

**A STUDY TO DETERMINE FACTORS  
ASSOCIATED WITH UTILISATION OF  
TRAINED TUBERCULOSIS TREATMENT  
SUPPORTERS BY TUBERCULOSIS PATIENTS  
IN LUNDAZI DISTRICT**

**BY**

**METHUSELAH JERE**

**UNZA**

**2008**

**A STUDY TO DETERMINE FACTORS ASSOCIATED  
WITH UTILISATION OF TRAINED TUBERCULOSIS  
TREATMENT SUPPORTERS BY TUBERCULOSIS  
PATIENTS IN LUNDAZI DISTRICT**

**BY**

**METHUSELAH JERE**

**ZEN- 1997 (MWAMI)**

**ZRN – 2002 (LUSAKA)**

**SUPERVISOR: MRS D CHANDA**

**A RESEARCH STUDY SUBMITTED IN PARTIAL  
FULFILMENT FOR THE AWARD OF BACHELOR OF  
SCIENCE IN NURSING DEGREE IN THE  
DEPARTMENT OF POST BASIC NURSING.**

**SCHOOL OF MEDICINE  
UNIVERSITY OF ZAMBIA**

**UNZA, LUSAKA**

**FEBRUARY 2008**

## **ACKNOWLEDGEMENT**

First and foremost I would like to register heart felt thanks to the Ministry of Health for affording me this opportunity to under take a Bachelor of Science in Nursing program at the University of Zambia.

I would like, also, to thank Mrs. D. Chanda for her untiring efforts in guiding and supervising me in seeing that the development of this research proposal becomes a reality.

I am, also, grateful to the District Director of Health (DDH) – Lundazi, for allowing me to collect data in his catchment area.

I would like to thank Mr. P. M. Malunga for their financial and material support, and encouragement for me to reach this far.

I would like, also, to acknowledge my wife Florence Jere, my children Gezile, Given and Gift, and the entire family for encouraging me to continue with this program despite all the difficulties I have met on the way.

## TABLE OF CONTENTS

<b>Content</b>	<b>page</b>
Acknowledgement .....	i
Table of contents .....	ii
List of tables .....	vi
List of figures .....	ix
Declaration .....	x
Statement .....	xi
Dedication .....	xii
List of abbreviations .....	xiii
Abstract .....	xiv
Appendix I: Interview Schedule .....	xvi
Appendix II: Work schedule .....	xxvii
Appendix III: Gantt chart .....	xxviii
Appendix IV: Budget and the budget justification .....	xxix
Appendix V: Permission to under take a pilot study .....	xxxii
Appendix VI: Permission to undertake a research study .....	xxxii

### CHAPTER ONE

1.0	Introduction .....	1
1.1	Background Information .....	1
1.1.1	Economic Status .....	1
1.1.2	Health Care System .....	2
1.2	Statement of the Problem .....	5
1.3	Factors associated to the low utilization of trained Tuberculosis Treatment Supporters.....	7
1.3.1	Service-related factors .....	7
1.3.1.1	Inadequate Sensitization .....	7
1.3.1.2	Attitude .....	8
1.3.1.3	Lack of confidentiality among trained TB Treatment Supporters .....	8

1.3.1.4	Distance .....	8
1.3.1.5	Non-availability of trained TB Treatment Supporters .....	8
1.3.1.6	Erratic Supply of Drugs .....	9
1.3.2	Disease-related factors .....	9
1.3.2.1	Knowledge .....	9
1.3.2.2	Age of the TB client.....	9
1.3.2.3	Loss of hope .....	9
1.3.3	Socio-economic-related factors .....	10
1.3.3.1	Fear of stigmatization and discrimination .....	10
1.3.3.2	Cultural beliefs.....	10
1.3.3.3	Religious Factors .....	10
1.3.3.4	Educational level .....	11
1.3.3.5	Age of the TB client .....	11
1.4	Problem Analysis .....	12
1.5	Justification .....	13
1.6	Research Objectives .....	13
1.6.1	General Objective .....	14
1.6.2	Specific Objectives .....	14
1.7	Hypotheses .....	14
1.8	Operational Definition of Terms .....	15
1.8.1	TB Treatment Supporter .....	15
1.8.2	Distance .....	15
1.8.3	Utilization .....	15
1.8.4	Attitude .....	15
1.8.5	Confidentiality .....	16
1.8.6	Availability of TB Treatment Supporters .....	16
1.9	Research study Variables and Cut-off Points .....	16
1.9.1	Independent Variable .....	16
1.9.2	Dependent Variable .....	16

## **CHAPTER TWO**

2	Literature Review .....	19
2.1	Introduction .....	19
2.2	Global Perspective .....	20
2.3	Regional Perspective .....	22
2.4	National Perspective .....	24
2.5	Conclusion .....	27

## **CHAPTER THREE**

3	Research Methodology.....	28
3.1	Research Design .....	28
3.2	Research Setting .....	28
3.3	Study Population .....	29
3.4	Sample Selection .....	29
3.5	Sample Size .....	30
3.6	Data Collection Tool .....	30
3.7	Data Collection Technique .....	31
3.8	Pilot Study .....	32
3.9	Validity .....	32
3.10	Reliability .....	32
3.11	Ethical and Cultural Consideration .....	33

## **CHAPTER FOUR**

4.0	Data Analysis and Presentation of Findings .....	34
4.1	Data Analysis .....	34
4.2	Presentation of Findings .....	35
4.2.1	Section A: Demographic Characteristics .....	35
4.2.2	Section B: Knowledge Questions .....	38
4.2.3	Section C: Practice Questions .....	41
4.2.4	Section D: Attitude Questions .....	48
4.2.5	Section E: Cross Tabulations .....	50

## **CHAPTER FIVE**

5.0	Discussion of Findings and Implications to the Health Care System .....	62
5.1	Demographic Characteristics of the Respondents .....	62
5.2	Discussion of Variables .....	64
5.2.1	Knowledge about the Availability and Functions of Trained TB Treatment Supporters .....	64
5.2.2	Practice .....	66
5.2.3	Attitude .....	69
5.3	Implications on the Health Care System .....	71
5.3.1	Practice .....	71
5.3.2	Research .....	72
5.3.3	Education .....	72
5.3.4	Administration .....	73
5.4	Conclusion .....	73
5.5	Recommendations .....	74
5.6	Plans for Dissemination of Findings .....	75
5.7	Limitations of the Study .....	76
	<b>REFERENCES .....</b>	<b>77</b>

## LIST OF TABLES

Table 1: Utilization of TB Treatment Supporters in Lundazi district .....	5
Table 2: Variables and Cut Offs Points .....	17
Table 3: Demographic Data .....	35
Table 4: Who is a Trained TB Treatment Supporter? .....	39
Table 5: Who is the Respondent's TB Treatment Supporter? .....	40
Table 6: Sex of the Respondent's TB Treatment Supporter .....	41
Table 7: Why Respondent does not discuss with His/Her Treatment Supporter .....	42
Table 8: Respondent's Reason for choosing His/Her treatment Supporter .....	43
Table 9: Respondent's value of their Treatment Supporter .....	44
Table 10: Respondents who have trained TB Treatment Supporters in the Community..	45
Table 11: Distance to the nearest trained TB Treatment Supporter .....	45
Table 12: Respondents who missed a Dose .....	46
Table 13: Duration that the respondents missed taking their Drugs .....	46
Table 14: Respondents reasons for missing their Anti-TB drugs .....	47
Table 15: Respondent's belief about TB being a curable disease .....	48
Table 16: Respondent's who have Cultural Restrictions .....	49
Table 17: Respondents' Level of Knowledge in relation to Sex .....	50
Table 18: Respondents' Level of Knowledge in relation to Age .....	51
Table 19: Respondent's Level of Knowledge in relation to Marital Status.....	52
Table 20: Respondent's Level of Knowledge in relation to the Level of Education .....	53
Table 21: Respondent's Level of Knowledge in relation to their Practice about the utilisation of trained TB Treatment Supporters.....	54

Table 22: Respondent's Level of Knowledge in relation to their Attitude about the utilisation of trained TB Treatment Supporters.....	54
Table 23: Respondent's Practice about the utilisation of trained TB Treatment Supporters in relation to Sex .....	55
Table 24: Respondent's Practice about the utilisation of trained TB Treatment Supporters in relation to Age .....	55
Table 25: Respondent's Practice about the utilisation of trained TB Treatment Supporters in relation to their Marital Status .....	56
Table 26: Respondent's Practice about the utilisation of trained TB Treatment Supporters in relation to their Level of Education .....	56
Table 27: Respondent's Attitude about the utilisation of trained TB Treatment Supporters in relation to their Sex .....	57
Table 28: Respondent's Attitude about the utilisation of trained TB Treatment Supporters in relation to their Age .....	57
Table 29: Respondent's Attitude about the utilisation of trained TB Treatment Supporters in relation to their Marital Status .....	58
Table 30: Respondent's Attitude about the utilisation of trained TB Treatment Supporters in relation to their Marital Status .....	58
Table 31: Respondent's practice in relation to their attitude about the availability and utilisation of trained TB Treatment Supporters .....	59
Table 32: Respondents who have trained TB Treatment Supporters in community in relation to their TB Treatment Supporters .....	60

**Table 33: Respondent's Distance to the nearest trained TB Treatment**

**Supporter in relation to who their TB Treatment Supporter is? ..... 61**

## LIST OF FIGURES

Figure 1: Problem Analysis .....	12
Figure 2: Respondent's who have heard of DOT Plan .....	38
Figure 3: Respondent's who have heard of Trained TB Treatment Supporters .....	38
Figure 4: Where did the Respondent Hear about trained TB Treatment Supporter .....	39
Figure 5: Functions of the Trained TB Treatment Supporter .....	40
Figure 6: Respondents who hold discussions with their TB Treatment Supporter .....	41
Figure 7: What Respondent Discuss With His/Her Treatment Supporter .....	42
Figure 8: What the Treatment Supporter does for the Respondent .....	44
Figure 9: Respondents reasons for not utilising trained TB Treatment Supporters .....	47
Figure 10: Factors Enhancing Adherence .....	48
Figure 11: Respondent's Cultural Restrictions .....	49
Figure 12: Respondent's Opinion about the use of trained TB Treatment Supporters....	50

## DECLARATION

I, hereby declare that the work presented in this study for a Bachelor of Science degree in nursing has not been presented either wholly or in part, for any other degree and is not being currently submitted to any other degree.

Signed: ..... *Rea* .....

(Candidate)

Date: ..... *31/03/08* .....

Approved: ..... *Alhade* .....

(Supervising Lecturer)

Date: ..... *03/04/08* .....

## STATEMENT

I, *Jere Methuselah*, do hereby certify that this study is entirely the result of my own independent investigations. The various sources to which I am indebted are clearly indicated in the text and reference.

Signed: .....*Jere*.....

Date: .....*31/03/08*.....

## **DEDICATION**

To

My late mother, Rosemary Miti, whose encouragements though post humours, continue  
to inspire all my life's endeavours

To

My father, Mr. Geryford Fikizolo Ndabambi Jere, for his support and ensuring that I go  
to school and get the knowledge that has seen me this far

To

My wife, Florence Ndhlovu Jere, for the love, encouragement and support that has made  
it possible for me to accomplish my ambitions

To

My children Gezile, Given and Gift for the encouragement and allowing me to be away  
from them throughout the whole period I have been pursuing my studies

To

The Almighty God for the blessing of good health throughout my studies.

## **LIST OF ABBREVIATIONS**

<b>AIDS</b>	<b>Acquired Immunodeficiency Syndrome</b>
<b>CBoH</b>	<b>Central Board of Health</b>
<b>DOT</b>	<b>Directly Observed Therapy</b>
<b>DOTS</b>	<b>Direct Observed Treatment Short course</b>
<b>DRC</b>	<b>Democratic Republic of Congo</b>
<b>HBC</b>	<b>Home-Based Care</b>
<b>HIV</b>	<b>Human Immunodeficiency Virus</b>
<b>LDHMT</b>	<b>Lundazi District Health Management Team</b>
<b>MDR</b>	<b>Multi-Drug Resistance</b>
<b>MoH</b>	<b>Ministry of Health</b>
<b>MTDP</b>	<b>Medium Term Development Plan</b>
<b>NTCP</b>	<b>National TB Control Programme</b>
<b>NTLP</b>	<b>National Tuberculosis and Leprosy Control Program</b>
<b>PHC</b>	<b>Primary Health Care</b>
<b>SA</b>	<b>South Africa</b>
<b>SAP</b>	<b>Structural Adjustment Programme</b>
<b>SSA</b>	<b>Sub-Saharan Africa</b>
<b>TB</b>	<b>Tuberculosis</b>
<b>TIPEC</b>	<b>Tuberculosis Integrated Project in Eastern and Central Provinces</b>
<b>WFP</b>	<b>World Food Programme</b>
<b>WHO</b>	<b>World Health Organisation</b>
<b>XDR</b>	<b>Extremely Drug-Resistant</b>

## **ABSTRACT**

This study is aimed at determining factors associated with the utilisation of the trained Tuberculosis (TB) Treatment Supporters in Lundazi district. The use of Trained TB treatment supporters has been promoted as one of the strategy to increase the cure rate, reduce the defaulter rate, reduce relapses and prevent the development of Multi-Drug Resistance (MDR) Tuberculosis. There are various factors that are associated with the utilization of trained TB Treatment Supporters such as socio-economic factors which include fear of stigmatization and discrimination, cultural beliefs, religious factors, educational level and age of the TB client. Other factors include service-related factors which are inadequate sensitization, attitude, lack of confidentiality among trained TB treatment supporters, distance, Non-availability of trained TB treatment supporters and erratic supply of drugs, and disease-related factors which are knowledge, chronicity of TB and loss of hope. The researcher investigated the knowledge, attitude and practice of the TB client towards the utilisation of trained TB treatment supporters in Lundazi district.

Literature search of the studies done globally, regionally and locally has already indicated the need to involve the trained TB treatment supporters in the fight against TB. Hence, the need to determine the factors associated with the utilisation of trained TB treatment supporters. This is a study which sought to examine how the TB clients value the services of the trained TB treatment supporters.

A cross-sectional, non-interventional, descriptive study was done by collecting data using an interview schedule for TB clients. Before collecting data for the main study a pilot study was done in Chama, at Chama district hospital, in which only 5 TB clients/patients (10% of the main study sample size) were interviewed. This was to enable the researcher verify the validity and reliability of the interview schedule to be used in the main study. Data for the main study was collected from 31<sup>st</sup> August 2007 to 9<sup>th</sup> September 2007, from 50 TB clients/patients, from the three health centres (Lundazi district hospital, Lundazi urban health centre and Mwase-Lundazi health centre) in Lundazi district.

Data analysis was done manually using a scientific calculator and a data master sheet. Data was checked for completeness and inconsistencies, categorized and coded before being entered on the data master sheet for easy analysis. Cross tabulations, frequency tables and percentages of important variables were prepared to show their relationships.

The study revealed that there is a low utilisation of trained TB treatment supporters in the district; only 28% of the 50 respondents were being supervised by the trained TB treatment supporters. The study also revealed that 76% of the respondents do discuss about their TB treatment with their treatment supporters. In respect of the availability of trained TB treatment supporters in the communities and their utilisation by the TB clients, the study revealed that out of the 26 respondents who had trained TB treatment supporters in their communities, 46.2% of them had relatives as their treatment supporters and among these respondents the majority 41.7% of them would take 1 – 2 hours to reach the nearest the trained TB treatment supporters. The study revealed that 52% of the respondents had trained TB treatment supporters in their communities.

Based on the above findings, the study recommends that; there is need to increase the grants to the district, to enable the district purchase the necessary equipment and supplies for the trained TB treatment supporters carry out their functions effectively; the government need to identify and partner with stakeholders such as World Food Programme (WFP) and Care International, who are specializing in TB control and prevention programmes to supplement there inadequacy in terms of training TB treatment supporters and purchasing of equipments and supplies; there is need that the Lundazi district intensifies the awareness and sensitisation programmes about the availability and functions of the trained TB treatment supporters in the community, to enable the communities utilize them appropriately. There is also need for the district to carry out a similar study at a larger scale in order to obtain more accurate information and generalise the findings. It is hoped that these recommendations would help the TB clients to better utilize the services of the trained TB treatment supporters in Lundazi District.

## **CHAPTER ONE**

### **1.0 INTRODUCTION**

#### **1.1 BACKGROUND INFORMATION**

Zambia is a developing country situated in the southern part of Africa, a region called the sub-Saharan Africa. Zambia is a land-locked country covering an area of 752,614 square kilometers (Central Statistical Office, 2003). It covers about 2.5 percent of Africa. It shares borders with the Democratic Republic of Congo (DRC) and Tanzania in the north; Malawi and Mozambique in the east; Zimbabwe and Botswana in the south; Namibia in the southwest and Angola in the west (Central Statistical Office, 2003). Administratively, the country is divided into nine provinces and 73 districts. Of the nine provinces, two are predominantly urban, namely Lusaka and Copperbelt provinces. The remaining provinces—Central, Eastern, Northern, Luapula, North-Western, Western and Southern—are predominantly rural provinces. Four of ten Zambians live in urban areas. Lundazi is one of the 73 districts of Zambia. Lundazi district is situated approximately 170km north of Chipata the provincial headquarters of Eastern Province of Zambia.

Zambia has a tropical type of climate and vegetation with three distinct seasons; the cool dry season (May to August), the hot dry season (September to October) and warm wet season (November to April). The northern parts of the country receive an average rainfall of 1400 mm while the drought prone southern parts receive about 600mm of rainfall per year.

##### **1.1.1 Economic Status**

Zambia has a mixed economy consisting of a modern urban sector that, geographically, follows the rail line and a rural agricultural sector. For a long time, the modern sector has been dominated by parastatal organizations, while private businesses have predominated in construction and agriculture sectors. Since 1991, with the introduction of a liberalized market-oriented economy, the parastatals have been privatized and, in some cases, liquidated. Copper mining is the country's main economic activity, accounting for 95 percent of export earnings and contributing 45 percent of government revenue during the decade following independence (1965-1975) (Central Statistical Office, 2003). In the

mid-1970s following a sharp decline in copper prices and a sharp increase in oil prices, the country's economy deteriorated. Attempts were made to minimize dependency on copper exports by diversifying the economy through the creation of import substitution parastatals. This did not achieve the desired results.

The country's poor economic status has made it impossible to embark on wide TB prevention campaigns. Poverty levels have risen from about 69.2% in 1992 to as high as 73% in 2004 (Central Statistical Office, 2003). Due to high poverty levels, most families cannot afford to provide decent meals and accommodation. This has forced most families to live in small and poorly structured houses leading to over crowding which is a major predisposing factor to the transmission of tuberculosis. Families have also failed to provide nutritious diets making their bodies unable to fight infections such as TB. On the other hand, industrialization has led to urbanization in major towns and cities. Urbanization has further led to the mushrooming of shanty compounds, which are characterized by poor sanitation, poor housing, and over crowding. These factors have led to easy transmission of diseases like diarrhea and tuberculosis which burden the health care system.

### **1.1.2 Health Care System**

At independence, in 1964, Zambia had inherited a vibrant economy which was mainly supported by high earnings from copper exports. The country's population was around 4.3 million people with an annual growth rate of 3.2% (Central Statistical Office, 2003). The Government Republic of Zambia was able to fulfil its obligation of providing social services to its citizens. New health facilities such as hospitals, health centres and health training institutions were constructed and the health care services were declared free. The free health care services did not last long as in the 1970's; Zambia started experiencing an economic malaise due to the falling copper prices at the London Metal Exchange. The world economic depression in the 1970s that resulted from the increase in oil prices at the international market also contributed to Zambia's economic decline.

The rapid population increase and the emerging of new diseases put a strain on the health system. As a result the health sector could not be sustained by the declining economy and the health sector suffered a serious setback. The country saw a general decline in the health status of the population and wide spread shortages of resources for health. Most of the health infrastructure and equipment became obsolete and the health budget could not support reinvestment in the health sector.

In the 1980s, the Zambian government started making adjustments aimed at correcting the ailing economy. The Zambian government first introduced the Structural Adjustment Programme (SAP). However, the SAP could not produce the desired results. In the 1990s, following the reintroduction of plural politics, Zambia saw a major shift in the health care system. Zambia, like many countries in developing world, embarked on an ambitious plan aimed at resuscitating the health sector.

In 1991, a vision was conceived and articulated “providing Zambians with equity of access to quality, cost effective health care as close to the family as possible”. This vision gave birth to the National Health Reforms which were intended to transform the vision into reality. Cost sharing schemes were introduced to assist in financing the health sector. Exemptions were extended to chronic diseases like tuberculosis, which is of public health concern.

In response to the global declaration of TB as an emergency the government of Zambia declared Tuberculosis a national disaster on the 4<sup>th</sup> of January 1999 by the then Minister of Health, Professor Nkandu Luo (MoH, 2000: 16). The declaration also led to the establishment of National Tuberculosis and Leprosy Control Program (NTLP) whose objectives were as follows.

1. To reduce morbidity and mortality from TB through effective treatment of cases using the direct observed treatment short course (DOTS).
2. To reduce the incidence and prevalence of TB in Zambia through case detection and early diagnosis.

3. To reduce physical and psychosocial suffering of the population from tuberculosis which results from emotional and physical exhaustion families experience as they look after a patient suffering from TB within the household.

In view of the above Strategies TB has been considered as one of the priority areas that need urgent attention. DOTS strategy was adopted as the main strategies in the control and treatment of TB. Due to the very high patient to staff ratio in the health service, the importance of partnering with the community to provide a high quality of service for the TB patient has been recognized. Zambia was among the countries to pioneer the integration of the community in the provision of health care for the TB patients through the community TB Care Project funded by WHO and carried out in Ndola in 1996 (CBoH/MoH, 2005: 1).

In 2004, the CBoH endorsed the integrated community-based DOTS approach to strengthen TB control activities in the district hospitals and health centres (CBoH/MoH, 2005:1). Effective implementation of the DOTS strategy as a measure to control the spread of TB requires commitment from all stakeholders such as governments, health care providers and the community. This approach is aimed at providing quality integrated TB services to the people by means of standardized diagnosis and care, and community-based treatment. In order to expand the community based DOTS strategy, health workers and community volunteer needed to be trained in each district. However, the need for standardization of training and practices was recognized and, therefore, a National Training Manual was found to be an essential tool to ensure that DOTS can be implemented effectively and uniformly throughout the country. But despite all these efforts by the Government, it has been noted that the trained TB treatment supporters are not being used as expected in Lundazi District, hence this study needs to be conducted in order to identify the associated factors to the low utilization of the trained TB treatment supporters.

## 1.2 STATEMENT OF THE PROBLEM

The current global tuberculosis (TB) epidemic has pressured health care managers, particularly in developing countries, to seek for alternative, innovative ways of delivering effective treatment to the large number of TB patients diagnosed annually. One strategy employed is directly observed therapy (DOT) for all patients. Directly observed therapy (DOT), defined by the WHO as “watching patients take their medication” (WHO 1999: 36) emphasizes the supervision and control of drug swallowing with the rationale that this supervision/controlling would lead to improved case-holding and cure rates. In high-burden settings innovation with this strategy has resulted into the use of lay community members (trained TB treatment supporters) to supervise TB patients during the duration of anti-TB treatment.

While the DOTS strategy has been widely implemented, still little understood are factors such as; the extent to which TB clients value it, the experiences of trained TB treatment supporters in providing support, the necessary conditions for ensuring a successful support program, and the likelihood of successful integration of an HIV/AIDS program into a successful TB DOTS program.

**Table 1: Utilization of TB Treatment Supporters in Lundazi district**

Year	No of trained TB Treatment Supporters	No of registered TB clients	No and percentage of TB clients supervised by trained TB Treatment Supporters
2004	153	335	260 (78%) approximately
2005	185	439	234 (54%) approximately

**Source: Lundazi District TB Treatment Register for 2004 - 2005**

The normal situation is to ensure the complete utilization of all the trained TB treatment supporters. But in Lundazi district which is the study location, the reverse obtains. Table 1 show that there is a low utilisation of trained TB treatment supporters of 24% magnitude between 2004 and 2005 according to available data in Lundazi district. This

low utilisation is against an increasing number of registered TB clients of 31% magnitude between 2004 and 2005 in Lundazi district.

The probable causes of this low utilisation of trained TB treatment supporters may be inadequate sensitization of the TB clients about the availability and presence of trained TB treatment supporters in the communities they are coming from, fear of stigmatization and discrimination, non availability of the trained TB treatment supporters in the communities and unhealthy socio-cultural factors.

Chanda (2006) states that the effects of this scenario can affect the TB clients negatively as it may lead to patients defaulting and failing to respond to TB treatment. Some of the clients may even die. The clients may even develop multi-drug resistance (MDR) TB strains, which is very easily transmissible and very difficult to treat. The families and the communities can also be affected negatively because they would be spending most of the time taking care of the sick, thereby reducing their income. The health care system will be affected negatively as the detection and cure rates will be affected. The nation at large would also be affected because it would be spending huge amounts of money on the health care system.

In 2004, Care International had bought bicycles for the trained TB treatment supporters to use as they are going to supervise DOTS. This motivated the trained TB treatment supporters and this saw approximately 78% of the TB clients being supervised by trained TB treatment supporters. In 2005 Lundazi DHMT in collaboration with Care International trained a further 185 TB treatment supporters hoping that the number of TB clients being supervised by trained TB treatment supporters would go up, but instead the number and percentage of the TB clients being supervised by trained TB treatment supporters went down. After seeing that the number of TB clients being supervised by trained TB treatment supporters went down in 2005, Lundazi DHMT trained some more 317 TB treatment supporters in 2006 without finding out why there was a low utilisation of trained TB treatment supporters by TB clients. However, this did not solve the problem and instead worsened the situation because by the end of 2006 only 59 (27.4%)

TB clients out of the 215 TB clients on the treatment Register were being supervised by the trained TB treatment supporters. No research in this area has been conducted, hence the need for this research.

### **1.3 FACTORS ASSOCIATED TO THE LOW UTILIZATION OF TRAINED TUBERCULOSIS TREATMENT SUPPORTERS.**

There are several factors which would contribute to the low utilization of TB treatment supporters among TB patients in Lundazi district. These factors are described under service-related factors, disease-related factors and socio-economic-related factors as below:

#### **1.3.1 SERVICE-RELATED FACTORS**

##### **1.3.1.1 Inadequate Sensitization**

Inadequate sensitization of the patients about the availability of trained TB treatment supporters in the community they are living may contribute to low utilization of these cadres. There are various methods of supervising the TB clients on treatment which are known as DOT plans. The various DOT Plans are as follows (CBoH, 2005: 27):

- DOT Plan C – this is where the patient is observed taking drugs at the clinic by the health workers. (C stands for Clinic)
- DOT Plan V – this is where a trained community volunteer observes the patient taking the drugs. (V stands for Volunteer).
- DOT Plan R- this is where the patient is observed taking the drugs by the relative. (R stands for Relative).

The type of the DOT plan to be used is determined by the patient's choice following the explanation by the health worker about the available DOT plans. Therefore, if the patient is not given adequate information about this cadre in the community will not be able to be willing to be monitored by this cadre. At which ever level that the patient is being observed, documentation of the drugs being taken is done to help in the monitoring of the patients' adherence to the treatment regimen.

### **1.3.1.2 Attitude**

The attitude of the trained TB treatment supporters may have an influence on their acceptance and use by the TB clients. Positive attitude encourages the TB clients to utilize the trained TB treatment supporters while negative attitude discourages them to utilize the trained TB treatment supporters. This is closely related to the confidence demonstrated by the trained TB treatment supporters. Confidence demonstrates expertise and this may also encourage TB clients to think of utilizing the trained TB treatment supporters. Lack of confidence by the trained TB treatment supporters may contribute to their low utilization by the TB clients.

### **1.3.1.3 Lack of confidentiality among trained TB treatment supporters**

Confidentiality is very cardinal in buying TB client's confidence and cooperation. Most of the people in the community associate TB to the HIV/AIDS and as such TB clients would prefer to be observed by their own relatives who would provide confidentiality and privacy than the trained TB treatment supporters. Therefore, it is more likely that the TB patients fear that the trained TB Treatment Supporters would not keep confidentiality, which may be forcing them to either choose DOT plan C or R as these may provide confidentiality and privacy as opposed to the trained TB treatment supporters.

### **1.3.1.4 Distance**

The physical distance between where the trained TB treatment supporters live and where the TB patients live can also strongly influence the utilization of trained TB treatment supporters by the TB clients. Long distances will promote low utilization while short distances may encourage the TB clients to utilize the trained TB treatment supporters adequately.

### **1.3.1.5 Non-availability of trained TB treatment supporters**

Non-availability of trained TB treatment supporters may also contribute to the inadequate sensitization of the TB clients in the community thereby compounding to the low utilization of the trained TB treatment supporters by TB clients. This may be attributed to the fact that trained TB treatment supporters have left their catchment areas. Therefore,

the TB clients may be left with the option of either being supervised by relatives or by the health worker at the clinic. The reasons why the trained TB treatment supporters can leave the community include:

- Some may get some employment which need them to leave their community
- Some may get married to far distant community
- Some may just decide to stop being active and reporting

#### **1.3.1.6 Erratic Supply of Drugs**

Erratic supply of drugs may also influence the utilisation of the trained TB treatment supporters by the TB clients. Erratic drug supply will promote low utilisation while TB treatment supporters are there to observe the TB patients taking the drugs on a daily basis, and as such the erratic supply of drugs will influence the utilization of trained TB treatment supporters by TB patients as their DOT plan.

### **1.3.2 DISEASE-RELATED FACTORS**

#### **1.3.2.1 Knowledge**

Knowledge about the availability and functions of the trained TB treatment supporters will greatly influence the TB patients to utilize them. There are several sources of information from which the TB patients can learn about the availability and functions of the trained TB treatment supporters. These sources may include health workers at the clinic, printed Information Education and Communication materials, books and pamphlets, relatives, friends and fellow TB patients.

#### **1.3.2.2 Chronicity of TB**

The chronicity of the disease and its complications may lead to the client's loss of hope in treatment. This may lead to them not utilizing the services of the trained TB treatment supporters.

#### **1.3.2.3 Loss of hope**

It is estimated that in Zambia, about 70% of TB patients are HIV positive (CBoH/MoH, 2004: 3-1). Due to this close link, TB patients may easily loss hope and feel frustrated.

This is more likely to discourage the TB patients from making use of the trained TB treatment supporters.

### **1.3.3 SOCIO-ECONOMIC-RELATED FACTORS**

#### **1.3.3.1 Fear of stigmatization and discrimination**

Fear of being stigmatized by the public may affect the utilization of the trained TB treatment supporters by the TB clients. There is a tendency to stigmatize TB patients as a result of its association with HIV/AIDS. It is estimated that in Zambia, about 70% of TB patients are HIV positive (CBoH/MoH, 2004: 3-1). This may also be affected by the knowledge of the TB clients about the functions and operation of the trained TB treatment supporters.

#### **1.3.3.2 Cultural beliefs**

TB patients are part of a larger society harboring varying cultural and tribal beliefs about any kind of sickness. Despite the scientific facts about the cure of TB, cultural beliefs held by the society may influence the TB client's views about the use of trained TB treatment supporters in the community. For example, it is believed that being helped by a non family member or a non health worker one may not recover from any sickness. As such TB clients may prefer going to traditional healers, health worker (at the health centre) or being helped by the family member rather than a community based agent such as a trained TB treatment supporters.

#### **1.3.3.3 Religious Factors**

The teachings of some religious denominations may influence its members to utilize the community based agents such as; trained TB treatment supporters, Home based care givers, counselors and many more others. In the same vain, some denominations such as Catholic Church have formed community based faith organisations which also provide care to patients with chronic diseases like TB. Therefore, some TB clients may opt to be observed by members of such organisations.

#### **1.3.3.4 Educational level**

The client's level of education will affect his/her ability to utilize the trained TB treatment supporters. This is true because the client's educational level will affect his/her knowledge about the disease and the existence of the trained TB treatment supporters. The client's level of education may be affected by poverty. Clients with low educational levels will easily be influenced by the traditional healers.

#### **1.3.3.5 Age of the TB client**

The age of the TB client will also affect the utilization of the trained TB treatment supporters. Children will not utilize the trained TB treatment supporters because they are taken care of by their parents/guardian where as the elderly TB clients will utilize the trained TB treatment supporters.

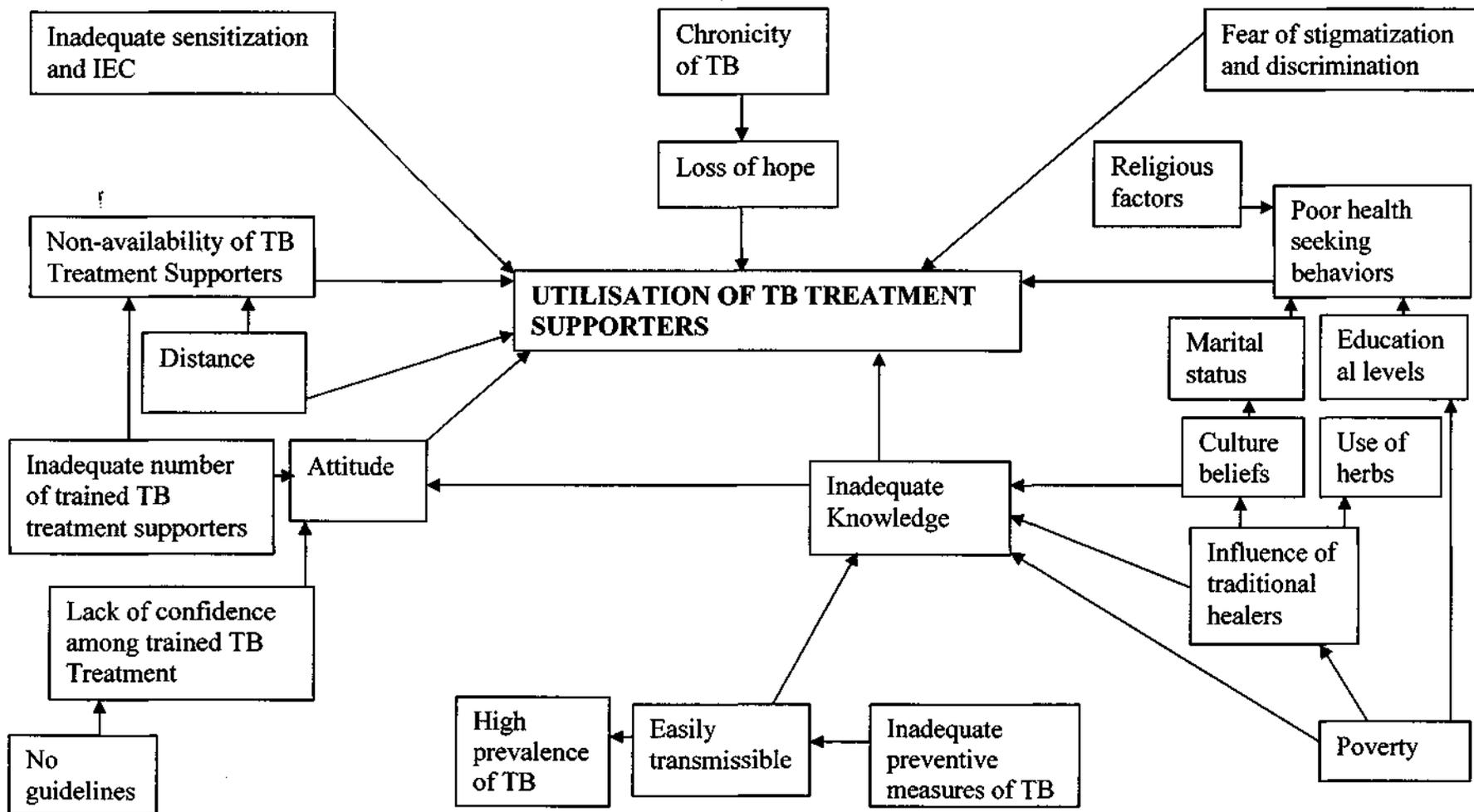
## 1.4 PROBLEM ANALYSIS

Figure 1: Problem Analysis

### Services-related factors

### Disease-related factors

### Socio-cultural factors



## **1.5 JUSTIFICATION**

This research is intended to generate solutions that will assist in improving utilisation of the trained TB treatment supporters in the district. The findings of the study will be communicated to Lundazi District Health Management Team (LDHMT), TB control programme managers and TB treatment supporters in order to improve their utilisation by TB clients in Lundazi district. The study also aims at providing a stepping stone for future studies to be conducted in Lundazi and other parts of the country in the area of TB treatment, control and prevention.

Inkhaya's study (2004) focused on finding out the trained TB treatment supporter's knowledge on TB treatment and prevention. The study revealed that the majority, 70% of the respondents had medium level of knowledge. This could also be the reason why there is a low utilisation of the trained TB treatment supporters by TB clients.

Meanwhile, a study done by Munthali (2005) focused on finding out which guardian is preferred by the TB clients as a TB treatment supporters by the TB clients, and it was found that most of the TB clients (80%) are comfortable with female treatment supporters, either as wives or relatives, and most of the respondents also preferred to be supervised by guardians rather than health workers.

None of these studies tried to look at why trained TB treatment supporters are not utilized as per expectation. In view of this fact, the research has to be conducted in order to establish the gaps contributing to the low utilization of trained TB treatment supporters by the TB clients.

## **1.6 RESEARCH OBJECTIVES**

"An objective is something that you are trying hard to achieve", (Summers et al 2003:1129). Research objective is a statement of purpose that indicates the nature of the inquiry, the key concept or phenomenon under investigation, and the group, community, or setting under study. (Polit, at el, 2001:97).

### **1.6.1 General Objective**

To establish the factors that are associated with the utilization of trained TB treatment supporters in Lundazi district

### **1.6.2 Specific Objectives**

- 1.6.2.1 To determine the knowledge that TB clients have on the utilization of trained TB treatment supporters in Lundazi district.
- 1.6.2.2 To determine how the TB clients utilize the trained TB treatment supporters in Lundazi district
- 1.6.2.3 To establish how the attitudes of the trained TB treatment supporters influence their utilization by TB clients in Lundazi district.
- 1.6.2.4 To establish the role of socio-cultural and traditional beliefs and norms play in the utilization of trained TB treatment supporters by the TB clients in Lundazi district.
- 1.6.2.5 To determine how service factors influence the utilization of trained TB treatment supporters by TB clients in Lundazi district.

## **1.7 HYPOTHESES**

“Hypothesis is a statement of the relationship between two variables”, (Treece and Treece, 1986:505).

The following hypotheses are a prediction of variables under study:

- 1.7.1 Increased sensitization of the TB clients about the availability of the trained TB treatment supporters in the community they are living would increase the utilization of the TB treatment supporters in Lundazi district.
- 1.7.2 The distance between the TB treatment supporters and the TB clients encourage or discourage TB clients from utilizing the trained TB treatment supporters in Lundazi district.
- 1.7.3 The utilization of trained TB treatment supporters by the TB clients in Lundazi district is associated with cultural beliefs.

**1.7.4** The attitudes of TB treatment supporters and lack of confidentiality among TB treatment supporters influence their low utilization among TB clients in Lundazi district.

## **1.8 OPERATIONAL DEFINITION OF TERMS**

### **1.8.1 Trained TB treatment supporters**

In this study a trained TB treatment supporter is a male or female member of the community where they live who is equipped with skills to participate in the implementation of the DOTS strategy, TB contact tracing, TB treatment defaulters tracing, recognizing side effects of TB drugs and basic counseling skills. S/He is the link between the patient and the health centre to encourage the patient to take the full treatment and report early any complications.

### **1.8.2 Distance**

In this study distance denotes the time that the trained TB treatment supporter takes to reach the home of the client. This study puts the time at less than 30 minutes that the trained TB treatment supporter is supposed to take to reach the vicinity of the TB client.

### **1.8.3 Utilization**

In this study utilisation is the process of making use of the trained TB treatment supporters among the TB clients in terms of directly observing them swallowing the tablets.

### **1.8.4 Attitude**

In this study attitude is the belief, thinking or feeling that the TB client have for the services offered by the trained TB treatment supporters. Positive attitude will be demonstrated by client believing that TB is curable, observing them swallowing tablets will enhance adherence and cure of TB as well as believing that good nutrition enhances healing. Whereas, negative attitude will be demonstrated by the client not believing that TB is caused by sleeping with a lady with abortion, client does not feel or believe that TB

is curable and does not adhere to treatment and does not recommend adherence to TB treatment to his friends.

### **1.8.5 Confidentiality**

In this study confidentiality is the ability to keep secrets about the patient's condition by the trained TB treatment supporters as they participate in the care of TB clients in their communities.

### **1.8.6 Availability of TB treatment supporters**

In this study availability is the presence of trained TB treatment supporters who are willing to take up the tasks/roles of the trained TB treatment supporters within the vicinity of the TB clients.

## **1.9 RESEARCH STUDY VARIABLES AND CUT-OFF POINTS**

A variable is a measurable or potentially measurable component of an object or event that may fluctuate in quantity or quality or that may be different in quantity or quality from one individual object or event to another individual object or event of the same general class (Basavanthappa, 2006: 81).

### **1.9.1 Dependent Variable**

Dependent variable is that factor which is observed and measured to determine the effect of the independent variable on the dependent variable (Polit, Beck and Hungler 2001:33). These variables change as a result of manipulation of the independent variables. The dependent variable in my study is "utilization of trained TB treatment supporters".

### **1.9.2 Independent Variable**

The independent variable is that phenomenon that is called the cause or stimulus. The independent variable is that factor which is measured or selected by the researcher to determine its relationship to an observed phenomenon, which constitutes the dependent variable. These include knowledge, practice and attitude.

**Table 2: Variables and Cut Offs Points**

<b>Variables</b>	<b>Indicator</b>	<b>Cut-Off Point (scores)</b>	<b>Question(s)</b>
1. Knowledge	High	The TB client is able to define who a TB treatment supporter is and knows their functions and how to utilize their services. Ability to get 10 to 14 correct responses of knowledge questions.	9 - 15
	Medium	When respondents score 5 to 9 correct responses of the knowledge questions	
	low	When respondents score less than 5 correct responses of knowledge questions	
2. Practice	Good	Good practice is demonstrated by the TB client discussing about his/her treatment with the TB treatment supporter. TB treatment supporter watches the client swallow tablets every day, takes the client to the clinic for review and encourages client to keep appointment dates and counsels the client when he/she is low. The TB treatment supporter takes less than 30 minutes from his/her home to get to the client's home. A score of 17 to 33 correct responses to practice questions demonstrate good practice.	16 - 27
	Poor	Poor/bad practice is demonstrated by client not discussing about his/her treatment with the TB treatment supporter, not being watched swallowing tablets by a TB treatment supporter on a daily basis, and the TB treatment supporter takes more than 30 minutes from his/her home to get to the home of the TB client. A score of less than 17 to practice questions indicate poor/bad practice.	

3. Attitude	Positive	<p>Is demonstrated by the client's thinking, beliefs and feelings about their treatment. In this study positive attitude will be shown by</p> <ul style="list-style-type: none"> <li>• the client believing that TB is curable, that when he/she accepts to be supervised by the TB treatment supporter by directly observing them swallowing their tablets will promote compliance and cure.</li> <li>• Client does not believe in the negative cultural causation of TB; that TB is caused by sleeping with a lady who has an abortion.</li> <li>• Client believes that an outsider can be a treatment supporter.</li> </ul> <p>A score of 9 to 12 to the attitude questions demonstrate positive attitude.</p>	28- 32
	Negative	<p>The client does not think belief and/or feel about their treatment like in the way above. A score of less than 9 to the attitude questions demonstrate negative attitude.</p>	

## CHAPTER TWO

### 2.0 LITERATURE REVIEW

#### 2.1 INTRODUCTION

Literature review is the process that involves finding, reading, understanding and forming conclusions about published information about a particular topic under study (Treece and Treece, 1986: 91). It is important because it gives the researcher a clear picture about a topic under study, it also gives directions on which methodology and instruments can be effectively used. It also forms a basis for comparison when it comes to drawing up of conclusions.

This chapter will review literature related to the knowledge that the TB clients have regarding their ailment, their adoption of TB treatment supporters and their attitude towards utilizing their services, at the global, regional and national levels in order to get a broad-based view on the utilisation of trained TB treatment supporters.

Tuberculosis is a serious public health, social and economic problem. This is so because if left untreated, each person with active TB may infect on average between 10 to 15 people every year (WHO, 2004: 26). Therefore, the key to TB care and prevention is to identify people who are infectious and provide prompt and effective treatment to make them non infectious to others within the shortest possible period.

“Tuberculosis (TB), a common and deadly infectious disease primarily affects the lungs, but can also affect any other part of the body such as the central nervous system, the lymphatic system, the circulatory system, the genitourinary system, and skeletal system. It is commonly caused by *mycobacterium tuberculosis*, though other forms of mycobacteria such as *mycobacterium bovis*, *mycobacterium africanum*, *mycobacterium canetti* and *mycobacterium microtti* can also cause tuberculosis” (Raviglione and O’Brien, 2004: 954). It is not an inherited disease. Infection with Tuberculosis is acquired through inhalation of air containing the TB bacilli from an infected person when they cough, sneeze, talk, or spit. It may also be acquired by direct contact with an infected person through kissing (Smeltzer and Bare, 2000: 437).

## **2.2 GLOBAL PERSPECTIVE**

Tuberculosis (TB), an ancient disease dating back to the era of the Egyptian Pharaohs, is today a global health problem affecting over 2 billion people. Despite over 40 years of TB treatment, the disease records an estimated 2 million annual deaths and is the leading cause of death among the world's known curable infectious diseases. Up to 1980, successful interventions had reduced TB to a manageable infectious disease. However, increased poverty, faltering health systems and the growth of the HIV epidemic have allowed for the silent yet lethal re-emergence of the TB epidemic. The persistence of TB, even though we know how to manage it, is a reflection of the general complacency that now exists in fighting the disease (WHO, 2004:9-11).

The 44<sup>th</sup> World Health Assembly (1991) recognized the growing importance of TB as a public health problem and potential for cost-effective control using currently available tools such as the Directly Observed Therapy Short-course (DOTS). The DOTS strategy focuses on ensuring that infectious (smear positive) TB patients are cured on the first attempt (WHO, 2004: 6-8). The five elements of the strategy are:

1. Government commitment to a national TB control programme as a specific health system activity, integrated into comprehensive primary care, and supported technically at national level.
2. Passive case detection by means of a patient-friendly and clinically efficient service based primarily on smear microscopy. People with symptoms indicative of TB who attend primary health care (PHC) facilities or seek treatment from health practitioners should be identified and investigated appropriately.
3. Standardized, directly observed, short-course treatment, prioritizing sputum smear positive (or infectious) patients. Directly observed treatment involves each TB patient having a treatment supporter or supervisor who observes the patient swallowing his or her drugs on a daily basis for at least the first two months of treatment. "Short-course"-refers to a treatment of six to eight months' duration

which is shorter than previous regimes which required treatment for nine to eighteen months.

4. Standardized treatment in the correct combination and dosage. A reliable supply of necessary TB drugs in all PHC facilities is therefore essential.
5. Effective monitoring using standardized registers, quarterly reporting and clear definitions and treatment outcomes.

Since the introduction of DOTS strategy in the early 90's, considerable progress has been made in global tuberculosis control. By 2000, 148 countries had adapted the WHO DOTS strategy for tuberculosis control and 27% of the global tuberculosis cases were treated under DOTS. The report of the Ad-hoc committee on tuberculosis epidemic by WHO (1998) in London commended the achievement of a few countries but expressed concerns about slow progress of DOTS implementation in most countries with a high burden of tuberculosis (WHO, 2004: 12).

Walley et al (2000) did a study in Pakistan on the effectiveness of DOTS. This was a trial study focusing on Directly Observed Treatment, short course (DOTS) for tuberculosis: a randomized controlled trial in Pakistan. A randomised controlled trial had three arms: DOTS with DOT by health workers; DOTS with DOT by family members; or DOTS without DOT (self-administered treatment). The objective of the trial was to assess the effectiveness of different packages for TB treatment under operational conditions in Pakistan. The main outcome measures were cure; and cure or treatment completion (WHO definitions). The trial was performed at three sites in Pakistan providing TB services strengthened according to WHO guidelines for the purposes of the research, using a standard daily short-course drugs regimen (2HRTE/6TE). Subjects were 497 adult new sputum-positive (WHO definition) TB patients.

The findings of the study were that the overall cure rate combining all three arms was 60%; the overall cure or treatment completed rate was 65%. These rates were

considerably higher than those before strengthening services: at Rawalpindi, where historic data was available, the cure rate increased from 26% to 57%, and the overall cure or treatment completed rate increased from 41% to 67% (Walley et al 2000; <http://www.leeds.ac.uk>).

These findings tell us that strengthening TB services in line with the WHO DOT strategy can greatly improve the cure rates. Therefore, the challenge to implement the recommended DOTS strategies, which include the involvement of community-based volunteers in the form of TB Treatment Supporters if the fight against TB is to be won worldwide.

### **2.3 REGIONAL PERSPECTIVE**

We must accept that we will never be able to control TB, until we address the issue of poverty, especially in southern Africa, which has 11 of the 15 nations with the highest estimated per capita TB incidence rates (Kironde and Kahirimbanyi, 2002:7). Despite the increase in the global economy over the years, most of the world's population, particularly in sub-Saharan Africa, has remained poor and without access to basic necessities such as food, water, sanitation and medical facilities. TB and its main infection ally, HIV, are not only rampant in such areas, but also their treatment is more difficult as both conditions require a patient to have healthy nutritious meals with their medication – something which is impossible for the many who cannot even afford one decent daily meal.

It is, therefore, impossible and impractical for us to believe that we can eradicate, or even halve TB infections by 2015 - as current global targets spell out - unless we begin to implement global and national strategies to contribute to meaningful and worthwhile poverty reduction programmes in Africa. If we do not, then, we will continue to observe the growth of the phenomenon of drug-resistant strains of TB, which currently account for 10% of all new TB infections, and cost far much more to treat. The recent emergence of multi-drug resistant (MDR) and extremely drug-resistant (XDR) strains of TB, in the East and South Africa's Kwazulu Natal province respectively, serve to remind us that

current tools used in controlling and monitoring TB and its co-infection process with HIV are inadequate to address the severity of the epidemics (Kironde and Kahirimbanyi, 2002:16-23).

TB control efforts have been hampered by the escalating HIV/AIDS epidemic to an extent that TB has now been declared an emergency on the African continent. The majority of the 20 countries with the highest TB rates are in Sub-Saharan Africa. The increasing occurrence of multiple drug resistant TB and HIV is likely to further worsen both HIV and TB treatment efforts (<http://www.who.tb.org.com>). South Africa is one of the countries in the Sub-Saharan Africa (SSA), which is also critically hit with the TB impact. Tuberculosis poses an enormous threat to the health of South Africans. In 2002, only six countries were estimated by the World Health Organization to have more cases of TB than South Africa (SA). Despite the availability of effective and affordable treatment, the number of South Africans dying from tuberculosis continues to increase (<http://www.healthlink.org.za>). The HIV epidemic in SA fuels the TB epidemic, with both predominantly affecting young people. A recent study showed that 55% of patients with smear or culture positive TB in SA were HIV-positive (<http://www.healthlink.org.za>). This underscores the need for collaboration and integration of HIV and TB services, as well as the key role of HIV prevention in controlling the TB epidemic.

Although the long term solution lies in improving socio-economic conditions and reducing HIV infection rates, experience in several low and middle income countries, such as Peru and Vietnam, suggests that well-functioning TB control programmes can reduce both the morbidity and mortality associated with TB. The Directly Observed Treatment, short-course (DOTS) strategy was formulated by the World Health Assembly in 1991 and adopted by the South African National TB Control Programme in June 1996 (Walley et al, 2001; <http://www.leeds.ac.uk>). The National TB Directorate has achieved considerable success in developing and implementing the National TB Control Programme (NTCP). DOTS coverage has increased substantially, and 182 of the country's 183 sub-districts now implement the strategy. In line with the Global DOTS

Expansion Plan, SA has developed a Medium Term Development Plan (MTDP). The plan provides the template for mobilization of human and financial resources needed to expand TB control efforts, and has been supplemented by provincial implementation plans (Bamford et al, 2006; <http://www.stoptb.org/conference/Decla.access.html> ). These efforts try to amplify the need for concerted effort of both the government and the community in the fight against the deadly TB, if the battle is to be won.

Research done within South Africa, reveals that varied groups of lay people are involved in DOTS activities in different areas of the country. For example, Kironde and Bajunirwe (2002) found that in the Diamond Fields region of the Northern Cape Province, DOTS supporters were mainly reasonably well educated young unemployed women who, in the absence of better opportunities, volunteered for the TB programme in the hope of eventual remuneration. On the other hand, in the Hlabisa district of KwaZulu-Natal, Wilkinson and colleagues (2001) found that local shopkeepers comprised a big proportion of the DOTS supporters in their programme. Other specialized groups of people, notably traditional healers have also been found to have great potential to deliver effective DOTS programmes in the KwaZulu-Natal province.

These findings show that it is worthwhile to recognize the factors which motivate lay people to get involved in TB control programmes in different areas. As there is probably no 'one size fits all' answer to this question, decisions on whether lay workers in TB programmes should be paid could be made in a context-specific manner in addition to being dependent on other factors such as the resources that exist to pay them. Therefore, there is need for some research in this area.

## **2.4 NATIONAL PERSPECTIVE**

Tuberculosis is a major public health problem in Zambia and is among the top ten causes of morbidity and mortality. Apparently, the TB notification rates have increased from about 100 per 100,000 in 1984 to over 500 per 100,000 in 2005 (MoH, 2006: 13). In consideration of the TB trends in Zambia and around the world, the World Health Organization (WHO) declared the disease a global emergency as early as 1993. The

African Ministers of Health also declared TB a regional emergency in 2005 at a meeting in Maputo, Mozambique (MoH, 2006: 22).

The interaction of TB with the HIV infection has complicated and made the TB control programme difficult. TB has become a leading cause of death among people living with HIV/AIDS, while infection with HIV is the most potent risk factor for a latent infection to convert to active TB. In Zambia about 70% of people with TB are co-infected with HIV (CBoH, 2004). Multi-drug resistant TB (MDR-TB) has been reported in almost every part of the country. In 2005 approximately 50 cases were reported countrywide as having MDR-TB (MoH, 2006: 22).

The Directly Observed Treatment Short course strategy has been identified as an important strategy to achieve the World Health Organisation targets of a cure rate of 85% for smear positive cases (CBoH/MOH, 2004). DOTS is key in the treatment of Tuberculosis. The strategy of DOTS goes hand in hand with the TB treatment supporters. The role of TB treatment supporters in the implementation of the DOTS strategy is to ensure that the patient is taking medication every day as prescribed. They also ensure that appointment dates are closely followed. A Community Based Treatment Unit is spearheading the implementation of DOTS with family and community involvement in the care of TB/AIDS patients by training treatment supporters living closer to the patients and family members (Kaluta, et al 2004). Treatment supporters can be anyone who is willing, trained, responsible, acceptable to the patient and accountable to the TB control services. Community based DOTS implementation is the surest way of ensuring the provision of adequate care and support to persons infected with tuberculosis.

Chanda (2002) showed that health care providers can contract TB from the items in the TB patient's room such as the locker, and the bed rails. This finding can be used improve the training of TB treatment supporters. The TB treatment supporters would be taught hand washing techniques to prevent them from contracting TB from the TB client's home.

The Central Board of Health (CBoH) endorsed the integrated community based DOTS approach to strengthen TB control activities in the district hospitals and health centres. In order to expand the community based DOTS strategy, health workers and volunteers needed to be trained in each district. However, the need for standardization of training and practices was recognized and to that effect the National Training Manual was found to be an essential tool to ensure that DOTS can be implemented effectively and uniformly throughout the country (CBoH, 2005: 1).

A study done by Bond, Tihon and Godfrey-Faussett (2005), in Lusaka- Zambia on visiting TB patients; the widening role of Home-Based Care (HBC) organisations in the management of TB patients, demonstrated the importance of HBC for TB and HIV/AIDS clients. The study had enrolled 6,000 TB patients and found out that more than half (63%) of these were actually cared for by the HBC organisations based in the community.

These findings therefore, support the government decision to train TB treatment supporters, because TB clients will be cared for right up in their homes despite the critical shortage in the health care system.

A study done by Inkhaya (2004), in Lusaka urban district, sought to determine TB treatment supporter's knowledge on TB treatment and prevention because the levels of their knowledge can influence their work positively or negatively. The study revealed that the majority, 70% of the respondents had medium level of knowledge. They acquired this knowledge from a variety of sources despite their educational levels, such as other support groups like home based care, health personnel, media and friends. In conclusion, remunerating TB treatment supporters is likely to motivate them to know more on TB treatment and prevention and also to put much effort in their work.

Munthali (2005) did a study to determine which guardian is preferred by the TB patients as a TB treatment supporter in Monze district- Zambia. The study revealed that most of the TB patients (80%) are comfortable with female treatment supporters, either as wives

or relatives, and most of the respondents also preferred to be supervised by guardians rather than health workers.

In as much as the able family members are encouraged to look after sick relatives, the chronic nature of tuberculosis and prolonged treatment protocol can be barriers to effective treatment, even with family support. Therefore, there is need for an independent individual in the care of TB clients on TB drugs. This is so because relatives with low educational attainment are not as likely to encourage their family members to comply with the medication regimen.

None of these studies tried to look at how the trained TB treatment supporters are not utilized. In view of the above fact, the researcher has been prompted to undertake a study in order to establish the gaps in the existing services that may be contributing to the low utilization trained TB treatment supporters by the TB patients in Lundazi district. In this study, the researcher intends to make the findings of the study to be used by the policy makers, TB control programme managers and TB treatment supporters in order to improve their utilisation by TB patients in Lundazi district. The study also aims at providing a stepping stone for future studies to be conducted in Lundazi and other parts of the country in the area of TB treatment, control and prevention.

## **2.5 CONCLUSION**

Several studies have been done worldwide, ranging from the effectiveness of the DOTS strategy to the impact the TB treatment supporters have on the DOTS strategy. These studies have brought out several issues of which one of them is how do we motivate the trained TB treatment supporters. Above all these is the fact that we can not under rate the efforts of the trained TB treatment supporters in the fight against the deadly TB. Therefore, the researcher sought to determine the factors associated with the low utilization of the trained TB treatment supporters in Lundazi district.

## **CHAPTER THREE**

### **3.0 RESEARCH METHODOLOGY**

“Research methodology refers to the steps, procedures and strategies for gathering and analyzing the data in a research investigation”, (Polit, Beck and Hungler 2001:167). The methodology, therefore, refers to the development of a research investigation. The aim is to ensure reliability and validity in the data collection tool need. The study was aimed at determining factors associated with the utilisation of trained TB treatment supporters by TB patients in Lundazi district.

### **3.1 RESEARCH DESIGN**

“A research design is the plan, structure, and strategy of investigations of answering the research question. It is the overall plan or blue-print that the researchers select in order to carry out their study” (Polit, et al 2001:167).

A descriptive cross sectional study design with both qualitative and quantitative dimensions was used to determine factors associated with low utilization of trained TB treatment supporters in Lundazi district. A descriptive is a broad class of non experimental studies. Its purpose is to observe, describe and document aspects of a situation as it naturally occurs and sometimes to serve as a starting point for the hypothesis generation or theory development. It is commonly used in the field of nursing research (Polit et al, 2001:167). The approach involved a systematic collection of data in order to give a clear picture of the situation.

### **3.2 RESEARCH SETTING**

“Research setting is the physical location and condition in which data collection takes place in a study”, (Polit et al, 2001:470).

This study was conducted in Lundazi district. Lundazi is one of the eight (8) districts in the Eastern Province of Zambia. Lundazi district is situated about 186 km north of Chipata the provincial headquarters for Eastern Province. The district share boards with Chama district in the north, Mambwe district and Mpika district in the west, Chipata

district in the south and Malawi in the east. The district has a total population of approximately 312,280 (LDHMT, 2007-2009 Action Plan). The characteristics of the district vary, ranging from the educated to uneducated, rich to very poor. Therefore, the behavior of the people related to the health matters differ.

The district has only one first level referral hospital, 4 zonal health centres, 20 health centres and 8 health posts (LDHMT, 2007).

### **3.3 STUDY POPULATION**

The study population is “the entire number of units under study”, (Treece and Treece 1986:215). This is a population on whom information can be obtained from. The study population in this research consisted of all TB patients in Lundazi district.

### **3.4 SAMPLE SELECTION**

“Sample selection is a process of selecting a portion of the population to represent the entire population”, (Treece and Treece 1986:215-236). Lundazi population was picked purposely because of its high prevalence rate of TB and it is easily accessible to the investigator.

Multistage sampling was used to select zones which were included in the study. Multistage sampling is used when population is complex and it involves more than one sampling method (Polit et al, 2001:242). A sampling frame was made of all the health centres in Lundazi district. The researcher then selected the health centres using simple random sampling method. Simple random sampling is “the most basic type of probability sampling in which a sampling frame is created by enumerating all members of a population of interest and then selecting a sample from the sampling frame through completely random procedures (Polit et al, 2001:240). This method was selected to give every health centre in Lundazi district an equal opportunity of being included in the study.

Then a lottery technique was used, in which all the names of TB patients from the selected health centres were written on pieces of paper, which were mixed well in the container and then the sample was selected, by picking the papers one by one and shaking the before picking each paper until all the fifty (50) respondents were picked. This was done to give every TB client in Lundazi district an equal and independent chance of being selected.

### **3.5 SAMPLE SIZE**

A sample is a smaller part of the population selected in such a way that the individuals in the sample represent (as near as possible) the characteristics of the population, (Treece and Treece 1986: 458).

The sample size comprised of 50 TB patients. The reasons for selecting this sample size include, limited time, inadequate resources both financial and human resources to enable the researcher carryout a study with more respondents which is usually more representative of the situation prevailing in the area.

### **3.6 DATA COLLECTION TOOL**

A tool in research refers to an instrument or equipment used to collect data. It may take the form of a questionnaire or an interview schedule, checklist, protected device or some other type of a tool for eliciting information (Treece and Treece, 1986:237-240).

The investigator used an interview schedule to solicit information from respondents. An interview schedule is a questionnaire that is read to the respondents (Polit et al 2001:267-270). The interview schedule had both open-ended and close-ended questions. The interview schedule was divided into 4 sections (A, B, C and D). Section A elicited demographic data, section B elicited information on knowledge about the trained TB treatment supporters, Section C measured the attitude of TB patients towards utilisation of trained TB treatment supporters and section D elicited data on attitude of TB clients about the utilisation of trained TB treatment supporters.

The interview schedule was chosen because of the following advantages:

- The tool can be used in the study which includes both illiterate and literate subjects, and my study population consists mostly of illiterate members.
- The researcher would ensure that the respondents answer all the questions, thereby avoiding the incidences incompleteness.
- The researcher would probe further on some questions thereby getting a comprehensive data concerning the research topic.
- The interviewer is better placed to observe the respondents' level of understanding; the information which would be used to interpret data.

However, this technique has the following disadvantages:

- The tool requires a lot of time to be administered especially if the researcher is conducting the interview alone.
- As the respondent is aware that someone is recording the information, bias information may be given.

### **3.7 DATA COLLECTION TECHNIQUE**

Data collection techniques are methods or ways used to collect data to answer a research question (Treece and Treece, 1986:348-372).

Interviewing technique was used to collect detailed information related to the variables. No research assistant was used for data collection. For the purpose of learning, the researcher had to collect the whole data himself. Respondents were made comfortable before beginning the interview. This was achieved by welcoming and greeting each respondent. Each respondent was also assured of privacy, confidentiality and anonymity by using serial numbers on each questionnaire. The interviewer was filling in the responses on behalf of the interviewee as the responses were being given. In case of clarification, the interviewer repeated the questions so that it could be clearly understood. At the end of the interview, the interviewer thanked the respondents and said good-bye. Then the answered interview schedules were checked to ensure that all were collected and for completeness and put aside

### **3.8 PILOT STUDY**

“A pilot study is a miniature trial run of the methodology planned for the major project. It is a time for detecting errors and flaws in the instrument for gathering data”, (Treece and Treece, 1986: 382).

A pilot study was conducted at Chama District Hospital, which had similar characteristics as the actual population in which the study was conducted. The pilot study sample constituted 10% of the actual study sample. A sample of 5 TB patients was randomly selected for the pilot study. The main reasons for conducting a pilot study were:

- To detect any errors in the interview schedule for the main study
- To assess the appropriateness and clarity of the questions.
- To test the feasibility, validity and reliability of the interview schedule.

### **3.9 VALIDITY**

“Validity is the degree to which an instrument measures what it is intended to measure” (Polit et al, 2001:308-311).

Validity was maintained by ensuring that all variables under study were covered in the interview schedule. Questions were clearly constructed to avoid ambiguity and were pre-tested. The questionnaire was tested at the Chama District Hospital because Chama district had similar characteristics like Lundazi district. This was done in order to ensure that the instrument measured what it was supposed to measure. The supervising lecturer and other experts in the area under study checked the questionnaire

### **3.10 RELIABILITY**

“Reliability is the degree of consistence and dependability with which an instrument measures the attribute it is designed to measure”, (Polit et al, 2001:305-308). It is actually the degree of accuracy of a measuring instrument. The inaccuracy may result from the deficiency in the instrument itself as well as from the inconsistency between different individuals who are taking readings from the instrument.

The same instrument was used to collect data from all the respondents and this helped the researcher to collect similar data. The respondents were exposed to the interview schedule once. The researcher had also put other measures in place such as making the questions simple, concise and brief; cross checks were inserted by asking questions which tie-in with other questions asked elsewhere in the interview schedule.

### **3.11 ETHICAL AND CULTURAL CONSIDERATION**

“Ethics are systems of normal values concerned with the degree to which research procedures adhere to professional, legal and social obligations to the study participants”, (Polit et al, 2001:461).

The researcher obtained written permission to collect data for the pilot and actual study from the District Director of Health – Chama District and District Director of Health – Lundazi District respectively. Verbal permission was sought from each and every respondent. No respondents were forced to take part in the study. The nature and purpose of the study was thoroughly explained to the respondents so that they were able to make informed decisions. The respondents were assured of anonymity and confidentiality. No names were used on the interview schedule except numbers.

## **CHAPTER FOUR**

### **4.0 DATA ANALYSIS AND PRESENTATION OF FINDINGS**

#### **4.1 DATA ANALYSIS**

Data analysis is the systematic organisation and synthesis of research data and the testing of research hypothesis using those data (Polit and Hungler, 2001:357). During this process the data is classified into categories, after which the data is interpreted. Interpretation involves comparing the specific data of the respondents with known norms and standards. Then the researcher makes inferences on the data.

The purpose of this study was to determine factors associated with the utilisation of trained TB treatment supporters among the TB clients/patients in Lundazi district. Results of the study were based on all the responses from a sample of fifty TB patients who are currently on treatment under the three health facilities in Lundazi district namely Lundazi District Hospital, Lundazi Urban Health Centre and Mwase-Lundazi Zonal Health Centre. The findings were entered on the data master sheet and analysed.

During the data processing, the interview schedules used were counted to ensure that the correct number was obtained. They were checked for accuracy, completeness and internal consistency. The responses from closed-ended questions were entered on the data master sheet for easy manual analysis of data, while responses from open-ended records were categorised in different groups and then coded.

Data was analysed manually using single counting and a scientific calculator. Data from this study have been presented according to the sequence and sections in the questionnaire. The findings of the study have been presented in frequency tables, pie charts and bar graphs. The frequency tables summarised the results of the study to ensure that the readers understand the findings of the research study easily. Cross tabulations of the variables helped to show clearly the relationship between variables. The use of pie charts and graphs in the presentation of findings makes the work reader friendly.

The study has been presented under sections A, B, C, D and E.

- Section A looks at demographic data
- Section B looks at knowledge questions
- Section C looks at practice questions
- Section D looks at attitude question
- Section E presents the cross tabulations

## 4.2 PRESENTATION OF FINDINGS

### 4.2.1 SECTION A: DEMOGRAPHIC CHARACTERISTICS

**Table 3: Demographic Data (n= 50)**

<b>Respondent's</b>	<b>Frequency</b>	<b>Relative Frequency</b>
<b>SEX</b>		
Male	23	46%
Female	27	54%
<b>Total</b>	<b>50</b>	<b>100%</b>
<b>AGE</b>		
Below 16 Years	3	6%
16 – 24 Years	11	22%
25 – 34 Years	20	40%
35 Years and above	16	32%
<b>Total</b>	<b>50</b>	<b>100%</b>
<b>MARITAL STATUS</b>		
Single	13	26%
Married	29	58%
Widowed	7	14%
Divorced	1	2%
<b>Total</b>	<b>50</b>	<b>100%</b>

<b>Respondent's</b>	<b>Frequency</b>	<b>Relative Frequency</b>
<b>DENOMINATION</b>		
Roman Catholic	22	44%
Reformed Church in Zambia	2	4%
United Church of Zambia	1	2%
Seventh-day Adventist	5	10%
Apostolic Faith	2	4%
Jehovah's Witness	1	2%
Others	17	34%
<b>Total</b>	<b>50</b>	<b>100%</b>
<b>EDUCATIONAL LEVEL</b>		
Never been to school	8	16%
Primary	15	30%
Secondary	21	42%
College/University	6	12%
<b>Total</b>	<b>50</b>	<b>100%</b>
<b>EMPLOYMENT STATUS</b>		
Formally Employed	8	16%
Self Employed	11	22%
None	31	62%
<b>Total</b>	<b>50</b>	<b>100%</b>
<b>INCOME STATUS</b>		
Enough	7	14%
Not enough	43	86%
<b>Total</b>	<b>50</b>	<b>100%</b>
<b>SOURCE OF SUPPORT</b>		
Wife	9	18%
Husband	22	44%
Children	6	12%
Parents	10	20%

Church	6	12%
<b>Total</b>	<b>50</b>	<b>100%</b>

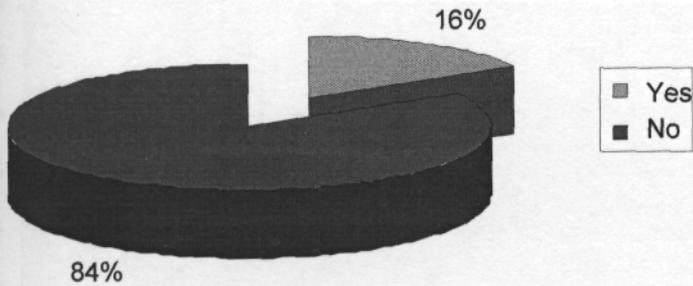
Table 3 indicates that the majority (27) 54% of the respondents were females, while only (23) 46% of the respondents were males. The table also shows that the majority (20) 40% of the respondents were aged 25 – 34 years, (16) 32% were aged 35 years and above, (11) 22% were aged 16 – 24 years and only (3) 6% were aged less than 16 years. It also indicates that the majority (29) 58% of the respondents were married and only (1) 2% were divorced.

The table also reveals that the majority (22) 44% of the respondents were Roman Catholics, (5) 10% were Seventh-Day Adventist, (2) 4% were from Reformed Church in Zambia, (2) 4% were Apostolic Faith, (1) 2% were Jehovah's Witness and (17) 34% were from others churches like Church of Central African Presbyterian (CCAP), Chipangano, Zion Christian and Zion Spirit. It also indicates that majority 42% (21) of respondents had secondary education, while (15) 30% had primary education, (6) 12% had college/university education and only (8) 16% had never been to school.

The table also shows that the majority of the respondents (31) 62% are doing nothing for their living, while only (8) 16% of the respondents are formally employed. It also indicates that the majority (43) 86% do not have sufficient income and they are just helped by other people and/or the church, while only (7) 14% reported that they have enough income to support themselves and their family. The table also reveals that the majority of the respondents (22) 44% receive help from their husband and/or their parents (10) 20% while only (6) 12% receive help from the church.

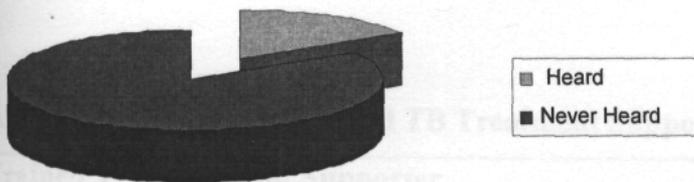
#### 4.2.2 SECTION B: KNOWLEDGE QUESTIONS

**Figure 2: Respondent's who have heard of DOT Plan (n= 50)**



Majority (42) 84% of the respondents have never heard of the DOT Plan which requires a TB client to choose their treatment supporter during the course of their treatment, while only (8) 16% have heard of the DOT Plan.

**Figure 3: Respondent's who have heard of Trained TB treatment supporters (n= 50)**

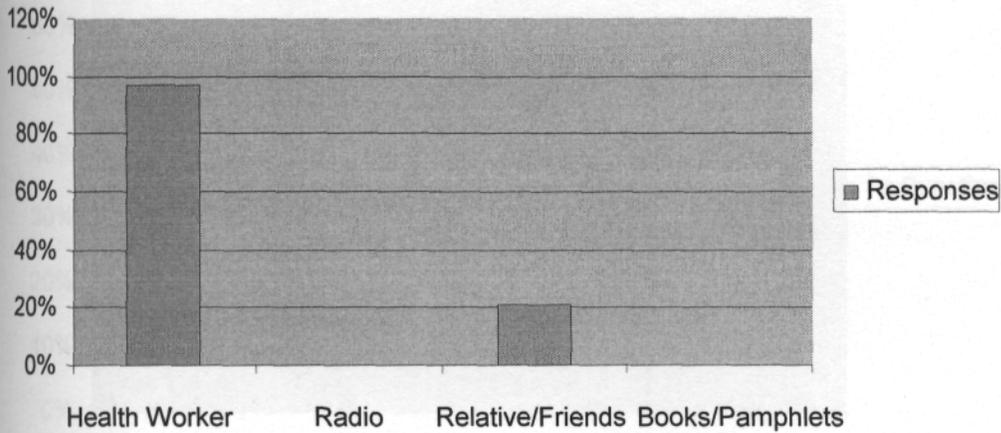


Majority (29) 58% of respondents have heard about the trained TB treatment supporters, while only (21) 42% have not heard about the trained TB treatment supporters.

Response	Frequency	Relative Frequency (%)
Do not know	22	44%
TOTAL	50	100%

Table 4 reveals that the majority (28) 56% of the respondents were able to define a trained TB treatment supporter, while (22) 44% did not know who a trained TB treatment supporter is.

**Figure 4: Where did the Respondent Hear about trained TB Treatment Supporter (n=29)**



The majority of the respondents (28) 97%, have heard about the trained TB treatment supporters from the Health Workers at the Clinic. Meanwhile, none of the respondents had heard of the trained TB treatment supporters from the local radio station or from the books and pamphlets.

**Table 4: Who is a Trained TB Treatment Supporter? (n=50)**

Trained TB Treatment Supporter	Frequency	Relative Frequency
A male/female trained to observe me swallow my anti-TB drugs.	28	56%
Do not know	22	44%
<b>TOTAL</b>	<b>50</b>	<b>100%</b>

Table 4 reveals that the majority (28) 56% of the respondents were able to define a trained TB treatment supporter, while (22) 44% did not know who a trained TB treatment supporter is.

**Figure 5: Functions of the Trained TB Treatment Supporter (n=50)**

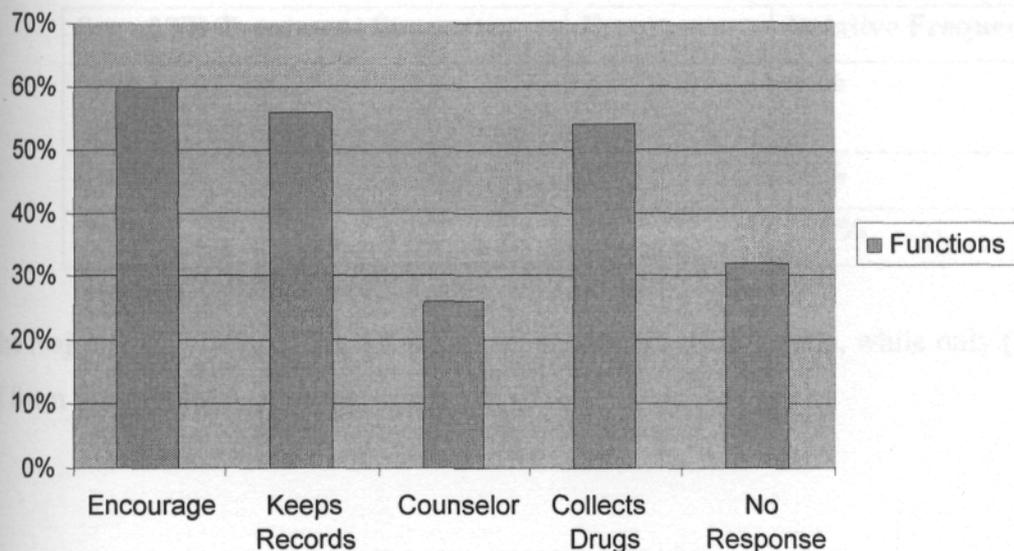


Figure 5 indicates that the majority of the respondents (30) 60% were able to mention encouraging client to attend review clinics as one of the functions of the trained TB treatment supporter, while only (16) 32% did not know the functions of the trained TB treatment supporter.

**Table 5: Who is the Respondent's TB Treatment Supporter? (n=50)**

TB Treatment Supporter	Frequency	Relative Frequency
Relative	34	68%
Clinic Staff	2	4%
Trained TB Treatment Supporter	14	28%
<b>TOTAL</b>	<b>50</b>	<b>100%</b>

Table 5 reveals that the majority of the respondents (34) 68% have relatives as their treatment supporters, and only (14) 28% have trained TB treatment supporters as their treatment supporters. Meanwhile (2) 4% of the respondents were being supervised by the clinic staff as their treatment supporters.

**Table 6: Sex of the Respondent's TB Treatment Supporter (n=50)**

Sex of TB Treatment Supporter	Frequency	Relative Frequency
Male	23	46%
Female	27	54%
<b>TOTAL</b>	<b>50</b>	<b>100%</b>

The majority (27) 54% of the TB treatment supporters were female, while only (23) 46% of them were males.

#### 4.2.3 SECTION C: PRACTICE QUESTIONS

**Figure 6: Respondents who hold discussions with their TB Treatment Supporter (n=50)**

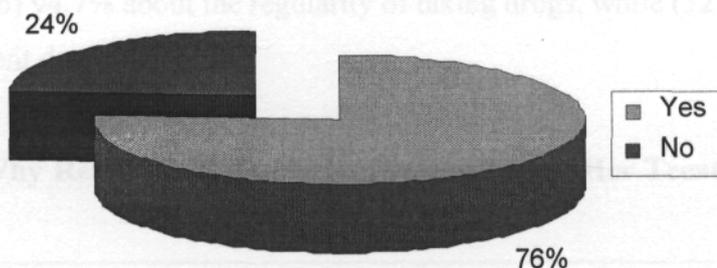


Figure 6 indicate that the majority of the respondents (38) 76% do discuss with their treatment supporters about their treatment and only (12) 24% of them do not discuss with their respondents.

Does not Discuss Because of	Frequency	Relative Frequency
Supporter does not come to visit	2	16.7%
We do not have time to discuss	8	66.6%
Does not provide HEPS for my nutrition	0	0%
Others	2	16.7%
<b>TOTAL</b>	<b>12</b>	<b>100%</b>

Table 7 indicates that (5) 66.6% of the (12) 24% respondents who do not discuss with their treatment supporters because they do not have time to do so; (2) 16.7% do not

**Figure 7: What Respondent Discuss With His/Her Treatment Supporter (n=38)**

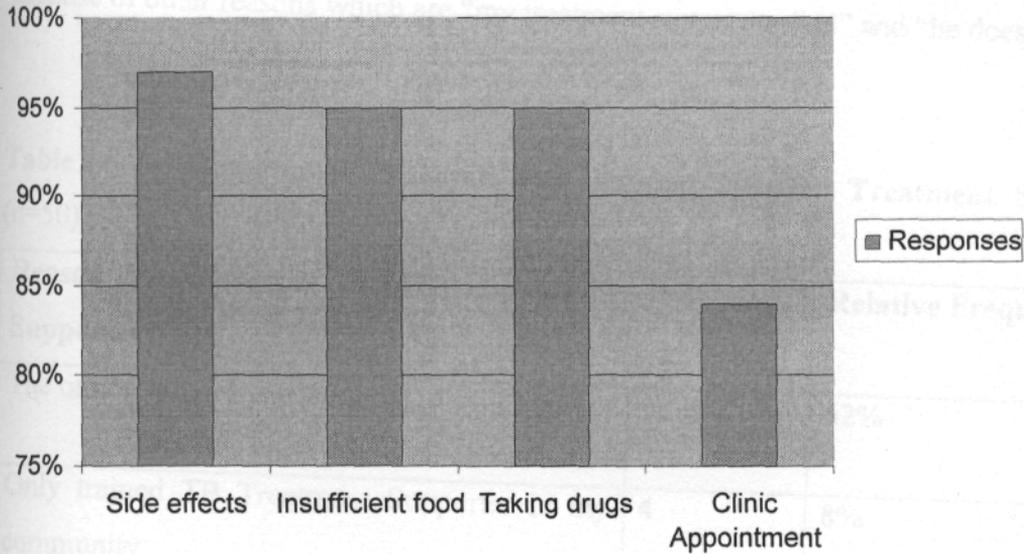


Figure 7 indicate that (37) 97.4% of the respondents discuss with their treatment supporters about the Concern over side effects of TB drugs, (36) 94.7% about Insufficient food at home, (36) 94.7% about the regularity of taking drugs, while (32) 84.2% about Clinic appointment dates.

**Table 7: Why Respondent does not discuss with His/Her Treatment Supporter (n=12)**

Does not Discuss because of	Frequency	Relative Frequency
TB treatment supporter does not know the side effects of the TB drugs	0	0%
TB treatment supporter does not come to visit me	2	16.7%
We do not have time to discuss	8	66.6%
Does not provide HEPS for my nutrition	0	0%
Others	2	16.7%
<b>TOTAL</b>	<b>12</b>	<b>100%</b>

Table 7 indicate that (8) 66.6% of the (12) 24% respondents who do not discuss with their treatment supporters because they do not have time to do so, (2) 16.7% do not

discuss because their treatment supporters do not visit them and (2) 16.7% do not discuss because of other reasons which are “my treatment supporter died” and “he does not care”.

**Table 8: Respondent’s Reason for choosing His/Her Treatment Supporter (n=50)**

<b>Reason for choosing His/Her treatment Supporter</b>	<b>Frequency</b>	<b>Relative Frequency</b>
The only relative I live with	31	62%
Only trained TB Treatment Supporter in my community	4	8%
Not told of other options	4	8%
I have confidence and trust in him/her	12	24%
<b>TOTAL</b>	<b>50</b>	<b>100%</b>

The majority of the respondents (31) 62% chose their treatment supporters because he/she is the only relative the respondent is living with, (12) 24% because they have confidence and trust in him/her, 4 (8%) because they were not told of the other options while 4 (8%) because he/she is the only trained TB treatment supporter in the community.

**Figure 8: What the Treatment Supporter does for the Respondent (n=50)**

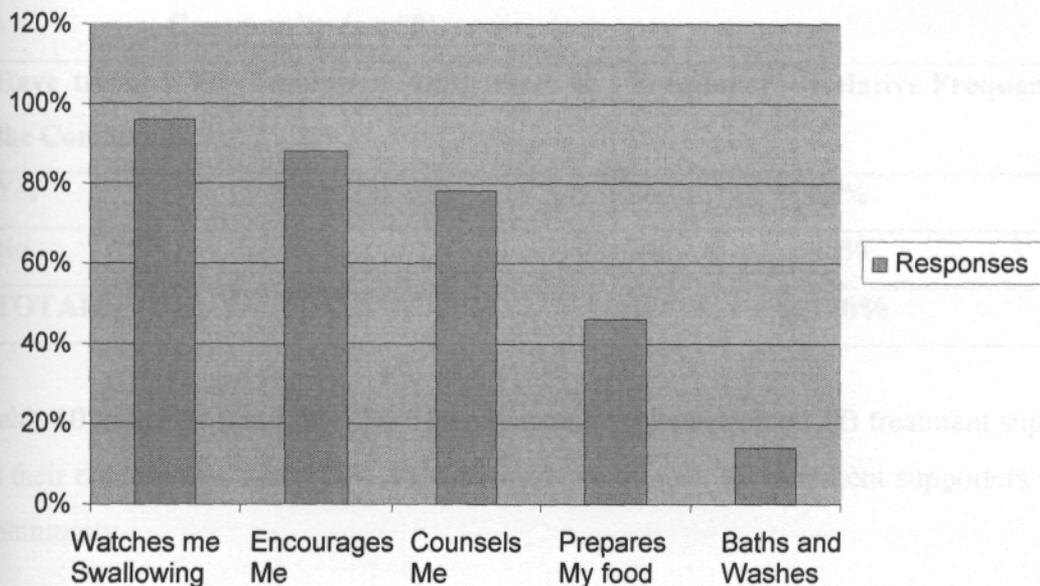


Figure 8 reveals that (48) 96% of the respondents are observed swallowing drugs by their treatment supporters, (44) 88% are encouraged and taken to the clinic by their treatment supporters, (39) 78% are counselled when they feel low by their treatment supporters, (23) 46% are assisted to prepare their food by their treatment supporters, (7) 14% are bathed and assisted with washing their clothes by their treatment supporters and only (2) 4% are not helped in any way by their treatment supporters.

**Table 9: Respondent's value of their Treatment Supporter (n= 50)**

Respondent's value of their Treatment Supporter	Frequency	Relative Frequency
Very Supportive	41	82%
Supportive	5	10%
Neglected	4	8%
<b>TOTAL</b>	<b>50</b>	<b>100%</b>

The majority of the respondents (41) 82% described the role their treatment supporter play as very supportive, (5) 10% as supportive and (4) 8% said they feel neglected.

**Table 10: Respondents who have trained TB Treatment Supporters in the Community (n= 50)**

Have trained TB Treatment Supporters in the Community	Frequency	Relative Frequency
Yes	26	52%
No	24	48%
<b>TOTAL</b>	<b>50</b>	<b>100%</b>

Table 10 indicates that (26) 52% of the respondents have trained TB treatment supporters in their community, while (24) 48% do not have trained TB treatment supporters in their community.

**Table 11: Distance to the nearest trained TB Treatment Supporter (n= 26)**

Distance to the nearest trained TB Treatment Supporter	Frequency	Relative Frequency
Less than 30 minutes	9	34.6%
½ - 1 hour	11	42.3%
1 – 2 hours	6	23.1%
<b>TOTAL</b>	<b>26</b>	<b>100%</b>

Table 11 indicates that (9) 34.6% of the respondents who said have trained TB treatment supporters in their community take less than 30 minutes to cover the distance to the nearest trained TB treatment supporter, (11) 42.3% take 30 minutes to 1 hour, while (6) 23.1% take 1 – 2 hours to reach the nearest trained TB treatment supporter.

**Table 12: Respondents who missed a Dose (n= 50)**

<b>Missed a Dose</b>	<b>Frequency</b>	<b>Relative Frequency</b>
yes	19	38%
No	31	62%
<b>TOTAL</b>	<b>50</b>	<b>100%</b>

The majority of the respondents (31) 62% had never missed any of their TB treatment.

**Table 13: Duration that the respondents missed taking their Drugs (n= 19)**

<b>Missed Dose(s) for how long</b>	<b>Frequency</b>	<b>Relative Frequency</b>
Less than 1 week	17	89.4%
2 weeks	1	5.3%
3 weeks and above	1	5.3%
<b>TOTAL</b>	<b>19</b>	<b>100%</b>

Table 13 indicates that of the 19 respondents who missed some doses, (17) 89.4% missed the doses for less than 1 week, (1) 5.3% missed for 2 weeks while (1) 5.3% missed for 3 weeks respectively.

**Table 14: Respondents reasons for missing their Anti-TB drugs (n= 19)**

Reason for missing dose(s)	Frequency	Relative Frequency
Ran out of TB drugs	16	84.2%
Did not have a TB Treatment supporter	0	0%
Discouraged by trained TB Treatment Supporter's attitude	0	0%
Others	3	15.8%
<b>TOTAL</b>	<b>19</b>	<b>100%</b>

Table 14 indicates that the majority of the respondents who had missed some doses (16) 84.2% missed some doses because they had ran out of drugs, while (3) 15.8% had no one to encourage or observe the swallowing of the drugs.

**Figure 9: Respondents reasons for not utilising trained TB Treatment Supporters (n=50)**

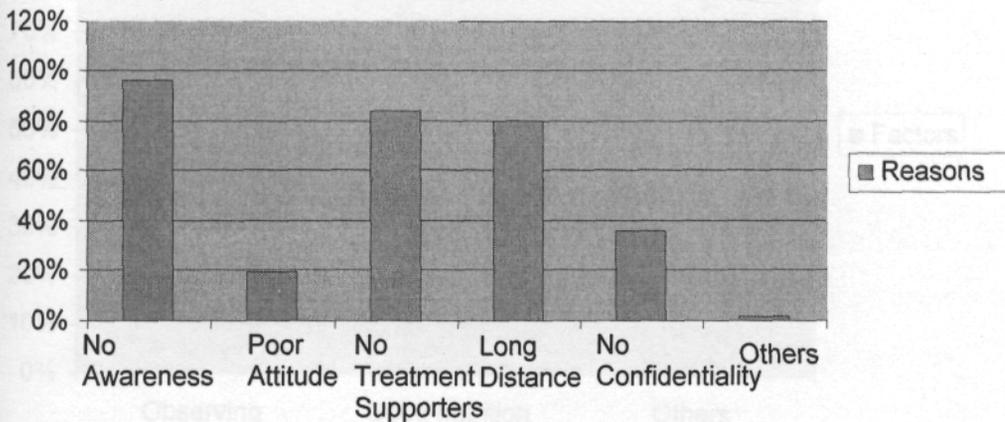


Figure 9 indicates that (48) 96% of the respondents think that Lack of awareness about the availability of trained TB treatment supporters, (42) 84% think trained TB treatment supporters are just not there, (40) 80% think Long distance to the nearest trained TB treatment supporter, (18) 36% think Lack of confidentiality among trained TB treatment

supporters and poor attitude of trained TB treatment supporters are some of the reasons for not utilizing trained TB treatment supporters.

#### 4.2.4 SECTION D: ATTITUDE QUESTIONS

**Table 15: Respondent's belief about TB being a curable disease (n= 50)**

Respondent's believe that TB is Curable	Frequency	Relative Frequency
Yes	47	94%
No	3	6%
<b>TOTAL</b>	<b>50</b>	<b>100%</b>

The majority of respondents (47) 94% believe that TB is curable, while only (3) 6% do not believe that TB is curable.

**Figure 10: Factors Enhancing Adherence (n=50)**

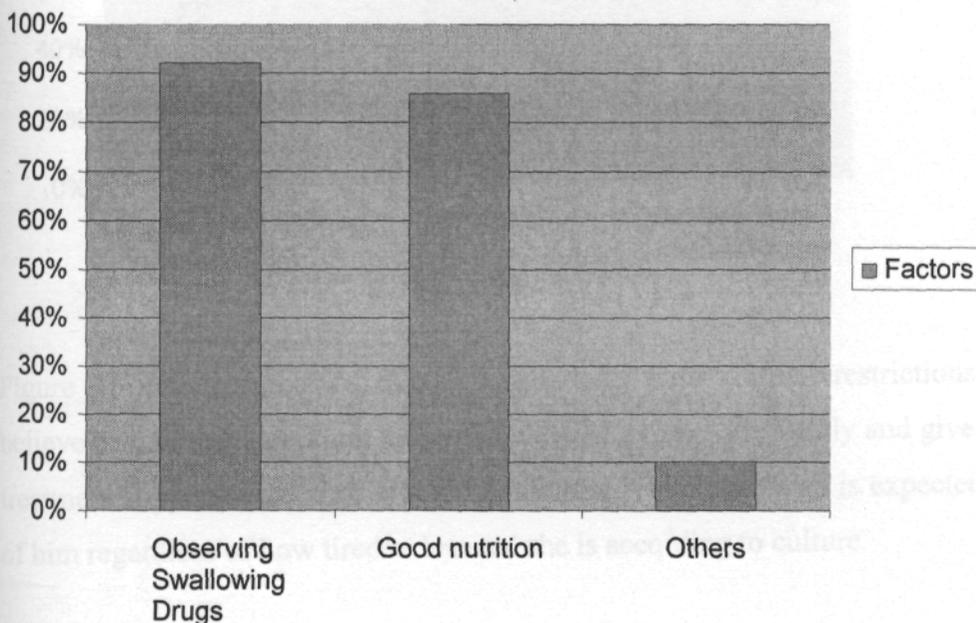


Figure 10 reveals that the majority of the respondents (46) 92% think observing TB clients swallowing their tablets daily would enhance adherence, (43) 86% think that having good nutrition would enhance adherence, while only (5) 10% think constant supply of TB drugs would enhance adherence.

**Table 16: Respondent's who have Cultural Restrictions (n= 50)**

Have Cultural Restrictions	Frequency	Relative Frequency
Yes	17	34%
No	33	66%
<b>TOTAL</b>	<b>50</b>	<b>100%</b>

Table 14 indicates that (17) 34% of the respondents have cultural restrictions with regard to TB treatment.

**Figure 11: Respondent's Cultural Restrictions (n=17)**

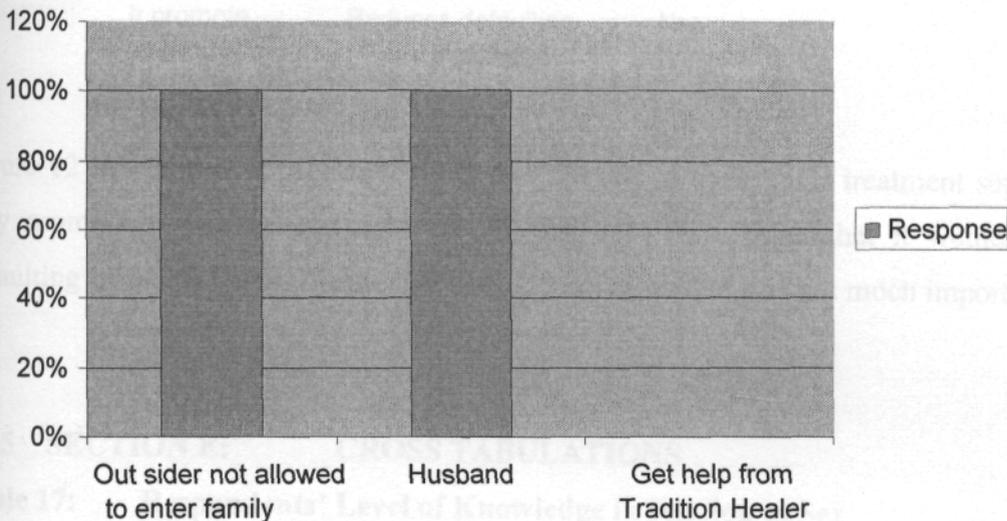


Figure 11 indicates that of the 17 respondents with cultural restrictions, (17) 100% believe that an outsider is not culturally allowed to enter the family and give care as a TB treatment supporter and that When the husband is sick, the wife is expected to take care of him regardless of how tired/exhausted she is according to culture.

**Figure 12: Respondent's Opinion about the use of trained TB Treatment Supporters (n=50)**

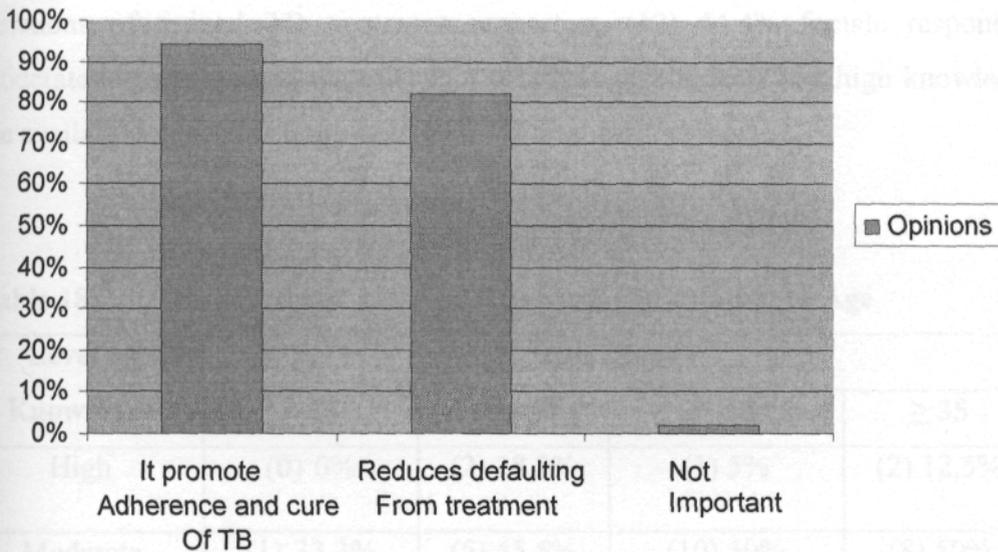


Figure 12 indicates that (47) 94% think that the use of trained TB treatment supporters may promote adherence and cure of TB, and (41) 82% think that it would reduce defaulting from treatment. Meanwhile only (1) 2% think that it is not much important.

#### 4.2.5 SECTION E: CROSS TABULATIONS

**Table 17: Respondents' Level of Knowledge in relation to Sex**

Level of Knowledge	Sex		Total
	Male	Female	
High	(2) 8.7%	(3) 11.1%	(5) 10%
Moderate	(12) 52.2%	(12) 44.4%	(24) 48%
Low	(9) 39.1%	(12) 44.4%	(21) 42%
<b>Total</b>	<b>(23) 46%</b>	<b>(27) 54%</b>	<b>(50) 100%</b>

Table 15 shows that the majority (12) 52.2% of the male respondents had moderate knowledge about the availability and functions of trained TB treatment supporters, (9) 39.1% male respondents had low knowledge about the availability and functions of trained TB treatment supporters and only (2) 8.7% male respondents had high knowledge

about the availability and functions of trained TB treatment supporters. Meanwhile, the majority (12) 44.4% of female respondents had low knowledge about the availability and functions of trained TB treatment supporters, (12) 44.4% female respondents had moderate knowledge and only (3) 11.1% female respondents had high knowledge about the availability and functions of trained TB treatment supporters.

**Table 18: Respondents' Level of Knowledge in relation to Age**

Level of Knowledge	Age Range				Total
	< 16	16 - 24	25 - 34	≥ 35	
High	(0) 0%	(2) 18.2%	(1) 5%	(2) 12.5%	(5) 10%
Moderate	(1) 33.3%	(5) 45.5%	(10) 50%	(8) 50%	(24) 48%
Low	(2) 66.7%	(4) 36.4%	(9) 45%	(6) 37.5%	(21) 42%
<b>Total</b>	<b>(3) 6%</b>	<b>(11) 22%</b>	<b>(20) 40%</b>	<b>(16) 32%</b>	<b>(50) 100%</b>

Table 16 indicates that the majority (2) 66.7% of respondents aged less than 16 years had low level of knowledge, (1) 33.3% of the respondents had moderate knowledge and (0) 0% respondents in the same age group had high knowledge about the availability and functions of trained TB treatment supporters. Out of 11 Of the respondents aged 16 - 24 years, (5) 45.5% had moderate knowledge, (4) 36.4% had low knowledge and (2) 18.2% had high knowledge about the availability and functions of trained TB treatment supporters. Meanwhile, the majority (10) 50% of respondents aged 25 - 34 years had moderate knowledge and (8) 50% respondents aged 35 years and above also had moderate knowledge about the availability and functions of trained TB treatment supporters.

**Table 19: Respondent's Level of Knowledge in relation to Marital Status**

Level of Knowledge	Marital Status				Total
	Single	Married	Widowed	Divorced	
High	(2) 15.4%	(3) 10.3%	(0) 0%	(0) 0%	(5) 10%
Moderate	(6) 46.2%	(14) 48.3%	(3) 42.9%	(1) 100%	(24) 48%
Low	(5) 38.5%	(12) 41.4%	(4) 57.1%	(0) 0%	(21) 42%
<b>Total</b>	<b>(13) 26%</b>	<b>(29) 58%</b>	<b>(7) 14%</b>	<b>(1) 2%</b>	<b>(50) 100%</b>

While the majority (6) 46.2% of single respondents had moderate knowledge, (5) 38.5% and (2) 15.4% of them in the same category had low and high knowledge respectively. Meanwhile (14) 48.3% of married respondents had moderate knowledge, (12) 41.4% and (3) 10.3% of them had low and high knowledge respectively. Furthermore, table 17 indicates that the majority (4) 57.1% of widowed respondents had low knowledge, (3) 42.9% of them had moderate knowledge and none of them in this category had high knowledge. The table also reveals that all (1) 100% of the divorced respondents had moderate knowledge about the availability and functions of trained TB treatment supporters.

**Table 20: Respondent's Level of Knowledge in relation to the Level of Education**

Level of Knowledge	Level of Education				Total
	Never been to school	Primary	Secondary	College /University	
High	(0) 0%	(1) 6.7%	(2) 9.5%	(2) 33.3%	(5) 10%
Moderate	(1) 12.5%	(5) 33.3%	(14) 66.7%	(4) 66.7%	(24) 48%
Low	(7) 87.5%	(9) 60.0%	(5) 23.8%	(0) 0%	(21) 42%
<b>Total</b>	<b>(8) 16%</b>	<b>(15) 30%</b>	<b>(21) 42%</b>	<b>(6) 12%</b>	<b>(50) 100%</b>

Table 18 indicates that the majority (7) 87.5% of respondents who have never been to school had low knowledge, (1) 12.5% of them had moderate knowledge and none (0) 0% in this category had high knowledge about the availability and functions of trained TB treatment supporters. The table also shows that while the majority (9) 60.0% of respondents with primary education had low knowledge, (5) 33.3% and (1) 6.7% of them in this same category had moderate and high knowledge respectively about the availability and functions of trained TB treatment supporters. Meanwhile, the majority (14) 66.7% of respondents with secondary education had moderate knowledge, (5) 23.8% had low knowledge and (2) 9.5% of them in this category had high knowledge. Table 18 further reveals that the majority (4) 66.7% of respondents with college/university education had moderate knowledge, (2) 33.3% of them in the same category had high knowledge and none (0) 0% in this same category had low knowledge about the availability and functions of trained TB treatment supporters.

**Table 21: Respondent's Level of Knowledge in relation to their Practice about the utilisation of trained TB Treatment Supporters.**

Level of Knowledge	Practice		Total
	Good	Poor	
High	(3) 21.4%	(2) 5.6%	(5) 10%
Moderate	(11) 78.6%	(13) 36.1%	(24) 48%
Low	(0) 0%	(21) 58.3%	(21) 42%
<b>Total</b>	<b>(14) 28%</b>	<b>(36) 72%</b>	<b>(50) 100%</b>

Table 19 shows that the majority (11) 78.6% of respondents who had good practice in relation to the utilisation of trained TB treatment supporters had moderate knowledge and (3) 21.4% in the same group had high knowledge, while (21) 58.3% of respondents who had poor practice had low knowledge, (13) 36.1% of respondents in the same group had moderate knowledge and only (2) 5.6% of respondents in the same group had high knowledge.

**Table 22: Respondent's Level of Knowledge in relation to their Attitude about the utilisation of trained TB Treatment Supporters.**

Level of Knowledge	Attitude		Total
	Positive	Negative	
High	(2) 15.4%	(3) 8.1%	(5) 10%
Moderate	(6) 46.1%	(18) 48.6%	(24) 48%
Low	(5) 38.4%	(16) 43.2%	(21) 42%
<b>Total</b>	<b>(13) 26%</b>	<b>(37) 74%</b>	<b>(50) 100%</b>

Table 20 shows that the majority (6) 46.1% of respondents with positive attitude about the utilisation of trained TB treatment supporters had moderate knowledge, while (2) 15.4% had high knowledge (5) 38.4% of respondents in the same category had low knowledge. Meanwhile, the majority (18) 48.6% of respondents with poor attitude had

moderate knowledge, (16) 43.2% of respondents in the same category had low knowledge and only (3) 8.1% of respondents in the same category had high knowledge about the availability and utilisation of trained TB treatment supporters.

**Table 23: Respondent's Practice about the utilisation of trained TB Treatment Supporters in relation to Sex**

Respondent's Practice	Sex		Total
	Male	Female	
Good	(8) 34.8%	(6) 22.2%	(14) 28%
Poor	(15) 65.2%	(21) 77.8%	(36) 72%
<b>Total</b>	<b>(23) 46%</b>	<b>(27) 54%</b>	<b>(50) 100%</b>

Table 21 indicates that the majority (15) 65.2% of the male respondents had poor practice and only (8) 34.8% of them had good practice, while the majority (21) 77.8% of the female respondents had poor practice and only (6) 22.2% of them had good practice about the utilisation of the trained TB treatment supporters.

**Table 24: Respondent's Practice about the utilisation of trained TB Treatment Supporters in relation to Age**

Respondent's Practice	Age				Total
	< 16 years	16 – 24 years	25 – 34 years	≥ 35 years	
Good	(0) 0%	(4) 36.4%	(6) 30.0%	(4) 25.0%	(14) 28%
Poor	(3) 100%	(7) 63.6%	(14) 70.0%	(12) 75.0%	(36) 72%
<b>Total</b>	<b>(3) 6%</b>	<b>(11) 22%</b>	<b>(20) 40%</b>	<b>(16) 32%</b>	<b>(50) 100%</b>

Table 22 shows that the majority (3) 100% of respondents aged less 16 years had poor practice about the utilisation of trained TB treatment supporters, (7) 63.6% out of the 11 respondents aged 16 – 24 years had poor practice, (14) 70.0% out of the 20 respondents

aged 25 – 34 years had poor practice, while (12) 75.0% out of the 16 respondents aged 35 years and above had poor practice.

**Table 25: Respondent’s Practice about the utilisation of trained TB Treatment Supporters in relation to their Marital Status**

Respondent’s Practice	Marital Status				Total
	Single	Married	Widowed	Divorced	
Good	(5) 38.5%	(8) 27.6%	(0) 0%	(1) 100%	(14) 28%
Poor	(8) 61.5%	(21) 72.4%	(7) 100%	(0) 0%	(36) 72%
<b>Total</b>	<b>(13) 26%</b>	<b>(29) 58%</b>	<b>(7) 14%</b>	<b>(1) 2%</b>	<b>(50) 100%</b>

Table 23 indicates that the majority (8) 61.5% out of the 13 single respondents had poor practice about the utilisation of the trained TB treatment supporters, (21) 72.4% out of the 29 married respondents also had poor practice, (7) 100% of the widowed respondents had poor practice and (1) 100% had good practice about the utilisation of trained TB treatment supporters.

**Table 26: Respondent’s Practice about the utilisation of trained TB Treatment Supporters in relation to their Level of Education**

Respondent’s Practice	Level of Education				Total
	Never been to school	Primary	Secondary	College /University	
Good	(0) 0%	(2) 13.3%	(9) 42.9%	(3) 50%	(14) 28%
Poor	(8) 100%	(13) 86.7%	(12) 57.1%	(3) 50%	(36) 72%
<b>Total</b>	<b>(8) 16%</b>	<b>(15) 30%</b>	<b>(21) 42%</b>	<b>(6) 12%</b>	<b>(50) 100%</b>

Table 24 shows that (7) 100% of the respondents who have never been to school had poor practice, (13) 86.7% out of 15 respondents with primary education had poor practice and (12) 57.1% out of the 21 respondents with secondary had poor practice about the

utilisation of trained TB treatment supporters. It also indicates that out of the 6 respondents with college/university education (3) 50.0% had good practice while (3) 50.0% had poor practice about the utilisation of trained TB treatment supporters.

**Table 27: Respondent's Attitude about the utilisation of trained TB Treatment Supporters in relation to their Sex**

Respondent's Attitude	Sex		Total
	Male	Female	
Positive	(5) 21.7%	(8) 29.6%	(13) 26%
Negative	(18) 78.3%	(19) 70.4%	(37) 74%
<b>Total</b>	<b>(23) 46%</b>	<b>(27) 54%</b>	<b>(50) 100%</b>

Table 25 shows that (18) 78.3% out of the 23 male respondents had negative attitude, while (19) 70.4% out of the 27 female respondents had negative attitude about the utilisation of the trained TB treatment supporters.

**Table 28: Respondent's Attitude about the utilisation of trained TB Treatment Supporters in relation to their Age**

Respondent's Attitude	Age				Total
	< 16 years	16 – 24 years	25 – 34 years	≥ 35 years	
Positive	(2) 66.7%	(3) 27.3%	(6) 30%	(2) 12.5%	(13) 26%
Negative	(1) 33.3%	(8) 72.7%	(14) 70%	(14) 87.5%	(37) 74%
<b>Total</b>	<b>(3) 6%</b>	<b>(11) 22%</b>	<b>(20) 40%</b>	<b>(16) 32%</b>	<b>(50) 100%</b>

Table 26 indicates that the majority (2) 66.7% out of the 3 respondents aged less than had positive attitude about utilisation of the trained TB treatment supporters, (8) 72.7% out of the 11 respondents aged 16 – 24 years had negative attitude, (14) 70.0% out of the 20 respondents aged 25 – 34 years had negative attitude, while (14) 87.5% out of the 16

respondents aged 35 years and above had poor attitude about the utilisation of the trained TB treatment supporters.

**Table 29: Respondent's Attitude about the utilisation of trained TB Treatment Supporters in relation to their Marital Status**

Respondent's Attitude	Marital Status				Total
	Single	Married	Widowed	Divorced	
Positive	(3) 23.1%	(9) 31.0%	(1) 14.3%	(0) 0%	(13) 26%
Negative	(10) 76.9%	(20) 69.0%	(6) 85.7%	(1) 100%	(37) 74%
<b>Total</b>	<b>(13) 26%</b>	<b>(29) 58%</b>	<b>(7) 14%</b>	<b>(1) 2%</b>	<b>(50) 100%</b>

Table 27 indicates that (10) 76.9% out of the 13 single respondents had negative attitude about the utilisation of trained TB treatment supporters, (20) 69.0% out of the 29 married respondents had poor attitude, (6) 85.7% of the widowed respondents had poor attitude, while (1) 100% of the divorced respondents had poor attitude about the utilisation of the trained TB treatment supporters.

**Table 30: Respondent's Attitude about the utilisation of trained TB Treatment Supporters in relation to their Marital Status**

Respondent's Attitude	Level of Education				Total
	Never been to school	Primary	Secondary	College /University	
Positive	(1) 12.5%	(4) 26.7%	(7) 33.3%	(1) 16.7%	(13) 26%
Negative	(7) 87.5%	(11) 73.3%	(14) 66.7%	(5) 83.3%	(37) 74%
<b>Total</b>	<b>(8) 16%</b>	<b>(15) 30%</b>	<b>(21) 22%</b>	<b>(6) 12%</b>	<b>(50) 100%</b>

Table 28 shows that of the 8 respondents who have never been to school (7) 87.5% and (1) 12.5% had negative attitude and positive attitude respectively. The table also reveals that of the 15 respondents who had primary education (11) 73.3% had negative attitude, while (4) 26.7% in the same category had positive. It further indicates that the majority

(14) 66.7% of the respondents with secondary had negative attitude, with (7) 33.3% in the same category having positive attitude about the utilisation of the trained TB treatment supporters. The majority (5) 83.3% of the respondents with college/university education had poor attitude, while only (1) 16.7% of them in the same category had positive attitude about the utilisation of the trained TB treatment supporters.

**Table 31: Respondent's practice in relation to their attitude about the availability and utilisation of trained TB Treatment Supporters**

Respondent's practice	Attitude		Total
	Positive	Negative	
Good	(4) 30.8%	(10) 27%	(14) 28%
Poor	(9) 69.2%	(27) 73%	(36) 72%
<b>Total</b>	<b>(13) 26%</b>	<b>(36) 72%</b>	<b>(50) 100%</b>

Table 29 indicates that out of 14 respondents with positive, the majority (9) 69.2% had poor practice about the availability and utilisation of trained TB treatment supporters while (4) 30.8% had good practice about the availability and utilisation of trained TB treatment supporters. The table further reveals that of the 36 respondents with negative attitude, the majority (27) 73% of them had poor practice about the availability and utilisation of trained TB treatment supporters while (10) 27% of them had good practice about the availability and utilisation of trained TB treatment supporters.

**Table 32: Respondents who have trained TB Treatment Supporters in community in relation to their TB Treatment Supporters**

Respondents who have trained TB Treatment Supporters in community	Who is your TB Treatment Supporter?			Total
	Relative	Clinic	Trained TB Treatment Supporter	
Yes	(12) 46.2%	(0) 0%	(14) 53.8%	(26) 52%
No	(22) 91.7%	(2) 8.3%	(0) 0%	(36) 72%
<b>Total</b>	<b>(34) 68%</b>	<b>(2) 4%</b>	<b>(14) 28%</b>	<b>(50) 100%</b>

Table 32 indicates that out of 26 respondents who had trained TB treatment supporters in their communities, the majority (14) 53.8% of them chose the trained TB treatment supporters as their treatment supporters while (12) 46.2% of them chose relatives as treatment supporters. The table further shows that out of the 36 respondents who did not have trained TB treatment supporters in their communities, (22) 91.7% of them chose relatives as their treatment supporters while (2) 8.3% of them had the clinic as their treatment supporters.

**Table 33: Respondent's Distance to the nearest trained TB Treatment Supporter in relation to who their TB Treatment Supporter is**

Who is your TB Treatment Supporter?	Distance to the nearest trained TB Treatment Supporter			Total
	Less than 30 minutes	½ - 1 hour	1 – 2 hours	
<b>Relative</b>	(3) 25%	(4) 33.3%	(5) 41.7%	<b>(12) 46.2%</b>
<b>Clinic</b>	(0) 0%	(0) 0%	(0) 0%	<b>(0) 0%</b>
<b>Trained TB Treatment Supporter</b>	(6) 42.9%	(7) 50%	(1) 7.1%	<b>(14) 53.8%</b>
<b>Total</b>	<b>(9) 34.6%</b>	<b>(11) 42.3%</b>	<b>(6) 23.1%</b>	<b>(26) 100%</b>

Table 33 shows that out of the 12 respondents who had relatives as their treatment supporters, the majority (5) 41.7% of them would take 1 – 2 hours to reach the nearest the trained TB treatment supporters, (4) 33.3% of them would take ½ - 1 hour to reach the nearest trained TB treatment supporters while (3) 25% of them would take less than 30 minutes. The table further reveals that of the 14 respondents who had trained TB treatment supporters as their treatment supporters, the majority (7) 50% of them take less than 30 minutes to reach the nearest trained TB treatment supporters, (6) 42.9% of them takes ½ - 1 hour to reach the nearest trained TB treatment supporters while (1) 7.1% of them takes 1 – 2 hours to reach the nearest trained TB treatment supporters.

## **CHAPTER FIVE**

### **5.0 DISCUSSION OF FINDINGS AND IMPLICATIONS TO THE HEALTH CARE SYSTEM**

This chapter looks at the study interpretations and discusses the findings as well as the implications to the health care system. The discussion of findings is based on data collected from a sample of fifty (50) respondents. The respondents were TB patients on treatment in Lundazi district. The general objective of the study was to determine the factors associated with the utilisation of trained TB treatment supporters by TB Patients in Lundazi district.

### **5.1 DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS**

The study sample consisted of fifty (50) respondents who were the TB patients on treatment in Lundazi district. The study population were all TB patients who were on TB treatment in Lundazi district.

Section A of the questionnaire [Appendix I] had questions on demographic data from the respondents. The results revealed that the majority 54% of the respondents were female. This could be due to the fact that females are vulnerable to HIV/AIDS, which predisposes them to the development of TB disease. Chanda (2004) showed that TB is a co-infection with HIV/AIDS. This could also be as a result of the fact that females are freer to seek health care services, than their male counterparts (Ndubani et al 2003: 353- 363).

The demographic data further reveals that the majority 40% of the respondents were aged 25 – 34 years and 6% were aged less than 16 years (see table 3; page 35). This indicates that there were more TB patients aged 25 – 35 years in Lundazi district. This could be due to the relationship between HIV/AIDS are TB. This age group is more sexually active. They are also in the economically productive age group in terms of working, therefore, making this age group more vulnerable to TB disease as TB is spread in the air (aerosol-spread).

The majority 58% of the respondents were married. This signifies the strong entrenched Zambian culture among the people of Lundazi in respect to marriage. It could also be due to the fact that the majority 40% of the respondents are in their reproductive age group and are aged between 25 and 34 years (see table 3; page 35). It is also revealed that 26% of the respondents were single because they were still in their teenage years and were still looking for their spouses to-be. 14% were widowed and only 2% were divorced respectively. The divorced respondents were few because divorce is not culturally and socially acceptable in Zambia.

Information on the respondents' denomination revealed that the majority 44% were Roman Catholics, 10 % were Seventh - day Adventists, 4% were from Reformed Church in Zambia, 4% were Apostolic Faith, 2% were Jehovah's Witness and 34% were from other churches like Church of Central African Presbyterian (CCAP), Chipangano, Zion Christian and Zion Spirit. Though the information on the respondent's denomination indicates that all the respondents are Christians, it is worthy to note that Lundazi community is a mixture of Christians and Muslems.

Educational level (see table 3: page 35) of TB patients in Lundazi revealed 42% of the respondents had secondary education; this could be due to the fact that the composition of the respondents consisted of patients from both the urban and rural areas of Lundazi. This could also be due to the increased numbers of basic schools in the district. 30% had primary education, 12% had attained their college/university education, while 16% had never been to school.

Information on the employment status revealed that the majority 84% of the respondents were not in formal employment. This could be due lack of permanent employment opportunities in the district, which has a lot of seasonal companies dealing in tobacco and cotton buying.

## **5.2 DISCUSSION OF VARIABLES**

### **5.2.1 Knowledge about the Availability and Functions of trained TB Treatment Supporters**

Knowledge is one factor that greatly influences the utilisation of trained TB treatment supporters by TB patients. The effect of education, or lack thereof, is a barrier to treatment, according to Munthali (2005) who noted that high education may make it easier for TB patients' to understand information about TB, its treatment, and prevention of drug resistance. The knowledge about the availability and functions of the trained TB treatment supporters helps the TB patients to choose the trained TB treatment supporter as their treatment supporter throughout the whole period of their treatment. The findings of the study revealed that the majority 84% of the respondents never heard about the DOT Plan, which requires a TB patient to choose a treatment supporter who should assist him/her during the course of their treatment. This indicates that TB patients had no option of choosing the treatment supporter of their choice. Instead they were dictated to be supervised by a treatment supporter by the health workers.

The study further revealed that the majority 58% of the respondents heard about the trained TB treatment supporters (see figure 3; page 38). This indicates that TB patients have some basic knowledge about the availability of trained TB treatment supporters and their functions. However, it is important to note that the remaining 42% represents a bigger number of TB patients in the district who have never heard about trained TB treatment supporters, which would negatively affect the utilisation of trained TB treatment supporters by TB patients in the district. This shows that there is inadequate information about the availability of trained TB treatment supporters in the district hence there is need to inform the TB clients of their presence and need to use them.

Figure 4 shows that the majority 96.6% out of 29 respondents who heard about trained TB treatment supporters heard it from the Health Workers at the clinic and 20.7% heard it from the relatives and/or friends. This indicates that there are only two sources from which TB patients can get the information about TB and its treatment. This is so because none of the respondents heard about trained TB treatment supporters from the local radio

station, books and/or pamphlets. This signifies the importance of employing other means of delivering information education and communication (IEC) such as running radio programs on the local radio station and translating IEC materials into the local language in order to sensitise the community about the availability and functions of the trained TB treatment supporters.

It has also been revealed that 56% of the respondents were able to define who a trained TB treatment supporter is. This is due to the fact that only 58% of the 50 respondents heard about the trained TB treatment supporters. This indicates that 44% of the respondents did not know who the trained TB treatment supporters are and what their functions are in relation to TB treatment. This finding correlates with the hypothesis that increased sensitisation of the TB clients about the availability of the trained TB treatment supporters in the community they are living would enhance the utilisation of trained TB treatment supporters by TB clients. Therefore, I fail to reject this hypothesis.

In relation to who is their TB treatment supporter, the study showed that the majority 68% of the respondents have relatives as their treatment supporters, 28% have trained TB treatment supporters as their treatment supporter and only 4% were being supervised by the clinic staff (see table 5; page 40). This indicates how poorly the trained TB treatment supporters are being utilised by the TB patients in Lundazi district. This is due to the fact that patients are often told to come to the health facility daily, and only if they “refuse” are they offered an alternative. TB patients typically are very ill, poor and have a low education level. It is difficult for them to refuse what the doctor or nurse tells them, it is difficult for them to negotiate a form of treatment supervision convenient to them. Instead they often agree, because while feeling ill they’ll agree to almost anything to get treatment. The danger is that they may default when they start to feel better.

With regard to the sex of their TB treatment supporter, the study revealed that 52% of the TB treatment supporters for the 50 respondents were females and only 48% of them were males. This could be explained by a study done by Munthali (2005) which was focusing on finding out which guardian is preferred by the TB clients as a TB treatment

supporter by the TB clients, and it was found that the majority 80% of the TB clients were comfortable with female TB treatment supporters, either as wives or relatives, and most of the respondents also preferred to be supervised by guardians rather than health workers.

### **5.2.2 Practice**

Practice is the actual performance of an activity in a real situation. It may also be defined as a way of doing something, especially as a result of habit, custom, or tradition (Mayor et al 2006: 1104).

In response to whether the TB client discusses their treatment with their treatment supporters, the study revealed that the majority 76% of the respondents do discuss about their TB treatment with their treatment supporter and 24% do not discuss with their treatment supporters (see figure 6; page 41). Figure 7 further indicated that 97.4% of the 38 respondents who discuss with their treatment supporters discuss about the concerns over side effects of the TB drugs, 94.7% discuss about insufficient food at home, 94.7% about the regularity of taking drugs and 84.2% about clinic appointment dates. These issues are critical aspects of the TB treatment which needs the explanation of a trained TB treatment supporter. This is the reason why the use of trained TB treatment supporters should be encouraged so the TB patients can receive appropriate IEC about their treatment. Discussion is a major component of the TB treatment because of the nature of the treatment duration.

It has also been revealed that 66.6% of the 12 respondents who do not discuss with their treatment supporter do so because their treatment supporters do not have time to spare so that they can discuss, 16.7% do not discuss because their treatment supporters do not come to visit them and 16.7% do not discuss because their treatment supporters died and/or does not care about their clients (see table 7; page 42). This is a very bad practice in that these TB patients can easily default and/or start missing doses any how. This will lead to reduced cure rate, increased relapses and increased number of Multi-Drug Resistance (MDR) TB cases. Friedman (2003) argued that community participation and

peer group education is relevant in long courses of treatment where culturally sensitive support in or near a patient's home is necessary to maintain adherence to treatment regimens (Friedman 2003: 24).

With regard to the reasons why the TB clients chose their treatment supporters, the study revealed that the majority 62% of the respondents chose their treatment supporters because he/she is the only relative they are living with and 24% of the respondents chose their treatment supporters because they had confidence and trust in them (see table 8; page 43). This finding is in line with Munthali's study in which she was looking at guardian is preferred by the TB patients as a TB treatment supporter in Monze district, and it was observed that most patients on TB treatment (80%) are more comfortable with female treatment supporters, either as wives, or, relatives. She also noted that most of them preferred to be supervised by guardians rather than health care providers. This could be a reflection that there are no trained TB treatment supporters in the communities these TB patients are living or it could be a reflection that these patients are not told of the other options of the treatment supporters. So this shows that there is need for better IEC on the availability and use of trained TB treatment supporters.

With regard to what the TB treatment supporters do for their TB clients, the study revealed that 96% of the 50 respondents were observed swallowing their TB drugs daily by their treatment supporters (see figure 8; page 44). This is a very important component of the Directly Observed Treatment Short course (DOTS) which is thought, could increase the cure rate, reduce defaulter rate and reduce the development of MDR TB cases. For example a study conducted in Pakistan by Khan et al (2001) which was focusing on the effectiveness of the DOT part of DOTS trial revealed that the cure rate increased from 26% to 57%, and the overall cure or treatment completed rate increased from 41% before implementing DOT to 67% after implementing the DOT strategy.

The study further revealed that 88% of the respondents were encouraged and taken to the clinic by their treatment supporters. 78% of the respondents were counseled when they felt low, this is a cardinal intervention in trying to promote adherence to TB treatment.

Therefore, there is need that treatment supporters have some basic counseling skills, hence the justification that trained TB treatment supporters be used. It is also revealed that 46% of the respondents were assisted to prepare their food and 14% were helped to bath and wash their clothes by their treatment supporters.

In response to the value that the TB clients attach to the services rendered by their TB treatment supporters, the study revealed that 82% of the 50 respondents value the services of their treatment supporters as very supportive, 10 % of them rated the services of their treatment supporters as supportive and only 8% of them felt that they were neglected. Kironde and Bajunirwe (2002) in their study focusing on patient's perspectives of the DOT programme, discovered that TB patients would appreciate the services of the treatment supporters if they are given an opportunity to choose the treatment supporter of their choice unlike when they have been forced on them. This shows that the health care system needs to monitor and evaluate the distribution or allocation of TB treatment supporters to the clients. This may show that a change in strategy is needed in the provision of this service.

In relation to the availability of trained TB treatment supporters, the study revealed that 52% of the respondents had trained TB treatment supporters in their communities (see table 10; page 45). It is further revealed that 53.8% of the 26 respondents with trained TB treatment supporters in their communities chose trained TB treatment supporters as their treatment supporters, while 46.2% of them chose relatives as their treatment supporters (see table 32; page 60). The table further indicates that 35.3% of the 34 respondents who chose relatives as their treatment supporters had trained TB treatment supporters in their communities. This indicates that it is not only the availability of trained TB treatment supporters in the community that influence the choice of TB clients when selecting their treatment supporters.

With regard to the distance between where the TB client stays and where the trained TB treatment supporters live, the study revealed that 34.6% out of the 26 respondents who trained TB treatment supporters takes less than 30 minutes to reach the nearest trained TB

treatment supporters, 42.3% of them take ½ an hour to 1 hour while 23.1% of them take 1 – 2 hours to reach the nearest trained TB treatment supporters (see table 11; page 45).

### **5.2.3 Attitude**

Attitude is defined as someone's opinions or feelings about something, especially as shown by their behaviour, or behaviour towards somebody (Mayor et al 2006: 76). Section C of the interview schedule was looking on the attitude of TB clients towards the utilisation of the trained TB treatment supporters. The study revealed that the majority 74% out of the 50 respondents had negative attitude towards the utilisation of the trained TB treatment supporters, while 26% of the respondents had positive attitude towards the utilisation of trained TB treatment supporters (see table 29; page 58). This could be due to the inadequate information the TB patients have about the trained TB treatment supporters. This signifies that much effort is needed to influence the TB patients so that they can willingly make use of the trained TB treatment supporters.

With regard to attitude against the level of knowledge, the study revealed that out of 37 respondents with negative attitude, 48.7% of them had moderate knowledge about the availability and utilisation of trained TB treatment supporters, 43.2% of them had low knowledge while 8.1% of them had high knowledge about the availability and utilisation of trained TB treatment supporters (see table 22; page 54). The table further showed that out of 13 respondents with positive attitude, 15.4% of them had high knowledge about the availability and utilisation of trained TB treatment supporters, 46.1% had moderate knowledge while 38.5% had low knowledge about the availability and utilisation of trained TB treatment supporters. This indicated the fact that the TB patient's attitude depends on the level of knowledge they have regarding the availability and utilisation of the trained TB treatment supporters. This therefore, shows the need to increase the knowledge levels of the TB clients regarding the availability, functions and utilisation of trained TB treatment supporters.

In response to the relationship between attitude and practice, the study revealed that out of the 13 respondents with positive attitude 30.8% of them demonstrated good practise

and 69.2% of them had poor practise. It is also observed that of the 37 respondents with negative attitude, 73% of them had poor utilisation practices of trained TB treatment supporters while 27% of them had good utilisation practices (see table 31; page 59). This finding correlates with the findings of the study done by Jack C et al (2004) which was focusing on once-daily antiretroviral therapy integrated with tuberculosis directly observed therapy in a resource-limited setting indicated that the respondents with a positive attitude practised good utilisation of trained TB treatment supporters and those with negative attitude practised poor utilisation of trained TB treatment supporters.

With regard to the belief whether TB is curable or not, the study revealed that 94% of the 50 respondents believed that TB is curable while 6% of them believed that TB is not curable (see table 15; page 48). This signifies that TB patients would adhere to TB treatment because they believe that once they take the drugs they would get healed, unlike if they did not believe that TB is curable. However, 6% of the TB client may hold a silent belief that he/she is not going to be cured. The strength of this belief may lead to the TB client condemning him/herself for having TB, he/she may develop low self esteem, a negative attitude towards him/herself and the disease, and may end up non compliant with treatment. Therefore, there is need to continue with the provision of IEC on TB as a disease and its treatment.

In respect of what the TB clients think would enhance adherence to the TB treatment, the study revealed that 94% of the 50 respondents think observing TB patients swallowing their tablets daily would enhance adherence to treatment and hence would promote the cure rate, 86% of them further think providing the TB patients with good nutrition would enhance adherence and 10% of them still think constant supply of TB drugs would also enhance adherence (see figure 10; page 48). This indicates that TB patients agree with the WHO assumption that DOT would promote adherence.

With regard to whether TB clients have any cultural restrictions, the study revealed that 66% of the 50 respondents had no cultural restrictions with regard to TB treatment while 34% of them had cultural restrictions with regard to TB treatment (see table 16; page 49).

It is also noted that 100% of the 17 respondents with cultural restrictions believed that an outsider is not culturally allowed enter the family and give care as a TB treatment supporter, and that when the husband is sick, the wife is expected to take care of him regardless of how tired/exhausted she is (see figure 11; page 49). This shows that utilisation of trained TB treatment supporters is greatly influenced by the cultural beliefs that the TB client holds. The cultural restrictions that the 34% of the respondents have may negatively affect TB treatment and the utilisation of trained TB treatment supporters by the TB clients. Therefore, there is need to adequately educate the TB clients about the availability, functions and utilisation of trained TB treatment supporters, if these unhealthy cultural beliefs are to be broken among the TB clients.

In response of what the TB client thinks about the use of trained TB treatment supporters, The study indicated that 94% of the respondents think that the correct use of trained TB treatment supporters may promote adherence and cure of TB, 82% of them further thinks that it would reduce defaulting from treatment. This is a good attitude, because it promotes the utilisation of the trained TB treatment supporters by the TB patients. It is imperative that this attitude is accompanied by the availability of trained TB treatment supporters in the communities, so that the TB clients no TB treatment can easily find trained TB treatment supporters in the communities.

### **5.3 IMPLICATIONS ON THE HEALTH CARE SYSTEM**

Implication may be defined as a possible effect or result (Mayor et al 2006: 718). The implications of this study on the health care system are looked at from the practice, research, education and administration point of view.

#### **5.3.1 Practice**

The reasons of training TB treatment supporters are to supervise TB clients throughout their period of treatment to increase the cure rate and reduce the defaulter, relapse and treatment failure rates, and also to promote the case detection rates so that the TB clients are given the right to choose the TB treatment supporter of their choice. The study revealed that there is a low utilisation of trained TB treatment supporters among the TB

clients of 28%. This implies that they need to be given adequate information about the availability and functions of the trained TB treatment supporters. This will help the TB clients and the health care system at large to adequately utilise the trained TB treatment supporters.

### **5.3.2 Research**

The knowledge about the availability and functions, and the attitude and practice towards the utilisation of trained TB treatment supporters by TB clients can not be improved without evidence based knowledge through conducting research. No research has been done on utilisation of trained TB treatment supporters among TB clients in Zambia. With the findings of this research, much attention should be given to TB clients to ensure that they will have adequate knowledge about the availability and functions, good practice and positive attitude about the utilisation of trained TB treatment supporters. Therefore, more researches are encouraged such as the effectiveness of TB DOTS supporters in order to improve the quality of contributions provided by the trained TB treatment supporters in the health sector.

### **5.3.3 Education**

The study has revealed challenges to the health care system Lundazi district. It has been observed that in high TB burden settings, community-based TB treatment is an effective and viable option that can supplement other modes of treatment delivery. Furthermore, community-based TB treatment delivery has been found to be cost-effective, and it is a low cost technology that can easily be adapted to diverse areas of need and appropriate lay volunteers recruited according to availability in each contextual setting. Therefore, there is a greater need to intensify the training of TB treatment supporters in order to update their knowledge which will in turn help to improve their practice and attitude. This will in the long run also positively influence the practice and attitude of TB clients towards them.

### **5.3.4 Administration**

The proper implementation of the DOTS strategy among the TB clients is affected by the shortage of trained TB treatment supporters. The study revealed that 72% of the TB

clients are either supervised by the clinic or the relatives. This may be due to the fact that trained TB treatment supporters are not there in the communities such that TB clients have no option but to choose either the clinic or relative as their treatment supporter. To promote utilisation of the trained TB treatment supporters among TB clients, once the treatment supporters are trained, the District Health Management Team has the duty to ensure that these trained TB treatment supporters are maintained and retained in the communities. It also has to ensure that these trained TB treatment supporters are actively practising. Lack of motivation may lead to these trained TB treatment supporters becoming non functional and/or relocating from the communities. Therefore, the District Health Management Team needs to support the programme of training and retaining TB treatment supporters financially. The District Health Management Team can purchase necessary equipment and supplies like bicycles, and stationary just to mention a few.

#### **5.4 CONCLUSION**

The study sought to determine the Knowledge, Attitude and Practice of TB patients on the utilisation of trained TB treatment supporters in Lundazi district. Fifty (50) TB patients were interviewed using structured interview schedule. The sample was drawn from Lundazi District Hospital, Lundazi Urban Health Centre, Mwase-Lundazi Zonal Health Centre and Lumezi Mission Zonal Health Centre.

The study revealed that there is a low utilisation of trained TB treatment supporters in the district; only 28% of the 50 respondents were being supervised by the trained TB treatment supporters. The study also revealed that knowledge, attitude and practice were not the only factors that affected the utilisation of trained TB treatment supporters among the TB patients. Factors such as distance between where the patient lives and where the trained TB treatment supporters, constant supply of anti TB drugs, and the availability of trained TB treatment supporters in the communities where the patients contributed to either correct or incorrect utilisation of trained TB treatment supporters among TB patients. It is therefore important to have all these factors attended to in order to improve the utilisation of trained TB treatment supporters by TB patients.

## 5.5 RECOMMENDATIONS

- There is need to increase the grants to the District, to enable the district purchase the necessary equipment and supplies for the trained TB treatment supporters carry out their functions effectively. This will also help them to be recognised by the community and they would easily become popular, thereby the TB clients would freely choose them as their treatment supporters.
- The government need to identify stakeholder who are specializing in TB control and prevention programmes to supplement there inadequacy in terms of training TB treatment supporters and purchasing of equipments and supplies. For example WFP (World Food Programme) and Care International partnered with CBoH in a project called Tuberculosis Integrated Project in Eastern and Central Provinces (TIPEC). In this project Care International supported TB control through capacity building (training health workers in TB control and training of TB treatment supporters) and buying anti-TB drugs were the government could not manage (CBoH, 2005:78).
- There is need to increase the funding of research programmes to allow more researches to be done in the area of TB treatment and trained TB treatment supporters as this will help to improve the quality of care provided by trained TB treatment supporters to the clients.
- There is need that the district intensifies the awareness and sensitisation programmes about the availability and functions of the trained TB treatment supporters in the community, to enable the communities utilize them appropriately. There is a low utilisation of trained TB treatment supporters in the district as revealed by table 5 which showed that 68% of the respondents had relatives as their treatment supporters.
- There is need to carry out a similar study in the district at a larger scale in order to obtain more accurate information and generalise the findings.

- There is need for the district to be conducting some refresher courses for the trained TB treatment supporters so that they can be well updated with information regarding TB treatment and prevention.
- It was observed that most of the printed materials on TB from the Ministry of Health were in English language; it is therefore recommended that such more brochures be printed in local languages (Tumbuka and Chewa) for the local people to read and understand especially those who are literate.
- There is need that the district intensifies the supervision of the trained TB treatment supporters, to ensure that they do the right things. For example table 14 revealed that out of 19 respondents who had missed some doses of their anti-TB drugs 84.2% of them did so because they had ran out the TB drugs.

## **5.6 PLANS FOR DISSEMINATION OF FINDINGS**

Dissemination of findings entails the measures that would be undertaken to make known to the relevant authorities and study subjects what the study has measured. The findings of this study will be disseminated by presenting summaries of research findings to Lundazi District Health Management Team with the necessary recommendations on knowledge, attitude and practice of TB patients on the use of trained TB treatment supporters.

The researcher will also take advantage of management meetings and any workshop that would be arranged by Lundazi District Health Management Team to disseminate the results to the health workers in the district.

Four copies of the final report will be printed, bound and submitted to the Department of Post Basic nursing, the Medical library, the Ministry of Health as sponsors and a copy to the investigator. Attempts will be made to disseminate the findings of the study at any conference for public consumption and action.

## **5.7 LIMITATIONS OF THE STUDY**

- Since this was an academic exercise, the study sample was small (was limited to 50 respondents), therefore the findings could not be generalised to the entire Lundazi district. Otherwise with adequate funding and time the researcher would have captured a larger sample thus the results of the study would have been generalised.
- Time allocated in which to carry out the research was not adequate as the researcher had other courses to do alongside with research.
- The funding from sponsor for the research was not adequate thus the researcher had to collect data from a smaller sample of 50 respondents.

## 5.8 REFERENCES

1. Bamford L, Loveday M and Verkuil J (2006); **Tuberculosis** from <http://www.stoptb.org/conference/Decla.access.html> accessed on 15<sup>th</sup> June, 2007.
2. Basavanthappa, B. T. (2006); **Nursing Research**, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi. pp. 81
3. Bless, C. and Achola, P. (1990); **Fundamentals of Social Research Methods (An African Perspective)**, Government Printers, Lusaka.
4. Bond V. A, Tihon V and Godfrey-Faussett P (2005); **Kuyendela odwala – Visiting TB patients: the widening role of home based care organisations in the management of TB patients in Lusaka, Zambia**, In: International Journal of TB and Lung Diseases 9(3): 282-287.
5. CBoH, (2005); **Facilitators Manual for the Training of Community TB Treatment Supporters**, CBoH, Lusaka
6. CBoH/MoH, (2004); **Management of Opportunistic Infection**, A Reference Manual for Health Workers, CBoH/MoH, Lusaka
7. Central Statistics Office, (2000). **Census of Population, Housing and Demography**. Lusaka.
8. Chanda D. and Gosnell, D. J. (2006); **The Impact of Tuberculosis on Zambia and the Zambian Nursing Workforce**, The Online Journal of Issues in Nursing, The American Nurses Association, Inc. - 8515 Georgia Avenue - Suite 400 – Silver Spring, MD 20910 ISSN: 1091-3734 | 1-800-274-4ANA.
9. Jack C et al (2004); **A pilot study of once-daily antiretroviral therapy integrated with tuberculosis directly observed therapy in a resource-limited setting**. *Acquired Immune Deficiency Syndrome, Journal*. 36(4): 929-934,
10. Kaluta R, Mwape R, Mwape W, Mfula J. C (2004); **Implementation of DOTS at community level**, Int. Conf. AIDS. 2004 Jul 11-16; 15: abstract no. D10171. (Unpublished).

11. Kironde S, and Bajunirwe F, (2002); **Lay workers in directly observed treatment (DOT) programmes for tuberculosis for high burden settings: should they be paid? A review of behavioural perspectives.** African Health Sciences Vol. 2, No. 2, August 2002; pp. 73-78.
12. Kironde S, and Klaasen S, (2002); **What motivates lay volunteers in high burden but resource-limited tuberculosis control programmes? Perceptions from the Northern Cape province, South Africa.** International Journal of Tuberculosis Lung Diseases 2002; Vol. 6, No. 2, pp 104-110
13. Kironde S. and Bajunirwe F. **Lay workers in directly observed treatment (DOT) programmes for tuberculosis for high burden settings: should they be paid? A review of behavioural perspectives.** African Health Sciences 2002; 2(2): 73-78.
14. Kironde S. and Kahirimbanyi, M. (2002); **Community participation in primary health care (PHC) programmes: Lessons from tuberculosis treatment delivery in South Africa,** African Health Sciences, Vol. 2, No. 1, April, 2002, pp. 16-23,
15. LDHMT, (2005); **Health Management Information System,** LDHMT, Lundazi
16. LDHMT, (2006); **Lundazi District TB Treatment Register for 2006/07,** LDHMT, Lundazi
17. Mayor, M. et al (2006); **Macmillan English Dictionary For Advanced Learners,** International Student Edition, Macmillan Publishers Ltd, London. P: 76, 718, 1104.
18. MoH, (2006); **2005 Annual Report,** September 2006, MoH, Lusaka. Pp. 22
19. Munthali, F. C (2004); **A study to determine which guardian is preferred by the TB patients as a TB Treatment Supporter in Monze District, Zambia** (unpublished).

20. Ndubani, P., Guinness, L., Walker, D., Jama, J., and Kelly, P. (2003); **Surviving the impact of HIV-related illness in the Zambian business sector**, AIDS patient care and STDs. Jul. 2003, vol. 17, No. 7: 353-363.
21. Polit, D. F., Beck, C. T. and Hungler, B. P. (2001); **Essentials of Nursing Research**, 6<sup>th</sup> Ed., Lippincott Williams & Wilkins, Philadelphia. pp. 33, 97, 167, 240-242, 267-270, 305-311, 460- 461.
22. Raviglione, M. C. and O'Brien, R. J. (2004); **Harrison's Principles of Internal Medicine**, 16<sup>th</sup> Ed., McGraw-Hill Professional, London. pp. 954
23. Smeltzer, C. S. and Bare, B. G. (2000); **Brunner & Suddarth's Textbook of Medical-Surgical Nursing**, 9<sup>th</sup> Ed., Lippincott, Philadelphia. pp. 437
24. Summers, D et al (2003); **Longman Dictionary of Contemporary English**, Longman, London. pp. 1129
25. Treece, E. W and Treece Jr, J. W (1986); **Elements of Research in Nursing**, 4<sup>th</sup> Ed., Mosby Company, St. Louis. pp. 215, 236-240, 266, 348-372, 382, 458, 505.
26. Walley J. D, Khan M. A, Newell J. N and Khan M. H (2001); **Effectiveness of the direct observation component of DOTS for Tuberculosis: a randomized controlled trail in Pakistan** – <http://www.leeds.ac.uk> accessed on June 18, 2007
27. Walley J.D., Khan M.A., Newell J.N., Khan M.H, *Lancet* 2001,357:664-669.
28. WHO (1998); **Tuberculosis Epidemic Report**, WHO, London.
29. WHO (2004); **Gender in TB Research**, WHO Geneva.
30. WHO (2006): Tuberculosis – <http://www.who.tb.org.com> accessed on June 18, 2007.
31. Wilkinson D, Colvin M, Gumede L, and Grimwade K (2001); **Integrating Traditional healers into a tuberculosis control programme in Hlabisa, South Africa**. Medicine Research Council Policy Brief: No. 4 December 2001, from <http://www.healthlink.org.za> accessed on 20<sup>th</sup> June 2007.

## **APPENDIX I: INTERVIEW SCHEDULE**

**UNIVERSITY OF ZAMBIA  
SCHOOL OF MEDICINE  
DEPARTMENT OF POST BASIC NURSING**

**STUDY TITLE:** A Study to Determine Factors associated with the Utilisation of Trained TB Treatment Supporters by TB Patients in Lundazi District.

Interview schedule for TB clients/patients on treatment in Lundazi District

QUESTIONNAIRE NUMBER -----  
DATE OF INTERVIEW -----  
PLACE OF INTERVIEW -----  
NAME OF INTERVIEWER -----

### **INSTRUCTIONS TO THE INTERVIEWER**

1. Introduce yourself to the respondent.
2. Explain the purpose of the interview and reasons for undertaking the research.
3. Ask for permission to interview the participant as well as for taking notes.
4. Participants should not be forced to be interviewed.
5. Assure the respondent of the confidentiality of the interview.
6. Do not write respondent's names on this interview schedule.
7. Write/tick responses in the space provided.
8. Thank the respondent at the end of each interview and assure him/her of the confidentiality involved in handling this information.

For official  
use only

**SECTION A: DEMOGRAPHIC DATA**

1. What is your sex?
- a. Male
  - b. Female
2. What is your age on the last birthday
- a. Below 16 years
  - b. 16 – 24 years
  - c. 25 – 34 years
  - d. 35 years and above
3. What is your marital status?
- a. Single
  - b. Married
  - c. Widowed
  - d. Divorced
4. What is your denomination?
- a. Roman Catholic Church
  - b. Reformed Church in Zambia
  - c. United Church of Zambia
  - d. Seventh-Day Adventist
  - e. Pentecostal Church
  - f. Apostolic Faith Church
  - g. Jehovah's Witness
  - h. Others, specify \_\_\_\_\_

For official  
use only

5. How far did you go with your education?

- a. Never been to school
- b. Primary education
- c. Secondary education
- d. College/University education


6. What do you do for your living?

- a. Formally employed
- b. Self employed
- c. None
- d. Others, specify \_\_\_\_\_


7. Do you get enough money to support your family?

- a. Yes
- b. No


8. If no, who supports you for the care of your family?

---

---

---

**SECTION B: KNOWLEDGE QUESTIONS**

Have you ever heard of a DOT plan which requires you to choose a treatment supporter?

- a. Yes
- b. No


For official  
use only

0. Have you ever heard of the trained TB Treatment Supporters?

- a. Yes
- b. No


1. If yes, where did you hear it from?

- a. Health worker at clinic/hospital
- b. Radio
- c. Relatives/Friends
- d. Books/Pamphlets
- e. Others, specify \_\_\_\_\_


2. Do you know who a trained TB Treatment Supporter is?

- a. A male/female trained to observe me swallow my anti-TB drugs.
- b. Community member living near my home
- c. A community health worker


3. What are the other functions of trained TB Treatment Supporters?

- a. Encourage client to attend review clinics
- b. Keeps records of drugs taken by the TB client.
- c. Counselor
- d. Collects drugs for the client from the clinic.


4. Who is your TB treatment supporter?

- a. Relative
- b. Clinic staff
- c. Trained TB Treatment Supporter


For official  
use only

15. What is the sex of your treatment supporter?

- a. Male
- b. Female


**SECTION C: PRACTICE QUESTIONS**

16. Do you discuss your TB treatment with him/her?

- a. Yes
- b. No


17. If yes, what have you discussed with him/her concerning your treatment?

- a. Concern over side effects of TB drugs
- b. Insufficient food at home
- c. Regularity of taking drugs due to a. and b. above.
- d. Clinic appointment dates.
- e. Others, specify \_\_\_\_\_


18. If no give reasons for not discussing issues pertaining to your treatment with your TB Treatment Supporter.

- a. TB Treatment Supporter does not know the side effects of the TB drugs
- b. TB Treatment Supporter does not come to visit me
- c. We do not have time to discuss
- d. Does not provide HEPS for my nutrition
- e. Others, specify \_\_\_\_\_


For official  
use only

9. Why did you choose this treatment supporter?

---

---

---

10. What does your treatment supporter do for you?

- a. Watches me swallow my tablets
- b. Takes me to the clinic for review and encourages me to keep appointment dates
- c. Counsells me when I feel low.
- d. Prepares food for me
- e. Baths and washes for me
- f. Others, specify \_\_\_\_\_

11. How do you value the services of your treatment supporter?

- a. Very supportive
- b. Supportive
- c. Neglected me

12. Do you have trained TB Treatment Supporters in your community?

- a. Yes
- b. No

13. If yes, how long does it take him/her to get to your home?

- a. Less than 30 minutes
- b. 1/2 - 1 hour
- c. 1 - 2 hours

For official  
use only

4. Since you were commenced on TB treatment, have you sometimes gone without taking drugs due to any other reason?

- a. Yes
- b. No


5. If yes, for how long haven't you taken the TB drugs?

- a. Less than 1 week
- b. 2 weeks
- c. 3 weeks and above


6. What was the reason(s) for not taking the TB drugs regularly?

- a. Ran out of TB drugs
- b. Did not have a TB Treatment supporter
- c. Discouraged by trained TB Treatment Supporter's attitude
- d. Others, specify \_\_\_\_\_


7. What reason(s) can you think of, for people's unwillingness to utilize the trained TB Treatment Supporters?

- a. Lack of awareness about the availability of trained TB Treatment Supporters.
- b. Poor attitude of trained TB Treatment Supporters
- c. Non availability of trained TB Treatment Supporters.
- d. Long distance to the nearest trained TB Treatment Supporter
- e. Lack of confidentiality among trained TB Treatment Supporters
- f. Others, specify \_\_\_\_\_


**SECTION D: ATTITUDE QUESTIONS**

8. Do you believe that TB is curable?

- a. Yes
- b. No

9. What do you think would enhance adherence and cure of TB?

- a. Observing TB clients swallowing their tablets daily
- b. Having good nutrition
- c. Others, specify \_\_\_\_\_  
\_\_\_\_\_

10. Does your culture restrict you from utilizing trained TB Treatment Supporters in any way?

- a. Yes
- b. No

11. If yes, how does it restrict you?

- a. An outsider is culturally not allowed to enter the family and give care as a TB Treatment Supporter.
- b. When the husband is sick, the wife is expected to take care of him regardless of how tired/exhausted she is.
- c. When you are sick you should get help from the traditional healer first.
- d. Others, specify \_\_\_\_\_  
\_\_\_\_\_

For official  
use only

2. What is your opinion about the use of trained TB Treatment Supporters?

a. It promote adherence and cure of TB

b. It reduces defaulting from treatment

c. Others, specify \_\_\_\_\_

**END OF INTERVIEWS**

Thank you very much for taking time to answer these questions.

## Marking key to the questionnaire

No	Questions	Correct responses	score
<b>KNOWLEDGE QUESTIONS</b>			
9	Have you ever heard of a DOT plan which requires you to choose a treatment supporter?	a	1
10	Have you ever heard of the trained TB Treatment Supporters?	a	1
11	If yes, where did you hear it from?	a, b, c, d, e,	5
12	Do you know who is a trained TB Treatment Supporter is?	a	1
13	What are the other functions of trained TB Treatment Supporters?	a, b, c, d	4
14	Who is your TB treatment supporter?	c	1
15	What is the sex of your treatment supporter?	a or b	1
<b>Total</b>			<b>14</b>
<b>PRACTICE QUESTIONS</b>			
16	Do you discuss your TB treatment with him/her?	a	1
17	If yes, what have you discussed with him/her concerning your treatment?	a, b, c, d, e	5
18	If no give reasons for not discussing issues pertaining to your treatment with your TB Treatment Supporter.	a, b, c, d, e	5
19	Why did you choose this treatment supporter?		1
20	What does your treatment supporter do for you?	a, b, c, d, e, f,	6
21	How do you value the services of your treatment supporter?	a	1
22	Do you have trained TB Treatment Supporters in your community?	a	1
23	If yes, how long does it take him/her to get to your home?	a	1
24	Since you were commenced on TB treatment, have you sometimes gone without taking drugs due to any other reason?	a	1

25	If yes, for how long haven't you taken the TB drugs?	a	1
26	What was the reason(s) for not taking the TB drugs regularly?	a, b, c, d,	4
27	What reason(s) can you think of, for people's unwillingness to utilize the trained TB Treatment Supporters?	A, b, c, d, e, f	6
	<b>Total</b>		<b>33</b>
<b>ATTITUDE QUESTIONS</b>			
28	Do you believe that TB is curable?	a	1
29	What do you would enhance adherence and cure of TB?	a, b, c	3
30	Does your culture restrict you from utilizing trained TB Treatment Supporters in any way?	a	1
31	If yes, how does it restrict you?	a, b, c, d	4
32	What is your opinion about the use of trained TB Treatment Supporters?	a, b, c	3
	<b>TOTAL</b>		<b>12</b>

**APPENDIX II: Work Schedule**

<b>Task to be performed</b>	<b>Time frame</b>		<b>Responsible Person</b>
	<b>Dates</b>	<b>Duration</b>	
Literature review	Continuous	Continuous	Principal Investigator
Development and finalizing of research proposal	22/04/07 to 30/07/07	110 days	Principal Investigator
Printing research proposal	31/07/07	1 day	Principal Investigator
Clearance from school	01/08/07 to 14/08/07	14 days	Research Supervisor
Training of research assistant	15/08/07 to 21/08/07	7 days	Principal Investigator
Pilot Study	22/08/07 to 28/08/07	7 days	Principal Investigator Research Assistance
Amendments to data collection	29/08/07 to 30/08/07	2 day	Principal Investigator
Data collection main study	31/08/07 to 09/09/07	10 days	Principal Investigator Research Assistance
Data Analysis	10/09/07 to 03/12/07	84 days	Principal Investigator
Draft report writing to PBN	04/12/07 to 24/12/07	21 days	Principal Investigator
Final report writing and submission	25/12/07 to 31/12/07	7 days	Principal Investigator
Dissemination of research finding	01/01/08 to 21/01/08	21 days	Principal Investigator
Monitoring research project	Continuous	Continuous	Principal Investigator

**APPENDIX III: Gantt Chart**

Task to be Performed	Month of Year 2007										Month of year 2008	
	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	
Literature review	→											
Development and finalization of the research proposal	→											
Printing research proposal				→								
Clearance from school					→							
Training of research assistance					→							
Pilot study					→							
Amendment to data collection					→							
Data collection main study						→						
Data analysis							→					
Draft report to PBN										→		
Finalization of report										→		
Dissemination of research finding										→		
Monitoring research project	→											

**APPENDIX IV: BUDGET**

<b>Item No</b>	<b>BUDGET CATEGORY</b>	<b>UNIT COST (K)</b>	<b>QUANTITY</b>	<b>TOATAL COST (K)</b>
<b>1</b>	<b>Stationery</b>			
(a)	Bond paper	25,000.00	4	100,000.00
(b)	Pens	1,000.00	5	5,000.00
(c)	Pencil	500.00	10	5,000.00
(d)	Rubber	1,000.00	2	2,000.00
(e)	Note books	500.00	4	2,000.00
(f)	Tipex	8,000.00	2	16,000.00
(g)	Staplers	20,000.00	2	40,000.00
(h)	Staples	5,000.00	2 boxes	10,000.00
(i)	Files	5,000.00	2	10,000.00
(j)	Scientific calculator	60,000.00	1	60,000.00
(k)	Flip chart	40,000.00	1	40,000.00
(l)	Markers	3,000.00	6	18,000.00
	<b>SUBTOTAL</b>			<b>308,000.00</b>
<b>2</b>	<b>Personnel</b>			
(a)	Lunch Allowance			
	I. Researcher	50,000.00	10 days	500,000.00
	II. Research Assistant	50,000.00	10 days	500,000.00
(b)	Transport			
	I. Researcher	10,000.00	10 days	100,000.00
	II. Research Assistant	10,000.00	10 days	100,000.00
	<b>SUBTOTAL</b>			<b>1,200,000.00</b>
<b>3</b>	<b>Secretarial services</b>			
	I. Typing research proposal	3,000	100 papers	300,000
	II. Typing questionnaire	3,000	10 papers	30,000
	III. Typing research report	3,000	120 papers	360,000

	IV. Photocopying	200	400 papers	800,000
	V. Binding	25,000	4 copies	100,000
	<b>SUBTOTAL</b>			<b>1,590,000</b>
<b>4</b>	Dissemination workshop			<b>2,000,000</b>
	<b>TOTAL</b>			<b>5,098,000</b>
	Contingency fund 10%			309,800
	<b>GRAND TOTAL</b>			<b>5,607,800</b>

## **BUDGET JUSTIFICATION**

### **1. STATIONERY**

Stationery is required for typing the research proposal, writing the final research report as well as typing and printing the report. In addition, 50 interview schedules have to be produced. The notebooks are needed for taking notes of all important points during data collection and analysis. The scientific calculator is required for data analysis. Stapler and staples are needed to put papers together and to maintain their proper arrangement. Tipex will be used to erase errors. Files will be used for storing the interview schedules during the data analysis period.

### **2. SECRETARIAL SERVICES**

There will be need for funds to cater for the typing and photocopying services. Diskettes will be required for data storage. Money is also required for binding the research proposal and report.

### **3. PERSONNEL**

Funds for transport will be required to move to and from the area of data collection. There will also be need for lunch allowance during the data collection period.

### **4. CONTINGENCY**

Contingency is the 10% of the total amount of the budget. It is required to cater for any unforeseen expenses during the research.

**APPENDIX V: PERMISSION TO UNDETAKE A PILOT STUDY**

The University of Zambia  
School of Medicine  
Department of Post Basic Nursing  
P.O. Box 50110  
Lusaka

30<sup>th</sup> July, 2007.

The District Director of Health  
Chama District Health Management Team  
P.O. Box 540008  
Chama

UFS: The Head of Department  
Department of Post Basic Nursing  
School of Medicine  
P.O Box 50110  
Lusaka

Dear Sir/Madam

**RE: REQUEST FOR PERMISSION TO UNDERTAKE A PILOT STUDY**

I am a fourth (4<sup>th</sup>) year student in the Department of Post Basic Nursing at the University of Zambia, School of Medicine. In partial fulfillment of the award of the Bachelor of Science Degree in Nursing, I'm required to carry out a research project. My topic is "A study to determine factors associated with the utilisation of trained TB Treatment Supporters in Lundazi District – Eastern Province".

I therefore request for your permission to administer an interview schedule to TB patients/clients receiving treatment from Chama District Hospital as part of the pilot study to test the reliability and validity of this tool before the main research study in Lundazi. I intend to carry out this exercise on the 22<sup>nd</sup> August 2007 to 28<sup>th</sup> August 2007.

Your assistance will be highly appreciated.

Yours Faithfully

Jere Methuselah.

## **APPENDIX VI: PERMISSION TO UNDER TAKE A RESEARCH STUDY**

The University of Zambia  
School of Medicine  
Department of Post Basic Nursing  
P.O. Box 50110  
Lusaka

30<sup>th</sup> July, 2007.

The District Director of Health  
Lundazi District Health Management Team  
P.O. Box 530013  
Lundazi

UFS: The Head of Department  
Department of Post Basic Nursing  
School of Medicine  
P.O Box 50110  
Lusaka

Dear Sir/Madam

### **RE: REQUEST FOR PERMISSION TO UNDERTAKE A RESEARCH STUDY**

I am a fourth (4<sup>th</sup>) year student in the Department of Post Basic Nursing, School of Medicine at the University of Zambia. In partial fulfillment of the award of the Bachelor of Science Degree in Nursing, I'm required to carry out a research project. My topic of study is "A study to determine factors associated with utilisation of trained TB Treatment Supporters in Lundazi District - Eastern Province."

I therefore request for your permission to administer an interview schedule to the TB patients/clients in Lundazi District. I intend to carry out this exercise from 15<sup>th</sup> August 2007 to 9<sup>th</sup> September 2007.

Thank you in anticipation.

Yours Faithfully

Jere Methuseloh.

FYA

MPO

DIBLCO

*[Handwritten signature]*

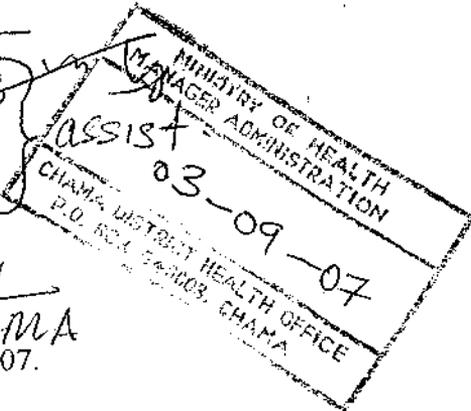
30<sup>th</sup> July, 2007.

PCO

The District Director of Health  
Chama District Health Management Team  
P.O. Box 540008  
Chama

UFS: The Head of Department  
Department of Post Basic Nursing  
School of Medicine  
P.O. Box 50110  
Lusaka

The University of Zambia  
School of Medicine  
Department of Post Basic Nursing  
P.O. Box 50110  
Lusaka



i3 7  
*[Handwritten signature]*

Dear Sir/Madam

**RE: REQUEST FOR PERMISSION TO UNDERTAKE A PILOT STUDY**

I am a fourth (4<sup>th</sup>) year student in the Department of Post Basic Nursing, School of Medicine at the University of Zambia. In partial fulfillment of the award of the Bachelor of Science Degree in Nursing, I'm required to carry out a research project. My topic is "A study to determine factors associated with the utilisation of trained Tuberculosis (TB) Treatment Supporters in Lundazi District – Eastern Province".

I therefore request for your permission to administer an interview schedule to TB patients/clients receiving treatment from Chama District Hospital as part of the pilot study to test the reliability and validity of this tool before the main research study in Lundazi. I intend to carry out this exercise from the 22<sup>nd</sup> August 2007 to 28<sup>th</sup> August 2007.

Your assistance will be highly appreciated.

Yours Faithfully

*[Handwritten signature]*

Jere Methuselah.

The University of Zambia  
School of Medicine  
Department of Post Basic Nursing  
P.O. Box 50110  
Lusaka

30<sup>th</sup> July, 2007.

The District Director of Health  
Lundazi District Health Management Team  
P.O. Box 530013  
Lundazi

UPS: The Head of Department  
Department of Post Basic Nursing  
School of Medicine  
P.O. Box 50110  
Lusaka

*No objection*  
*[Signature]*  
REPUBLIC OF ZAMBIA  
MINISTRY OF HEALTH  
LUNDAZI DISTRICT HEALTH BOARD  
30 AUG 2007  
DISTRICT DIRECTOR OF HEALTH  
P.O. BOX 53001  
LUNDAZI

13 7  
*[Signature]*

Dear Sir/Madam

**RE: REQUEST FOR PERMISSION TO UNDERTAKE A RESEARCH STUDY**

I am a fourth (4<sup>th</sup>) year student in the Department of Post Basic Nursing, School of Medicine at the University of Zambia. In partial fulfillment of the award of the Bachelor of Science Degree in Nursing, I'm required to carry out a research project. My topic of study is "A study to determine factors associated with the utilisation of trained Tuberculosis (TB) Treatment Supporters in Lundazi District - Eastern Province."

I therefore request for your permission to administer an interview schedule to the TB patients/clients in Lundazi District. I intend to carry out this exercise from 15<sup>th</sup> August 2007 to 9<sup>th</sup> September 2007.

Thank you in anticipation.

Yours Faithfully

*[Signature]*

Jere Methusekha.