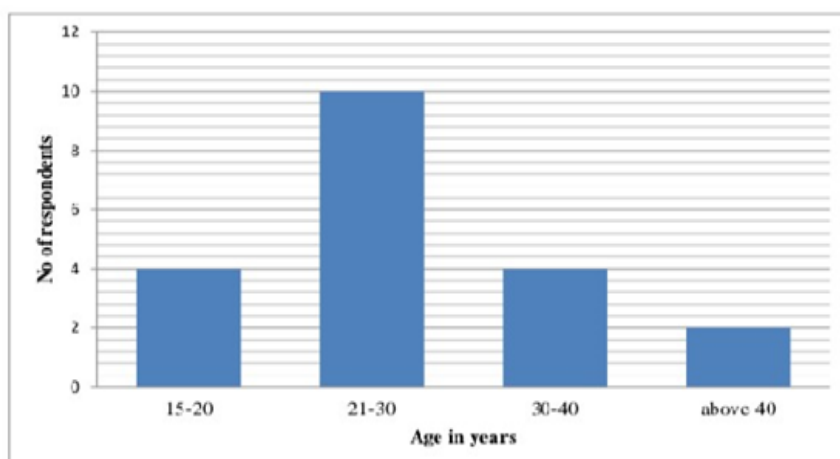
**Table .2. Marital status of respondents**

| MARITAL STATUS | NUMBER OF RESPONDENTS | PERCENTAGE |
|----------------|-----------------------|------------|
| single         | 8                     | 40%        |
| married        | 6                     | 50%        |
| divorced       | 5                     | 25%        |
| widowed        | 1                     | 5%         |
| TOTAL          | 20                    | 100%       |

**N=20**

The table above showed that 8 (40%) of the respondents were single, 6 (30%) of the respondents were married, 5 (25%) were divorced whilst 1 (5%) of the respondents were divorced

**FIG.2 Demographic Data**



The bar graph above indicated that 4 (20%) of the respondents were of the age group 15-20 years, 10 (50%) of the respondents were from 21-30 years age group, 4 (20%) were of the age group 30 – 40 years whilst 2 (10%)

of the respondents were above 40 years.

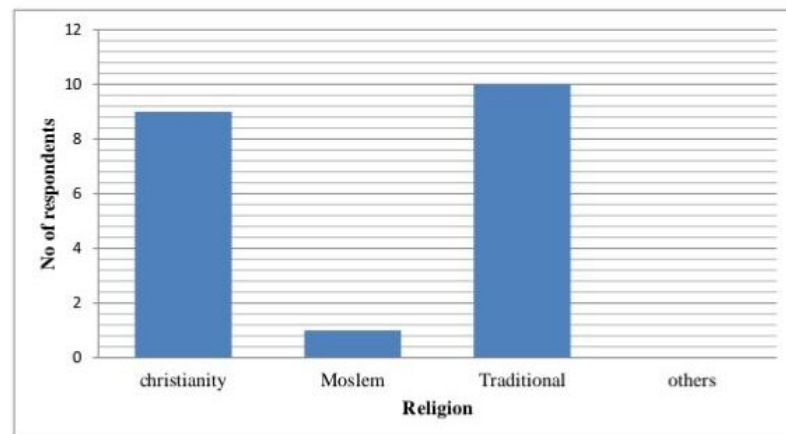
**Table 3. Education status of the despondences**

| LEVEL OF EDUCATION    | NUMBER    | PERCENTAGE  |
|-----------------------|-----------|-------------|
| Never attended school | 1         | 5%          |
| primary level         | 4         | 20%         |
| Tertiary level        | 14        | 70%         |
| secondary level       | 1         | 5%          |
| <b>TOTAL</b>          | <b>20</b> | <b>100%</b> |

N=20

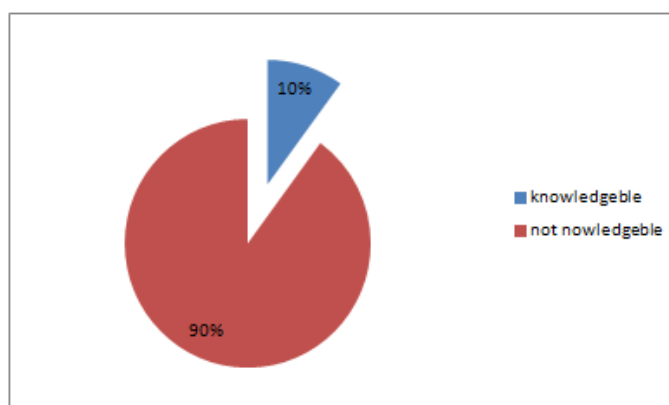
The data on the above table shows that 1 (5%) of the respondents never attended school, 4 (20%) had attained primary education, 14 (70%) had attained Tertiary level of education whilst 1 (5%) of the respondents had attained secondary education.

**FIG 3. Responses on Religion**



The bar graph above indicated that 9 (45%) of the respondents were Christians, 1 (5%) were Moslems, 10 (50%) Of the respondents were of the Traditional religion.

**FIG 4. Knowledge of TB preventive treatment**

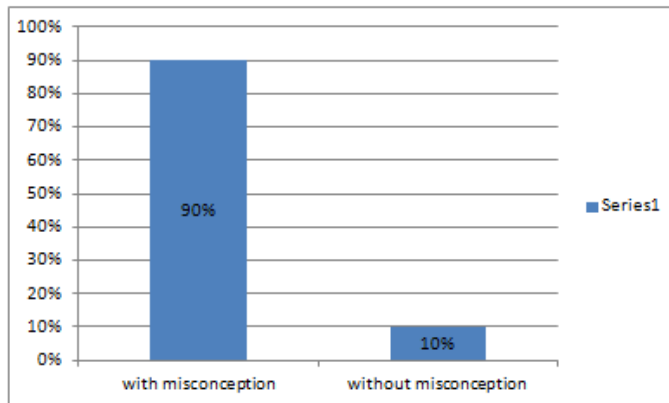


N=20



The pie chat above shows that 2 (10%) of the respondents were knowledgeable and 18(90%) of the respondents were not knowledgeable about TB preventive treatment

**FIG 5. Misconception of respondents on TB preventive treatment**



N=20

The bar graph above show that 18(90%) respondents had misconceptions while 2(10%) respondents do not have misconceptions towards TB preventive treatment activities

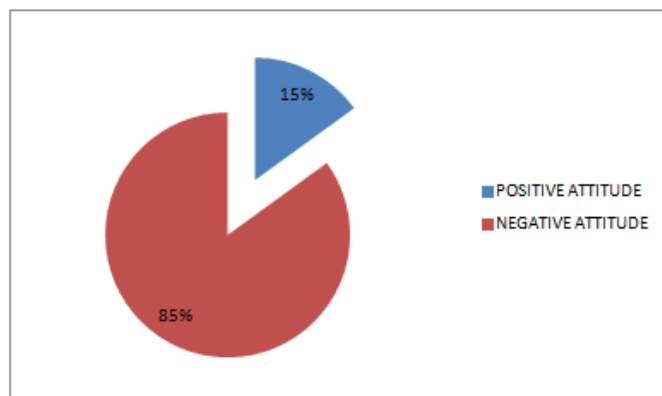
**Table 4. Misconception respondents with their risk type**

| RISK GROUP WITH MISCONCEPTION | NUMBER OF RESPONDENTS | PERCENTAGE |
|-------------------------------|-----------------------|------------|
| contacts of index cases       | 12                    | 60%        |
| HIV positive patients         | 4                     | 20%        |
| Health workers                | 2                     | 10%        |
| TOTAL                         | 18                    | 90%        |

N=20

The table above show that 12(60%) respondents were from contacts of TB cases, 4 (20%) respondents were HIV positive patients and 2(10%) respondents were Health workers to make a total of 18(90%) respondents with misconceptions towards TB preventive treatment

**FIG 6. Attitudes of respondents**



N=20

The pie chart above shows that 3(15%) respondents had positive attitudes while 17(85%) respondents had negative attitudes towards TB preventive Treatment

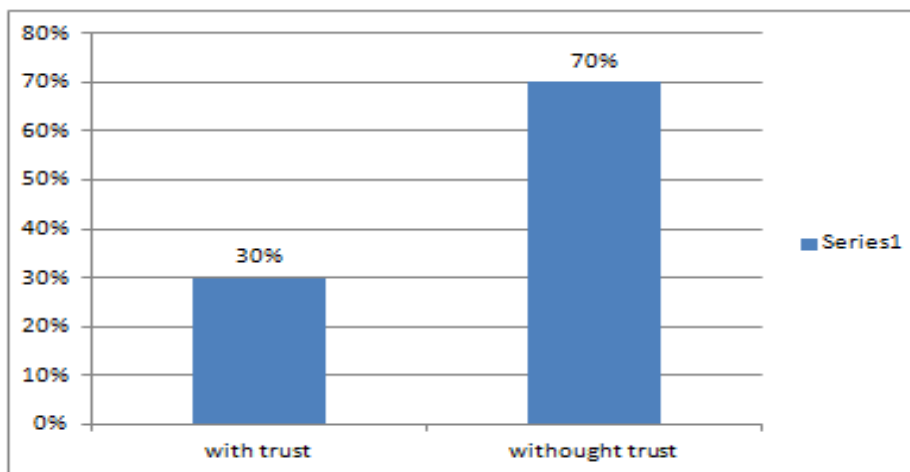
**Table 5. Stigma and fear of respondents on TB preventive treatment**

| STIGMA AND FEAR         | NUMBER OF RESPONDENTS | PERCENTAGE |
|-------------------------|-----------------------|------------|
| with sigma and fear     | 16                    | 80%        |
| with no stigma and fear | 4                     | 20%        |
| TOTAL                   | 20                    | 100%       |

N=20

The table above shows that 16(80%) respondents had stigma and fear while 4(20%) respondents were with no stigma and fear

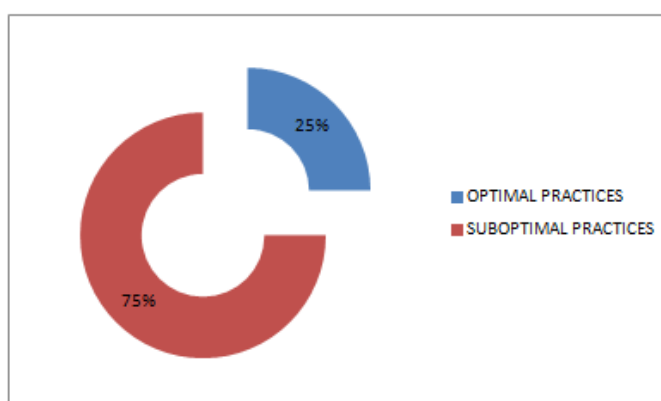
**FIG 7. Trust of respondents in health care system**



N=20

The bar graph above show that 6 (30%) respondents have trust in the Health care system and 14 (70%) respondents do not have trust in health care system

**FIG 8. Suboptimal Practices of respondents**



N=20

The pie chart above shows that 5 (25%) respondents had optimal practices and 15(75%) respondents had suboptimal practices on TB preventive treatment.

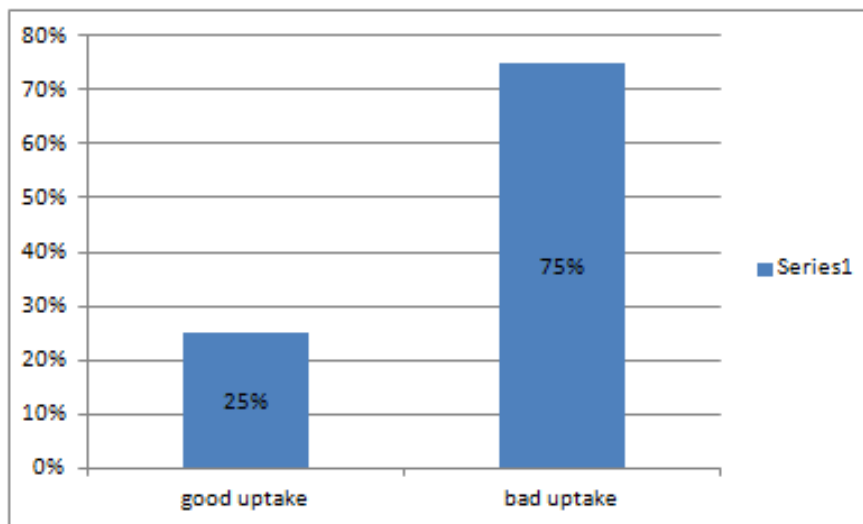
**Table 6. Adherence of respondents on treatment regiments**

| ADDERENCE      | NUMBER OF RESPONDENTS | PERCENTAGE |
|----------------|-----------------------|------------|
| good adherence | 5                     | 25%        |
| poor adherence | 15                    | 75%        |
| Total          | 20                    | 100%       |

N=20

The table above shows that 5(25%) respondents had good adherence and 15(75%) respondents had poor adherence to TB preventive treatment regiments

**FIG 9. Uptake of TB preventive treatment of respondents**



N=20

The bar above show that 5(25%) respondents had good uptake and 15(75%) respondents had bad uptake of TB preventive treatment

**Table 7. Bad uptake of TB treatment by risk group of respondents**

| BAD UPTAKE BY RISK GROUP | NUMBER OF RESPONDENTS | PERCENTAGE |
|--------------------------|-----------------------|------------|
| HIV patients             | 1                     | 5%         |
| Heath workers            | 6                     | 30%        |
| contacts of index cases  | 8                     | 40%        |
| TOTAL                    | 15                    | 75%        |

N=20

The table shows that 1(5%) from the HIV positive, 6(30%) health workers and 8(40%) contacts of TB index cases to make a total of 15(75%) respondents that had bad uptake of TB preventive treatment.

## DISCUSSIONS

### Gender and marital status

Data obtained indicates that the respondents who responded to the questionnaires, 14 (70%) were females while 6 (30%) were males. Also 8 (40%) of the respondents were single, 6 (30%) of the respondents were married, 5 (25%) were divorced whilst 1 (5%) of the respondents were divorced

### High risk group ranking by type of exposure

Information gathered revealed that 8(40%) respondents were contacts of TB cases, 6 (30%) respondents were Health workers and 6(30%) respondents were HIV positive patients.

### Demographic and Education level and Religion

The results from the study showed that 4 (20%) of the respondents were of the age group 15-20 years, 10 (50%) of the respondents were from 21-30 years age group, 4 (20%) were of the age group 30 – 40 years whilst 2 (10%) of the respondents were above 40 years. Also on education level it was revealed that 1 (5%) of the respondents never attended school, 4 (20%) had attained primary education, 14 (70%) had attained Tertiary level of education whilst 1 (5%) of the respondents had attained secondary education. On religion it was discovered that 9 (45%) of the respondents were Christians, 1 (5%) were Moslems, 10 (50%) Of the respondents were of the Traditional religion.

### Knowledge of TB preventive treatment

Findings indicated that 2 (10%) of the respondents were knowledgeable and 18(90%) of the respondents were not knowledgeable about TB preventive treatment. In order to get more information about knowledge on TB from causative agent, signs and symptoms as well prevention and control level of misconception were further asses and showed that 18(90%) respondents had misconceptions while 2(10%) respondents do not have misconceptions towards TB preventive treatment activities. Misconceptions were also measured from each risk group and it was discovered that 12(60%) respondents were from contacts of TB cases, 4 (20%) respondents were HIV positive patients and 2(10%) respondents were Health workers to make a total of 18(90%) respondents with misconceptions towards TB preventive treatment. This clearly indicates that there is less knowledge about TB prevention and control among the TPT eligible groups which include misconceptions especially the contacts of TB patients group followed by people living with HIV and finally exposed health workers

### Attitudes of respondents

Findings from study proved that 3(15%) respondents had positive attitudes while 17(85%) respondents had negative attitudes towards TB preventive Treatment. Stigma and fear were analyzed under attitudes and revealed that 16(80%) respondents had stigma and fear while 4(20%) respondents were with no stigma and fear. Also it was revealed that 6 (30%) respondents have trust in the Health care system and 14 (70%) respondents do not have trust in health care system. This clearly shows that there in negative attitudes towards TB preventive treatment evidenced by stigma and fear of discrimination and lack of trust in the health system.

### Suboptimal Practices of respondents

Information obtained from practices of respondents towards TB prevention and control measures revealed that 5 (25%) of the respondents had optimal practices and 15(75%) of respondents had suboptimal practices on TB preventive treatment. One key factor of these practices was further analyzed under adherence to treatment regimen hence the results showed that 5(25%) respondents had good adherence and 15(25%) respondents had poor adherence to TB preventive treatment regiments. Another indicator of practices was measured under the uptake of eligible population on treatment regiments and it was discovered that 5(25%) respondents had good

uptake and 15(75%) respondents had bad uptake of TB preventive treatment. Uptake of TB treatment was further assessed basing on risk groups reflected that 1(5%) from the HIV positive, 6(30%) health workers and 8(40%) contacts of TB index cases to make a total of 15(75%) respondents that had bad uptake of TB preventive treatment. The study revealed that eligible populations have suboptimal practices towards TB preventive treatment which is evidenced by poor adherence to treatment regiments as well as poor uptake of TB preventive treatment.

## CONCLUSION

Tuberculosis (TB) is a leading infectious disease cause of death worldwide. TB preventive treatment (TPT) is critical to reducing TB incidence, yet uptake remains suboptimal in many settings. Understanding knowledge, attitudes, and practices (KAP) related to TPT is important to inform strategies to improve access and adherence. A cross-sectional KAP survey was conducted among a representative sample of adults in Chipinge District Manicaland province between January to June 2024. Participants were interviewed using structured questionnaires to assess their knowledge of TB and TPT, attitudes towards TPT, and self-reported practices related to TPT uptake and completion. Descriptive statistics and regression analyses were used to identify factors associated with TPT knowledge, attitudes, and completion. The study population was stratified into three risk groups (Health workers, People living with HIV/AIDS, contacts of TB cases) A total sample of 20 was extrapolated from the population. This sample represented 30% of the study population 8(40%) respondents were contacts of TB cases, 6 (30%) respondents were Health workers and 6(30%) respondents were HIV positive patients. This study reveals important gaps in knowledge, negative attitudes, and incomplete uptake of TPT in this setting. The findings underscore the need for multi-faceted interventions to improve TPT awareness, acceptability, and adherence within this population. Targeted education, community engagement, and health system strengthening are recommended to overcome the identified barrier.

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3. *The end TB strategy, World Health Organization 2015.*
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7. *Guidelines for Programmatic Management of Drug Resistant Tuberculosis in Zimbabwe 2023 edition.*
8. *Definitions and reporting frame work 2013 revision (updated December 20 14 to 2020) .Geneva. World Health Organization 2013.*
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10. *National guidelines for community engagement in TB prevention and care MOHCC Harare 2014*

## APPENDICES

### Participant's informed consent form for officials

### Appendix A

My name is Muyaradzi Muchararadza a fourth year Environmental Health student at Chinhoyi University. I am conducting a research on the topic entitled: Assessment of knowledge, attitudes and practices on TB preventive treatment in Chipinge district and i seek to gather information on this topic.

Take note

- Participation in this survey is voluntary and totally anonymous.
- Do not write your name on this questionnaire.

- Your answers cannot be matched to you in any way.
- The answers you give will be kept private.
- You are kindly asked to read the questionnaire carefully and fill in the appropriate answers.

Please keep in mind that each person is different from the other and that in this questionnaire there are no right, wrong or desirable answers. Answer the questions based on what you really know, feel, or do. Thank you for filling this questionnaire honestly.

### Consent to the participant in this study

I confirm that the person asking my consent to participate in this study has explained to me the purpose, procedure, discomforts and benefits of this study.

I have also received read and understood information about this study

I am aware that the findings of this study, including personal detail will be processed anonymously into the research report.

I am participating voluntarily.

I have had time to ask my questions and have no objection to participate in this study.

I understood that there is no penalty if I wish to withdraw from the study and my withdrawal will not affect me in any way.

Participant's signature:

STRUCTURED QUESTIONNAIRE FOR STUDY POPULATION

## Appendix B

### Details of the participant

Age:

Gender:

### Details of questionnaire

Date:-----

Start time: ----- end time:-----

Questions:

### Section 1: Knowledge about TB Preventive Treatment

1. Have you heard about TB preventive treatment before?

- Yes



- No

- Not sure

2. What is the purpose of TB preventive treatment?

- To treat active TB disease

- To prevent TB infection from progressing to active disease

- To cure TB disease

- I don't know

3. Which of the following groups are recommended to receive TB preventive treatment? (Select all that apply)

- People living with HIV

- Close contacts of someone with active TB

- Older adults

- Healthcare workers

- People with weakened immune systems

- I don't know

4. What type of medication is typically used for TB preventive treatment?

- Isoniazid

- Rifampicin

- Pyrazinamide

- I don't know

## **Section 2: Attitudes towards TB Preventive Treatment**

1. How concerned are you about getting TB?

- Very concerned

- Somewhat concerned

- Not at all concerned

- Not sure

2. If recommended, how willing would you be to take TB preventive treatment?

- Very willing

- Somewhat willing

- Not willing

- Not sure

3. What factors would make you hesitant to take TB preventive treatment? (Select all that apply)

- Worry about side effects

- Concern about the length of treatment

- Lack of trust in healthcare system

- Perceived low risk of getting TB

- Financial/logistical barriers to accessing treatment

- Other: \_\_\_\_\_

### **Section 3: Practices and Healthcare Utilization**

1. Have you ever been tested for TB infection?

- Yes

- No

- Not sure

2. Have you ever been offered TB preventive treatment before?

- Yes

- No

- Not sure

3. Do you regularly see a healthcare provider for checkups or other care?

- Yes, regularly

- Sometimes

- No, rarely or never