

**EXPLORATION OF FACTORS CONTRIBUTING TO THE
TUBERCULOSIS DEFAULT RATE IN THE EAST LONDON
AREA OF BUFFALO CITY METROPOLITAN MUNICIPALITY**

by

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DECLARATION

I, **Nomakorinte Elizabeth Mlatsheni**, hereby declare that the research project entitled: **“Exploration of factors contributing to the Tuberculosis default rate in the East London area of Buffalo City Metropolitan Municipality”**

” submitted to the University of Fort Hare for the Masters Degree in Community Health has never been submitted by me for a degree at this or any other university, that this is my own work in design and execution and that all material contained here has been duly acknowledged.

Signature

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Date

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ABSTRACT

Tuberculosis (TB) kills approximately three million people per year worldwide. Of the estimated two billion people infected with tuberculosis, eight million develop the disease annually. The present global tuberculosis situation indicates that both the disease and default burdens are still very high, especially in developing countries. Defaulting from treatment has been one of the major obstacles to treatment management and an important challenge for tuberculosis control. The main purpose of this study was to explore factors that contribute to the high default rate of tuberculosis in the East London area of the Buffalo City Metropolitan.

In this study the researcher used the qualitative approach whereby the participants were given an opportunity to express their lived experiences on the factors contributing to defaulting on tuberculosis treatment. The population consisted of all TB clients who were defaulting treatment from January to December 2012 in Zanempilo, Gonubie and Chris Hani clinics in the East London Primary Health care facilities under the Buffalo City Metropolitan Municipality (BCMM).

The researcher used the non-probability purposive sampling method. TB registers from January to December 2012 were used as a source of information to get the names and addresses of TB defaulters. The study was conducted in the East London area of Buffalo City Metropolitan Municipality. East London is a city on the south east coast of Buffalo City Metropolitan Municipality in the Eastern Cape Province. The East London health care system is operating under the Buffalo City Metropolitan Municipality (health district). It is composed of 35 fixed clinics, six mobile clinics, two community health centres, one specialized hospital, one regional hospital and three private hospitals.

In-depth unstructured face-to-face interviews were used to collect data from 14 participants. In this study the researcher identified factors such as patient behaviour, sickness, feeling better, nurses' attitudes, work issues and temporary change of residence as reasons why patients stopped taking their treatment. It is imperative to understand predictive factors for treatment default so that programs can implement specific measures to target the population at risk, since other strategies such as simpler treatment regimens and Directly Observed Treatment Short course (DOTS) have not given enough satisfactory results.

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CHAPTER 1: INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Tuberculosis (TB) is an air transmitted disease which mainly affects the lungs and when it happens it is called pulmonary TB (PTB). The disease may also affect other parts of the body, such as the spine, stomach and the brain. TB is curable. Infected people do not necessarily become ill immediately as they can develop latent TB which is not infectious.

The immune system protects the body against TB and the bacilli can be dormant for many years. According to WHO (2010) TB is still one of the leading causes of morbidity and mortality worldwide and remains a major public health burden in many developing countries despite the global efforts to control it. TB is a major public health problem with an estimate of 8.9 million cases, causing more than 1.4 million deaths globally.

South Africa has the highest TB incidence being the third highest with the WHO statistics giving an estimated incidence of 500 000 cases of active TB, so about 1% of the population of about 50 million develop active TB each year. It is estimated that about 80% of the population of South Africa is infected with TB bacteria, the vast majority of whom have latent TB rather than active TB disease (DOH, 2009:9).

Tuberculosis continues to be the leading cause of death in South Africa. In 2011 there were 25 000 deaths from TB in South Africa (DOH, 2009:9). These exclude those people who had both HIV and TB infection. The South African causes of death from death notifications are 62 827 for 2011, which is 11.6 percent of the number of deaths.

The incidence of TB disease in the Eastern Cape Province is estimated to be 300 per 1000 000 of the total population with the mortality rate at 7,2%. In the Buffalo City Metropolitan Municipality the TB cure rate was 54%, while the treatment default rate was 12% and the death rate was 15,2% (DOH, 2009:9).

The South African National TB Control Programme showed steady improvement. In 2010 the national cure rate was at 71% as compared to the target of 85%. TB is one of the fastest growing infectious diseases and this is partly due to co-infection with the Human Immunodeficiency Virus (HIV) and poor adherence to treatment (Martins & Wilkons, 2007:370).

This study focused on the experiences of patients suffering from tuberculosis regarding factors contributing to the high default rate. In South Africa the main challenge is effective implementation of the national TB control process. Low cure rates due to poor adherence to treatment is a major obstacle to efficient TB control in the country (DOH, 2009:10).

Patients who default treatment are at risk for clinical deterioration, complications, poor outcomes, drug resistance and they may continue to be infectious to others. Patients who are on TB treatment for the first time are expected to take treatment for six months and the retreatment cases for nine months. TB patients have difficulty in following a long treatment regimen. Patients who have missed their treatment for a period of two months continually during their course of treatment are deemed as non-adherent or defaulted (DOH, 2009:11).

In South Africa the Directly Observed Treatment short course (DOTS) strategy was adopted in 1996 and in 1999 the government recommitted its resources to the implementation of the DOT component and made TB control a national priority. According to the World Health Organisation Global Tuberculosis Report (WHO, 2007), South Africa has the highest TB incidence in the world.

In South Africa the situation is made worse by the development of multidrug-resistant (MDR) and lately extensively-drug-resistant (XDR) TB. The client is said to be cured when the smear results were positive before taking treatment becomes negative after finishing the course of treatment. TB remains one of the biggest causes of the disease burden in the country and the Eastern Cape is one of the worst provinces (DOH, 2010:20).

1.2 PROBLEM STATEMENT

As has already been stated, the major cause of mortality and morbidity in South Africa is tuberculosis. Case detection and implementation of DOTS has increased substantially; however, the cure rate has remained low and the defaulter and mortality rate remains high. The national target for the tuberculosis defaulter rate is below 5%. The effect of defaulting TB treatment is a burden to the Province economically because it is very expensive to treat MDR TB and XDR TB patients. The cost of treating the MDR and XDR patients is up to 25 times the cost of treating uncomplicated drug-susceptible clients (WHO, 2009).

The Health Information System at Buffalo City Metropolitan Municipality (BCMM) shows that the defaulter rate in the East London Primary Health Care Services is 18.9%. This shows that the clients are defaulting in spite of the implementation of DOTS and case detection strategies in the rural and urban areas of BCMM.

The researcher who is a clinic supervisor in BCMM is concerned about the high TB defaulter rate and decided to investigate the contributory factors as experienced by the patients who have defaulted treatment during their course of treatment.

The researcher has identified that there is no research study conducted regarding the factors contributing to the high defaulter rate as experienced by patients who have defaulted in BCMM. She believes that if clients can come up with these factors, this will assist in the implementation of strategies that will improve the TB defaulter rate and, therefore, decrease the morbidity and mortality rate.

1.3 PURPOSE OF THE STUDY

The purpose of the study was:

To explore and describe factors contributing to the high defaulter rate of TB clients who had defaulted treatment during their course of treatment in the East London area of Buffalo City Metropolitan Municipality with the aim of improving the defaulter rate amongst TB patients.

1.4 RESEARCH OBJECTIVES

The objectives of the study were:

- to explore and describe the factors contributing to the high TB defaulter rate in the East London area of Buffalo City Metropolitan Municipality; and
- to recommend strategies that can be used to improve the defaulter rate of clients who are on TB treatment.

1.5 RESEARCH QUESTION

The research question was:

- What are the factors contributing to the high defaulter rate as experienced by TB patients who have defaulted treatment in the East London area?

1.6 SIGNIFICANCE OF THE STUDY

This study will assist in identifying the challenges which are associated with the defaulter rate of TB treatment in the East London area. If the challenges are known, the strategies for the improvement of defaulter rate will be put in place accordingly. There will be a decrease in MDR TB and XDR TB, TB case findings and in the death rate due to TB infections. The findings of the study will be used to develop innovative approaches to ensure that the defaulter rate is decreased.

Policies and guidelines at the District and Provincial level regarding the control of TB will be updated based on the findings and recommendations of this study. The financial burden to the government will be reduced so that the available funds can be used to help the communities with basic needs and alleviate poverty. The economy of the communities will be boosted because the life expectancy will be increased.

1.7. DEFINITION OF TERMS

1.7.1 TB incidence

TB incidence for any country is the number of new cases, usually of active TB disease, that have occurred in the country during a certain time period which is usually a year (DOH, 2009: 10).

In this study TB incidence refers to the number of new cases usually of active TB disease that have occurred in the Buffalo City Metropolitan Municipality (BCMM) from January to December 2012.

1.7.2 Mycobacterium Tuberculosis

This refers to a microorganism responsible for tuberculosis (DOH, 2010:20).

1.7.3 Directly Observed Treatment Supporter

This refers to an observer who watches the client swallowing tablets during the course of treatment (DOH, 2010:21).

In this study Directly Observed Treatment Supporter refers to an observer who watches the client swallowing tablets during the course of treatment in BCMM.

1.7.4 TB cure rate

This refers to a number of smears positive cases that are smear negative in the last month of treatment and on at least 30 days prior to the treatment completion date (DOH, 2010:21).

In this study TB cure rate refers to a number of smear positive cases that are smear negative in the last month of treatment and on at least 30 days prior to the treatment completion date in BCMM.

1.7.5 TB defaulter rate

This refers to a number of smear positive cases that have defaulted TB treatment for more than 2 consecutive months (DOH, 2010:21).

In this study TB defaulter rate refers to the number of smear positive cases that have defaulted TB treatment for more than two consecutive months in BCMM.

1.7.6 Defaulter

McLean (2003:5) describes defaulters as clients whose treatment was interrupted for two or more consecutive months for any reasons; in other words, clients who fail to adhere to their drug regimen.

In this study defaulter refers to clients whose treatment was interrupted for two or more consecutive months for any reasons; in other words, clients who fail to adhere to their drug regimen.

1.7.7 Tuberculosis (TB)

TB is a communicable bacterial disease caused mainly by the mycobacterium tuberculosis, also known as tubercle bacilli, which affects primarily the lungs. Occasionally, other species of mycobacterium could affect other parts of the body (Vlok, 2010:514).

1.8 RESEARCH METHODOLOGY

1.8.1 Research design

A qualitative, explorative and descriptive design was applied to examine human experiences through descriptions that were provided by the TB clients who defaulted treatment in the Buffalo City Metropolitan Municipality and how they interpreted those experiences.

1.8.2 Research setting

The study was conducted in the East London area of Buffalo City Metropolitan Municipality. East London is a city on the south east coast of Buffalo City Metropolitan Municipality in the Eastern Cape Province. The East London health care system is operating under the Buffalo City Metropolitan Municipality (health district). It is composed of 35 fixed clinics, six mobile clinics, two community health centres, one specialized hospital, one regional hospital and three private hospitals.

1.8.3 Population

According to (Brink, 2012:131) the term “population” refers to a complete set of persons or objects that possess some common characteristics that are of interest to the researcher. The population for this study consisted of all TB clients who were defaulting treatment from January to December 2012 in Zanempilo, Gonubie and Chris Hani clinics in the East London primary health care facilities under Buffalo City Metropolitan Municipality (BCMM).

1.8.4 Sampling

In this study the researcher used the non-probability purposive sampling method. TB registers from January to December 2012 were used as a source of information to get the names and addresses of TB defaulters. The researcher aimed at a minimum of 15 participants for quality purposes. As the researcher did not know in advance how many participants were needed, she continued sampling until data saturation was reached, that is, at a point when there was no new information coming up.

1.8.5 Inclusion criteria

Inclusion criteria are those characteristics that a subject or an element must possess to be part of the target population (Burns & Grove, 2005:343).

In this study the inclusion criteria were all the subjects who met the criteria as mentioned in the sampling and study population, which included all TB clients who were defaulting treatment in BCMM from January to December 2012, both males and females from the age of 18 years.

1.8.6 Exclusion criteria

According to Burns and Grove (2005:343) the exclusion criteria are those characteristics that can cause a person or element to be excluded from the target population. All TB patients who were not defaulting treatment from January to December 2012, the psychiatric patients, children under the age of eighteen years and those who were not willing to participate were excluded.

1.9 PILOT STUDY

The pilot study was conducted at Cambridge clinic. Clients who had been included in pilot study were not included in the main study. The pilot study was done to give the researcher an opportunity to practice interviewing skills and to ensure that the interview questions were leading the interviewee to tell the interviewer about the factors contributing to the defaulting of TB treatment.

1.10 DATA COLLECTION

The in-depth unstructured interviews were conducted to collect data from the participants. The guiding question was asked and followed by probing questions in between for clarity and understanding. A tape recorder was used to collect data.

Permission to use the tape recorder was gained from all the participants. The researcher also wrote down notes, including her observations. The researcher continued to obtain information until data was saturated.

1.11 DATA ANALYSIS

Data captured on an audiotape and field notes was transcribed, analyzed and translated verbatim according to the process of open coding, grouping similar codes together to generate themes that were used as headings in the findings (Burns and Grove, 2005:5).

The coding process resulted in the emergence of themes, categories and sub-categories. The transcriptions together with field notes were sent to an independent coder. The researcher and the co-coder agreed on the themes, categories and sub-categories identified.

1.12 TRUSTWORTHINESS

Trustworthiness is a way of ensuring data quality. The model of Lincoln and Guba (1985) as cited by Holloway (2008:237) was used to ensure trustworthiness of the data. This model consists of the following strategies: credibility, dependability, conformability and transferability.

1.13 ETHICAL CONSIDERATIONS

Permission for conducting the research study was requested from the ethics committee of the Faculty of Science and Agriculture at the University of Fort Hare, the Department of Health, the Eastern Cape Province Research and Surveillance Department, the Department of Health, the Eastern Cape Province District Manager for the East London area of BCMM and the managers of the affected clinics. Ethical principles were observed throughout the process of the study. Permission for using an audiotape was requested before interviews.

1.14 CONCLUSION

In this chapter, the scientific foundation of the study was introduced with a brief description of the rationale and background, the problem statement, purpose, objectives, research question, significance of the study and definition of terms.

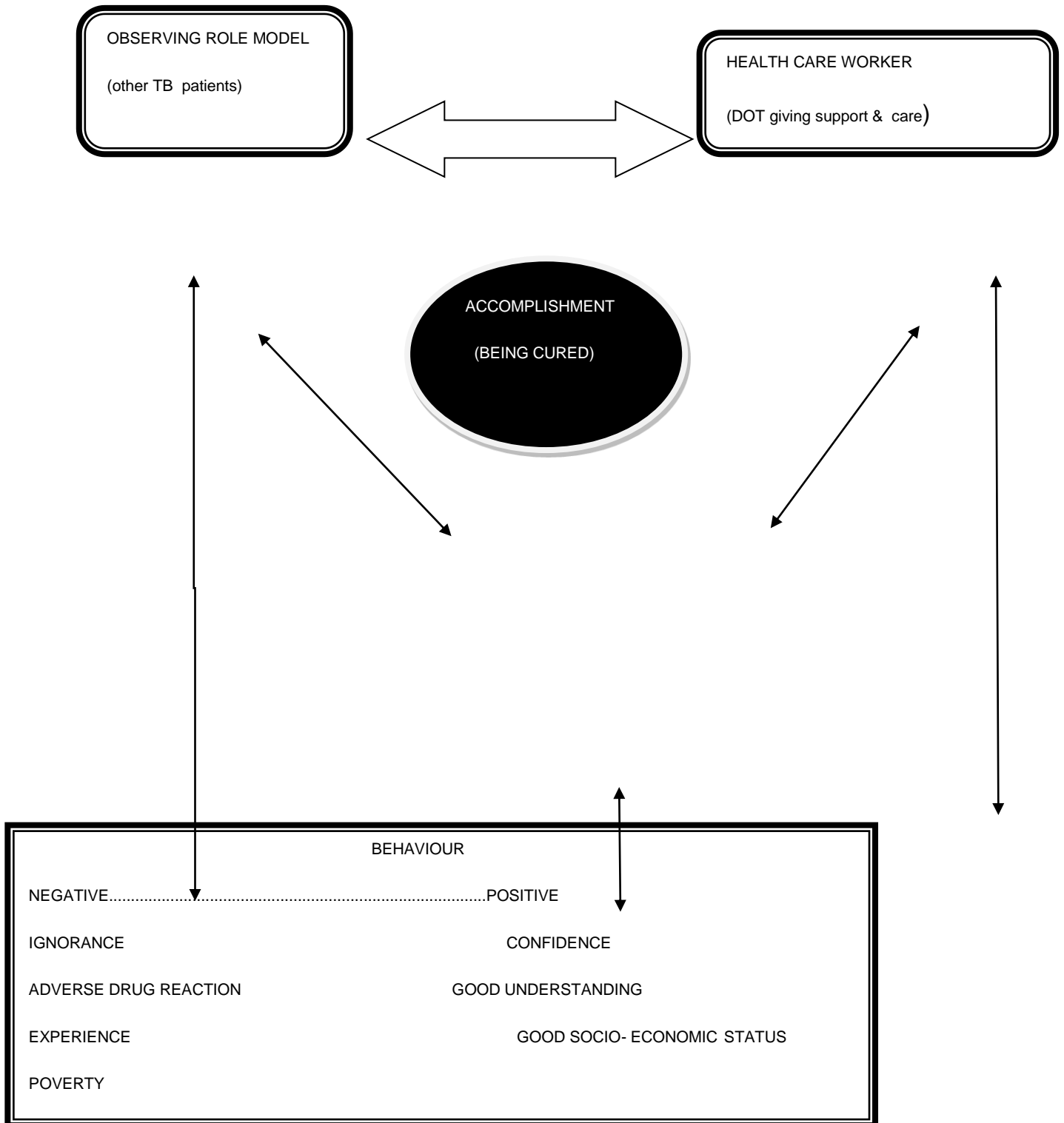
CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The purpose of this study was to explore and describe the factors contributing to TB treatment default by clients. This chapter will reveal a review of related literature and the theoretical framework on which the study was based. The purpose of the literature review was to place the study in the context of the general body of knowledge, which minimises the possibility of unintentional duplication and increases the probability that the new study makes a valuable contribution (Brink, 2012:71). It is essential for the researcher to conduct a literature review in order to locate existing, similar or related studies that can serve as a basis for the study at hand (Brink, 2012:71). The researcher consulted several sources, including medical text books, medical and research journals, policies, guidelines and web pages.

2.2 THEORETICAL FRAMEWORK

Figure 2.1 Self-developed conceptual framework based on self-efficacy model of Shortridge-Baggett and Van der Bill (1996)



The study was guided by a conceptual model which was developed by the researcher based on the self-efficacy model by Ridge-Baggett and Van der Bill (1996). Self-efficacy is a person's belief about his/her ability and confidence in performing at a certain level to achieve certain goals under difficult circumstances. Self-efficacy is a person's perception of his/her ability to achieve certain goals or outcomes. The basis of this theory is Bandura's social cognitive theory (1986), namely assumptions that can determine whether health behaviour change will be started, how much effort one will put in and for how long one can sustain it when facing hindrances and potential failures. According to Bandura (1986:39) there are three sources affecting self-efficacy:

- Performance accomplishments where practise and success create confidence and this improves self-efficacy.
- Various experiences through observing others who become role models.
- Self-evaluation of a person's capabilities to perform a given task or behaviour required to achieve particular goals.

TB client's self-efficacy is likely to increase when he or she perceives that the TB medicine actually works and a cure is possible. If the patient knows someone with whom he or she identifies and who has been cured, the self-efficacy can be enhanced. The health care workers play a vital role because of their knowledge of TB and they could encourage TB patients to finish their treatments. Verbal persuasion is used by health care workers when they try to convince patients to take certain treatment

2.3 TUBERCULOSIS

Tuberculosis (TB) is an infectious disease. The causal agent is Tubercle Bacillus and occasionally Mycobacterium Tuberculosis (Walsh & Crumbie, 2007:344). Tuberculosis is second only to Human Immunodeficiency Virus/Acquired Immune

Deficiency Syndrome (HIV/AIDS) as the greatest killer worldwide due to a single infectious agent accounting for 2.4% of the global burden of disease. In 2010, 8.8 million people fell ill with tuberculosis globally, and a total of 1.4 million people died as a result of the disease, most of these cases and deaths (about 95%) occurring in developing countries (WHO, 2012).

Africa faces the highest TB rates per population but Asia carries the greatest absolute burden and the epidemic is worsening in other regions as well (WHO, 2009). South Africa is amongst the countries in the world with the highest tuberculosis burdens and has one of the worst TB epidemics in the world. In 2007 the incidence of all forms of TB (including people with HIV) was 848 per 100,000 people per year and the TB prevalence was 692 per 100,000 people per year. Standard adherence treatment and adherence are poor (WHO, 2009). Out of the 53 districts nationally, 25 have cure rates of less than 50%, way below the WHO target of 85% of the new smear positive cure rate (Barron & Monticelli, 2007:145).

TB is a medico-social problem; factors such as socio-economic and nutritional status, perception of the disease, health-seeking behavior and access to health care influence its frequency and prognosis. It is generally seen as a 'dirty social disease', which mainly affects poor people. 'Hard work' or 'overwork' and 'bad hygiene' are believed to cause TB (Chayaka, 2007:453).

TB has been a major public health problem in South Africa for years. Poverty overcrowding and HIV have certainly contributed to this problem making it difficult to prevent the spread of TB. By the time many people visit a PHC facility for treatment, the illness is often very advanced and the people with whom they have had contact have also become infected. About one third of the world's population is infected with tuberculosis mycobacterium. People with a weakened immune system have a much greater risk of falling ill from TB. A person with HIV/AIDS is about 20-30 times more likely to develop active TB. WHO's Stop TB strategy aims to ensure universal access to diagnosis, treatment and care of all affected by TB and drive down TB deaths and the TB burden (DOH, 2009:10)

The most critical period for the development of clinical disease is the first 6 to 12 months after infection. About 5% of those infected with latent TB may develop TB. The infection in about 95% of those initially infected becomes latent and may be reactivated later in life. Reactivation of latent infections is common in older adults, immune compromised persons, substance abusers, underweight and undernourished persons and those with diabetes or silicosis (Stanhope & Lancaster, 2004:94).

During the 20th century the incidence of tuberculosis declined in most of the developed world. At the same time it increased in the rest of the world to point where the World Health Organisation (WHO) has declared an international emergency. The global incidence of the disease is growing by 11% each year and the number of cases is increasing by 2.4% (WHO, 2009).

Roughly one third of the world's population is infected (two billion people). Not all TB occurs in poorer nations, however. In 2000 more than 100,000 cases occurred in Europe and North America as a result of international travel. Tuberculosis in general has high economic costs for the global community and the treatment of TB is complicated by the growing incidence of HIV co-infection with approximately 10 million co-infected people throughout the world (Vlok, 2010:123).

2.4 CLINICAL MANIFESTATION OF TB

The main symptom of pulmonary TB is usually a persistent cough for three weeks or longer. A person who has a persistent cough for three weeks or more usually has one or more of the following symptoms: chest pain, shortness of breath, weight loss, tiredness, fever, night sweats, loss of appetite, and coughing up blood. The symptoms of TB such as cough, fever, headache, among others, resemble most respiratory diseases. Most patients mistakenly believe they have malaria or pneumonia which may lead to delay in the early assessment by medical services. In far advanced cases there may be clubbing of fingers, conjunctivitis, bronchiectasis and corpulmonale. Children usually present with failure to gain weight, wheezing and paratracheal lymph nodes (Vlok, 2010:525).

2.5 CAUSES OF TB

In a few cases, the bacillus is transmitted to humans from infected cows through drinking non-sterilized milk. This mode of transmission only plays a minor role in the natural history of the disease in humans. Although TB can affect any organ of the body, the lungs are most frequently the primary site of invasion. TB can spread from person to person through the air when people with pulmonary TB release large numbers of organisms in their sputum. This may be through coughing, sneezing, talking, or laughing. People nearby can breathe in the bacteria and become infected. The organisms could remain suspended in the air for hours or days, making TB one of the most easily transmitted respiratory pathogens. In some cases, TB is attributed to causes such as weakened resistance due to poor nutrition and general health. People who live with the HIV epidemic have contributed to the resurgence of tuberculosis in recent years (Walsh & Crumby, 2007:344).

2.6 EFFECTS OF TB

Non-compliance with TB treatment has many negative effects, not only for the individual patients and their families, but also for society in the form of drug resistance TB treatment defaulters, especially those who are smear positive. These people comprise an infectious pool that maintains the continued transmission of TB within the community and can result in the development of multidrug-resistant strands of TB (Daniel, Oladapo & Alausa, 2006:65).

Drug-resistant TB is a human-made phenomenon caused by inconsistent or partial treatment, when TB bacilli become resistant to the most common anti-TB drugs. This happens when doctors or health workers prescribe the wrong drugs or the wrong combination of drugs, the drug supply is unreliable, or patients do not take all their medicines regularly for the required period of time. Once the bacilli become resistant to one or more anti-TB drugs, the infected person can go on to infect others with the same drug-resistant strain. Multidrug-resistant TB (MDR) is more difficult and more expensive to treat, and more likely to be fatal (WHO, 2012).

In addition, a person who is infected by TB can infect ten to fifteen healthy people in a shortest possible time. Here the patient's family members and the society as a

whole are under high risk of getting the infection. When a patient suffering from tuberculosis refuses to take treatment, the disease progresses so rapidly resulting to death in few months. On the other hand, when the disease takes a chronic form, the patient loses too much energy to work or even walk. Mycobacterium tuberculosis also damages lung tissues which, without proper treatment, become a cause for the patient's disability or death (DOH, 2010: 21).

2.7 TREATMENT OF TB

Mycobacterium tuberculosis is a very slow-growing, intracellular organism; as such treatment requires the use of multiple drugs for several months. With appropriate antibiotic treatment, TB can be cured in most people. Treatment usually combines several different antibiotics that are given for at least six months, sometimes for as long as 12 months. The treatment regimen for TB includes isoniazid, rifampicin, pyrazinamide and ethambutol. They are the first line drugs for TB treatment. They are called first line drugs because they are effective; side effects are tolerable and these drugs are readily available (Walsh & Crumby, 2007:345).

The second line drugs are the fluoroquinolones, amino glycosides, polypeptides, thioamides, cycloserine and para-aminosalicylic acid. They are less effective, have toxic side effects and are not readily available. They are mainly used for resistant TB cases. TB treatment has two phases: the initial phase has two months (new cases) or three months (re-treatment cases) and the continuation phase which is six months (DOH, 2009:10).

Since 1996, the South African National Department of Health has adopted the DOTS strategy of WHO. This strategy is trusted all around the world because of its ability to produce a cure rate of up to 96% (Department of Health, 2009:10). This Directly Observed Treatment short-course (DOTS) has been found to be an effective means of administering anti-TB drugs, significantly reducing the rates of relapse and drug resistance as well as improving the treatment compliance rate. Steady progress is being made globally towards achieving the Millennium Development Goal (MDG) 6, Target 8 which is to "Halt and begin to reverse the incidence of TB by 2015" (Vlok, 2010:124).

In South Africa, TB treatment is free of charge at clinic level. However, many patients do not complete their treatment and develop MDR-TB and XDR-TB which are very expensive to treat and can be fatal. The frequency and duration of usual treatment for each patient at the clinic is determined by the physician and dosages may differ between adults and children (DOH, 2009:11).

2.8 STANDARDS FOR DIAGNOSIS

A person with a productive cough, which is accompanied by systemic symptoms for more than two weeks, should be regarded as a TB suspect and should be investigated properly. All individuals suspected of having TB should at least have two sputum specimens for bacteriological confirmation of the disease. The presence of acid fast bacilli in a sputum smear is strongly presumptive of TB but a definitive diagnosis requires a positive culture result (Beers, 2006:1510). The standard of care is to provide HIV counseling to all TB suspects. All TB clients should be strongly advised to have an HIV test and consent should be sought before testing because HIV status has an influence on diagnosis. Blood tests are done to investigate extra pulmonary TB (Migliori, Hopewell, Blasi, Spanavello & Raviglione, 2006:690).

2.9 FACTORS CONTRIBUTING TO NON-COMPLIANCE

2.9.1 Socio demographic factors

Age is one of the socio-demographic factors which influence non-compliance among clients. It has been noted that defaulters were younger than non-defaulters and it was also found that the highest default rate is at 21-30 years of age. This shows that young clients default more than older clients. The male gender was also significantly associated with higher default rates. But some researchers reported that gender was not significantly associated with default (Chee, 2008:499).

Socio-economic status of the patients seems to be important since patients' decision on whether they will continue treatment is likely to be affected by their social environment and economic status. Lack of effective social support networks and unstable living circumstances are additional factors that create an unfavorable environment for adherence to treatment (WHO, 2010).

Erhabor et al. (2010) reported that a long distance from the home to the chest clinic exposes a TB patient to a higher risk of defaulting. Some patients' homes are very far away from the chest clinics. In addition, roads sometimes are inaccessible, especially during the rainy season, and this inhibits compliance with TB treatment; therefore, decentralized treatment is recommended. A study conducted in China also revealed that patients in rural areas experienced difficulties in reaching treatment points because they could not afford to pay for their daily transport. Transport costs were found to affect treatment adherence because patients could not afford to go to collect their medication at health centers (Tang & Squire, 2005:97).

In South Africa, a study conducted in the Eastern Cape by (Cramm, Finkenflugel, Moller & Nieboer, 2010:72) found that the associated stigma might influence TB client's behaviour in seeking help and adhering to TB treatment. In the same study, the findings showed that people infected with TB had a tendency to hide their TB status out of fear of being stigmatized. This might be influenced by its association with HIV infection.

2.9.2 Patient related factors

The National Tuberculosis Control Program (NTCP) (Department of Health, 2009) indicates that poor patients' compliance is a contributing factor to the low cure rate in South Africa. These factors are most crucial as adherence is dependent on the client's behaviour. It can be assumed that the continuous intention and motivation of the patients by themselves based on their knowledge and perception of the disease seem to be playing the fundamental role in order to complete the prescribed regimen without defaulting.

Knowledge about TB has been known to be significantly associated with treatment defaulting among TB patients by many research results (Tachfout, Slama, Beraho & Nejari, 2012:42). Lack of knowledge about TB causes patients to become frustrated and depressed as if by lacking the necessary knowledge, they cannot make an informed decision about their own health. In order to address this problem, the Department of Health in South Africa recommended that a comprehensive

Advocacy, Communication and Social Mobilization (ACSM) plan be developed and implemented. The plan both promotes and urges the involvement of political leaders in the mobilization of resources (DOH, 2009). The plan also encourages the spread of knowledge and awareness of TB to the community at large. With this approach it is hoped that treatment adherence and case detection will improve.

In some TB patients, altered mental states caused by substance abuse, depression, and psychological stress may also play a role in their adherence behavior it has also been noted that higher default rates were associated with alcoholism (Santha 2009:52).

2.9.3 Disease related factors

Some strong determinants of adherence are those related to the severity of symptoms, rate of progress and severity of the disease, and the availability of effective treatment (WHO, 2009). Patients with active disease and those with severe symptoms are more compliant On the other hand one of the factors that contribute to defaulting is when patients start feeling better and stop taking their treatment.

The number of tablets that need to be taken, as well as their toxicity and other side effects associated with their use have been reported to act as deterrents to continuing treatment (WHO, 2010). Tuberculosis patients with other associated chronic diseases, such as diabetes, HIV or ischaemic heart diseases, who receive other drugs on a daily basis, are less likely to comply with anti-tuberculosis treatment. This may be attributed to the complexity of compliance with too many drugs and the costs associated with the treatment (WHO, 2009).

A study conducted in Addis Ababa, Ethiopia, by Sagbakken, Frich & Bjune (2008:11), revealed that lengthy anti-TB treatment exhausted both the patients' and their relatives' financial and practical support systems. Because of a lengthy anti-TB treatment period and its effect on support systems, patients often do not adhere to the treatment.

2.9.4 Health care provider and service related factors

Currently there is a strong voice that says that a patient is an active collaborator in the treatment process, not a passive, acquiescent recipient of a health professional's advice. The participants at the WHO adherence meeting in 2001 noted that the relationship between the patient and health care provider must be a partnership that draws the abilities of each in the way of creating an atmosphere in which alternative therapeutic means are explored, the regimen is negotiated, adherence is discussed and follow-up is planned (WHO, 2012).

WHO (2009) noted that poorly developed health services; health care providers who are untrained, overworked, or inadequately supervised in their tasks; the inability to predict potentially non-adherent patients; the availability of expertise; and flexibility in the hours of operation of treatment centers were health care team/health system-related factors that are affecting the treatment default of patients.

In South Africa it was found that the negative attitudes of health workers towards TB patients contributed to the spread of TB (Escott, Nsutebu, Walley & Khan, 2010:22). In Ghana it was identified that patients appeared to be ashamed of their condition. This level of stigma was compounded by the patients' perceived biased manner in which health professionals' informed them of their condition. Moreover, the long duration of TB treatment was a heavy burden because it impacted negatively on their duties to care for children and provide income for the family (Dodor & Afenyandu, 2008:144).

In addition, lack of privacy in the TB clinics affects the treatment seeking behaviour of TB patients because of the stigma attached to the disease and its associated social problems. Female patients are usually more concerned about privacy than males, and would prefer female health workers to deliver their treatment as they are more sympathetic. Time spent at the clinic is another factor promoting treatment default as patients spend a mean time of three hours on each visit (Jittimane, 2007:359).

2.9.5 Regimen factors

Given the fact that the latest short course chemotherapy for TB lasts for six months, regimen-related factors should also be taken into consideration. The early default could be a result of inadequate pretreatment health education and counseling and poor defaulter tracing mechanism resulting from overworked health care personnel, feeling better after medication for a while and socio-economic factors including inadequate food and opportunity costs (Vlok, 2010). One of the reasons for default cited by patients who did not complete the treatment course included ignorance about need for treatment compliance coupled with inadequate knowledge about TB and travelling outside treatment areas, consequently missing clinic appointments and running out of drugs. Predictive factors for default were inadequate knowledge about TB, herbal medication use, low income, alcohol abuse, previous default, HIV co-infection and the male sex (WHO, 2012).

2.10 MANAGEMENT OF TUBERCULOSIS

In South Africa there are several acts regulating the management of TB as well as the Patient's Rights Charter and the Batho Pele principles. South Africa has one of the highest recorded rates of TB in the world. The National Department of Health reported smear-positive rates of 162 per 100,000 of the total population in Africa (DOH, 2009:9).

According to the Department of Health (DOH, 2009:9), the objectives of the management of TB are to prevent and cure the disease; prevent the spread of infection from infected adults to children; prevent the progression of TB infection and TB disease in children; prevent MDR-TB and promote DOTS.

South Africa follows the WHO guidelines for diagnosing and treating TB patients. All patients who present with the following symptoms are screened for TB (DOH, 2008:34): persistent cough for two weeks or more; sputum production which may be blood stained; shortness of breath and chest pain; loss of appetite and loss of weight; fatigue; night sweats and fever.

There are three main categories of TB patients determining the type of treatment (DOH, 2009:34): a patient who has never had treatment for TB or who has taken the treatment for less than four weeks; a patient who had previously been treated for TB; and a TB patient aged eight years or younger. In South Africa there are three regimens of treatment which include the combination of TB drugs, classified as follows (DOH, 2009:34): regimen 1, for new patients; regimen 2, for re-treatment of adult patients; regimen 3, for children under eight years old. Every country should have a register for TB patients. According to the register, TB patients have one of the following outcomes: cured; treatment completed; treatment failure; died; treatment interrupted; transferred out.

2.11 POLICIES AND GUIDELINES

To reduce the morbidity and mortality rates from TB in people living with HIV, the World Health Organisation(2009) recommends the following interventions: early provision of antiretroviral therapy (ART) at CD4 count <350 cells/mm³ and the THREE I's for HIV/TB: intensified case-finding of TB (ICF), isoniazid preventive therapy (IPT), and infection control for TB (IC). ICF and treatment of TB interrupts transmission of diseases by infectious cases, decreases morbidity and delays mortality. Most importantly, active TB screening offers the opportunity to provide preventive therapy for people who do not have symptoms and signs of TB. The WHO guidelines for intensified TB case-finding and isoniazid preventive therapy for people living with HIV in resource-constrained settings provide guidance to national HIV and TB programmes and service providers to scale up the implementation of TB screening (Sculier, Lienhardt & Getahum, 2011:245).

2.12 CONCLUSION

This chapter explored existing literature on TB defaulting and factors contributing to noncompliance, causes of TB, signs and symptoms, standards for diagnosis and effects of TB. The following chapter will deal with the research methodology of the study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter three outlines the research methodology used while conducting this study. This chapter includes discussions on the research design, study population, the sampling procedure, data collection methods, ethical considerations and data analysis.

3.2 RESEARCH DESIGN

Holloway (2008:206) defines research design as a plan of action in which strategies for data collection as well as the findings and implications are communicated. Research design describes how researchers intend to proceed with the approach and processes of the research study.

A qualitative, explorative and descriptive design was applied to determine factors contributing to the TB default rate as described by TB defaulters in the East London area of BCMM from January to December 2012. In this study the researcher examined human experience through descriptions of the factors contributing to TB default that were provided by TB clients who defaulted treatment in the East London area of BCMM from January – December 2012.

3.3 RESEARCH APPROACH

In this study the researcher used a qualitative approach whereby the participants were given an opportunity to explore and describe the factors contributing to defaulting of tuberculosis treatment. The participants were able to describe the factors contributing to TB treatment default on their own terms (Burns & Grove, 2005:55-56).

3.4 STUDY SETTING

The study was conducted in the East London area of Buffalo City Metropolitan Municipality. East London is a city on the south east coast of Buffalo City Metropolitan Municipality. The city lies on the Indian Ocean coast largely between the Buffalo River and the Nahoon River. East London has a population of over 838 005. It is mainly composed of urban areas, semi urban informal settlements and

a few rural areas. It has a large industrial area which has a positive impact on the economy of the area. Although there are industries around, there is also a high rate of unemployment.

East London's health care system operates under the Buffalo City Metropolitan Municipality (health district). It is composed of 35 fixed clinics, six mobile clinics, two community health centres, one specialized hospital, one regional hospital and three private hospitals.

As a result of the high defaulter rate, TB is a challenge in this area and the Buffalo City Metro is at 10.9% TB default rate. Most of the deaths are due to poor TB outcomes. There is also a marked increase in MDRTB AND XDRTB clients in East London(DOH, 2010).The high defaulter rate and an increase in MDRTB and XDRTB patients pose a great challenge in the East London area as a whole; therefore, an investigation needs to be done so as to develop some strategies to address the situation.

3.5 STUDY POPULATION

According to Burns and Grove (2005:74) a population represents all elements, individuals, objects, events or substances that meet the sample criteria for inclusion in a study. The target population consisted of all TB patients who are defaulting treatment in Zanempilo, Gonubie and Chris Hani clinics in the East London Primary Health care (PHC) facilities under Buffalo City Metropolitan Municipality (BCMM).

3.6 SAMPLING

Sampling is defined as a subset of the population. The researcher may decide to select a small proportion of this population from whom to collect data (Burns & Grove, 2009:721).

In this study the researcher used the non-probability purposive sampling method. According to Burns and Grove (2009: 355) purposive sampling is sometimes referred as judgemental or selective sampling. The researcher consciously selects certain participants, elements, events or incidents to include in the study. TB registers from January to December 2012 were used as a source of information to get the names and addresses of TB defaulters from January to December 2012 in the BCMM.

The researcher aimed at a minimum of 15 participants for quality purposes. The researcher did not know in advance how many participants were needed; she continued sampling until data saturation was reached, that is at a point when there was no new information coming up. After data saturation the total number of participants was 14.

3.7 INCLUSION CRITERIA

A study might have inclusion or exclusion criteria. Inclusion criteria are those characteristics that a subject or an element must possess to be part of the target population (Burns & Grove 2005:343). The inclusion criteria for this study were male and female TB clients who defaulted treatment from the age of 18 years during the period from January to December 2012.

3.8 EXCLUSION CRITERIA

According to Burns and Grove (2005:343) the exclusion criteria were those characteristics that can cause a person or element to be excluded from the target population. All TB patients who were not defaulting treatment, the psychiatric patients, those who were not on TB treatment during the period of January to December 2012, children under the age of eighteen years and all TB patients who were smear negative pre-treatment and those who are not willing to participate were excluded from participation.

3.9 PILOT STUDY

According to Burns and Grove (2005:344), a pilot study is a smaller version of a proposed study, which is conducted to develop or refine the methodology. The purpose of a pilot study is to investigate the feasibility of the proposed study and to detect possible flaws in the data-collection, such as ambiguous instructions in wording, inadequate time limits, and so on. The time and effort expended in conducting a pilot study will be well spent, as pitfalls and errors that may prove costly in the actual study can be identified and avoided (Brink, 2012:199).

The pilot study was conducted at Cambridge clinic. Clients who were included in the pilot study were not included in the main study. The pilot study was done to give the researcher an opportunity to practice interviewing skills and ensure that the interview

questions were leading the interviewee to tell the interviewer about factors contributing to TB treatment default.

A pilot study was conducted to test the worthiness of the study and to identify problems early in the study. The researcher used one question, referred to as a grand tour question: What made you not to complete the course of your TB treatment? This question led the interviewee to come up with the factors that contributed to the client's TB treatment default which was the objective of the study. The probing questions depended upon the participants' responses. From the responses of the probing questions the researcher identified categories and sub-categories of the study. The researcher followed all the steps of the research process up to the findings. By doing so the researcher had the opportunity to detect possible flaws in the interview process.

3.10 DATA COLLECTION

The success of the study depends on the data collection. Without high quality data collection techniques, the accuracy of the research conclusions can easily be challenged (Brink, 2012:200).

The in-depth unstructured interviews were conducted to collect data from participants using one-to-one interviews. An appointment to visit the clients was arranged prior the interview dates. The researcher visited the clients at their homes so that they were interviewed in a relaxed environment and at a time convenient to them (Brink, 2012:159).

The researcher tried to obtain information until data saturation. A tape recorder was used to collect data while respondents were being interviewed. During the interviews the researcher also took notes (observational and theoretical) while busy interviewing the client. Permission was asked from all the participants for using the tape recorder and the taking of notes. The researcher used one question referred to as a grand tour question: What made you not to complete the course of your TB treatment? This question led the interviewee to come up with the factors that contributed to the client's TB treatment default which was the objective of the study.

The probing questions depended upon the participants' responses. From the responses of the probing questions the researcher identified categories and sub-categories of the study.

3.11 DATA MANAGEMENT AND ANALYSIS

In a qualitative research the data analysis is not a distinct step; it is done concurrently with the data collection. Data analysis entails categorising, ordering, manipulating and summarising the data in meaningful terms. In this study the researcher transcribed and proof read the transcripts against the recorded interview. The recorded tapes were listened to repeatedly and compared with the transcripts (Brink, 2012:193). During the whole process of data analysis the researcher made reflective remarks and marginal marks as meaning came to the fore. The key phrases and feelings expressed by the participants were noted. After proof reading of the transcripts the information was organised into themes, categories and sub-categories so as to get the meaning of the data. The transcriptions together with field notes were sent to an independent coder. The coding process resulted in the emergence of themes, categories and sub-categories. The researcher and the co-coder agreed on the themes, categories and sub-categories identified.

3.12 TRUSTWORTHINESS

Trustworthiness is a way of ensuring data quality based on the model of Lincoln and Guba (1985). Holloway (2008:237) identified the following strategies to demonstrate the trustworthiness of the research: credibility, dependability, conformability and transferability.

3.12.1 Credibility

Lincoln and Guba in Holloway (2008:238) argue that ensuring credibility is one of the most important factors in establishing trustworthiness. The accuracy of the data was checked on the spot which was during the course and at the end of the data collection dialogues. Member checking was ensured by reading back the transcripts to the participants to ensure that their words matched what they actually intended to voice. Each person who is approached should be given opportunities to refuse to participate in the project so as to ensure that the data collection sessions involve

only those who are genuinely willing to take part and are prepared to offer the data freely (Shenton, 2004:64).

3.12.2 Dependability

In order to address dependability more directly, the processes within this study was reported in detail thus enabling a future researcher to repeat the work, if not necessarily to gain the same results. The research design may be viewed as an in-depth coverage to allow the reader to assess the extent to which the proper research practices have been followed so that the reader can have thorough understanding of the methods and their effectiveness (Holloway, 2008:238). Triangulation was also used where the participants were asked questions in different methods about different events (Brink, 2012:172).

3.12.3 Conformability

This refers to the absence of bias in the research. The researcher should be impartial and neutral in terms of the researcher's influence on research outcomes and ensure that even the data collection and analysis are fair and even handed (Holloway, 2008:238).

The concept of conformability is the qualitative investigator's comparable concern with objectivity. Steps were taken to ensure as far as possible that the work's findings were the result of the experiences and ideas of the informants rather than characteristics and preferences of the researcher (Shenton, 2004:71).

3.12.4 Transferability

Transferability refers to the ability to apply the findings in other contexts or to other participants. Within qualitative research, demonstrating transferability of findings lies with those who wish to apply it in another context (Brink, 2012:173).The researcher enhanced transferability by safeguarding all data transcripts, analysed data records, voice recordings and the independent coder's analysis. This data base is kept so that it can be used for policy development (Green & Thorogood, 2008:224).

3.13 ETHICAL CONSIDERATIONS

Ethics is defined as the study of moral standards and how they affect conduct. Research designs should always reflect careful attention to the ethical issues embodied in research projects (Brink, 2012:35). Ethical considerations were implemented throughout this study.

According to Brink, (2012:35) there are three ethical principles that guide the researchers during the research process: respect for persons, beneficence and justice

3.13.1 The principle of respect for persons

The participants voluntarily participated in the research study and an informed consent form was signed by those who were willing to participate. The participants were informed that the purpose of the study was to explore and describe the factors contributing to TB treatment default. They were told that they were expected to participate in interviews. They were given an opportunity to discuss the venue and time with the researcher. They were made aware of the fact that they had the right to withdraw at any time without repercussion or penalty (Brink, 2012: 35).

3.13.2 Principle of beneficence

The researcher had to adhere to this principle by ensuring the well-being of the participants and seeing that they were protected from harm and discomfort whether physical or emotional. Due to co-infection of TB and HIV/AIDS there was a possibility that the participants might be emotional and break down during interviews. The researcher arranged with the trauma unit of the nearby regional hospitals to refer the respondents for counselling and further assistance, if this was needed (Brink, 2012:35).

3.13.3 Principle of justice

The principle of justice refers to the fair selection and treatment of participants. Confidentiality and anonymity were maintained as the researcher did not use their names. Particulars included numbers instead of their names, and privacy was maintained during the interviews. The researcher made the participants aware of the fact that the interviews would be tape recorded and their names would not be

attached to the interviews. Permission to use audio tapes was requested from the participants. The researcher had to make sure that all the appointments were kept and punctuality maintained throughout the research process.

Permission for conducting the research was requested from the Ethics Committee of the Faculty of Science and Agriculture at the University of Fort Hare, the Department of Health, the Eastern Cape Province Research and Surveillance Department, the sub-district manager of BCMM and the managers of the three clinics in East London where the participants were taking their treatment (Brink, 2012:37).

3.14 DISSEMINATION OF RESULTS

After the report has been compiled, it will be submitted to the Department of Nursing Science of the University of Fort Hare. The results will be communicated to the research department of the university, the Department of Health in the Eastern Cape Province and the health centres from where the research was conducted. Papers will be presented at relevant conferences and articles will be published in accredited journals.

3.15 CONCLUSION

The practice of nursing needs to be based on knowledge generated through research. Nursing practice is an extremely important source for research problems. The purpose of the methodology section is to inform the reader of how the investigation was carried out, what the researcher did to solve the research problem and to answer the research question. The section also contains enough detail to enable the researcher or anyone else to replicate the investigation.

CHAPTER 4: DATA PRESENTATION AND ANALYSIS

4.1 INTRODUCTION

The main aim of the study was to provide health authorities, managers and workers with insight into the perceived factors affecting treatment compliance among tuberculosis (TB) patients. It is hoped that a better understanding of the 'patient perspective' of compliance with TB medical regimens would assist health providers in providing the kinds of services which would impact positively on TB patients' treatment compliance. In this chapter there are tables indicating gender and age distribution.

In this chapter the researcher has discussed the research findings which include the demographic data of the participants 'themes, categories and subcategories that emerged from data analysis.

4.2 PARTICIPANTS' DEMOGRAPHIC DATA

The study was conducted at three clinics in East London which were Zanempilo, Gonube and Chris Hani. The study had a total 14 participants, nine males and five females who defaulted TB treatment during the period from January 2012 to December 2012 with ages ranging from 20 to 49 years.

TABLE 4.1: GENDER DISTRIBUTION OF PARTICIPANTS

Males	Females	TOTAL
9	5	14

TABLE 4.2: AGE DISTRIBUTION OF PARTICIPANTS

20- 29 years	30- 39 years	40- 49 years	TOTAL
6	5	3	14

4.3 THEMES THAT EMERGED FROM THE DATA ANALYSIS

This chapter presents the results and the analysis of the data. It is divided into different themes which all deal with reasons for defaulting TB treatment. Four themes emerged from data analysis: physical health, health service factors, social support and knowledge of patients about TB. The themes were further classified into categories and sub-categories as described in the table below:

TABLE 4.3 THEMES, CATEGORIES AND SUB-CATEGORIES REGARDING THE FACTORS CONTRIBUTING TO THE TUBERCULOSIS DEFAULT TRATE

NO.	THEMES	CATEGORIES	SUB-CATEGORIES
1.	Client related factors	Physical health of participants	Feeling better Feeling sick whilst on treatment Cannot walk because of amputation
		Behavioural issues	Drinking alcohol Smoking Lazy to go to the clinic

		Temporal change of residence	Visiting relatives
		Work related issues	Working during the week Working until late
2	Health services related factors	Health workers' attitudes	Nurses shouting at clients Nurses don't care about clients Nurses are disrespectful Health workers gossiping about clients Health workers not visiting clients who are defaulting Health workers not tracing clients

		Poor service	No care for clients Clients not given clear information and instructions
3	Social support	Family support	Clients living alone Relatives not visiting Relatives staying far away
		Health care service support	Community health workers not visiting clients at home for support No arrangement for clients to get treatment at home No supply of food supplements
4	Knowledge regarding tuberculosis	Treatment	Not aware about duration of treatment Don't know about side effects of treatment Don't know what to do when they are sick whilst on treatment Not aware on how to get treatment when visiting other areas

		Changing residence temporarily	Clients do not know that they should report to health workers when visiting other areas.
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4.4 PRESENTATION OF FINDINGS

4.4.1 THEME 1: CLIENT RELATED FACTORS

The participants had different reasons as to why they stopped taking their TB treatment, although there were some commonalities.

Some of the reasons were interlinked as participants sometimes had two reasons for not taking the medication and also others stopped the medication twice for different reasons each time. Some of the reasons for stopping treatment were client related caused by the following categories: physical health of the clients, behavioral issues, work related issues and temporal change of residence.

4.4.1.1 Physical health of clients

The participants stopped taking the medication because they felt better. One participant did not feel well until he stopped taking the medication and he felt better. Below are some responses related to the above themes:

“I started treatment when I fell ill on the New Year, until August then I stopped because I felt better.”

“Okay mother I am going to tell the honest truth when you feel better you think you are cured is it? Though you are not fully cured I want to tell the honest truth.”

The other participants stopped taking the medication for the first time because he just stopped with no reason and then the second time he got shot in the leg so he could not walk to the clinic. Three participants were sick that’s why they stopped taking medication.

The participant said he was also taking the Anti-Retro Viral treatment (ARVs) and fell ill, had sores and started coughing blood and that's why he stopped taking the treatment. He was admitted at the hospital and told the reason for being sick was caused by the pills and was given another treatment.

“It is because I was also taking ARVs. I fell ill and had sores so I thought the pills caused it. I then stopped because I was coughing blood. After that I was admitted at Frere Hospital. My being admitted made me to take the pills again. I was told that the reason why I felt sick was because I started the treatment.”

4.4.1.2 Behavioural issues

Another group of participants stopped taking their medication because of using alcohol, smoking and laziness. One participant felt better and started drinking and smoking, and another participant just felt lazy and also he was not told about the duration for taking the medication; at the same time another participant felt lazy to go to the clinic. He went away for a visit and when he came back he just got lazy.

“I felt better and decided to stop and started drinking and smoking.”

“No I do not really have a reason it is just being lazy because I last went in June.”

4.4.1.3 Temporal change of residence

Some participants stopped taking their medication because of temporary change in residency. They both missed their return dates because they were not around, one had gone with her sister and the other was on a holiday.

“I never wanted to stop. I wanted to finish my treatment. I used to take it at Mpilweni. My sister came and I went with her for a whole month.”

4.4.1.4 Work related issues

Participants worked out of town, some could not get a chance to get the medication. They also worked during the week and on weekends they could not get the pills because they were working. Another participant also mentioned that work sometimes interferes as he works the whole day cutting grass.

“I do not have time to go to the clinic because I am working for a contractor and I am always out of town even during weekends.”

4.4.2. THEME 2: HEALTH SERVICE RELATED FACTORS

This section deals with issues that participants had with the health service nurses and community service workers. It was categorized into two (2) groups: the health workers' attitudes and poor services.

4.4.2.1 Health workers' attitudes

The participants had problems with the attitude of nurses. Nurse attitudes included misunderstandings about the medication, nurses shouting at and gossiping about a patient and not looking for patients after they stopped taking medication. The participants did not go back to the clinic for fear of being shouted at by the nurses. Participants claimed that nurses were disrespectful and did not take care of clients.

“Then I was afraid to go to Mpilweni because those nurses shout a lot. The nurses, I am scared of them.”

“Yes, I told them, they said I must cough then I never got a right answer. They said after (six months), the guy who is working there said I must go and fetch my pills. That lady did not give me the right answer. I told them that they said I must leave.”

The participants did not receive community service visits by community health workers after they stopped their treatment. It means that no one checked the clients as to why they stopped taking medication.

“No I have never seen them.”

4.4.2.2 Poor service

The participants complained about the poor service they received at the clinic. One of the participants had gone to the clinic after being called to come and was not serviced for the whole day and was told he should not have come even though he had struggled coming with an amputated leg.

“Yes, they said I must leave and there is no reason why I’m there. My neighbour said my name was called in the clinic, I went there crippling, going there again and not being attended the whole day, you see, you sit there and burn because of sun. I came back and told myself I am not going there again.”

The community workers never visited the participant but they called later on for the participant to get the pills. When he went to the clinic they told him there was no reason for him to be there and he left. Fear of being shouted at by nurses made him not to go back.

“I never wanted to stop. I wanted to finish my treatment. I used to take it at Mpilweni. My sister came and I went with her for a whole month. Then I was afraid to go to Mpilweni because those nurses shout a lot. I stopped, this is a second month now. I asked my boyfriend on Saturday I do not know what happened. My muscles are stiff and I am afraid to go there those nurses shout even if you try to explain they shout.”

The other participant stopped taking medication after a misunderstanding with the nurses. She went to the clinic and was told to cough but her sputum did not come out as it was dry. Therefore the nurses did not give her medication; they said she could not get medication if she do not have sputum.

I was told to cough, the sputum could not come out I mean, how can I put it, it is dry. The nurses said I must stop because there was no sputum coming out.

All participants got their medications from the three clinics under study. One participant said he got his medication once per month so he went to the clinic once per month. All other participants went to the clinic every day except for weekends as they were given the weekend pills on Friday. Since most participants went to the clinics every day this led to complaints of being tired to walk and if sick they could not walk as some of the places where they stay are far away from the clinic.

4.4.3 THEME 3: SOCIAL SUPPORT

This theme dealt with family support and health service support as categories.

4.4.3.1 Family support

Those who lived alone did not have any one to get pills for them and some worked full time and did not get the chance to go to the clinic. However, even those with family members did not automatically guarantee them the assistance to collect their medication. One of the participants had a son but he always runs away to play leaving her unaided.

“Yes, when I am stiff I cannot walk because my son leaves me. Even yesterday when we were sorting he ran away with other two children.”

4.4.3.2 Health service support

The participant asked for assistance with food as he was not working and living alone and another participant asked how he be helped to stop smoking. This shows that most patients need the support of their family and the health sector. Below are some responses relating to this:

“No I do not have food, I want to ask because there are people who get ...as I am not working now food from the clinic, I am going to ask at the clinic of how they can assist in this regard. I heard from the other guy that I can go to the clinic and enquire about the food parcels for sick people.”

“There is something, can you advise me about smoking because I managed to stop drinking but it is difficult to stop smoking. But I do not smoke the way I used to.”

4.4.4 THEME 4: KNOWLEDGE OF PATIENTS REGARDING TB

The participants had no knowledge about TB in terms of duration and how to take the medication. Participants were told at the clinic about the duration and how they were going to take the medication for TB. Participants, however, were told nothing - they were just given pills and told to come back after a certain time. The participants did not go back as they did not know how long they were supposed to take the medication. Participants did not remember if the clinic told them about the duration of the pills.

“Yes they told me I had to take the medication for six months.”

However some of the participants did not know that they could send someone to collect their medication for them even if they knew about the duration of the medication. At the same time they did not ask the nurses if it was possible to do so. Therefore, there is lack of proper communication as nurses leave some things out and clients view nurses as unapproachable. The participants also knew about the duration but they did not know that they should report to the clinic when they were leaving for a holiday or going out of town so that the nurses could make arrangements for them or get the medication at the nearest clinic where they were going.

4.5 CONCLUSION

This chapter revealed the major barriers to the success of completing TB treatment. It was observed that the reasons leading to default by participants were patient behaviour, feeling better, being sick, misunderstandings in communication, work issues and temporary change of residency. Patient factors such as lack of knowledge, lack of social support on the treatment duration and the need to report when travelling had a bearing on the behaviour of defaulting. In addition, health service factors also played a role in defaulting with nurses being disrespectful, poor service provision and community workers failing to look out for patients when they failed to come for medication. The success of preventing default depends on the actions taken to fill in the gaps identified in the programme. The following chapter will deal with a discussion of the results and recommendations.

CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter summarizes the findings and discussions made in this study and it gives conclusions regarding factors contributing to the tuberculosis default rate in the East London area of Buffalo City Metropolitan Municipality. The findings of this study revealed various factors contributing to tuberculosis treatment default. The findings are discussed on the basis of information that was obtained from the participants and from the literature of other researchers and authors.

5.2 DISCUSSION

This section focuses on discussions of the demographics and the results of the research under the following themes: client related factors, health related factors, social support and knowledge regarding tuberculosis.

5.2.1 Demographics

This study focuses on factors contributing to the default rate of clients on tuberculosis treatment. Therefore, the sample consisted of participants who had stopped taking their treatment. In this study there were more male participants than female respondents. These findings concurred with Vijay, Balasangameswara, Jgannatha, Saroja & Kuma (2003:187) who found a significantly higher default rate among males than females. Similarly, in the UK Peate (2004:85) found that men were often unwilling to access healthcare services and took a lot of risks with their health. This may also apply to this study as male participants constituted the larger proportion of the sample.

In a study conducted by Holtz & Lancaster (2006:649) in Pretoria, South Africa, in 1991-2001, most defaulters were males. The higher rate of default in men compared to women can be assumed to be related to their role of being the earning member in the family. Men tend to leave their homes quite early for work in order to provide for their families and, therefore, they may find it difficult to come regularly to the health care facility, especially during the intensive phase of the treatment.

In terms of age the majority of the respondents were between 20 to 29 years of age. The mean age was 32 years with median age of 30 years, a minimum of 25 and a maximum of 45 years. It shows that most of the younger generation is usually more at risk of defaulting than older people. Chee (2008:450) found that there was no significant association between age and treatment default.

5.2.2 Client related factors

Besides well known risk factors, the most important unresolved challenge in tuberculosis control is the treatment completion. Treatment will only be effective if the patient completes the regimen which includes a combination of drugs. Poor compliance contributes to the worsening of tuberculosis by increasing the incidence of it and by initiating drug resistance (Pandit & Choudhary, 2006:11). In this study all the participants did not finish their treatment for different reasons. It is important to understand the reasons behind defaulting so that it can be minimized as it may lead to high rates of mortality. It has also been shown that defaulters have the tendency to default again (Saka *et al.*, 2011:115).

5.2.2.1 Feeling better

It emerged from this study that one of the reasons people default their treatment is because they felt better. The assumption is usually that when a person feels better they do not find the need to keep taking their medication as they feel that they have healed from the disease. This is supported by the findings from Dodor & Afenyandu (2008:830) in a study of factors associated with tuberculosis treatment default and completion at the Effia-Nkwanta Regional Hospital in Ghana. He found that patients were tempted to cease therapy once their symptoms had abated. On the other hand, it is a common problem in TB therapy that many patients stop taking anti-TB drugs if they feel better after the initiation of the treatment (WHO, 2010).

5.2.2.2 Sick whilst on treatment

Findings in this study also revealed that the reason for defaulting was due to being sick while on treatment. Clients on anti-tuberculosis treatment may have unpleasant side effects of the drugs. Minor adverse effects include anorexia, nausea, joint pains,

and a burning sensation in the feet. As a result, many tuberculosis clients start anti-tuberculosis treatment but do not finish it.

The results in this study concurred with Wasonga (2006:77) who found that side effects and feeling better are among factors that influence TB treatment default. The number of tablets that need to be taken, as well as their toxicity and other side effects associated with their use have been reported to act as deterrents to continuing treatment (WHO, 2009).

One participant complained that he could not go to the clinic because of a physical health not related to tuberculosis or treatment. He was short in the leg because of a partial amputation and thus he was experiencing difficulties in going to the clinic to fetch his TB treatment. The researcher could not find any literature related to that.

5.2.2.3 Behavioral issues

This study also revealed that patient behavior such as laziness, smoking and drinking alcohol caused treatment default. These results are in accordance with a control study by Lamsal, Lewis & Smith (2008:64), which showed that alcoholics and smokers were not committed in taking care of their own health, usually had a poor diet, often complained of weakness after treatment and may have had improper counseling and distribution of medicine. Recurring use of alcohol leads to forgetting the taking of drugs and eventual default. In fact, the South African Demographic and Health Survey of 1998 (DOH, 2010) indicated that 28% (n=8.3 million) of South Africans 15 years and older consume alcohol. Clients also defaulted because they felt lazy. This may be due to the duration of treatment and the distance to the nearest clinic where they get medication. The currently recommended minimum duration of treatment is six months, even though it is much shorter than the previously recommended 12 to 24 months.

5.2.2.4 Temporary change of residence

This study also showed that clients stopped taking their medication because of temporary change of residency. Similar results were obtained in a study by (Jaggaramma in 2005:133), where 24% of the defaulted clients had migrated out of the 531 clients registered under the TB programme in the 3rd and 4th quarters of

2001, and 104(20%) had defaulted for treatment. Among defaulters, 24% had migrated from their original places of residence.

5.2.3 Health related factors

5.2.3.1 Health workers' attitudes

Misunderstanding between clients and nurses was one of the reasons which led to defaulting treatment. These results are in accordance with Stein (2013), who found that non-compliance may result from differing interests or expectations of the client and health-care provider. Misperceptions or dissatisfaction with the client-health care provider relationship may also be a cause of non-compliance. Indeed, the health care provider-client relationship has for a long time been regarded as an important variable in compliance. In addition WHO (2012) found that factors associated with poor compliance with TB treatment included its complexity and duration, adverse side effects, and difficult access to health-care services.

The study revealed that the health factors being experienced by clients included the health workers' attitudes and poor service delivery at the clinics. Health workers' attitudes included misunderstandings about the medication, health workers shouting at and gossiping about the clients and not looking for clients after they stopped taking medication. This is in accordance with the study by Tachfout *et al.* (2012) in Sub-Saharan Africa that revealed that poor attitudes towards TB clients are the reasons for non-adherence to TB treatment. This also applies to community workers who failed to follow up on clients. The clients also revealed that sometimes they went to the clinic and waited the whole day and were not attended that day which shows poor services by health care workers.

5.2.3.2 Poor health services

Indications of poor health services were found to be failure by health providers to offer adequate health education about TB treatment (probably due to overburdened health care providers and the weak capacity of the system to educate patients and provide follow-up), waiting too long for services, and unfavorable healthcare personnel attitudes. This is supported by the study conducted by Tachfout *et*

al.(2012:42) in Sub-Saharan Africa which said that non adherence of TB clients was due to deficient health education by health workers

5.2.3.3 Social support

On social support the study showed that the majority of the respondents lived alone. A few of them lived with other family members though some of them did not get help from them. This is in line with the results of the study by Chani (2010:60) in Ethiopia that lack of family support was found to be strongly predictive of default and also noted that compliance behavior to be closely associated with social support from family and friends This shows that most clients need the support of their family and the health sector. It can be seen that lack of social support amongst clients can lead to defaulting. This is in accordance with WHO (2009) which found that lack of effective social support networks and unstable living circumstances are additional factors that create an unfavorable environment for adherence to treatment

5.2.3.4 Knowledge of patients about TB

Almost three quarters of the sample did not have the knowledge about TB in terms of duration and how to take the treatment and the other quarter did have an idea. These results are similar to a study done in Sub-Saharan Africa by Tachfout *et al.* (2012:42) which examined people's knowledge, attitude and perceptions about TB. The results of the study revealed that poor knowledge about TB has a great impact on the lack of adherence of TB clients.

This study also revealed that even though clients knew this information they did not know other information relating to their treatment such as reporting when going out of town and getting treatment in any clinic besides where one resides. In addition, another study also found that clients were not given enough information about TB, which resulted in their defaulting on their treatment protocol (Chani, 2010:60). This study found that clients believed that after two months of treatment they would be cured as they felt better. In other words, clients did not have sufficient knowledge to discern the importance of completing treatment which is the same as taking the full course of treatment. On the contrary, there was a finding that correlation between

clients' understanding of etiology of tuberculosis and adherence to their treatment was not significant (WHO, 2010).

5.3 APPLICATION OF THE THEORITICAL FRAMEWORK

According to the self-efficacy model used in this study, a person's belief about his/her ability and confidence in performing at a certain level to achieve certain goals under difficult circumstances was confirmed. The findings of this study revealed that clients did not have confidence in taking the TB treatment because they lacked knowledge regarding the side effects of the drugs, duration of treatment and when to report when changing residence, lack of confidence leads to inability to reach the goal of adhering to treatment.

5.4 FUTURE RESEARCH

The researcher recommends the following topics for further research:

- service providers' experiences and perceptions of factors impacting on TB treatment default;
- service providers' views on improving TB treatment adherence; and
- Conducting a qualitative research on clients' perception, attitudes and religious beliefs towards TB and its influence on defaulting treatment.

5.5 RECOMMENDATIONS

- More emphasis should be given to client motivation by providing awards to clients who completed the course of treatment.
- Team building activities for health workers should be done to improve positive attitudes towards the clients, thereby buying back trust in health care systems.
- Regular in-service trainings of community health workers with regards to TB drug side effects and the duration of drug consumption.
- Strengthening of PHC ward based re-engineering teams by providing resources like transport, staff and sufficient equipment.

- Strengthening of multidisciplinary team in each ward where social workers, environmental officers, professional nurses, health promotion officers and doctors will work together to meet the needs of the clients accordingly.
- Strengthen client support, and community advocacy programs aimed at eradicating the stigma associated with tuberculosis.

5.6 LIMITATIONS OF THE STUDY

The researcher identified the following limitations of the study:

- The study was restricted to the Buffalo City Metropolitan Health District. Accordingly, the findings cannot be generalized to other districts or the whole country.
- The population for this study was generated from the health facility. TB clients not registered at the clinic but residing in the district were, therefore, not included.
- The research was conducted at the Buffalo City Health facilities which are government sponsored organisations; therefore, some information from private facilities was not included.

5.7 CONCLUSION

In summary, this study identified factors such as patient behaviour, sickness, feeling better, misunderstanding with nurses, work issues and temporary change of residence as reasons why clients stopped taking their treatment. It is imperative to understand predictive factors for treatment default so that programs can implement specific measures to target the population at risk, since other strategies such as simpler treatment regimens and DOT have not given enough satisfactory results.

It is also quite clear that health factor such as nurse attitudes, poor service and caregiver visits have an impact on the clients' continuity of treatment. If the challenges are known, the strategies regarding the improvement of the default rate will be put in place accordingly. There will be a decrease in MDR TB and XDR TB, TB case findings and in the death rate due to TB infections. Also, the economy of the communities will be boosted because life expectancy will be increased.

6. REFERENCES

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**7.1 ANNEXURE A: CERTIFICATION OF APPROVAL FROM THE UNIVERSITY OF
FORT HARE ETHICS COMMITTEE**

**7.2 ANNEXURE B: LETTER FROM THE EPIDIOLOGICAL RESEARCH &
SURVEILLANCE DEPARTMENT (DEPARTMENT OF HEALTH)**

7.3 ANNEXURE C: LETTER FROM THE DEPARTMENT OF HEALTH

7.4 ANNEXURE D: LETTER FROM THE CO- CODER

7.5 ANNEXURE E: LETTER FROM THE EDITOR