

**EXPLORATION OF THE KNOWLEDGE ABOUT AND  
ATTITUDE TOWARDS TUBERCULOSIS AMONG NON-  
TB INFECTED ATTENDEES AT A CAPE TOWN  
COMMUNITY CLINIC**

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### **Declaration**

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## Abstract

*Mycobacterium Tuberculosis* (TB) continues to rank among the world's most serious problems despite biomedical achievement of effective prophylaxis and chemotherapy. In South Africa, TB is directly linked to the country's high HIV prevalence rate and other related factors. The required knowledge, as well as people's attitude towards a better understanding of TB are prerequisites for motivating them to seek early treatment.

This study aims to explore the knowledge about and attitude towards TB among non-TB infected clinic attendees. More specifically, this study used a qualitative descriptive design to explore and describe clinic attendees' knowledge of the cause, symptoms and treatment of TB and to explore their attitude towards the disease. A semi-structured interview technique was used to gather data. Ten clinic attendees between 20-40 years old, able to communicate in English and who had no past history of TB were conveniently sampled. Manual data analysis was done using an inductive approach. Thereafter, a deductive approach using the Health Belief Model was used to guide the discussion of the findings.

Nine major themes were identified. The results confirm a gap in participants' knowledge of the cause, symptoms and treatment of TB. Despite these gaps participants perceived that they were susceptible to TB, the dangers TB could cause and the benefits of completing the treatment. Participants indicated that they would seek medical help if they experienced TB symptoms. However, their fear was their ignorance of TB symptoms on the one hand and the fear of being stigmatized, discriminated against, as well as the quality of health service deliveries on the other hand.

The findings highlight the need for on-going education about the cause of TB, transmission, symptoms and treatment at clinics and within the community. Media including radio, television, as well as schools and family should be included in TB education programmes. Immigrants should also be targeted to be included in TB education campaigns.

Keys terms: Tuberculosis, Non-TB infected patients, Knowledge and attitude, Health Belief Model.

## Opsomming

*Mycobacterium Tuberkulose* (TB) word steeds gekenmerk as een van die ernstigste gesondheidsprobleme ter wêreld, ten spyte van deurbrake met betrekking tot meer doeltreffende profilakse en chemoterapie. In Suid-Afrika, word TB direk gekoppel aan die land se hoë voorkoms van MIV en ander verwante faktore. Die nodige kennis, sowel as 'n beter begrip van mense se gesindhede teenoor TB, is voorvereistes vir die motivering wat hulle gedrag sal beïnvloed om vir vroeë behandeling te gaan.

Hierdie studie het ten doel om die kennis en gesindhede teenoor tuberkulose van ongeïnfekteerde TB-pasiënte in 'n Kaapstadse kliniek te ondersoek. In die besonder ondersoek die studie, deur 'n kwalitatiewe beskrywende benadering, die kennis van 'n spesifieke groep individue wat die kliniek besoek, met betrekking tot die oorsake, simptome en behandeling van TB, asook hulle houding ten opsigte van die siekte. Die studie beklemtoon ook enige vooroordele oor die siekte en identifiseer moontlike redes vir pasiënte se laat-aanmelding van TB by 'n kliniek.

'n Semi-gestruktureerde tegniek vir onderhoudvoering is gebruik. Tien pasiënte wat die kliniek besoek tussen die ouderdomme 20-40 jaar oud, wat in staat is om in Engels te kommunikeer, en wat geen vroeëre geskiedenis van TB het nie, is gerieflikheidshalwe per steekproef gebruik. Data is per hand versamel deur gebruik te maak van 'n induktiewe benadering. Hierna is 'n deduktiewe benadering gevolg, en die "Health Belief Model" is gebruik om die gesprekke te lei in die bevindinge.

Nege hoofteemas is geïdentifiseer. Die resultate bevestig 'n gaping in die kennis van deelnemers oor die oorsake, simptome en behandeling van TB. Ten spyte van die gapings, was deelnemers wel bewus van die feit dat hulle blootgestel is om TB op te doen en oor wat die gevare is wat deur TB veroorsaak kan word, sowel as wat die voordele is om TB-behandeling te voltooi. Deelnemers het aangedui dat hulle mediese hulp sal vra, sou hulle die simptome van TB bespeur. Desnieteenstaande was hulle vrees enersyds oor die onkundigheid van die simptome van TB, en om gestigmatiseer

of teen gediskrimineer te word, asook die standaard van mediese dienste beskikbaar andersyds.

Die bevindinge beklemtoon die behoefte aan voortgesette opvoeding oor die oorsake, oordrag, simptome en behandeling van TB in klinieke en binne gemeenskappe. Media soos radio en televisie, asook skole en families behoort ingesluit te word in sodanige opvoedingsprogramme. Immigrante behoort ook ingesluit te word by massa opvoedingsprojekte.

Sleuteltermes: Tuberkulose, ongeïnfekteerde TB-pasiënte, Kennis en gesindhede, "Health Belief Model".

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### List of abbreviations

ACSM	Advocacy, Communication and Social Mobilization
AFB	Acid Fast Bacillus
AIDS	Acquired Immune Deficiency Syndrome
BCG	Bacillus Calmette –Guerin
DOH	Department of Health
DOTS	Directly Observed Treatment Short course
DST	Drug Susceptibility Test
EPTB	Extra Pulmonary Tuberculosis
GLI	Green Light Initiative
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
LTB	Latent Tuberculosis
MDR-TB	Multi Drug Resistant Tuberculosis
NTCP	National Tuberculosis Control Programme
PTB	Pulmonary Tuberculosis
TB	Tuberculosis
USAID	United States Agency of International Development
WHO	World Health Organization
XDR-TB	Extremely Drug Resistant Tuberculosis
Z-N	Ziehl- Nielson

## Chapter 1: Foundation of the study

*“Nowhere in these ancient communities of the Eurasian land mass, where it is so common and feared, is there a record of its beginning. Throughout history, it had always been there, a familiar evil, yet forever changing, formless, unknowable. Where other epidemics might last weeks or months, where even the bubonic plague would be marked forever afterwards by the year it reigned, the epidemics of tuberculosis would last whole centuries and even multiples of centuries. Tuberculosis rose slowly, silently, seeping into the homes of millions, like an ageless miasma. And once arrived, it never went away again. Year after year, century after century, it tightened its relentless hold, worsening whenever war or famine reduced people’s resistance, infecting virtually everybody, inexplicably sparing some while destroying others, bringing the young down onto their sickbeds, where the flesh slowly fell from their bones and they were consumed in the years-long fever, their minds brilliantly alert until, in apocalyptic numbers, they died, like the fallen leaves of the dreadful premature autumn”.* From “The Forgotten Plague: how the war against Tuberculosis was won – and lost” (Ryan, 1992).

### 1.1 Introduction

In this chapter, an overview of the study based on the proposal approved by the review panel of the Stellenbosch University Health Research Ethic Committee is presented.

The ultimate goal of patient education is to influence or change patient health behaviours by providing them with information that motivates them to follow the treatment plan. In the case of *Mycobacterium tuberculosis* (TB) the different target groups which need to be addressed are patients, their relatives, health care providers and community members (Bayoumi, Mohamed, Ottoa & Yousif, 2007:21).

Before the 1960s, most patients with TB were hospitalized in sanatoria and their treatment included fresh air, bed rest, good nutrition and occasionally thoracic surgery. Chemotherapy became the mainstay of treatment with the discovery of effective anti-TB drugs in the late 1940s (Chung, Kim, Shin, Han, Kim, Lee, Kim, Lee & Shim, 2010:79). Today TB continues to rank among the world’s most serious problems despite biomedical achievements of effective prophylaxis and chemotherapy (Ilongo, 2004:70). Patients’ compliance with treatment is commonly poor and non-completion of treatment can lead to relapse and eventually drug resistant bacteria (Koay, 2004:503). It is argued that TB is considered to be a global threat due in part to the emergence of multi-

drug resistant TB (MDR-TB). This TB strain which is resistant to the first line treatment is more expensive and takes longer to treat and may have an impact on the economy of a country (Ilongo, 2004:71).

It has been reported that several factors are responsible for the high incidence and prevalence of TB in both developed and developing countries. These include culturally determined beliefs about TB; gaps in knowledge about the cause, transmission, prevention and relationship between Human Immunodeficiency Virus (HIV) and TB (Haasnoot, Boeting, Kuney & Van Roosmalen, 2010:902); failure to adhere to treatment (Ilongo, 2004:71); low level of patients' information and poor quality of communication between patients and health care providers (Koay, 2004:503). Moreover, tobacco smoke and substance abuse weaken the immune system and increases the risk of contacting TB (Lönnorth et al., 2009:2244; Schmidt, 2008:484). Homelessness, HIV infection, lack of family and social support, migrant status, illiteracy, unemployment and low income can also contribute to the spread of the disease (Ilongo, 2004: 71).

The required knowledge, as well as people's attitude of a better understanding towards TB are prerequisites for motivating early treatment seeking behaviours (Ishengoma, Kamugisha, Keto, Kilale, Makunde, Mandara, & Mangesho, 2007: 38). In the paragraph below the researcher discussed her interest about the topic.

## 1.2 How the researcher became interested in the topic

The researcher is a foreign trained nurse who is currently living and studying in South Africa. Her first involvement with TB was in her home country (Cameroon) where she worked for two weeks in a TB ward; this encounter with patients infected with TB did not have an impact on the researcher. The desire to research TB was raised during a previous course, in South Africa when the researcher was required to interview HIV positive patients infected with TB as part of an assignment. For this assignment, the researcher interviewed a HIV positive, pregnant woman infected with TB in her tiny one bed-roomed flat where she lived with her husband and three children. The woman's husband did not know his HIV status and had MDR-TB. The oldest two children from a previous relationship were HIV negative but the youngest child had both HIV and TB.

This interview made a big impact on the researcher because she could identify different health conditions in a single household. More importantly, the researcher was amazed by the woman's positive attitude towards her condition and with her knowledge about her condition. The woman answered the questions with great confidence and provided the researcher with so much information about HIV and TB; especially the clinical aspects of TB (transmission, symptoms, prevention and treatment). The researcher left the woman completely satisfied with the information she received, but she was constantly asking herself whether the woman was so knowledgeable about TB because she was experiencing it? Would she have been so informed about TB if she were not infected? These thoughts raised the researcher's curiosity and triggered her to study non-TB infected people's knowledge of the disease and how they behave towards an infected person. The literature reviewed for this study is discussed in the following paragraph.

### 1.3 Literature review

A full review of literature is presented in Chapter 2. A number of searches were conducted to locate the current views and reports on non-TB infected people's knowledge about and attitude towards TB in the sub-Saharan context in general and in South Africa in particular. Several articles reviewed reported that patients infected with TB seek assistance for treatment when the disease is well advanced and that this delay is the result of factors such as lack of knowledge, lack of awareness of the significance of the symptoms or negative social attitude (Bayouni et al., 2007: 21; Promtussananon & Peltzer 2005: 75; Koay, 2004: 502).

For instance, in a study conducted in South Africa in 2002, participants believed that TB is a result of breaking cultural rules that demand abstinence from sex after the death of a family member. These participants also subscribed to the view that only traditional healers could cure TB. Furthermore, they believed that Western type of TB can spread due to environmental pollution, smoking or alcohol abuse (Edginton, Sekatane & Golgstein, 2002: 1075).

In addition, the findings of another study conducted in Malaysia revealed that 36% of a younger age group (19 to 33 years) were of the opinion that TB sufferers were dirty (Koay, 2004: 505). Patients' non-compliance to treatment has been reported as a barrier to TB control, and lack of knowledge could impact on people's attitude and increase the stigma around the disease (Ilongo, 2004: 72).

According to the South Africa Department of Health (DOH), patients' knowledge and attitude are important in their ability to recognize the symptoms and seek early professional help. In the South African context, the national strategy plan recognizes the current challenges in TB control, namely low case detection, poor treatment adherence, stigma and discrimination associated with TB, lack of awareness by patients and communities and insufficient resources for TB programme activities (South Africa DOH, 2007-2011: 33).

As a result, the strategy for the success of any efforts to control TB is the development and the implementation of a comprehensive advocacy, communication and social mobilization (ACSM) plan to support the national TB programme (South Africa DOH, 2007-2011: 33). This plan will only be effective if the public's knowledge about and attitude towards TB are first assessed.

An earlier study revealed that knowledge about TB is generally poor and that this varies according to the level of education (Bayouni et al., 2007: 21). The fact that the disease is transmitted by bacteria is important information not understood by many patients and health care providers often fail to give patients any in-depth explanation (Bayouni et al., 2007: 25). It has also been observed in a study conducted in the Limpopo province that teenagers, older people and men have the least knowledge and highest misconceptions about TB (Promtussananon & Peltzer, 2005: 79).

Therefore, the authors suggest that the basic knowledge about TB causes needs to be improved for every age group in the population. Furthermore, the patients' education must focus on changing attitudes, such as misconception and stigmatization (Promtussananon & Peltzer, 2005: 79).

According to Bekker, Lawn, Liang, Midelkoop, Woo and Wu (2010: 406), the total number of TB notifications reached 27 000 in Cape Town in 2006 with a high burden in crowded and socially deprived African townships. In addition in 2010, it was reported that the Western Cape had the third highest incidence of TB in South Africa after KwaZulu-Natal and the Eastern Cape (Western Cape DOH Annual performance plan, 2011-2012: 18).

Promptussananon and Peltzer (2005: 79) reported that a Cape Town study revealed that more women knew the causes of TB than men and were more likely to seek medical treatment if they had TB.

TB in South Africa is a serious problem that needs specific and adequate responses. An urgent need exists to orientate and better define the types of interventions that must be put in place to save and protect the lives of those who are the most vulnerable. The section below elaborated on the problem statement.

#### 1.4 Problem statement

The Western Cape remains the province which performed well in the management of TB through various strategies, namely: A well-established Direct Observed Treatments short course (DOTS); HIV and TB integration programme; the Khayelitsha pilot model of ambulatory treatment of MDR-TB cases (Western Cape DOH annual report, 2010: 57). However, the incidence of TB has dramatically increased over the past seven years in the province (Western Cape DOH Annual Performance Plan, 2011: 86). Moreover, in 2010 the province had the third highest incidence of TB in South Africa after KwaZulu-Natal and the Eastern Cape (Western Cape DOH Annual performance plan, 2011-2012: 18).

In addition, the literature reports seem to indicate that ignorance about TB often lead to delays in seeking treatment (Bayouni et al., 2007: 21; Promptussananon & Peltzer, 2005: 75; Koay, 2004: 502). In order to address this problem, it is important to target an intervention towards people who have not yet been diagnosed or treated for TB and explore their knowledge of the disease.

## 1.5 Research Question

What is the knowledge about and attitude towards TB among non-TB infected clinic attendees? To answer the research question the following aim and objectives were formulated.

## 1.6 Aim of the study

The aim of this study was to explore the knowledge about and attitude towards TB among non-TB infected clinic attendees.

## 1.7 Objectives of the study

More specifically, this study attempted to explore the knowledge of non-TB infected clinic attendees with regard to

- the cause, symptoms and treatment of TB
- explore their attitude towards TB.

## 1.8 Significance of the study

Worldwide, every second a person is infected with TB and every 10 seconds someone dies as a consequence of TB (Haasnoot et al., 2010: 902). In South Africa, despite the free availability of effective treatment regimens, high rates of TB persist (Peltzer & Promtussananon, 2005: 74). Part of the problem may be community ignorance about TB. For example, if the community is not aware that TB is a contagious, airborne disease then they will not know how to adopt control measures within their homes (Bayouni et al., 2007: 25).

There is an urgent need to provide targeted interventions to improve the knowledge and understanding of TB within communities. In order to ensure that these interventions are accurately targeted, it is necessary to first explore the existing knowledge about, and attitude towards TB.

## 1.9 Research Methodology

A brief overview of the methodology is supplied in the current chapter and an in-depth report is developed in chapter 3.

### 1.9.1 Research design

The study followed a qualitative descriptive design to explore and describe the knowledge about and attitude towards TB among non-TB infected clinic attendees.

### 1.9.2 The conceptual framework

At the outset of this study the researcher had a loosely defined conceptual framework based on her own experience and the literature reviewed. The researcher has described her prior experience with the area of study in section 1.2 and the literature which informed this conceptual framework is described in Chapter 2.

It was only after the initial inductive process of data analysis that a theoretical framework, the Health Belief Model (HBM), (Hsieh & Shannon, 2005: 1279) was introduced which assisted with the description and discussion of the data. For this reason a full description of the HBM was not included in the literature review but rather included within the discussion of the data. As this is a qualitative study it was considered important that the researcher did not enter the process with too many preconceived concepts.

### 1.9.3 Population and sampling

The study population comprised of non-TB infected clinic attendees between 20 and 40 years of ages at the Parow Community Clinic in Cape Town. Further details about the inclusion criteria are provided in the methodology chapter (Chapter 3).

Participants fitting the inclusion criteria were selected using a non-probability, convenience sampling method to allow the researcher to interview readily available participants at the clinic during the period of data collection (Brink, Van Der Walt & Van Rensburg, 2006: 132).

It was anticipated that interviewing would continue until data saturation occurred which meant that no new data was emerging and patterns were being repeated (Burns & Grove, 2005: 348). The researcher recognises the importance of data saturation in qualitative research. However, in this study saturation could not be obtained due to resource and time restrictions. Therefore, the sample was restricted to ten participants. Five males and five females were interviewed and a semi-structured interview technique was used.

#### 1.9.4 Trustworthiness

Qualitative research is trustworthy when it is conducted in a fair manner and accurately reflects the participants' experience. Examination of trustworthiness is essential to ensure reliability and validity in qualitative research (Golafshani, 2003: 602). In this study, trustworthiness was ensured using the strategies outlined by Guba and Lincoln (Guba & Lincoln, 1985: 290) as cited by De Vos et al. (2005: 327), namely: credibility, transferability, dependability and confirmability which will be described in more detail in Chapter 3.

#### 1.9.5 Data analysis and interpretation

The interviews were tape recorded. During the interview, the researcher regularly checked her understanding of what had been said by summarizing what has just been said and checking for correctness. In addition, at the end of each interview, the tape was played back to the participant for validation. The interview was transcribed by the researcher.

Data analysis was done manually (Burns & Grove, 2006: 79; De Vos et al., 2005: 338; Miles & Huberman, 1994: 58). There were a number of reasons why computerized assisted qualitative data analysis software (CAQDAS), e.g. Atlas.ti was not used to code data in this study. These reasons included the small size of the sample, the inexperience of the researcher and cost of the software. A manual approach is recommended for inexperienced researchers conducting small sample studies in order to become familiar with the intuitive aspects of the analysis (Webb, 1999: 323). These

factors together with the understanding that CAQDAS does not increase the validity of coding (Webb, 1999: 323) led to the selection of a manual coding technique following an inductive approach and the steps described by De Vos et al. (2005: 334).

Key themes related to the research objectives were identified and categorized, and then coded texts were inserted into each category (Brink et al., 2006: 185). Following on this inductive coding process the categories were then deductively incorporated within the categories of the HBM (Schadewitz & Jachua, 2007: 5).

### 1.9.6 Ethical considerations

Consent was obtained from the University of Stellenbosch Health Research Ethics Committee (Appendix A), the Western Cape Department of Health (Appendix B), the City of Cape Town (Appendix C) and from the participants (Appendix D). Participants were requested to sign an informed consent form (Appendix D) and to give permission to have their responses recorded. Participation was voluntary and confidentiality guaranteed. More details about the ethical considerations for this study will be discussed in Chapter 3.

### 1.10 Operational definitions

**Attitude:** opinion, way of thinking; behaviour reflecting this (*The pocket Oxford dictionary*, 2005). In this context, attitude refers to non-TB infected patients' opinion, way of thinking or their behaviour towards TB.

**Incidence:** the number of new cases of a particular problem that are identified in a specified area or context during a specified period of time (De Vos et al., 2005: 372). According to the topic, the problem is TB in South Africa and particularly in Cape Town.

**Knowledge:** person's range of information, understanding about a subject (*The pocket Oxford dictionary*, 2005). In this context, it refers to non-TB infected patients' awareness, familiarity or their range of information about TB.

**Prevalence:** the number of existing cases in an area at a specified period of time (De Vos et al., 2005: 372).

**TB:** a chronic infection caused by mycobacterium tuberculosis; it usually involves the lungs but other organs can also be involved (Omerold, 2005: 18).

**PTB:** TB that affects the lungs and is the most common form of TB (South Africa DOH, 2009: 17).

**MDR-TB:** TB that is resistant in vitro to both rifampicin and isoniazid with or without resistance to other drugs (South Africa DOH, 2009: 80).

**Non-TB infected clinic attendees:** clinic attendees who may have come into contact with TB but who were not knowingly infected and had never been diagnosed or treated as a TB clinic attendee.

**XDR-TB:** TB that is resistant to the first and second line drug regimens (South Africa DOH, 2009: 85).

## 1.11 Structure of the Thesis

The layout of this thesis includes five chapters, namely: Chapter 1: Foundation of the study; Chapter 2: Literature review; Chapter 3: Research methodology; Chapter 4: Data Results and Chapter 5: Discussion, Conclusion and Recommendations.

## 1.12 Summary

This chapter provided a brief introduction to the foundation of the study. It was observed that a high rate of TB persists in South Africa. In addition, despite the positive results in the management of TB throughout the Western Cape, TB incidence is still high. With the aim of contributing to the fight against TB in the province, the present study used a qualitative descriptive design to explore the knowledge about and attitude towards TB among non-TB infected clinic attendees. A more extensive review of the literature can be found in the next chapter.

## **Chapter 2: Literature review**

### **2.1 Introduction**

In Chapter 1 an introduction to the study is presented which included the background, and an outline of the methodology. In this chapter, the literature on TB as it relates to the topic being researched is presented.

The main purpose of a literature review is for researchers to comprehend and extend their knowledge of the topic being studied (Polit & Beck, 2007:105). According to De Vos et al. (2002:127), a literature review is aimed at contributing to a clearer understanding of the nature and meaning of the problem under study. For the purpose of this study, the researcher has undertaken a literature review to identify existing knowledge related to the aim of the study. The literature that was systematically reviewed is presented and the following topics were explored.

The literature search strategy; an overview of TB; a brief review of the incidence of TB over the world, in South Africa and in Cape Town; transmission of TB, symptoms, diagnosis and treatment; an introduction to the South African national tuberculosis control programme; knowledge and attitude of non-TB infected clinic attendees towards TB; stigma and TB and the theoretical framework. In the paragraph below the literature search strategy is discussed.

### **2.2 Reviewing and presenting the literature review**

The researcher systematically searched PubMed, Google Scholar and electronic journals, without predefined inclusion or exclusion criteria. The researcher used the following combination of query terms to conduct the search: "TB knowledge and people attitude", "TB in Africa", "TB and HIV", "TB and stigma". Publications were purposefully selected if decided by the researcher as relevant for the review. English articles were favoured. The key journals that were used included: The International Journal of Tuberculosis and Lung Disease; Social Science and Medicine; International Journal of Epidemiology; Qualitative Report and the Southern African Journal of Epidemiology.

Further publications were identified from the references cited in relevant articles, reports and workshops, as well as in unreviewed news reports. An overview of TB and its incidence globally are discussed in the following paragraphs.

### 2.3 An overview of TB

TB is caused by the *Mycobacterium Tuberculosis*, a bacillus discovered by a physician called Robert Koch in 1882 (Dodor, 2009:11; Lönnorth, Jaramilo, Dye & Raviglione, 2009: 2241; Ducati, Netto, Basso & Santos, 2006: 698). The bacillus has a waxy coat that protects it from being destroyed in the body. This waxy coat absorbs acid during the Ziehl-Nielson (Z-N) test; therefore the bacterium is said to be an acid-fast bacillus (Dodor, 2009: 16; Matji, Ndjeka & Ogunbanjo, 2008: 44; Ducati et al., 2006: 702).

TB control received a boost with the discovery, in the late 1940s and the early 1950s, of drugs that could cure the disease (Lönnorth et al., 2009: 2241). Scientific advances, including the discovery of drugs, such as streptomycin and para-aminosalicylic acid, the development of the Bacille Calmette-Guerin (BCG) vaccine together with economic growth and accelerated welfare reforms in many industrialized countries, helped to sustain and accelerate the decline in TB incidence during this period (Lönnorth et al., 2009: 2241). However, TB has never been eradicated despite these biomedical achievements, effective prophylaxis and chemotherapy (Ilongo, 2004: 70).

Today TB is recognised as being responsible for the most human deaths caused by a single infectious agent (National Institute of Allergy and Infectious Diseases, 2009; Ducati et al., 2006: 697). TB is a highly feared disease that affects and impoverishes large sections of the world population and continues to ravage the developing world (United States Agency of International Development USAID, 2009; WHO, 2002: 3). It is the most prevalent infectious disease among young people and adults; it affects people in the most economically active age group (15 to 59 years) and those who are cured from this disease can be left with permanent sequellae that reduces their quality of life (Castro, Chakaya, Chauhan, Floyd, Lönnorth & Raviglione, 2010: 1814; Ducati et al., 2006: 704). The emerging drug-resistant strains of TB are presenting new challenges in

the ever-changing battle to control and prevent the disease (National Institute of Allergy and Infectious Diseases, 2009).

## 2.4 Global TB incidence

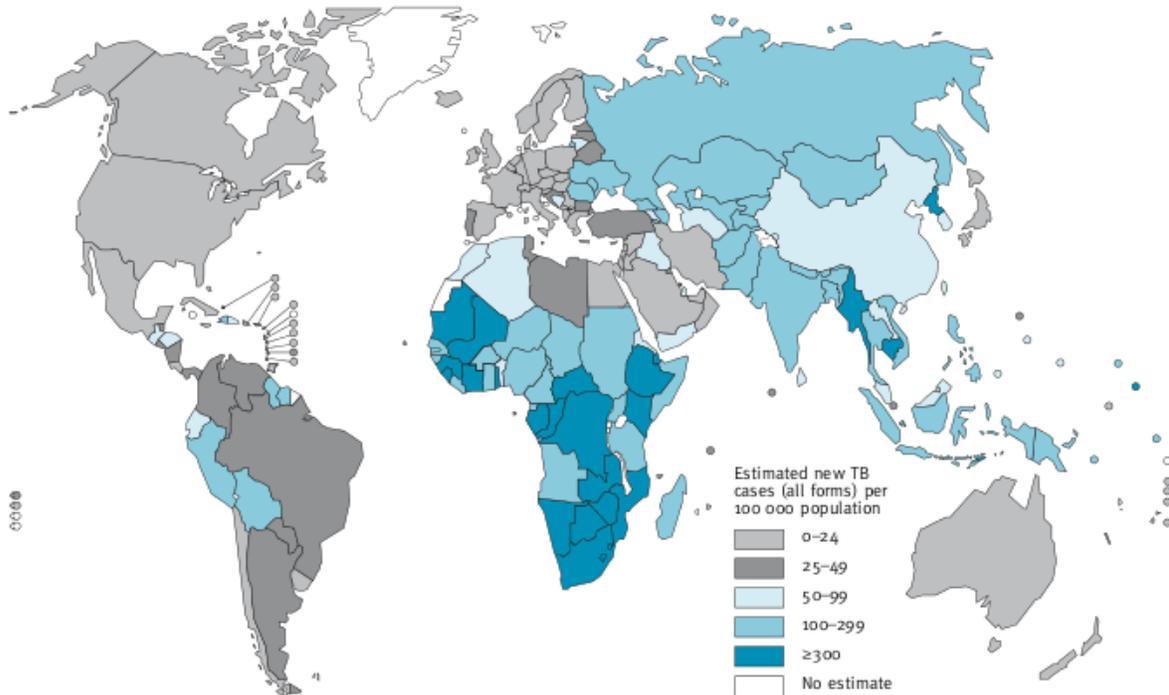


Figure 1: Estimated TB incidence of countries by 2009 (WHO Global TB Control, 2010: 6).

The figure above provides an illustration of the global incidence of new TB cases per 100 000 population in each country by 2009 and clearly indicates that Africa is the continent most widely affected by TB (WHO, 2010: 6).

The WHO declared TB a global emergency in 1993 and set a target of detecting 70% of new cases and curing 85% of those detected by 2000 (WHO, 2003: 19). The proposed strategy recommended for TB control was branded Directly Observed Treatment Short-course (DOTS), which has five key components: 1) political commitment which is needed to establish the following four components, 2) a rational case finding strategy including accurate, timely diagnosis through quality which assures culture and drug susceptibility tests (DST); 3) appropriate treatment strategies that use second line drugs under proper case management conditions; 4) uninterrupted supply of quality-assured

anti-TB drug; 5) standardized recording and reporting system (Ndjeka et al., 2008: 47; Dye, 2006: 940; WHO, 2003: 19). Although there has been an intensification of global effort to control TB, the incidence has been rising: from 8.8 million new cases globally in 2005 to 9.4 million in 2009. The number of associated deaths also increased and sub-Saharan Africa, South East Asia are mostly affected by the disease as illustrated in figure 1 (Castro et al., 2010: 1819; WHO Report on Global TB Control, 2010: 2; WHO Global TB control, 2009; WHO TB Epidemiology, Surveillance and Planning, 2008: 1; Ndjeka et al., 2008: 44).

The most challenging problem facing the world is the emergence of multi-drug resistant TB (MDR-TB). This TB strain, which is resistant to the first line treatment, is expensive and takes a long time to treat which may have a negative impact on the economy of a country (Ilongo, 2004: 71). It is shown that MDR-TB occurs largely as a result of patient non-compliance (Omerold, 2005: 18) and also because of the poor quality of health services which fail to effectively manage the drug supply and patient prescriptions (South Africa DOH 2009: 80). In addition, HIV infection continues to fuel the epidemic, especially in Africa (Castro et al., 2010:1814). In the last decades, a dramatic increase in TB incidence in Africa has been observed, mainly as a consequence of the HIV epidemic, reaching alarming rates and leading people to question whether “Africa can still be saved” (Ducati et al., 2006: 704). Lack of awareness or incorrect knowledge about TB might lead to wrong beliefs and misconceptions about various aspects of the disease, which in turn may affect the timely reporting of patients to the health institutions or poor compliance with treatment (Mtaita, 2009: 51).

#### 2.4.1 Impact of HIV in TB incidence in Africa

The African continent, which contains 11% of the world's population accounts for 27% of the global burden of TB and 30% of the global TB-related deaths. An estimated 2.4 million new cases of TB and 540 000 TB-related deaths occur annually in sub-Saharan Africa (Bekker, Lawn, Liang, Midelkoop, Woo & Wu, 2010: 406). Consequently, in August 2005 the WHO Regional Committee for Africa, comprising health ministers from

46 member states, declared the TB epidemic in Africa to be a regional emergency (South Africa DOH, 2007-1011: 6).

HIV infection is a potent risk factor for TB and the association between the two diseases has presented a grave public health threat, particularly in sub-Saharan Africa and in urban towns and cities in the developed world (Corbett, Dye, Maher, Raviglione, Walker, Watt & Williams, 2003: 1009). According to Dye (2006: 939), much of the increase in global TB incidence seen since 1980 is attributable to the spread of HIV in Africa. Corbett et al. (2003: 1009) explained that 30% of TB cases occurring in 15 to 49 year old adults in sub-Saharan Africa can be attributable to HIV and a continuous 10% per year increase in TB is projected in those countries most severely affected by the HIV pandemic. According to Bekker et al. (2010: 406), between 1990 and 2005, the TB incidence has tripled in African countries with the highest HIV prevalence. The HIV epidemic is now considered the most important factor driving the TB epidemic and it is threatening to overwhelm even effective TB control programmes in the African region (Corbett et al., 2003: 1011).

#### 2.4.2 TB in South Africa

In South Africa, TB was declared a national crisis in 2005 (South Africa DOH, 2007-1011: 6) as TB notifications had increased six-fold over the last two decades (Bekker et al., 2010: 405). Ehrlich, Harling & Myer (2008: 492) reported that as in many other countries, the TB epidemic in South Africa can be traced to the poor working and living conditions that surrounded early industrialization. They argue that these conditions, which persist today along with the country's high HIV prevalence, continue to fuel the epidemic. A study of the TB risk factors in South Africa found that there was a link between the risk of TB, smoking, alcohol and undernutrition (Ehrlich et al., 2008: 497). In addition, the above study found that these factors explained partly the association between low socio-economic status (SES) and TB risk. Furthermore, it has been reported that people from low SES groups on average have more frequent contact with people with active TB disease. They also have lower level of awareness and less power to act on existing knowledge concerning healthy behaviour (e.g. safe sex, smoking, diet

and alcohol use) and usually have limited access to high quality health care (Lönnorth et al., 2009: 2244).

It has been reported that South Africa alone accounts for approximately 25% of the global burden of HIV associated TB; at least 60% of patients infected with TB are co-infected with HIV (Bekker et al., 2010; Martinson, 2009: 1). In addition, the highest number of new TB cases in South Africa are among women ages between ages 20 to 29 years, reflecting the age distribution of HIV (USAID South Africa, 2009: 3). Moreover, in early 2006 South Africa experienced the most severe outbreak of a new TB strain known as Extensively Drug Resistant TB (XDR-TB). This outbreak in Tenguella Ferry (KwaZulu-Natal Province) killed 53 XDR-TB infected patients in less than a month and most of them were HIV infected and were receiving antiretroviral treatment (ART) along with TB treatments (USAID South Africa, 2009: 4).

### 2.4.3 TB in Western Cape

Despite efforts to strengthen TB control in the Western Cape, the incidence of TB has dramatically increased over the past seven years (Western Cape DOH Annual Performance Plan, 2011-2012: 86). In 2006, the TB notification rate reached 27 000 in Cape Town with the highest burden in crowded and socially deprived areas. In addition, it is reported that TB notification are more frequent among people aged 20 to 40 years (Bekker et al., 2010: 405). The epidemic in the Western Cape, like in the rest of the country, is complicated and is exacerbated by the HIV pandemic (Western Cape DOH Cape Town TB Control Progress Report 97-2003). A Cape Town based study revealed that a lack of sympathy from the health care providers which resulted in patient neglect and long waiting times at the local clinic are factors that drive possible TB patients away from the clinic (Murray, Bond, Marais, Godfrey-Faussett, Ayles & Beyers, 2012: 16).

The emergence of MDR and XDR-TB are potentially the most serious aspect of the TB epidemic in the Province (Western Cape DOH Annual Performance Plan, 2009-10: 108). For instance, despite the success of the integrated TB and HIV programme and the pilot model of ambulatory treatment of MDR-TB in Khayelitsha (the largest township

of South Africa's Western Cape province), the township has a growing epidemic of drug-resistant TB and it is said that the epidemic has threatened the success of the National TB Programme (Médecins Sans Frontières, City of Cape Town and the Western Cape Provincial Department of Health, 2011: 2). The late presentation of cases, high interruption rates and high proportion of previously treated patients were reported in the province as contributing to MDR-TB (Western Cape DOH Annual Performance Plan 2009-10: 108). Delay in presentation to a health facility is an important concern, as it contributes to delays in initiating TB treatment which can result in greater morbidity and mortality for the patient and also increased transmission of TB in the community (Chongsuvivatwong, Pungrassami, Kipp, Stewart, Strauss & Van Rie, 2010: 181). Therefore, Naidoo and Edgninton (2007) report that the mainstay of the TB crisis management in South Africa is social mobilisation to ensure that TB is destigmatised, and people seek treatment early and complete their treatment.

## 2.5 Transmission of TB

TB bacteria are transmitted from person to person by airborne droplets which can remain in a room air for several hours or until they are removed by natural or mechanical ventilation (Ndjeka et al., 2008:44). Patients with open pulmonary TB (PTB) are the most serious source of infection (Lienhardt, 2001: 288; Rathman, Sillah, Hill, Murray, Adegbola, Corrah, Lienhardt, & McAdams, 2003: 943). The risk of a susceptible person becoming infected is determined by the infectiousness of the TB infected patient, as well as the intensity of exposure and the host immune system (Ndjeka et al., 2008: 46; Sillah,Hill, Brookes, Dondor, Lugos, Howie, Fielding, Jallow, Lienhart, Corrah, Adegbola & Mcadams, 2007: 595; Ducati et al., 2006: 703).

### 2.5.1 Development of the disease

The development of TB is a two-stage process in which a susceptible person is firstly infected by the inhalation of droplets containing the bacilli when a person with PTB coughs, sneezes, spits or speaks. Secondly, the disease process may progress, depending on various proximate risk factors like crowding, age, sex, HIV infection, poverty, poor housing, smoking, malnutrition and the infected person who develops

primary TB (Schmidt, 2008: 483; Ducati et al., 2006: 703; Lienhardt, Fielding, Sillah, Bah, Gustafson, Warndorff, Palayew & Lisse, 2005: 914; Lienhardt, 2001: 288). According to Schmidt (2008: 483) for instance, poverty and urbanization create the perfect condition for TB. In addition, it is thought that regardless of these factors, infection can result when as few as one to five bacteria are deposited in a terminal alveolus of a person's lungs (South Africa DOH National TB Guideline, 2009: 15). During illness, the bacilli enter the blood stream and spreading to other organs may occur, setting the stage for subsequent activation of sites other than the lungs; this is known as extra PTB (EPTB) (Dodor, 2009: 15; Fujwara & Small, 2001: 190). The most commonly reported EPTB sites are the lymph nodes, pleura, bones or joints, genito-urinary system, the central nervous system (TB meningitis), the abdomen and pericardium (South Africa TB Guideline, 2009: 28; Dodor, 2009: 17).

It has been shown that in about 5% of patients who are infected with TB, the infection progresses from a latent (LTB) form to an active disease within two years of infection and an additional 5% will have active disease at some later point in their lives (Ndjeka et al., 2008: 46).

### 2.5.2 Development of reinfection

Although the majority of cases of active TB are thought to arise from a reactivation of latent infection, exogenous reinfection with a second strain of TB can occur, particularly in profoundly immuno-compromised persons and in those heavily exposed to new bacilli (Dodor, 2009: 15; Fujwara & Small, 2001: 191).

## 2.6 Symptoms of TB

The symptoms of TB are non-specific and can be classified as either systemic or organ-specific. Classic systemic symptoms include: fever, night sweats, anorexia, weight loss and weakness (South Africa DOH National TB Guideline, 2009: 18; Sillah et al., 2007: 599; Ducati et al., 2006: 703). However, since TB is associated with other illnesses that have similar symptoms, this lack of specificity can result in a delayed diagnosis or even a misdiagnosis (Fujwara & Small, 2001: 191).

Organ-specific symptoms of PTB include coughing for more than two weeks, chest pain and haemoptysis. In patients with primary TB, chest x-ray often show infiltrates in the middle or lower lung zones with hilar adenopathy. In patients with reactivation TB, the classic chest x-ray findings include upper-lobe infiltrates, frequently with cavitations (Bethel, Goldberg, Hostburg, Sterling, Weinfurter & Yun, 2006: 928). The clinical signs of PTB are more varied and less specific in persons with HIV infection. In EPTB, the symptoms depend on the organ involved (Dodor, 2009: 26; Fujwara & Small, 2001: 191).

## 2.7 Diagnosis of TB

TB has a range of signs and symptoms as listed above, but these could also be associated with other diseases. Therefore, it is imperative that the clinical signs and symptoms be confirmed by laboratory tests. The main laboratory tests used are: TB culture, TB microscopy and TB drug susceptibility tests (Ducati et al., 2006: 705). Other tests include a tuberculin skin test which measures the delayed type hypersensitivity response to treatment and chest x-rays which are quick to obtain but their findings are not specific for TB (Dodor, 2009: 19; Fujwara & Small, 2001: 190). The chest x-ray is very useful in the diagnosis of TB in children; they can also be used as a tool to assess the patient's response to TB or MDR-TB treatment (Ndjeka et al., 2008: 46; Ducati et al., 2006: 705).

The diagnostic mainstay of TB is microscopy of a stained sputum specimen (smear) which is a cheap, low-technology investigation and is easily undertaken in most settings. However, microscopy is less reliable in HIV infected individuals, which complicates diagnosis in this high risk population (Martison, 2009: 2; Wood, 2007: 46). The definitive diagnosis of TB in HIV positive individuals relies on a TB culture which is expensive and limited by the prolonged time required for positive and negative results, which can be delayed for 6 to 8 weeks (Martison, 2009: 2; Wood, 2007: 46).

This delay in diagnosis when combined with late presentation could result in highly infective people living in the midst of a highly susceptible population. For instance, it is reported that most cases of drug resistance TB in Khayelitsha are transmitted by patients who are not yet on treatment (Medecin sans Frontieres, City of Cape Town &

the Western Cape Provincial Department of Health, 2011: 1). Therefore, a drug resistant TB care is integrated to the existing TB programme in order to reduce TB incidence in that region. The programme aimed to improve case detection, decrease time to diagnosis and treatment initiation (Medecin sans Frontieres, City of Cape Town & the Western Cape Provincial Department of Health, 2011: 1).

In an attempt to improve TB testing at primary health care level the South African Minister of Health recently unveiled a new TB diagnosis machine called “the Genexpert machine”. According to literature the machine tests for TB more accurately than microscopy and can produce results within two hours (WHO South Africa, 2011).

## 2.8 Global TB control

TB is a preventable and curable disease. Research demonstrates that prompt diagnosis and treatment remain the most effective means of controlling the disease (Campbell & Bah-Sow, 2006: 1196).

The Global Plan to Stop TB 2011–2015 sets specific objectives for building and renovating laboratories, training laboratory staff and introducing recently developed rapid TB tests. It also highlights the activities of a new Stop TB Partnership Working Group, Green Light Initiative (GLI), which was launched in 2008. GLI provides policy guidance on appropriate laboratory technology and best practices, as well as oversees global initiatives aimed at helping countries build or scale up laboratories that efficiently and effectively provide services for TB, as well as other diseases (WHO, 2010: 21).

It has been reported that TB is often the first clinical indication that a person has an underlying HIV infection (Corbett, Martson, Churchyard & De Cock, 2006: 927). As a result, the WHO recommended HIV testing for patients of all ages who present signs or symptoms that suggest TB, regardless of whether TB is suspected or already confirmed (WHO TB Treatment, 2010: 65). In addition, all HIV-positive patients infected with TB should have co-trimoxazole preventive therapy initiated as soon as possible and given throughout their TB treatment (WHO TB Treatment, 2010: 69). In high prevalent countries the WHO and the International Union against TB and Lung Disease

recommend universal BCG vaccination to children at birth (Campbell & Bah-Sow, 2006: 1196).

### 2.8.1 The South African National TB Control Programme (NTCP)

One of the top ten strategic priorities for the health system in South Africa is the management of infectious diseases, of which TB is one of the most important (South Africa TB DOH, 2007- 2011: 6). In 2005, a TB crisis management was developed, which aimed to intensify the efforts of the TB programme (South Africa DOH, 2007- 2011: 6). This resulted in the implementation of an integrated HIV and TB management programme at facility level (South Africa DOH, 2007- 2011: 6).

The South Africa NTCP, in an effort to control TB, implemented the DOTS programme which was delayed because of poor service quality (USAID South Africa, 2009: 5). To overcome this challenge the NTCP adapted the WHO's Stop TB Strategy and developed a five-year National Strategic Plan for TB. This new plan includes an enhanced DOTS programme, an increased emphasis on TB and HIV, MDR-TB, as well as taking care of the needs of poor and vulnerable populations and attempts to empower affected people and communities through partnerships (USAID South Africa, 2009: 6).

In addition, it has been reported that one of the key points of empowering people with TB and the community is Advocacy, Communication and Social Mobilization (ACSM) (South Africa DOH 2007-2011: 33). ACSM aims to ensure that key messages about TB are communicated to the community to help improve knowledge levels, modify health seeking behaviour, improve access and utilization of health services and encourage communities to actively contribute towards TB control efforts (South Africa DOH, 2007- 2011: 33). ACSM also aims to overcome the challenges in TB control through social mobilization and community collaboration. Through liaising with Non-Governmental Organizations (NGOs) it is thought to be the best way to improve community understanding of and support for TB programmes. Social mobilization activities have contributed to increased TB case detection (USAID South Africa, 2009: 22).

### 2.8.2 TB control in Western Cape

TB persists as a public health problem of serious magnitude in the Western Cape Province and is the leading cause of premature death (Western Cape DOH Annual Report, 2009-10: 56) as most drug resistant patients have an extremely high risk of dying before the diagnosis has been confirmed (Western Cape DOH Annual Report 2009-10: 56). The enhanced TB response strategy focuses on strengthening the TB programme by improving TB cure rates and the management of MDR and XDR- TB (Western Cape Annual Report 2009-10: 56). For instance, the Khayelitsha pilot model of ambulatory treatment of MDR-TB cases is demonstrating that MDR-TB infected patients can be successfully managed at primary health care level (Western Cape DOH Annual Report 2009-10: 57).

Moreover, the Province has committed itself to a comprehensive HIV, AIDS and TB programme that, via all relevant departments of the provincial government and all sectors of society, addresses the various aspects of the dual HIV, AIDS and TB epidemics (Western Cape DOH Annual performance plan, 2011-2012: 94). The Provincial Cabinet endorsed the Provincial Strategic Plan 2007 – 2011, which is aligned with the National Strategic Plan and provides a roadmap for increased effort and commitment to contain the spread of HIV and TB. In addition, the Health Department has made significant progress in the implementation of the DOTS Strategy and is working on strengthening the expansion and enhancement of quality DOTS in high TB burden sub-districts and health facilities (Western Cape DOH Annual plan 2011-2012: 94; Western Cape DOH Annual performance plan 2009-2010: 13).

Furthermore, the Western Cape achieved a new smear positive TB cure rate of 79.4%. The overall treatment success rate of 83.5% for the Western Cape was also very encouraging and is approaching the national and global target of over 85% for 2011 (Western Cape DOH Annual report, 2009-10: 56).

### 2.9 TB treatment

It has been reported that until the 1940s, treatment of TB consisted mainly of bed rest, nutrition, and exposure to sun or sea air in sanatoria (Chung et al., 2010: 79). One

unintended effect of isolating patients in sanatoria was the protection of the community from infection (Lönnorth et al., 2009: 2241).

Today the mainstay of treatment in TB is a combination of effective antibacterial drugs such as isoniazid, rifampicin and pyrazinamide with a six months duration treatment (Ndjeka et al., 2008: 47; Ducati et al., 2006: 706). Sometimes during treatment there can be an initial resistance of the bacillus to isoniazid, making it necessary to add other first-line drugs to the treatment, such as ethambutol and streptomycin (Ducati et al., 2006: 706). Whenever there is resistance to rifampicin and isoniazid (MDR-TB), it becomes necessary to extend the treatment period, and frequently rely on the use of second line or third line drugs, even though the increased toxicity stands as a negative factor (Ducati et al., 2006: 706). The current recommended treatment consists of a combination of isoniazid, rifampicin and pyrazinamide and streptomycin (or ethambutol) during the first two or three months, followed by the combination of isoniazid, rifampicin for at least four or five additional months (WHO TB Treatment, 2010: 32).

### 2.9.1 Adherence improves effectiveness

In an effort to help people adhere to their treatment regimen, the WHO and the Stop TB Partnership recommend DOTS where health care workers counsel patients, perform progress surveillance and make sure that each medication dose is correctly taken (Ducati et al., 2006: 707). DOTS is not just observing patients swallow their treatment, it has five components as listed in section 2.4 (Global incidence) above.

In addition, it was reported that DOTS in South Africa was used as a model to increase awareness among doctors and nurses about the need for community collaboration in order to improve both treatment adherence and tracing of TB contacts (USAID South Africa, 2009: 10). However, DOTS faced some challenges including insufficient human resources to ensure TB and HIV collaboration, access to diagnoses, as well as the proper use of reporting and recording systems (South Africa DOH, 2007-2011: 13).

DOTS has been criticized for being a treatment guideline and biomedical strategy that does not take into account social factors related to TB control (Chongsuvivatwong et al., 2010: 181). Despite this, between 1995 and 2009 a total of 41 million TB infected patients globally were successfully treated in DOTS programmes and up to 6 million lives were saved, including 2 million women and children (WHO Global TB Control, 2010: 2). It is reported that both Kenya and Tanzania have reached their target of 85%, demonstrating that this target is achievable in countries with a high prevalence of HIV among TB infected patients (WHO Global TB Control, 2010: 12).

## 2.10 Knowledge and attitude of non-TB infected patients towards TB

Most studies reviewed which directly explore the knowledge and attitude of communities towards TB are drawn from developing countries where there is a high incidence of TB and significant socio-economic problems making the context similar to South Africa. Despite the international attention of TB and DOTS, knowledge of TB is not well established in Africa. There are still many superstitions and cultural beliefs surrounding TB which hamper its prevention, early diagnosis and treatment (Nthaita, 2009: 81).

It has been reported that TB infected patients seek assistance for treatment when the disease is well advanced and that this delay is the result of factors, such as a lack of knowledge, lack of awareness of the significance of the symptoms or a negative social attitude (Bayouni et al., 2007: 21; Promtussananon & Peltzer 2005: 75; Koay, 2004: 502). The fact that the disease is transmitted by bacteria is important information not understood by many patients, and health care providers often fail to give patients any in-depth explanation of disease causation (Bayouni et al., 2007: 25).

In a study exploring whether patient beliefs affect TB control, undertaken in a rural district in South Africa (Edginton et al., 2002: 1075), participants believed that TB is a result of breaking cultural rules that demand abstinence from sex after the death of a family member or after a woman has a spontaneous abortion. Furthermore, they believed that only traditional healers could cure TB (Edginton et al., 2002: 1075). This role of the traditional healer in TB cure is also reported in another study on knowledge, attitude and practice of TB among Maasai in Tanzania (Haasnoot, Boeting, Kuney &

Van Roosmalen, 2010: 902). Also, in a focus group study on stigma related to TB in the Eastern Cape province (South Africa), the traditional healers thought a combination of Western and traditional medicine was most effective to cure TB (Moller, Erstad, Zani & Tobi, 2006: 48).

In Egypt, a study of the predictors of treatment failure among patients infected with TB revealed that the most significant risk factor for treatment failure was non-compliance due to poor patient knowledge about the disease and deficient health education programmes (Bayoumi et al., 2007: 21). This is further sustained by Ilongo (2004: 72) who explains that non-compliance to treatment has been reported to be a barrier to TB control, and that lack of knowledge could impact on people's attitude and increase the stigma around the disease.

The findings of another study to ascertain people's knowledge about and attitude towards TB among 205 households aged between 19 and 72 years in Kudat district (Malaysia) revealed that 36% of a younger age group (19 to 33) believed that TB sufferers were dirty (Koay, 2004: 505). The same study also revealed that 44% of respondents believed they or their family will never get infected with TB, and that 51% who were not sure about the risk thought that patients infected with TB should not socially mix as the disease could be transmitted to others.

In the Limpopo province (South Africa), a study on perceptions of TB revealed that less knowledge and more misconceptions about TB existed among teenagers, older people and men (Promtussananon & Peltzer, 2005: 79). For this reason, the authors suggest that basic knowledge on the cause of TB needs to be improved for every age group in the population. Furthermore, the authors recommended that patients' education should focus on changing attitudes such as misconceptions and stigma.

### 2.10.1 TB and stigma

Stigma can be defined as a social process characterized by exclusion, rejection, blame, and, or devaluation resulting from the experience or reasonable anticipation of an adverse social judgment because of a particular health condition (Chongsuvivatwong et al., 2010: 181; Parker & Aggleton, 2003). It has been reported that marginalized groups

and the poor have limited access to information sources (WHO Addressing TB and Poverty, 2005: 27) and as a result incorrect beliefs about the transmission and curability of TB, which is a reflection of the way society understands the disease, has led to stigmatisation of people with TB (Dodor, 2009: 57). For example, incorrect beliefs that TB is transmitted through eating utensils and sexual behaviour can result in further isolation of TB infected patients (Dodor, 2009: 57). TB stigma may also be a result of other existing client characteristics that are sources of discrimination, such as an ethnic group, and co-infection with HIV (Macq, Solis & Martinez, 2006: 347). It is reported that in high HIV prevalence settings where dual infection with HIV and TB is common, TB is regarded as a marker for HIV positivity and as a result the HIV stigma is transferred to TB infected patients (Courtwright & Turner, 2010: 35).

### 2.10.2 Effects of TB stigma

One effect of TB stigma reported in the literature reviewed is the ability of stigma to affect health-seeking behaviour in individuals with symptoms suggestive of TB. This happens because stigma makes people want to hide their TB status from family or friends, out of fear of being rejected (Khan & Dhingra, 2010: 17; Dodor, 2009: 57; Miller, 2007: 17). Concerns about being identified as a person with TB make it more difficult for people with a prolonged cough who suspect that they may have TB, to seek care, because of the public nature of the TB diagnostic process (Dodor, 2009: 57).

In addition, within the South African context previous studies found that social stigma and misconception are the main factors that delay patients infected with TB from voluntarily presenting themselves at clinics for diagnosis and treatment (South Africa DOH, 2007-2011: 33; Pomtussananon & Peltzer, 2005: 79). Another Cape Town study suggests that those suspected of having TB avoid seeking diagnosis out of fear of being identified and stigmatised by the community (Murray et al., 2012: 7).

Consequently, by delaying seeking care, these people may develop more serious symptoms and they remain infectious for longer and are more likely to transmit the disease to others (Baral, Karki & Newel, 2007). In addition, a separate study in Burkina Faso and in Ethiopia found that TB is highly stigmatized. It also revealed that some

patients delay in seeking medical help for TB because other social causes, such as witchcraft, evil eye, and Satan are considered first (Abebe, Deribewa, Aspey, Woldemichael, Shiffa, Tesfage, Abdissa & Derbie, 2010: 4; Sanou, Dembele, Theobald & Macq, 2004: 5).

The stigma of TB is powerful because of public fear of infectious diseases. Lack of knowledge about TB fuels fear and many people continue to be uncertain that TB is curable (Miller, 2007: 17). TB stigma makes it more difficult for patients to continue with care, because of their fears of being identified as being infected with TB and as a result they may develop complications and increase the disease spread (Baral et al., 2007).

Patients infected with TB often endure more than physical symptoms and suffer from emotional distress because of stigma imposed by society, rejection by friends and family (Dodor, 2009: 57; Miller, 2007: 17). They isolate themselves to avoid infecting others and to avoid uncomfortable situations such as becoming the subject of gossip (Baral et al., 2007). A study undertaken in Gambia described how patients infected with TB believed people gossiped about them; they assumed that people were reluctant to share things with them and so avoided them. Sometimes TB patients became homeless after their landlords discovered their diagnosis and evicted them (Eastwood & Hill, 2004: 72).

As described above TB stigma is frequently associated with diagnostic delay and poor or non-compliance, creating a negative impact on TB control (WHO Addressing TB and Poverty, 2005: 28). It was revealed in a study on knowledge, attitude and practices of the Massai community in Tanzania that TB was perceived as a dirty disease, a death sentence and a punishment from God (Haasnoot et al., 2010: 903). In some settings like Kudat (Malaysia), TB was considered to be an inherited and/or incurable disease associated with unclean or undesirable habits or livelihoods (Koay, 2004: 505). This kind of perception is often reinforced among the poor who have impaired access to information (WHO Addressing TB and Poverty, 2005: 27).

Moreover, when such perceptions are widespread, the associated stigma of TB leads to fear of loss of employment and income, social exclusion and diminished marriage

prospects (WHO Addressing TB and Poverty, 2005: 27). According to Baral et al. (2007), unmarried women often find it difficult to get married, due to discrimination by prospective husbands and in-laws, while married women may find that they are being divorced because they have TB or if a history of TB is subsequently revealed.

This fear can also promote denial, undermine self-esteem and ultimately prevent timely diagnosis and effective treatment of TB (Miller, 2007: 16; Easthood & Hill, 2004). Furthermore, long clinic waiting times, demarcated waiting areas, colour-coded cards used in clinics and open consulting room doors were all factors that impaired patients' self-confidence and contributed to delays in seeking a diagnosis and promoted the use of alternative treatments (Murray et al., 2012: 6).

### 2.10.3 Gender differences and TB stigma

Gender differences with regard to stigma and its social consequences may result in differential health seeking behaviour and access to care between males and females (WHO Addressing Poverty in TB Control, 2005: 28). Studies revealed that females and older patients are more stigmatized than males and younger patients (Miller, 2007: 16; Moller et al., 2006: 66; Easthood & Hill, 2004). For example, the results of a focus group study in the Eastern Cape Province (South Africa) indicated that women were more likely than men to shoulder the blame for illness in the household. Thus, women were more likely to present for testing when another person in the household was infected with TB and to resort to cleansing rituals in order to free themselves or members of the household from the cultural manifestation of TB (Moller et al., 2006: 66). This could explain the result of a study in Cape Town (South Africa) which revealed that more women knew the causes of TB than men and that more women would seek medical treatment if they had TB (Promtussananon & Peltzer 2005: 79).

### 2.10.4 The role of health care worker in TB stigma

The use of isolation wards by most hospitals, and the observation that some doctors and nurses use masks and gloves when dealing with TB infected patients can lead to stigmatization of TB in the eyes of the community members. Besides, the humiliating

attitude and behaviour of health care workers and open avoidance of TB infected patients could send a message to the community members that TB is a shameful disease (Khan & Dhingra, 2010: 18). For example, during health education sessions, stigma can be reinforced by emphasizing the importance of safe disposal of sputum at the expense of conveying the message that modern treatment rapidly renders patients non-infectious (Miller, 2007: 17). Health care workers have a pivotal role in providing accurate information in a reassuring way and providing relevant knowledge to correct erroneous beliefs (Miller, 2007: 12).

## 2.11 Summary

The current literature relevant to this research project has been reviewed. The literature showed that TB is still a major public health challenge in the world and in South Africa. In addition, many factors including HIV infection, crowding and tobacco smoking contribute to the development of the disease. The literature also reported that the increase of TB in South Africa is partially linked to the HIV epidemic. Importantly the South African National TB Control Programme has adopted the WHO's DOTS and the Stop TB strategy to control TB. It was reported that the incidence of TB in the Western Cape was still high despite well-managed TB control programme activities. Furthermore, it was reported that a lack of knowledge and issues of stigma associated with TB could contribute to the late presentation of TB suspects to clinics and thereby have a negative impact on TB control programmes.

The following chapter presents a detailed description and justification of the methodology of the study.

## **Chapter 3: Research methodology**

### **3.1 Introduction**

Research methodology is the application of all steps and procedures for gathering and analysing data in a research investigation, in a logical and systematic way. It assists the researcher and the reader to understand the process of the research and gives it scientific merit (Burns & Grove, 2001: 26). Methodology embraces the research design, population, instruments used to collect data, ethical considerations, data analysis and its interpretation (De Vos, Delport, Fouche & Strydom, 2002: 255). This chapter discusses the methodology used in this study.

### **3.2 Determine research question**

The research question is formulated from a general research problem and answered by using either a qualitative or quantitative approach. A research problem can be described as an area of concern where there is a gap in knowledge or a situation in need of a solution (Brink et al., 2006: 59). A review of TB literature presented in Chapter 2 revealed that people with TB usually seek treatment when the disease is well advanced and that this delay is the result of factors such as lack of knowledge, lack of awareness of the significance of the symptoms and a negative social attitude (Koay, 2004: 502). Despite efforts to strengthen TB control in the Western Cape, the incidence of TB has dramatically increased over the past seven years (Western Cape DOH Annual performance plan, 2011-2012: 86). It is noteworthy that the incidence, particularly in Cape Town, continues to be among the highest in the world. In light of the fact that TB infections are increasing in Cape Town, the following research questions were asked: What is the knowledge about and attitude towards TB among non-TB infected clinic attendees? This question led to the formulation of the following aim and objectives.

### 3.2.1 Aim of the study

The aim of this study was to explore the knowledge about and attitude towards TB among non-TB infected clinic attendees.

### 3.2.2 Objectives of the study

More specifically the objectives of the study attempted to explore the knowledge of non-TB infected clinic attendees with regard to the causes, symptoms and treatment and to explore their attitude towards TB.

## 3.3. Research design

A research design is a blueprint for conducting the study that maximizes control over factors that could interfere with the validity of the findings. The purpose of the design is to maximize the possibility of obtaining a valid answer to the research question (Burns & Grove, 2006: 270). The research design is flexible and unique and evolves throughout the research process; it specifies how the researcher will address the issue of representation and legitimation (Denzin & Lincoln, 2008: 33). The aim of this study was to explore the knowledge about and attitude towards TB among non-TB infected clinic attendees. There is very little information relating directly to this area of study. This motivated the researcher to explore and document the issue, therefore a qualitative descriptive design was adopted.

### 3.3.1 Qualitative research

The qualitative research paradigm in its broadest sense, refers to research that elicits participant's accounts of meaning, experience or perceptions; it produces descriptive data in the participant's own written or spoken words (Burns & Grove, 2006: 61). Burns and Grove (2005: 248) state that descriptive designs help identify problems in current practice with a view to improve practice outcomes. The purpose of a descriptive research is "to observe, explore, describe and document aspects of a situation as it naturally occurs" (Polit & Beck, 2006: 192). Descriptive studies have little or no researcher control and subjects are examined as they exist in their natural settings, for example, in their homes, hospital or at work (Burns & Grove, 2005: 28).

Unlike quantitative researchers who seek causal determination, prediction and generalization of findings, qualitative researchers instead seek illumination, understanding and extrapolation to similar situations (Hoepfl, 1997 as quoted by Golfashini, 2003: 600

De Vos et al. (2002: 138), Denzin and Lincoln (2008: 4) state that in qualitative research, data are collected by direct contact with the respondents and, by using different methods of data collection that describe routine and problematic moments and meaning in individuals' lives. In addition, the sample is small, often purposively selected and a non-numerical method is used (Brink et al., 2006:113). In this study semi-structured interviews were used to gather in-depth data from a small purposive sample of participants.

By adopting a qualitative approach in this study, the researcher was able to explore the attitudes of people towards TB and allow them to use their own words to describe their thoughts.

### 3.3.2 Population and sampling

According to Brink et al. (2006: 123), population is the entire group of people or objects that is of interest to the researcher. Furthermore, Polit and Beck (2006: 259) describe a population as the entire aggregation of cases who meet specified criteria. Because the researcher does not have access to the entire population, the accessible population comprises those individuals who conform to the eligibility criteria and are available for a particular study (Burns & Grove, 2006: 324). In this research, the participants were non-TB infected clinic attendees at the Parow Community Clinic, in a Cape Town suburb. Parow is an urban, industrial and commercial town within the Western Cape province of South Africa and as a result provides a large number of services to a diverse group of people. The primary reason for selecting this clinic was its close geographical location to the researcher's home, which meant it could be accessed on foot.

### 3.3.2.1 Sampling

A sample is a selected group of elements or units from the defined population, whereas sampling is the researcher's process of selecting a sample from the population in order to obtain information regarding a phenomenon in a way that represents the population of interest (Brink et al., 2006: 124). According to Somekh and Lewin (2005: 218), a sample is studied in order to understand the population from which it is drawn. In this sort of exploratory, descriptive study where the researcher has no need to generalize, it is more important to select a sampling approach and a sample that is able to provide the richest data (Brink et al., 2006: 133; Burns & Grove, 2006: 344). Therefore, in this study, participants were selected using a non-probability, convenience sampling method, which allowed for easy access to participants and enabled the researcher to interview the readily available participants at the clinic during the data collection period (Brink et al., 2006: 132).

### 3.3.2.2 Sample size

The researcher recognises the importance of data saturation in qualitative research and it was hoped that in this study data saturation would occur, that is until no new ideas would emerge and patterns would begin to repeat (Burns & Grove, 2006: 348). However, saturation is not always reached at the conclusion of a study as the sample size may be determined by external factors such as the availability of funds and target dates (Henning, Van Rensburg & Smith, 2004:). In this study because of the limited scope, funds and tight submission deadlines, a sample size of 10 participants was set at the outset. The determination of sample size in qualitative research is usually based on the purpose of the study (Burns & Grove, 2006: 76). In this case it was considered that 10 participants would provide the researcher with sufficient data for analysis, while at the same time providing sufficient interviewing experience. In order to reduce any possible gender bias, an equal number of male and female participants were interviewed. In the literature there appears to be gender differences with regard to stigma and this may result in differential patterns in health seeking behaviour and access to care (WHO Addressing Poverty in TB Control, 2005: 28). In addition, prior studies also indicate that females and older people are more stigmatized than males

and younger people (Miller, 2007: 16; Moller et al., 2006: 66; Easthood & Hill, 2004:?). More importantly it is reported that TB notifications are frequent among 20 to 40 year old people in Cape Town (Bekker et al., 2010: 405). For this reason participants aged 20 to 40 years were included.

### 3.3.2.3 Inclusion criteria

Five male and five female participants who were not diagnosed with TB and who consulted at the Parow Community Clinic in Cape Town were included in the study. Participants were aged between 20 to 40 years. This age group was selected because it comprised of participants who were considered mature enough to understand the explanation given about the purpose of the research and the informed consent form which meant the researcher was able to obtain consent directly from the participants, which would not have been possible with a younger target population (Department of Health, 2006: 17). Furthermore, the literature has revealed that most cases of TB in sub-Saharan Africa occur among 15 to 49 year olds (Corbett et al., 2003: 1009) and TB notification in Cape Town is mostly prevalent among 20 to 40 year olds (Bekker et al., 2010: 405).

When diagnosed with TB, it is assumed that the person will usually receive some information about the condition before treatment commences and for this reason it was considered important that the participants had no past history of TB, as the researcher wanted to explore the knowledge and attitude of people who had no prior experience of the disease. Participants were included in the study if they could communicate in English because it was the only language in which the researcher could effectively communicate and there were no funds for an interpreter. As a foreign national living in South Africa, the researcher speaks English as a second language and has no knowledge of any other national languages of South Africans.

### 3.3.2.4 Exclusion criteria

Participants were excluded from the study if they were younger than 20 years old and older than 40 years of age. Participants who had TB before were also excluded and for

the reason indicated above, participants who could not communicate in English were also excluded.

### 3.3.3 Data collection technique

Burns and Grove (2001: 49) define data collection as “the precise systematic gathering of information relevant to specific research objectives or questions”. Data can include a variety of methods; however, the research objectives must be accomplished with the instrument used (Burns & Grove, 2001: 50).

There is a number of collecting data methods in qualitative research. In this study, interviews were selected as the most appropriate way to collect data because the researcher wanted to explore the participant’s attitude (De Vos et al., 2002: 271). The advantage of this technique is that all aspects of the research question can be explored and during the interview process, unusual and unique aspects of the phenomenon studied can be noticed immediately (Burns & Grove, 2006: 78).

Prior to commencing data collection, the researcher went to the clinic, met the clinic manager and determined where interviewing could take place. The researcher explained the purpose of the study and presented the approval letter from the Stellenbosch University Health Research Ethics Committee (Appendix A) and the City of Cape Town (Appendix B). The clinic manager gave verbal permission to proceed with data collection. The formal approval letter from the Western Cape Department of Health (Appendix C) came later. The following day the researcher returned to the clinic to begin with data collection.

The researcher introduced herself to all the clinic attendees in the waiting area, explained the aim of the project and the importance of their contribution. They were assured of the confidentiality of their personal responses, the safety of collected information and were informed of the conditions of participation (see inclusion and exclusion criteria below). At this point two people were invited to take part in the pilot interviews and were given informed consent forms (Appendix D) after they had agreed to participate in the study. Once the consent form had been signed, a time was set for

each interview (mostly after their appointments).

### 3.3.3.1 Interviews

Burns and Grove (2006: 377) describe interviews as a “flexible technique” that involves verbal communication between the researcher, who wishes to explore meaning in greater depth and the participant. They further explain that the interview is the most commonly used method in qualitative studies and it can be conducted by using a variety of approaches, including unstructured interviews, semi-structured and structured interviews. Semi-structured interviews were selected for this study because of the qualities (see section 3.3.4.2 below) related to this technique and the exploratory nature of this research. With this method the researcher was able to gather in-depth responses of participants’ knowledge, as well as their attitude towards TB.

### 3.3.3.2 Semi-structured interview

De Vos et al. (2005: 292) define semi-structured interviews as interviews which are organized around areas of particular interest, while still allowing considerable flexibility in scope and depth. In this study, the researcher was particularly interested in gaining some understanding of the participant’s knowledge and also their attitude towards TB and the semi-structured interview schedule included a set of six, predetermined, open-ended questions to guide the interview (De Vos et al., 2005: 296). The choice of questions (Appendix E) was motivated by previous research on the topic, as described in the literature.

Before asking the first question the researcher engaged the individual participants in informal discussion to enable them to relax and during this time demographic characteristics were collected (Barriball & While 1994:?). The questions were short and the researcher kept the language of communication as simple as possible (Miller 2007: 21). All participants answered the questions in their own words and during the interview there were opportunities (Appendix F, P7: 450-455) for clarification, reflective summaries and discussion. In addition, the researcher used creative questions to elicit information, such as “*Do you think TB infected patients can socially mix with others?*”,

*“How do you get in contact with TB?” and “What do you do to prevent TB”* (De Vos et al., 2005: 297). The researcher was able to redirect questions when the participant went off the topic and in so doing remained in control of the interview (De Vos et al., 2005: 289).

Prior to starting the interview process, the researcher used the guideline to practise her technique (De Vos et al., 2005: 288-289) with her family. The first two pilot interviews with clinic attendees (described in section 3.3.3) were used to pre-test the instrument; the participants did not have any difficulty in answering the questions. Data from these pilot interviews were not included in the final result. This practice helped the researcher to overcome her doubt and gain more confidence. The supervisor examined the transcribed pilot interviews in order to evaluate the researcher’s technique.

On the interview days, as with the pilot interview after someone had agreed to take part, signed the consent form, they agreed on a time when the interview would take place. The interviews mostly took place after their appointment and on average lasted about 10 minutes. The overall interview process lasted two weeks.

### 3.3.3.3 Weakness of interviews

Burn and Grove (2006: 377) highlight that face-to-face interviews can be time consuming and more expensive to conduct than alternative survey methods and that subject bias can be a threat to the validity of the finding. In this study interviews were recorded and after each interview participants were asked to listen to their recorded interview to ensure that they were comfortable with their responses, which also gave them an opportunity to correct or add comments. The researcher also experienced some challenges during interviewing which included interruptions, comforting of participants and withdrawals.

#### 3.3.3.3.1 Interruption

Interviews 3 and 4 were interrupted because people walked into the interview room. In interview 3 the participant’s father and in interview 4 the clinic maintenance staff caused interruptions. In both these incidences, the researcher stopped the interview and put

the recorder on pause mode. The interviews were then continued after the interruption after these people left. Although these incidences might have interfered with the train of thought of the participant, they did not impact on the level of confidentiality and intimacy established prior to the interruption. Prior to resumption of the interview, the researcher summarized the participant's response to refresh the interview.

#### 3.3.3.3.2 Comfort of patients

The researcher could not obtain a private room at the clinic for the interviews as they were all occupied. Consequently, the interviews took place in one of the waiting rooms which was unoccupied at the time of the interview. This did not appear to interfere with the quality of the interviews judging by participants' eloquence when they were answering the questions. Two participants requested that they be interviewed at their respective homes and it was granted.

#### 3.3.3.3.3 Withdrawal

The researcher interviewed two participants a day after their appointments at the clinic. Five participants who signed the consent form changed their minds and refused to participate stating that they were either tired or hungry after the long day waiting to be served at the clinic.

### 3.3.3.4 Transcription

Burns and Grove (2006: 81) are of the opinion that transcription of interviews assists the researcher in organizing the data. They advise that the data be immediately transcribed after an interview and that care should be taken not to change the meaning of words when transcribing. After each interview, while still at the site, the researcher immediately wrote down key observations about the participant's non-verbal gestures. These notes were added to the interview at the transcription stage. The researcher transcribed the interview herself immediately after she left the study site. By doing the interview and transcribing it herself the researcher was immersed into the topic under investigation. As described earlier, the research supervisor examined the pilot transcriptions to evaluate the accuracy and technique used during the interview.

### 3.3.4 Measure to ensure trustworthiness

Trustworthiness was established by making use of Guba's model for trustworthiness of qualitative research. This model postulates the following criteria for trustworthiness: credibility, confirmability, dependability and transferability are the essential criteria for quality (Lincoln & Guba, 1985: 174).

#### 3.3.4.1 Credibility

This criterion refers to the concept of internal validity (Rolfe, 2006: 305). Credibility is related to the researcher's confidence in the authenticity of the results; the way the researcher ensures that the results effectively represent participants' social life experiences (Brink et al., 2006: 118). Lincoln and Guba (1985: 174) recommend that the credibility of the research can be improved through a set of strategies, persistent observation, triangulation and member checking.

##### 3.3.4.1.1 Member checking

Rolfe (2006: 305) referred to Lincoln and Guba when stating that member checking is the important technique to ensure credibility in qualitative study. However, some authors like Sandelowski (1993: 3), McConnell-Henry, Chapman and Francis (2011: 31)

questioned “member check” as a valid way of ensuring that the researcher has analysed data correctly. According to McConnell-Henry et al. (2011: 31), offering full power to the participants by returning to them risks the entire project being placed in jeopardy. In this study, prior to recording the interview, each participant was reminded of the confidentiality of their responses and their approval was again obtained. At the end of each question, the researcher summarized her understanding of what had been said so participants could validate their responses. This process was repeated at the end of each interview and the recorded interview was then played back to the participants and they were asked if they had any further information to add. In most instances participants simply said “ok” after listening to their interviews, with the exception of participant 9 who added some explanation. Each participant was asked for a contact telephone number (which remained private and confidential) in case the researcher needed further clarification during analysis. The researcher did not need to contact any of the participants to validate her interpretation of their responses (McConnell-Henry et al., 2011: 31). Checking for agreement can improve the credibility of the coding process (Brink et al., 2006: 185). While the study was closely monitored, coding was not repeated by the research supervisor. The coding process is described in detail below (3.3.7 Data analysis and interpretation) and was carefully done and repeated by the researcher.

#### 3.3.4.1.2 Observation

According to Taylor-Powell and Renner (2003: 1), observation may be recorded in the researcher’s field notes or a descriptive account as a result of watching and listening. It is ideal for the gathering of data on non-verbal behaviour (De Vos et al., 2005: 284). The researcher was particularly alert, used her observations and skills and guided participants through the interview. Notes written from the observations were added to the analysis. In one instance, the researcher observed that the participant was very anxious because he was coming to test for TB and was worried about the outcome. The researcher aware of her role to prevent participants from being harmed or to remove existing harm (Hewitt, 2007: 1153), judged it necessary to encourage and counsel the participant. In doing so, she prevented the participant from moral harm.

This action did pay off as the participant was more confident in sharing his knowledge about TB.

#### 3.3.4.1.3 Triangulation

Triangulation is a procedure whereby researchers use a variety of sources to gather information in a study; it allows an in-depth understanding of the phenomenon and assists the researcher to assess all aspects of the topic (Brink et al., 2006: 118; De Vos et al., 2002: 315). Triangulation was not utilized in this study which makes use of a single data collection strategy.

#### 3.3.4.2 Transferability

This criterion corresponds to the concept of external validity (Rolfe, 2006: 305). Transferability relates to the degree to which findings can be applied to other contexts and settings (Lincoln & Guba, 1985: 174). Thus, qualitative researchers are encouraged to provide a detailed portrait of the setting in which the research is conducted. The aim is to give readers enough information for them to judge the applicability of the findings to other settings (Brink et al., 2006: 119). This type of research does not intend to be generalized.

However, the research setting was Parow Community Health Centre in Cape Town Metro district; the clinic is situated in Parow, northern suburb and is managed by both the Western Cape Department of Health and the City of Cape Town. The service delivery consists of preventive, promotive, curative and rehabilitation services and the management of chronic diseases. The clinic serves people from different ethnic groups and countries. The researcher also described above, step by step, the data collection process and how access to the research site was obtained. Below, the data analysis process and the ethical consideration for this study are addressed.

#### 3.3.4.3 Dependability

This criterion relates more to reliability in quantitative study (Rolfe, 2006: 305). It determines the degree of coherence of the research process and the extent to which

the researcher accommodates changes in the study setting (Lincoln & Guba, 1985: 175). Generally, a peer follows the process and procedures used by the researcher in the study (Brink et al., 2006: 119). However, in this study while the content analysis was not independently repeated, the data analysis process was reviewed and interrogated by the research supervisor.

#### 3.3.4.4 Confirmability

This criterion is largely an issue of presentation (Rolfe, 2006: 305). Confirmability guarantees that the findings, conclusion and recommendation are supported by the data and that there is an internal agreement between the researcher's interpretation and the actual evidence (Brink et al., 2006: 119). For example, the researcher can offer a self-critically reflexive analysis of the methodology used in the research. In this study, the researcher tried to follow the qualitative research process described by De Vos et al. (2005: 259).

#### 3.3.5 Data Analysis and interpretation

Brink et al. (2006: 170, 184) describe data analysis as the process of categorizing, ordering, manipulating, summarizing and describing the data.

Qualitative data analysis can be done manually or with computerized software. Data analysis for this study was done manually (Burns & Grove, 2006: 79; De Vos et al., 2005: 338; Miles & Huberman, 1994: 58). There were a number of reasons why CAQDAS (e.g. Atlas.ti) was not used to code data in this study which included the small sample size, inexperience of the researcher in CAQDAS and the cost of software. Webb (1999: 323) recommends a manual approach for inexperienced researchers conducting small sample studies in order to familiarize the researcher with the intuitive aspects of the analysis. These factors, together with the understanding that CAQDAS does not increase the validity of coding (Webb, 1999: 323) led to the selection of a manual coding technique and the steps described by De Vos et al. (2005: 334) were followed.

According to De Vos et al. (2005: 334) data analysis involves several steps: collecting the data, managing and organizing data, reading and summarizing data, generating

categories, themes and patterns, coding data, testing the emergent understanding, searching for an alternative explanation and presenting data. Data collection, management and organization were discussed earlier in this report.

#### 3.3.5.1. Demographic data

It is not usual in qualitative research to collect numerical data. However, numbers are useful to generate meaning from qualitative data; to document, verify, and test researcher interpretations or conclusions; and to represent target events and experiences (Sandelowski, 2001: 231). In addition, according to Burns and Grove (2001: 50) data can include a variety of methods. In this study the numerical data (country of origin and work) were not part of the questions in the interview guide, but arose during the informal discussion between the researcher and participants before the interview. This information was documented in the field notes and it assisted in the data analysis. The clinic is cosmopolitan in nature; therefore, the responses below represent the knowledge and attitude towards TB among participants from different African countries. It should be noted that while interesting, the sample is small and therefore these numbers have no real value in this study.

#### 3.3.5.1 Reading and summarizing the data

Taylor-Powell and Renner (2003: 2) referred to this phase as “getting to know your data”. Burns and Grove (2006: 80) state that at the beginning of qualitative data analysis researchers need to become familiar with the data through a process of repeated reading of notes and transcripts, listening to the audiotape and recalling observations.

In this study recorded interviews were transcribed immediately after each interview by the researcher and transcripts then checked against the recordings to limit transcription errors. The researcher then read and re-read the transcripts to ensure a good sense of the whole. Once all the interviews had been processed in the above way the researcher chose one transcript and read through it and wrote notes concerning the research objectives in the margin. The process was repeated across all transcriptions (Taylor-

Powell & Renner, 2003:?). Then the researcher summarized all participants' responses to each question. After completion of this process, the researcher selected all participants' responses to each of the interview questions to conduct a content analysis.

### 3.3.5.2 Content analysis

A conventional process of content analysis was used in this study; this method was selected because the primary aim of the study is descriptive (Hsieh & Shannon, 2005: 1279). This is an inductive approach where the researcher begins data analysis without too many preconceived ideas. As described above the researcher immersed herself in the data and allowed codes to emerge (Hsieh & Shannon, 2005: 1279). These codes were grouped into categories of meaning, which are internally consistent but distinct from one another (De Vos et al., 2005: 334). In this study, codes were identified by entries in the margins and underlined using different colour pencils. The categories were then named by the most descriptive words from the interview (Burns & Grove, 2006: 82; De Vos et al., 2005: 341; Taylor-Powell & Renner, 2003: 7). A full list of these codes and categories which relate to the first interview question is included at the end of this report (Appendix H). The results will be discussed in Chapter 4.

## 3.4 Ethical considerations

Ethics is the science of right and wrong. It refers to a belief of a particular group of individuals, or to the standards of behaviour expected of a group as described in the group's code of professional conduct (Pera & Van Tonder, 2005: 4). When conducting research, the researcher must ensure the protection of the rights of respondents and institutions in which research is done, while maintaining the scientific integrity of the study. Failure to conduct the research in an ethical manner diminishes the scientific process of the study (Brink et al., 2006: 31).

The researcher obtained approval from the University of Stellenbosch's Health Research Ethics Committee (Appendix A) to undertake this study; permission from both the Western Cape Department of Health and the Cape Town City Health to access the research site (Appendix B and C) and each participant signed an informed consent

(Appendix D) prior to being interviewed. There are three ethical principles that guide the researcher (Brink et al., 2006: 31).

### 3.4.1 Respect for persons

This principle involves the conviction that an individual has the right to self-determination (Brink et al., 2006: 32). For this purpose, participants were informed that they were participating in the study voluntarily with no coercion and that if they wanted to withdraw from the study at any stage they were allowed to do so with no punishment involved. To ensure this, the researcher approached the patients in the waiting area of the facility; she then explained the purpose of her study and asked for those who volunteered to participate.

### 3.4.2 Beneficence

The principle of beneficence assists in ensuring the well-being of participants by protecting them from discomfort and harm (Brink et al., 2006: 32). The ethical principle of voluntary participation and protecting the participants from harm are formalized in the concept of “informed consent” (Burns & Grove, 2005: 181). Hewitt (2007: 1152) argued that informed consent is an explicit agreement by participants to participate in the study after they had received and understood the information regarding the nature of the research. Participants were informed about the scope of the study and the benefit of their participation. The content of the informed consent form was explained to those who agreed to participate. They were requested to sign the informed consent form and a verbal consent was obtained for tape recording of their responses. The language of the interview was English as it was well understood by the researcher and there were no funds to hire an interpreter. Most of the participants were interviewed at the clinic. Interviewing was done in the corner of an empty waiting area, i.e. there were no other people in the area during the interview. On two occasions people entered the area and the interview was immediately stopped until they had left the area. The clinic offered a counselling service which was available in the unlikely event that a participant experienced emotional distress following the interview.

The interview times were chosen by a mutual agreement between the researcher and each participant. Also, the technique of the interview allowed participants to express their thoughts in their own words. A qualitative researcher explores issues that may upset the participants. Therefore, the researcher used De Vos's guideline for training in interviewing technique (De Vos et al., 2005: 288-289).

### 3.4.3 Justice

This principle involves fair selection and treatment. In this regard, the sample was selected conveniently which gave participants readily available equal chance to be selected. It also alludes to privacy which can be ensured by anonymity or confidentiality procedures (Brink et al., 2006: 31-35). In this study, the researcher did not have a private room to conduct the interview. This means that privacy was not totally ensured. However, as described above steps were taken to maximise privacy despite the environmental limitations. The interview took place at the far end of an empty waiting area and the interview was stopped on two occasions when people entered the area. Nevertheless, they were informed regarding the confidentiality of their responses and their names were not written anywhere on the interview sheet (Hewitt, 2007: 1155). More specifically, participants were informed that only the researcher would have access to the data, that the transcribed data would be kept in locked cupboards for a period of five years and the tape recorded interview would be destroyed after the study (Brink et al., 2006: 36).

### 3.5 Summary

This chapter focused on the methodology of the study. The study followed a qualitative descriptive design to explore and describe non-TB infected clinic attendees' knowledge about and attitude towards TB. Semi-structured interviews were conducted with ten participants. They were recruited with a convenience sampling method. Data was analysed manually using a conventional process of content analysis (inductive approach). Themes were identified according to the research objectives. Trustworthiness was established through the criterion of credibility, transferability, dependability and confirmability. Permission to conduct the study was granted by the

University of Stellenbosch's Health Research Ethics Committee (Appendix A), the Western Cape Department of Health and the Cape Town City Health (Appendix C and B). In addition, each participant signed an informed consent form (Appendix D) prior to being interviewed. The results of the study are presented in the next chapter.

## Chapter 4: Results

### 4.1 Introduction

In Chapter 3, the analysis process was described. This chapter will present the results and the interpretations of the findings. The literature provided in Chapter 2 and reviewed during analysis is used to support or refute the findings.

### 4.2 Presentation of the data

As described in Chapter 3 data analysis was done manually using conventional content analysis (inductive approach) and guided by the steps outlined by De Vos et al. (2005: 334). At the end of the analysis process nine themes were identified which are listed in table 1 below. Ten participants formed the sample in this study and the researcher used numbers to express an appropriate proportion of participants who refer to the same idea. The participants have been used within the description of themes to add richness to the description. These quotes appear in italics followed by the participant's identification number from which the excerpt was taken.

**Table 1: Themes and categories from the data**

<b>Themes</b>	<b>Categories</b>
<b>Ignorance of TB</b>	Acceptance of ignorance of TB Only patients infected with TB can testify Never had TB
<b>Knowledge of the causes and transmission of TB</b>	Place where one stays Poor nutrition and hygiene HIV affects the immune system People are coming into the country
<b>Perceived danger of TB</b>	TB can kill Affects one emotionally
<b>Knowledge of TB symptoms</b>	Know the symptoms
<b>Health seeking behaviour</b>	Go to the clinic if you experience TB symptoms
<b>Acknowledgement of TB treatment</b>	TB can be cured Importance of TB medication Don't stop the medication
<b>Acknowledgement of TB prevention</b>	Look after oneself

	Regular check-up Protect one body with injection
<b>Factors inducing fear of TB</b>	TB Stigma Feeling ashamed Health facility services Blaming of patients infected with TB
<b>Sources of TB information</b>	Heard at hospital Radio and television Taught at school Illness of family member

As described in Chapter 3, while it is unusual to present numerical data in a qualitative study these data were collected during the introductory phase of each interview and are presented here to provide a fuller description of the participants.

**Table 2: Demographic Characteristics of Participants**

Age	Gender	History of TB	Country of Origin	Work
36	Male	No	Nigeria	Business
28	Female	No	Zambia	Housewife
30	Female	No	South Africa	Assistant seller
34	Male	No	Zimbabwe	Security
22	Male	No	South Africa	Unemployed
38	Male	No	DRC	Barber
22	Female	No	South Africa	Unemployed
31	Male	No	DRC	Shop owner
35	Female	No	Cameroon	Unemployed
32	Female	No	South Africa	Waitress

#### 4.2.1 Theme 1: Ignorance of TB

This theme reports the participants' lack of knowledge about TB. These categories were grouped under this theme as they describe some of the reasons given to explain this lack of knowledge about TB.

**Table 3: Theme 1: Ignorance of TB**

Theme	Categories
Ignorance of TB	Acceptance of ignorance of TB Only patients infected with TB can testify Never had TB

#### 4.2.1.1 Acceptance of ignorance of TB

Two participants stated that they knew nothing about TB and were not aware whether they were at risk of contracting the disease. Five participants were also not fully informed about many aspects of TB. For instance, one participant stated that TB could be cured within “120 days”. Another stated that she would not recognize if someone is suffering from TB.

*“I heard about TB but I don’t know what it is, I don’t know where TB does come from and how you can get it. I really don’t know anything about TB” (P8).*

*It takes like ...how long (holding the chair and playing with her index finger) two weeks what! (Still playing with the finger) four days. I don’t know that, but I think two weeks maximum, I think it is 48 pills or something like that, I don’t know... To get cure of TB” (P7).*

*“(laugh) I cannot tell if somebody get TB if the person doesn’t tell me, so I would not know except the TB is so serious that everyone knows or the person is just showing... maybe it showing that he is sick I don’t know” (P9).*

This category may be supported by a reported study which showed that patients infected with TB seek assistance for treatment when the disease is well advanced and that this delay is the result of factors such as lack of knowledge, lack of awareness of the significance of the symptoms or negative social attitude (Bayouni et al., 2007: 21; Promtussananon & Peltzer 2005: 75; Koay, 2004: 502).

#### 4.2.1.2 Only TB infected patients can testify

Two participants stated that the only people who could know anything about TB were patients infected with TB themselves or a person who knew someone suffering from TB.

*“only people who can testify about the illness is somebody who have once experience the case yes... or maybe the family somebody the wife, the brother most have passed through that experience he will maybe explain to you that or maybe something my brother was passing through that kind of symptoms” (P1).*

This finding was not consistent with the study on patients infected with TB in Sudan, which revealed that 55% of the respondents did not know that they were infected and only 2% of the respondents mentioned that TB was caused by a microbe (Bayouni et al., 2007: 25). In addition, another study in Ghana revealed that most of the TB sufferers did not recognise their symptoms and signs as due to TB (Dodor, 2009: 123). This could mean that participants should not attribute their lack of knowledge about TB to the fact that they had not experienced or witnessed the disease. As indicated above, patients infected with TB sometimes had little knowledge about their conditions.

#### 4.2.1.3 Never had TB

Two participants reported that they knew very little about TB because they had never witnessed the disease before.

*“I have never had a TB infected patient before in my live. So I don’t really know much” (P1).*

The literature revealed that the ability to seek care depends on knowledge about the perceived risk of TB within reference groups (families, neighbourhood) and communities at large. Knowledge includes the ability to recognize the symptoms, causes, transmission of TB and also familiarity with the cure (Waisbord, 2005).

#### 4.2.2 Theme 2: Knowledge of the causes and transmission of TB

This theme reports the participants’ knowledge about the cause and transmission of TB. The categories grouped in this theme reflected their descriptions of the causes and transmission of TB. This theme and the following three themes (knowledge of TB symptoms, treatment and prevention), deal with the participants’ knowledge with regard to different aspects of TB. The participants’ educational level was unknown to the researcher. Participants were from different African countries.

**Table 4: Theme 2: Knowledge of the causes and transmission of TB**

Theme	Categories
Knowledge of the causes and transmission of TB	The place where one stays Poor nutrition and hygiene HIV affects the immune system People are coming into the country

#### 4.2.2.1 The place where one stays

In this study, eight participants stated various modes of transmission of TB. For instance by sleeping in the same bed with a patient infected with TB; being in the taxi; sharing utensils like cups, glasses or even toilets; by sharing the okapi smoke; shaking hands and French kissing. Of these participants, one described TB as an “airborne” disease. Four participants reported that in a closed room even if one is healthy the risk of becoming sick was high. One participant also stated that it was a risk if someone lived in a place where there were a lot of TB cases and another one argued that TB was transmitted via touching the spit.

*“ sometime you can get it if you are in the place with people with TB you can get it normally when they cough... sometime those people they don’t care even though they know that they are sick they can just cough anyhow and you can get it. I think because seriously, sometime you are in the taxi and you don’t know people around you, and you don’t know if they have TB or not. And some people don’t like when you open the taxi window, they want everything to be closed. You know we survive only by the grace of God” (P10).*

*“TB what I know is that it is an airborne disease that one can get or...maybe contracted through I can say when somebody cough, and you get in contact with that. Or maybe if you don’t open your window when you stay with someone who is coughing that much you can be infected like that. So it is more like airborne” (P2).*

The literature related to this category revealed that the risk of TB transmission is increased by the duration of contact with a TB case, the physical environment in which

the contact takes place, including aspects of crowding, air flow, humidity and many other factors (Lönnorth et al., 2009: 2243; Ndjeka et al., 2008: 44; Liendraht, 2001: 291).

#### 4.2.2.2 Poor nutrition and hygiene

Three participants reported that when a person does not eat well, the risk of becoming sick was high and could also exacerbate TB progression. Only one participant mentioned smoking as factor that could increase the risk of TB infection. Four participants stated that poor hygiene could expose a person to TB.

*“I mean you don’t need to have bacteria working around because you don’t know what you will get from there. You don’t need to have like a pile of dirty dishes or dirty clothes; you can get hold of other diseases except like TB. But I am sure TB you can get it from dirty space as well especially dust” (P10).*

This finding was similar to that of a study in Limpopo province (South Africa) where the participants’ perceived causes and transmission of TB included: smoking, exposure to cold and dirty air; eating unclean food and drinking contaminated water; and using dirty dishes (Promtussananon & Peltzer, 2005: 77).

#### 4.2.2.3 HIV affects the immune system

Six participants associated TB and HIV and three of them highlighted that HIV compromised the immune systems and opened the way for other diseases such as TB.

*“TB can go far as AIDS because it is the same. You never know what is TB what AIDS is. It is like it goes into your immune system you get what I saying? (Laugh) What I know is that... how I can say it... because normally if you get HIV/AIDS you can get TB easily and that affect your immune system and you got weaker and weaker, because you got TB and you got HIV” (P3).*

This finding may be supported by the literature which revealed that HIV infection, among other factors, has emerged as the most important risk factor for the development

of TB in an infected person (Bekker et al., 2009: 406; Dye, 2006: 939; Corbett et al., 2003: 1009; Liendraht, 2001: 295).

#### 4.2.2.4 People are coming into the country

One participant believed that immigration into the country increased TB transmission and exposure.

*“You know there are a lot of people coming to South Africa; you don’t know where you will get it. Some people they are working outside the country, so the travel and come back and they don’t even know that they got it or not... so seriously I am working as waitress, obviously I meet a lot of people we shake hands we laugh, we do this and that, they will even cough around me. It is only later that I will think of that you know” (P10).*

This result can be linked to the findings of a study in Rotterdam which indicated that the high TB case load in the urban municipalities was associated with the high proportion of immigrants in these areas. The above study also demonstrated that immigrants with TB in both urban and rural municipalities, most frequently had an infection acquired abroad (Baars, De Vries, Richardus, Sebek & Van Hest, 2010: 863). Another study in the United States of America revealed that a significantly higher burden of TB incidence was noted among persons born in Mexico (19%) and other foreign countries (18%) (Bierman, Gardam, Hu, Khan & Wang, 2008: 457). In this research, the two participants who reported that they knew nothing about TB, were immigrants.

#### 4.2.3 Theme 3: Perceived danger of TB

This theme reports participants’ acknowledgement that TB is dangerous. The categories grouped under this theme described participants’ perception of TB as dangerous.

**Table 5: theme 3: Perceived danger of TB**

<b>Theme</b>	<b>Categories</b>
Perceived danger of TB	TB can kill TB affects one emotionally

#### 4.2.3.1 TB can kill

Nine of the participants stated that TB could kill. Two of the participants attributed death from TB to an increase in HIV. One participant mentioned that death from TB would also occur if someone refused to go to hospital if they had TB symptoms or if they ran away from hospital. Three participants reported that TB was less dangerous since it could be cured.

*“People need to be more educated about TB. I don’t think they really know what they are facing, they kind of taking it for granted, they think it is something that you can just live with and it can heal itself but it doesn’t, it eats you and kills you if you don’t treat it” (P10).*

This study seems to indicate that almost all participants were aware of the fact that TB could kill. This may be supported by the literature where it was reported that TB is recognised as being responsible for the most human deaths caused by a single infectious agent (National Institute of Allergy and Infectious Diseases 2009; Ducati et al., 2006: 697). In addition, TB has become the leading cause of death among HIV patients in Southern Africa (USAID South Africa, 2009: 3).

#### 4.2.3.2 TB affects one emotionally

Four participants stated that they considered TB to be like any other disease as it could affect anybody. They explained that if they were infected they should just accept it and drink the medication. However, three participants reported that TB could disturb someone emotionally. For instance, two of these participants indicated their concerns about their ignorance of the symptoms and said that this was disturbing their peace of mind. Another stated that he was worried about the number of people he would have already infected if he had TB.

*“I have never being in a hospital all my life, this is the first time I am coming to hospital and I am coming to test for TB. The result will have a big outcome for me generally. For me this is my first time and the big time. You know it is sad; it is hurting to hear that one has TB, but the healing factor is that it can be cure” (P5).*

*“(Hesitation) we hear about this stuff, if I get TB I just have to stay positive... and motivate myself... drink the medication. It happens, it all goes his life, everybody got it. It goes around” (P3).*

This finding may be supported by The International Council of Nurses (2004: 26) which reported that how people react when they are told they have TB depends on many factors, such as cultural beliefs, personal experiences and knowledge.

The fact that some participants in this study acknowledged that TB could affect everybody was encouraging as such attitudes could diminish the stigma associated with it. This finding however may not be supported by the Malaysian study where some of the participants mistakenly believed that they or their family would never get infected with TB (Koay, 2004: 505). In addition, another study in rural Tanzania revealed that most of the participants believed TB was a hereditary disease (Haasnoot et al., 2010: 903).

#### 4.2.4 Theme 4: Knowledge of TB symptoms

This theme includes the descriptions the participants gave concerning the signs and symptoms of TB.

**Table 6: Theme 4: Knowledge of TB symptoms**

Theme	Categories
Knowledge of TB symptoms	Know the symptoms

##### 4.2.4.1 Know the symptoms

Eight of the participants were able to identify at least three signs and symptoms of TB. They cited the following symptoms of the disease: *cough, loss of appetite, loss of weight, coughing out blood, night sweats, dry skin, not good health looking, dry chest, chest pain, being unable to breathe, dehydration, pale skin and hair discoloration.* Weight loss was reported by almost all participants to be one of the signs that someone has TB. One participant brought more precision by stating that “cough(ing) for more than two weeks” was a sign of TB. Also, one participant revealed that coughing sputum

with blood was an alarming sign of TB. However, two participants affirmed not knowing the symptoms and one of these stated that TB was like “flu”.

*“ they cough a lot, they lose weight or maybe for the person I stay with maybe if I notice the person has fever, he sweats a lot at night he cough sputum with blood, then I will know there is a danger” (P3).*

*“The symptoms that I know are like you lose appetite you sweat a lot, you don’t have energy, then you can pick it up from there. It is just that people are ignorant” (P10).*

This theme may be supported by a study in Tanzania which revealed that 80% of the participants knew the symptoms of TB (Haasnoot et al., 2010: 903). In addition, Bayouni et al. (2007: 21) revealed that good understanding of the cause of the disease, transmission, symptoms and treatment were important factors contributing to seeking early medical assistance. However, a study in India suggested that knowledge was not sufficient to prompt people to seek care and that motivation was also necessary (Waisbord, 2005).

In addition, it was reported that a person suffering from TB could infect on average ten people in a year (Ndjeka et al., 2008: 46). Therefore, not knowing the symptoms as reported by two participants in this study should be considered a risk as it could contribute to the spread of the disease. This finding was consistent with a study in Pakistan which revealed that up to 10% of patients infected with TB delayed seeking treatment for more than six months after the onset of illness (Khan, Irfan, Zaki, Beg, Hussain & Rizvi, 2006: 213).

#### 4.2.5 Theme 5: Health seeking behaviour

This theme reports on what participants said they would do if they had symptoms of TB.

**Table 7: Theme 5: Health seeking behaviour**

Theme	Categories
Health seeking behaviour	Go to the clinic if you experience TB symptoms

#### 4.2.5.1 Go to the clinic if you experience TB symptoms

Eight participants who knew some of the symptoms of TB reported that they will seek medical assistance. One participant stated that she would go to the clinic if she started coughing out blood. Another participant also reported that he would not wait to see blood in his spit before going to the clinic.

*“It is very important to test for TB because the important thing is that it can be cure if it is detected early. For me personally I find it difficult to breath but I say I wouldn’t take note. Because I thought let me first find out the symptoms, let me caught out blood first before could check. You know maybe I am TB test positive because I found it difficult to breath and because I am tested early I will be able to manage it” (P5).*

*“If I start coughing out blood I will go to my nearest clinic for check-up and if it turns out to be TB I will start treatment right away. That is the best thing to do, I don’t think at home... What will you do at home” (P7).*

This result indicated that participants were aware that Western medicine could cure TB and they will seek medical help if they had TB symptoms. This could be because participants were drawn from a population who already believe in and seek Western medicine. As a result this finding was not consistent with the findings from the literature from two separate studies conducted in rural South Africa and in Tanzania. These studies revealed that participants believed that only traditional healers could cure TB (Haasnoot et al., 2010: 902; Edginton et al., 2002: 1075).

In addition, another study in Limpopo province (South Africa) revealed that 8.8% of the participants preferred TB treatment by going to a traditional healer (Promtussananon and Peltzer, 2005: 77). Furthermore, Murray et al. (2012: 6) found in a study in Cape

Town that the reason for participants to seek alternative treatment (traditional healer) for TB was to avoid HIV suspicion or lack of trust from their clinic providers. Moreover, this role of traditional medicine in TB cure was also revealed in another focus group study on stigma related to TB in the Eastern Cape province (South Africa), where the traditional healers thought a combination of Western and traditional medicine was most effective to cure TB (Moller et al., 2006: 48).

#### 4.2.6 Theme 6: Acknowledgement of treatment

This theme reported participants' knowledge of TB treatment. The participants recognised the curability of TB, the importance of treatment and the danger associated with non-completion of treatment.

**Table 8: Theme 6: Acknowledgement of treatment**

Theme	Categories
Acknowledgement of treatment	TB can be cured Importance of TB medication Don't stop the medication

##### 4.2.6.1 TB can be cured

Nine participants stated that TB was curable. One participant explained that except for stigma, what puts people at ease is that TB can be treated. Another participant stated that compared to HIV infection, TB was much acceptable because there was a cure.

*All I can say is that HIV doesn't have medicine to treat, to give you live. But TB has medicine that can give you live, give you a new live that is the difference" (P4).*

This result revealed that participants knew that TB was curable. Bayouni et al. (2007: 26) reported that it was vital for a patient to know that TB can be cured with regular treatment as this helped them to respect their treatment instruction. This finding was consistent with that of the authors who reported that in their study (Sudan), 80.3% of the participants believed TB was curable.

#### 4.2.6.2 Importance of TB medication

This theme discussed participants' familiarity with TB treatment. Nine participants recognized that taking the medication was important to cure TB. In some instances, two participants referred to a family member who was cured of TB. One participant also seemed to know the combination tablets. Another stated that she heard that nurses at the clinic would like to see TB infected patients swallow their medications.

*“My aunty has TB, she was sick and she took the tablets for eight months. After eight months she became very strong you can't even know that she had TB before, until today she is still alive. Those tablets are not the same for that eight months, after two months the tablets change” (P4).*

This finding revealed the importance of taking TB treatment and especially the roles of DOTS. It may be supported by the literature which reported that the most important and unique feature of DOTS is the use of patient observers (Lönnorth et al., 2009: 2242). In addition, the strategy ensures that patients infected with TB regularly take the medicines as prescribed and monitors their progress towards cure (Lönnorth et al., 2009: 2242). Furthermore, the South Africa Department of Health (2002: 10) states that the implementation of DOTS ensures that every person suffering from TB should have the support of another person to ensure that they swallow their medication daily. The treatment supporter does not have to be a professional health worker, but can be any responsible member of the community. Employers, colleagues and community members can act as treatment supporters.

#### 4.2.6.3 Don't stop the medication

Only two participants reported the exact length of treatment. However, seven participants explained that treatment interruption could lead to difficulties in successfully treating the infection or even death. One participant also cited the excessive weight loss as a consequence of stopping the treatment.

*“You must respect, you must take the tablet every time, everyday. If you try to forget to take the tablets you can die. Yes that is what I know about TB” (P4).*

*“In DRC I saw people who have TB start treatment, then stop when they feel better. Afterward they experience a relapse and the TB comes back, this time very dangerous. There are some who also die because of TB due to a neglect from the patient side; the fact that they did not finish their treatment. That is all I know” (P6).*

This finding indicated that most of the participants were aware of the importance of completing the treatment. In addition, this finding may be supported by a study in Malaysia which revealed that 86% of the respondents believed TB can be successfully cured if the treatment is completed (Koay, 2004: 505).

Furthermore, one of the consequences of treatment interruption given by participants was the difficulties to successfully treat the disease. This may be supported by the literature which revealed that the consequence of patients non-compliance to treatment was the rise of MDR-TB which is presenting new challenges in the ever-changing battle to control and prevent the disease (WHO Global Plan to Stop TB, 2010: 10; National Institute of Allergy and Infectious Diseases, 2009; Ali, Kuroiwa, Prasad & Vandan, 2008: 1073; Omerold, 2005: 15). In addition, it has been reported that non-compliance occurred as a result of poor patient knowledge about the disease and deficient health education; misconception between feeling better and being cured (Bayoumi et al., 2007: 21; Waisbord, 2005:?).

However, only two participants in this study reported the exact average length of treatment. This might be explained with the fact that participants were not on treatment for TB. It could be argued that most people might be unaware of the exact duration of treatment if not directly affected by the disease.

#### 4.2.7 Theme 7: Acknowledgement of prevention

This theme reported participants' knowledge of TB prevention. The categories described how they would go about TB prevention.

**Table 9: Theme 7: Acknowledgement of prevention.**

Theme	Categories
Acknowledgement of prevention	Look after oneself Regular check-up Protect one's body with injection

#### 4.2.7.1 Look after oneself

Eight participants stated that TB can be prevented. A person's lifestyle and nutrition were mentioned by three participants as helpful to improve one's health condition. Practices such as opening the window, eating a well balanced diet, cleaning of the space, no spitting on the ground, protecting one's mouth when coughing and no smoking were reported to be beneficial to the people. One participant stated that to prevent TB it was not good to share the okapi smoke. One participant also stated that avoiding contact with a TB infected patient would prevent TB. Two participants reported that they did not know how to prevent TB.

*"If you have TB and you don't eat well like fruit and vegetables that also can make the TB worse. It is better to look after yourself when you have it. Even if you don't have it you still need to look after yourself, so eat the right food" (P7).*

*"When you have TB you see, you have to prevent it from others. As they explain to the hospital you must keep your windows open, your doors must be open when you get up in the morning, you must open everywhere... maybe the disease should go out or that kind of things like that" (P1).*

This finding may be supported by the findings of a study in Limpopo (South Africa). In that study participants believed that TB can be prevented by eating clean food and drinking clean water; keeping one's body and house clean; avoiding contact with an infected person; avoiding dust and dirt to prevent TB (Promtussananon & Peltzer, 2005: 79).

#### 4.2.7.2 Regular check-up

This aspect was reported by one participant who stated that it was important to go for check-ups regularly.

*“Because there is no guarantee that once you have you will not have it again you need to check if you have it as long as you had it before, just at least twice a year to make sure you are still ok” (P10).*

This finding was consistent with a study in New York which revealed that regular check-ups were beneficial for TB prevention (Ilongo, 2004: 75).

#### 4.2.7.3 Protect one’s body with injection

Only one participant indicated the need for a new TB vaccine and stated that to prevent TB, it was important to protect one’s body with an injection.

*“Like you can go to get injection to protect your body to have TB. They must look for strong medicine to protect people against TB. I know you are trying to help people with the TB (pointing at the researcher) and I pray that God will give you intelligence to take nice medicine to combat TB. That TB must never come again in the world” (P4).*

This finding showed that nine participants in this study were not aware of BCG vaccine as a method of prevention of TB. This finding was different from the Malaysian study where 31.5% of the respondents reported that TB could be prevented by the BCG vaccine (Koay, 2005: 502). In addition, although it is not applicable to every country, the BCG vaccine is perceived as beneficial for TB prevention in children. Furthermore, WHO and the International Union Against TB and Lung Disease still recommend the universal neonatal BCG vaccination (Campbell and Bah-Sow, 2006: 1196). A study revealed that in the United Kingdom, at a time when TB was common, BCG vaccination of adolescents was 70-80% effective in reducing the incidence of all forms of TB later in life (Campbell and Bah-Sow, 2006: 1196).

#### 4.2.8 Theme 8: Factors inducing fear

This theme reported participants’ fear of TB. The categories under this theme each described why participants said they feared contracting TB.

**Table 10: Theme 8: Factors inducing fear of TB**

Theme	Categories
Factors inducing fear of TB	TB stigma Feeling ashamed Health facility services Blaming of patients infected with TB

#### 4.2.8.1 TB stigma

This theme discussed participants' perceived fear of TB. Five participants stated that they were afraid of TB because of the stigma which places a large burden on the infected person. Two participants stated that they were afraid of being rejected or discriminated by people who are uneducated about TB if they have TB. One participant stated that in his country TB was regarded as a "shameful" disease like HIV.

*"If I have TB there is a fear that I might be put out of my flat because I am renting, so I might be put out. They will say listen you can't stay here you are sick. I know for myself it is curable, but people who don't know anything, who don't know fully, who stigmatize, the reaction they will give me afterward. What would they think of me? Would they see me differently? Because they are uneducated about it. Another wound is that the person will be stigmatized, discriminated in the community" (P5).*

*"In DRC TB is like a shameful disease like HIV/AIDS. Once you are infected you lose your credibility in the society. You are considered like someone who is not eating well and you suffer rejection. But here in South Africa, apparently it is normal here to have TB" (P6).*

Six participants in the study associated TB with HIV. One described TB infected patients as looking like HIV patients. Another reported that HIV testing is the reason why patients infected with TB run away from hospital.

*"From to tell you someone who is sick from TB looks like someone who is sick of HIV. That is why I am very scared to have TB because it is like HIV. The sick is the same. There are people like that when TB comes there is also HIV inside.*

*You must be careful to get close to people like that or they will infect you not with HIV but TB". And you can't sleep with people like that. If it is your brother or whoever, then you say my friend you must sleep here and must sleep here" (P4).*

In this study various beliefs about the causes and spread of TB were identified: airborne disease; touching the sputum; sharing cooking utensils/plates/cups with a TB infected patient; dusty and dirty environment; sleeping with a TB case; using the same toilet; French kissing and sharing the okapi smoke. Such multiple interpretations of the causes and spread of the disease can lead to stigmatizing behaviour. The stigma associated with TB is frequently associated with diagnostic delay and poor or non-compliance, creating a negative impact on TB control (WHO Addressing TB and Poverty, 2005: 28). In addition, it is reported that in a high HIV prevalence setting where HIV/TB dual infection is common, TB is regarded as a marker for HIV positivity. Therefore, the HIV stigma is transferred to TB infected patients (Courtwright & Turner, 2010: 35).

#### 4.2.8.2 Feeling ashamed

One participant reported to be ashamed if diagnosed with TB. Another participant stated she was afraid of the reinfection type of TB.

*"Yes I am scare of having TB I don't think I will like to have it, I know it is curable but... like most people are ashamed that they have TB. They use like that when I touch you (touched the researcher) I can infect you, they don't really know actually about TB. So I will feel ashamed if I have it because of what people will think about me, because first they will think how do I get it; they will not ask you question but they will just assume their own thing" (P7).*

This finding may be supported by the literature which reported that TB infected individuals endured more than physical symptoms and suffer from emotional distress because of stigma imposed by society, rejection by friends and family (Miller, 2005: 17). In addition, another study in Gambia revealed that sometimes TB infected patients

became homeless after their landlord discovered their diagnosis and evicted them (Eastwood & Hill, 2004: 72).

#### 4.2.8.3 Health facility services

The research setting (Parow Clinic) has among other services a room called a “TB room”. One participant reported that the demarcation of a “TB room” at the clinic was misleading and enhanced the fear of TB. She pointed out that people assumed that a person had TB if that person entered the “TB room” at the clinic. One participant also stated that her fear was not TB itself, but service delivery at the facility. She stated that health care workers’ behaviour towards patients in the facility was not up to standard and urged the South African government to act regarding this aspect.

*“The people in our facility are tired. They get tired of people coming, they don’t have that patience to give more information to the patients, they get irritated easily and they take a short cut by giving you treatment and let you go. I think they should educate more people, if it is TB about TB, if it is HIV about HIV and let the people know that they need to take care of themselves and people around them. The only thing that worries me about TB is that if our government doesn’t see that the hospital and clinics, nurses and doctors whoever is working for the government are failing us like in this facility (referring to the research site) maybe there will be a problem later, because seriously they don’t really care. But it cost you too much to go to a private doctor for this kind of thing whereas you can get them for free at the clinic and people working there are holding things backward”* (P10).

One participant stated that the demarcation TB room at the facility was misleading. This finding may be supported by a study which revealed that the use of isolation wards by most hospitals, and the observation that some doctors and nurses use masks and gloves when dealing with TB infected patients can lead to stigmatization of TB in the eyes of the community members (Khan & Dhingra, 2010: 18). Furthermore, a study in Cape Town revealed that long waiting times at clinics, demarcated waiting areas,

colour- coded cards and the open doors for consultation were the factors that impaired patients' self-confidence. This contributed to a delay in seeking diagnosis and caused them to use alternative ways of treatment (Murray et al., 2012: 6).

Moreover, one participant pointed out the failure in the service delivery at the facility. This finding may be supported by Reyes-Guillen, Sanchez-Perez, Cruz-Burguete & De Juan (2008: 251) who state that physicians do not give sufficient support to patients and their families for dealing with the secondary effects of TB and do not take either patients or their families into account. The authors argued that if patients and their families are met with disinterest, indifference and display negative attitudes on the part of health personnel, it will be difficult to get them to change behavioural patterns. In addition, Khan and Dhingra (2010: 18) also argue that the humiliating attitude and behaviour of health care workers and open avoidance of TB infected patients could send a message to the community members that TB is a shameful disease.

#### 4.2.8.4 Blaming of patients infected with TB

Three participants reported that some people, after they had been diagnosed with TB would hide their status and deliberately spread the disease to others. They pointed out that such people would adopt practices such as not to cover their mouth when they cough or spit in the ground. Two participants stated that TB infected patients should be responsible for taking measures to prevent the spread of the disease to others.

*"I am sure people who have TB they need to volunteer themselves to put the mask. But if you look in there (pointing the TB room), they are not in there. They are sitting there (referring to the waiting area), and they will not tell you they have it, they sit there and you will laugh, shake hands with them, the next things they will cough without even protecting their mouth you know" (P10).*

In this study, one participant stated that an attitude such as avoiding contact with a patient infected with TB could prevent the spread of the disease. However, three participants stated that patients infected with TB should not be isolated while they were on medication.

*“If they started taking their medication I don’t see any reason why they should stay away from people. All of us are being when you start taking your medication you see the risk of contamination to others is very slim you can eat one spoon with the TB patient if he is taking his drugs. But if he is not taking his drug, that is how the risk is” (P1: 61-65).*

This finding was different from a study in Ghana which revealed that the majority of community members indicated that they were afraid of getting infected when interacting with patients infected with TB; they blame them for deliberately spreading the disease and pointed out that patients infected with TB should be isolated from the society (Dodor, 2009: 104, 106).

#### 4.2.9 Theme 9: Source of TB information

This theme discussed how the participants came across information they had on TB. This question was not part of the interview guide, but in some interviews participants mentioned their sources of TB information as indicated in the table below.

**Table 11: Theme 9: Source of TB information**

Theme	Categories
Source of TB information	Heard at the hospital Radio and television Taught at school Illness of family member

##### 4.2.9.1 Heard at the hospital

Three participants in this study reported that they knew about TB and some aspect of the disease because of the information given to them at the hospital.

*“You see you must prevent it from others as they explain to us at the hospital, you must keep your window open” (P1).*

This finding may be supported by a study in Pakistan where 75% of the respondents reported that health care workers were the main source of their information about TB.

Notably, 50% of these respondents also reported that they did not receive any counselling from their physicians about how to prevent the spread of infection (Irfan et al., 2006: 212). In addition, it was revealed in the literature that the fact that the disease is transmitted by bacteria is important information not understood by many patients, and the health care providers often ignore to give them any in-depth explanation (Bayouni et al., 2007: 25).

Furthermore, a study in New York City (USA) revealed that one out of ten members of the target populations believed that TB was acquired genetically and it was suggested that health educators should clearly inform their patients that TB is caused by a bacterium (Ilongo, 2004: 84). As a result, Reyes-Guillen et al. (2008: 251) argued that health education and media efforts should focus on informing the public of the correct way of transmission and symptoms, that TB services are free, and of the necessity of adhering to treatment and regular check-ups.

#### 4.2.9.2 Radio and television

In this study, two participants reported that they knew about TB because of the advert on television and radio.

*“We hear about TB on radio, TV everywhere. So you must just be careful” (p3).*

#### 4.2.9.3 Taught at school

One participant also reported that TB has been around for years and that they were informed about it at school.

*“At school, we are been taught this thing, from grade one to ... I mean when we were very young they told us that these are sign of TB. If you are like this, like that go to the clinic and we grow up like that knowing that these are the sign of TB”, (P10).*

#### 4.2.9.4 Illness of family member

Two participants stated that they knew about some aspects of TB because of the illness of a relative.

*“TB I know because my uncle had it before, I also heard about it”, (P3).*

### 4.3 Summary

In this chapter the results of the study have been presented and related to the literature. Nine major themes in connection with the research objectives were identified from the data and listed. Overall the knowledge of the cause of TB, transmission, symptoms, treatment and prevention was not well understood by all participants. However, the majority of the participants reported positive attitudes concerning the perceived danger of TB. Also by their willingness to seek medical care if they experience TB symptoms came across as positive. A negative attitude was reported by some participants through the perceived fear of TB. In the next chapter the discussion of the findings, conclusion and suggested recommendations are presented.

## **Chapter 5: Discussion, conclusion and recommendations**

### **5.1 Introduction**

This chapter presents a discussion of the findings, the limitations of the study and identifies some recommendations for clinical practice and further research. The objectives of the study attempted to explore non-TB infected clinic attendees' knowledge with regard to the causes, symptoms and treatment of and also to explore their attitude towards TB. Therefore, the findings are discussed according to these objectives. Schadewitz and Jachua (2007: 5) argued that a researcher might start with an inductive coding; this means trying to identify patterns in the data and establish categories by which the remaining data is coded. In further steps, the researcher can use some theoretical constructs to explain and evaluate the categories.

As described in Chapter 3, the primary analysis process was done using an inductive approach which entails using the data to generate themes (Miller, 2007:43). Following this a deductive approach was used to explain the findings according to an established model, namely the Health Belief Model (HBM) as in Schadewitz & Jachua (2007: 5).

An explanation of the HBM was not included in the literature review as it was considered important that the researcher does not commence inductive analysis with too many preconceived ideas. For this reason a detailed explanation of the HBM is now given.

### **5.2 Background to the HBM**

The HBM was originally developed in the 1950s by sociologists Hochbaum, Rosenstock and Kegels working in the public health sector in the United States of America. The model was developed in response to the failure of a free TB screening programme (Miller, 2007: 18; Croyle, 2005: 12). These authors first used the HBM to explain the impact of belief and attitude concerning protective health behaviour such as obtaining immunization and chest x-rays for TB (Ilongo, 2004: 71). The HBM has since been further developed and applied to several health related behaviours, including health

promotion behaviour (Ilongo, 2004: 71) and more prominently to sexual risk behaviours and the transmission of HIV (Croyle, 2005: 13).

### 5.3 Core assumptions of the HBM

Health behaviour is influenced by perceptions of a health threat, as well as aimed at the value associated with taking preventative actions (Becker, 1978 as quoted by Miller, 2007:19). The HBM emphasized that people's beliefs about whether or not they were susceptible to disease, and their perceptions of the benefits of trying to avoid it, may influence their health-related decisions as much or more (Franks & Felton, 2009; Croyle, 2005: 13). Therefore, the model suggests that patients are more likely to engage in health behaviour if they perceive themselves as vulnerable to the disease and they believe the illness is a serious medical and health problem (Ilongo, 2004: 72). They must also believe that taking action will reduce their susceptibility or severity of that condition (Croyle, 2005: 13). Patients must be exposed to factors that prompt actions such as shown on television or advice from a health care worker (Croyle, 2005: 13). They must acknowledge that certain barriers must be overcome to develop and maintain specific behaviours and they must believe that by taking the recommended action (Good hygiene, for example), a disease such as TB can be prevented (Mtaita, 2009: 28).

### 5.4 Constructs of the HBM

The HBM consists of six constructs which are described in detail below.

#### 5.4.1 Perceived susceptibility

This concept refers to the way an individual subjectively evaluates personal risk in contracting an illness (Felton & Franks, 2009) and it is the most important perception in health promotion (Mtaita, 2009: 33).

#### 5.4.2 Perceived severity

Perceived severity refers to an individual's evaluation of organic and social consequences that is likely to arise if a specific illness is contracted or if the specific

illness is left untreated (Ilongo, 2004: 72). In the case of TB, it is an evaluation of the threat of TB and how the disease will affect an individual both from a medical and social standpoint (Rosenstock, 1974: 329 as quoted by Mtaita, 2009: 34). Miller (2007: 54) argued that the need to feel well relates to the perceived severity of the disease in the health belief model.

#### 5.4.3 Perceived benefits

Perceived benefits result from an individual considering and evaluating the advantages of engaging in health related behaviour (Croyle, 2005: 14).

#### 5.4.4 Perceived barriers

Perceived barriers refer to individuals' own evaluation of the obstacles in the way of the decision to engage in health behaviour (Mtaita, 2009: 35). These barriers vary from individual to individual and may include financial, psychosocial, demographical, geographical or structural factors (Musemwa, 2011: 66; Denill et al., 1999:157).

#### 5.4.5 Cue to action

Cues to action are events, people, or things that move people to change their behaviour; internal and external cue to action act as the trigger of health behaviour such as taking medication (Mtaita, 2009: 36; Ilongo, 2004: 72).

#### 5.4.6 Self-efficacy

Bandura (1977) as documented by Ilongo (2004: 72) added the concept of self-efficacy to the HBM, because as the author explained, patients must have a high level of self-efficacy to perform routine tasks such as taking TB medication for the entire period of treatment. These constructs are summarized in the table below.

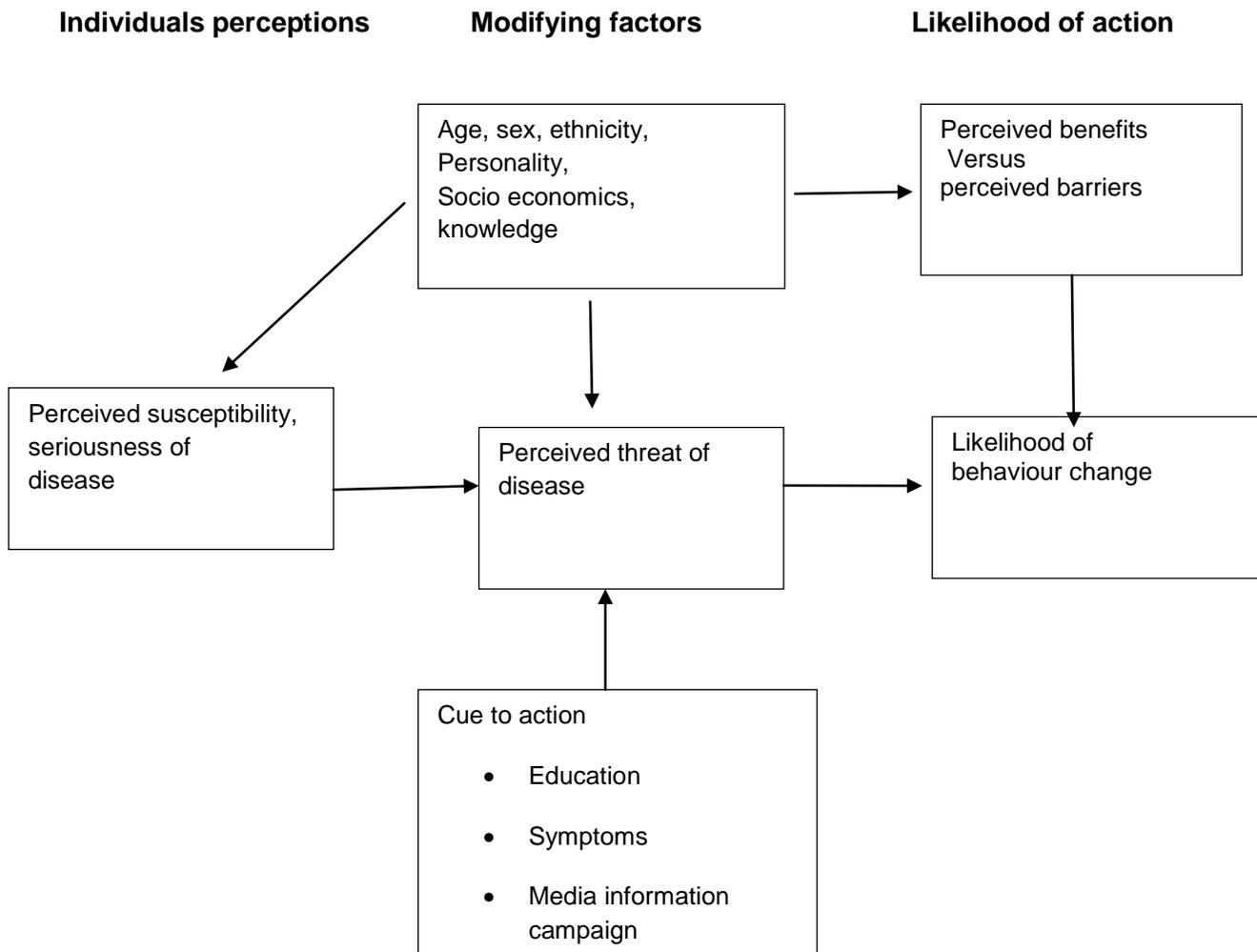
**Table 12: Concept and Definition of the HBM**

<b>Concept</b>	<b>Definition</b>	<b>Application</b>
<b>Perceived Susceptibility</b>	One's opinion of the chance of contracting a condition	Define population(s) at risk, risk levels; personalize risk based on a person's features or behaviour; heighten perceived susceptibility if too low.
<b>Perceived Severity</b>	One's opinion of the seriousness of a condition and its consequences	Specify consequences of the risk and the condition.
<b>Perceived Benefits</b>	One's belief in the efficacy of the advised action to reduce risk or seriousness of impact	Define action to take; how, where, when; clarify the positive effects to be expected.
<b>Perceived Barriers</b>	One's opinion of the tangible and psychological costs of the advised action	Identify and reduce barriers through reassurance, incentives, assistance.
<b>Cues to Action</b>	Strategies to activate "readiness"	Provide how-to information, promote awareness, reminders.
<b>Self-efficacy</b>	Confidence in one's ability to take action	Provide training, guidance in performing action.

(Source: Croyle, 2005:14)

## 5.5 Components of the HBM

The HBM is divided into three major components as demonstrated in figure 2. The components comprise of individual perceptions, modifying factors and variables affecting the likelihood of initiating action.



**Figure 2: The components and relationships in the HBM** (Glanz, Rimer & Lewis, 2002: 52)

From the above figure it is shown for instance that variables affecting the likelihood of taking action to prevent a disease are influenced by an individual’s perception of the severity and the individual perceived risk of contracting the disease (Dennill et al., 1999:157). It also shows that these individual perceptions of the severity, the risk of contracting the disease and the likelihood to take preventive action are influenced by three modifying factors (Denill et al., 1999:157). These factors according to Denill et al. (1999: 157) could be demographical (age, sex race ethnicity); socio-psychological (social class, personality) and structural (knowledge about the disease, prior contact with the disease). In addition, the knowledge of symptoms, illness of family or friend,

mass media campaign are the factors that could enhance a change in behaviour. These are referred to as cue to action (Denill et al., 1999: 157).

## 5.6 Limitations of the HBM

The HBM is well developed and well researched in its explanation of health decision-making (via perceived threat, benefits and barriers) and health behaviour initiation (via cues to action). However, the model devotes less attention to how health behaviours, once initiated, are maintained over time (Franks & Felton, 2009:?). It has also been criticized for being too simplistic and individualized as it ignores social and economic factors (Roden, 2004: 6) and does not acknowledge the health professionals' responsibility to reduce or ameliorate health care barriers (Nies & McEwen, 2007: 43).

## 5.7 Discussion of study findings as they relate to the HBM

In the paragraphs below, the themes which were inductively developed from the interviews are discussed in relation to each of the HBM constructs. This is summarized in the table below and detailed further.

**Table 13: Summary of the findings as is related to the HBM** (adapted from Croyle, 2005: 14)

Concept	Definition	Themes from the study	Application
<b>Perceived Susceptibility</b>	Participant personal risk of being exposed to TB	Ignorance Knowledge of the causes and transmission of TB	Some participants reported that they knew nothing about TB and there was a gap concerning different aspects for others. However, it was encouraging to find that some participants stated that TB could affect everyone and listed some conditions that could increase one's exposure to TB. Due to the gap in their knowledge, the study suggests the need to educate more people about TB starting at the clinic.
<b>Perceived Severity</b>	Participant perceived consequence of TB	Perceived danger of TB Factors inducing fear of TB	It was also encouraging to find that some participants reported that TB was dangerous and could affect a person emotionally. Almost all participants stated that TB could kill. However, others minimized the seriousness of the disease as it could be treated. The study suggests the need to increase awareness about the seriousness of TB.
	Participant	Knowledge of	Some participants could state at least three

<b>Perceived Benefits</b>	perceived action to prevent TB	symptoms, Acknowledgement of treatment, health seeking behaviour acknowledgement of prevention	signs and symptoms of TB. Most of them stated that TB could be cured and they reported their willingness to go to the clinic if they had TB symptoms which was encouraging. However, there was a gap in their knowledge of treatment and prevention and some reported that they could not recognize TB symptoms. The study suggests the need to increase awareness of TB symptoms, prevention and treatment.
<b>Perceived Barriers</b>	Participant perceived fear of TB	Factors inducing fear of TB	Participants reported various aspects that increase the fear of TB, namely fear of reinfection, feeling ashamed, facility service, stigma and irresponsibility of TB infected patients themselves. The study suggests that there is a need to provide people with accurate information and the role of health care workers in this education about TB.
<b>Cues to Action</b>	Participants perceived source of TB information and the trigger of their motivation	Source of TB information	Some participants reported that they knew about TB from the information given to them at the hospital, some heard over the radio/television, school and some from a relative who had TB. Some reported that from the experience of a relative and the advert on TV, they were motivated to start treatment if they were diagnosed with TB which was encouraging. However, the gap in their knowledge of symptoms could affect their motivation. The study suggests the need for accurate and reinforced information given through any media .
<b>Self-Efficacy</b>	Participant perceived confidence to take action to prevent TB	Knowledge of symptoms, acknowledgement of prevention acknowledgement of treatment and source of TB information	Participants reported that they will go to the clinic and start treatment if they were diagnosed with TB. However, the gap observed in their knowledge of prevention and treatment could negatively impact their confidence. The study then suggests the need to educate more people about TB and enhance the message about prevention and treatment.

### 5.7.1 Perceived susceptibility

This concept refers to the way an individual subjectively evaluates personal risk to contracting an illness (Felton & Franks, 2009), and it is the most important perception in health promotion (Mtaita, 2009: 33). In this study, it was found that some participants were still ignorant about TB. Some attributed their ignorance to the fact that they have not yet experienced the disease or have a relative suffering from TB.

*“I don’t know anything about TB that is why I asked why you are interviewing me for something I don’t know. I just know that is it an illness” (P9).*

Some participants on the other hand seemed to understand that TB is a communicable disease. However, there was a gap in the perceived cause and transmission of TB. For instance, the condition in which transmission occurred (Ndjeka et al., 2008: 46; Lienhardt et al., 2005: 595) was not well understood by all participants. Also, none of the participants mentioned that TB was caused by a bacterium. Some participants reported that TB was spread by coughing, which was encouraging. Others reported physical contact, such as shaking hands and sleeping in the same bed with an infected person, touching spit, sharing utensils such as cups, glasses, and plates could spread TB.

*“If you stay with someone who had TB you must be careful it can affect others like you use the same glass, you eat in the same plate, and you sleep in the same bed. Yes it would affect other people to get the TB” (P4).*

Despite this gap in the participants' knowledge of cause and transmission of TB, it was encouraging to observe in this study that most of them perceived that everyone can contract TB. According to HBM, if patients perceived that they are susceptible to TB or any other infections, they are more likely to accept the diagnosis and treatment (Mtaita, 2009: 33). Some participants mentioned that conditions such as HIV infection, people who immigrate to South Africa, a place where someone stays, poor nutrition and poor hygiene could increase a person's susceptibility to TB (Baars, De Vries, Richardus, Sebek & Van Hest, 2010: 863; Bierman, Gardam, Hu, Khan and Wang, 2008: 457; Ho, 2004: 757).

*“You know there are a lot of people coming to South Africa; you don't know where you will get it. Some people they are working outside the country, so the travel and come back and they don't even know that they got it or not” (P10).*

However, it was not encouraging to observe in this study that two participants, as a result of their ignorance, did not know if they were at risk of contracting TB. This finding comforted the finding from the literature that lack of knowledge about TB limits people's ability to prevent its spread and increases the possibility of delay in TB diagnosis

(Mtaita, 2009: 39; Bayouni et al., 2007: 21; Koay, 2005: 505; Promtussanano & Peltzer, 2005: 75).

According to the HBM, if people believe that they are not at risk or have a low risk of susceptibility, they are more likely to engage in unhealthy behaviour (Mtaita, 2009: 34). Therefore, the study suggests the need for ongoing education about TB starting at clinics.

### 5.7.2 Perceived severity

Perceived severity refers to an individual's evaluation of organic and social consequences that is likely to arise if a specific illness is contracted or if the specific illness is left untreated (Ilongo, 2004: 72). In the case of TB, it refers to an evaluation of the threat of TB and how the disease will affect an individual both from a medical and social standpoint (Rosenstock, 1974: 329 as quoted by Mtaita, 2009: 34). Miller (2007: 54) argued that the need to feel well relates to the perceived severity of the disease in the health belief model. In this study, it was encouraging to find that some participants stated that TB was very dangerous. Almost all participants, despite the gap in their knowledge of the cause or transmission reported that TB could kill. For instance, some participants reported that non-completion of treatment exposed a patient infected with TB to complication citing the excessive weight loss and even death. Some also attributed TB death to HIV. Some participants reported that patients infected with TB were emotionally affected and fear was a major concern. However, some participants also stated that TB was less dangerous since it could be cured.

*“TB I only realize how deadly it is in relation to HIV. Because if you are HIV positive and you have TB your chance of living is very slim that is what bothers me” (P5).*

This study then suggests that accurate messages about the seriousness of TB, as well as reassurance should be given to people at clinics.

### 5.7.3 Perceived benefits

Perceived benefits result from an individual considering and evaluating the advantages of engaging in health related behaviour (Croyle, 2005: 14). This corresponds with the participants' responses towards positive actions in the belief that wellness can be achieved or maintained (Miller, 2007: 54). For example, an encouraging finding in this study was that the majority of participants knew some signs and symptoms of TB; they could mention at least three of these signs. Some participants stated that cough with blood and weight loss, among others, were alarming signs that someone was infected with TB. Some participants reported that actions such as covering of the mouth when coughing, opening the window, eating a well balanced diet, which can all be summarized as good hygiene and lifestyle, were important to prevent TB. Almost all participants reported that TB can be cured and some of them highlighted the importance to adhere to treatment. Another positive action was that the majority of participants reported that they will go to the clinic if they had TB symptoms.

*“Open the window is one of the key issues of that disease. You see, for example when you are in the open air like this I don't know how the contagion might come but in the house it is very contaminated to an extent when it concern house in a blocked area it is very easy to somebody to contact it that time, yes” (P1).*

Notably, most of the participants were not aware of the length of treatment. For instance, only two participants mentioned the average length of treatment. This study also found that most of the participants were not aware of the BCG vaccine as a method of preventing TB. This finding was not so encouraging. The HBM proposes that to perceive any benefit, people must have a minimum knowledge and motivation towards staying healthy (Ilongo, 2004: 72). In other words, they need information regarding what action to take to prevent TB infection, how to take this action, as well as where and when to take the advised action (Mtaita, 2009: 34). Delay in treatment of TB can result in a higher risk of mortality among patients and transmission of the disease in the community (Castro et al., 2010: 1814; Dodor, 2009: 153). These findings could indicate that positive attitudes (perceived benefits) towards TB results form a good knowledge of the disease transmission, symptoms, treatment and prevention. Because not all the

participants could list more than three signs and symptoms of TB, the study then suggests the need to increase people's awareness of TB symptoms and prevention.

#### 5.7.4 Perceived barriers

Perceived barriers refer to individuals' own evaluation of the obstacles in the way of the decision to engage in health behaviour (Mtaita, 2009: 35). These barriers vary from individual to individual and may include financial, psycho-social, demographical, geographical or structural factors (Musemwa, 2011: 66; Denill et al., 1999: 157). In this study, it was found that the one negative attitude towards TB, was fear. This fear was associated with the stigma that surrounded the disease; participants' personal feeling; the facility service and the blaming of TB infected patients. One participant reported that she would be ashamed if she had TB and another one stated that he could not get close to someone who had TB out of fear of being infected. One participant stated that TB was a shameful disease in his country. Other participants reported that there was a fear of being discriminated against within the community and a fear of being rejected if they had TB. The perceived causes and spread of TB in this study (i.e. French kissing, sharing utensils, sleeping with a TB infected patient, and touching the spit, etc.) could also increase the stigma. Some participants in the study associated TB with HIV, and one of them went on to mention that patients infected with TB look like patients infected with HIV.

*"He is not different from someone who has HIV. He looks like someone sick, like someone who has HIV. He looks the same that is why it is very dangerous to have TB" (P4).*

These attitudes (feeling ashamed, avoiding an infected person, looking like patients infected with HIV, fear of the reinfection, poor quality of clinic services and above all fear of being stigmatized and discriminated) could impact negatively on people's decision to seek early treatment. It was revealed that the HIV stigma could delay patients to seek care for TB, since the visible symptoms of TB make them think that patients infected with TB are also infected with HIV (Chongsuvivatwong et al., 2010: 181; Dodor, 2009: 147; Moller et al., 2006: 4). One participant in this study pointed out that people are

afraid to go to the clinic in their home town when they have TB because of their popularity. Another participant stated that her fear was the quality of the facility service. These findings suggest the need to provide public with accurate information about the disease. It is important to bring the information to the community at all levels through mass campaigns starting at clinics and thereby breaking some of these barriers.

It was revealed in the literature that if patients and their families were met with disinterest, indifference and stigmatizing attitudes on the part of health personnel, this would affect their motivation to adhere to the long duration of TB treatment (Dodor, 2009: 151; Reyes-Guillen et al., 2008: 251). Therefore, it is vital for the health care workers to know that they have a pivotal role in providing accurate information to patients, in a reassuring way and providing them with relevant knowledge to correct erroneous beliefs about TB (Miller, 2007: 12).

#### 5.7.5 Cue to action

Cues to action are events, people, or things that move people to change their behaviour; internal and external cue to action act as the trigger of health behaviour such as taking medication (Mtaita, 2009: 36; Ilongo, 2004: 72). In this study, it was found that the majority of participants reported that they will go to the clinic if they had TB symptoms and that they would start treatment if they were ever diagnosed with TB. Some participants referred to the illness of a family member as a source of information about TB and a source of motivation to seek medical assistance. Others also reported that the advertisement seen on television also helped them to stay positive.

*“TB I know because my uncle had it before. If I get TB I just have to stay positive... and motivate myself... drink the medication. It happens, it all goes his life, everybody got it, it goes around” (P3).*

Hanson and Benedict (2002: 25) reported that hearing television or radio news, stories about food-borne illnesses and reading the safe handling instructions on packages of raw meat and poultry are cues to action associated with safer food handling behaviours. Miller (2007: 65) argued that the need to know relates to HBM as it raises an awareness

through mass campaigns and the type of information may trigger motivation or increase fear and discrimination. This could be supported by this study because none of the participants mentioned that TB was caused by bacteria. It is however noteworthy that some participants mentioned hospital, school, radio/television and illness of a relative as sources of their information about TB or their motivation to seek help. This study also found that participants, despite their willingness to go to clinic if they have TB symptoms, most of them expressed a fear of the disease. This fear varies from the infectious type of the disease to the stigma associated with it. Therefore, this study again suggests that education about the causes, symptoms, treatment and prevention of TB given in any media especially over the radio and television should be correct, accurate and reinforced from time to time.

#### 5.7.6 Self-efficacy

Self-efficacy is a relatively new concept added to the HBM and it refers to a persons' confidence in his or her ability to successfully perform the recommended action (Campbell, 2004: 28). In this study, most of the participants knew that everyone can contract TB. They also stated that TB could be cured and reported their willingness to go to the clinic. However, the gap in their knowledge of the causes, transmission, prevention and treatment of TB could minimize this confidence.

*“ You can be cure after taking correct medication at the correct time with a well balance diet but what scares me is that if I don't get treated early if I don't have those symptoms for TB itself, if I don't know them early it may kills. I may end up just... but I know it is treatable” (P2: 114-118).*

It was reported that not knowing the period of treatment for instance, could compromise people's decision if they were diagnosed with TB and could lead to non-compliance (Bayouni et al., 2007: 26). Bandura (1977) as cited by Ilongo (2004: 72) stated that patients must have high levels of self-efficacy to perform routine task such as taking TB medication for the entire period of treatment. This means that self-efficacy could improve adherence. Naidoo (2009: 33) argues that a strict adherence to anti-TB drugs regimens is essential for the patient to be cured. This indicates that someone has to be

personally invested and motivated in cooperating with health care professionals to improve his/her health status and prevent the spread of the disease. Good understanding of the cause of the disease, transmission, symptoms, treatment and positive perceptions were important factors in contributing to change behaviour, making people seek early medical assistance (Mtaita, 2009: 39; Bayouni et al., 2007: 21). According to Bayouni et al. (2007: 26) patients' knowledge about the length of TB treatment is an important educational message. Therefore, the study again suggests the need to educate more people about the TB treatment programme and adherence. There is a need to enhance the message that TB can be treated and prevented.

## 5.8 Limitations

This study included only a small sample of participants from a single clinic who had already indicated a willingness to seek help (i.e. attend the clinic) and so will not represent the knowledge and understanding of people who do not readily seek assistance from a Western medicine model. In addition, the study was restricted to English speaking participants which could have included a potential bias in the selection. Furthermore, there was limited time and resources for this study and data saturation was not obtained.

In addition, because data analysis was done manually by the researcher without a peer reviewer the process is not auditable. In retrospect the results would have been strengthened by making use of CAQDAS (e.g. Atlas.ti) to code the data or the involvement of a peer reviewer. Finally, this study was conducted in a single Cape Town suburb and so reflects only the knowledge of participants attending this particular geographic clinic.

## 5.9 Recommendations

With regard to the findings of this study, recommendations were made for nursing practice, policy makers and suggestions give for further research.

### 5.9.1 Recommendations for nursing practice

It was encouraging to find in this study that some participants could state that everyone could contract TB. Some listed different conditions that could increase their susceptibility. It was also encouraging to find that some participants also reported that TB could kill and that they will go to the clinic if they have TB. However, there was a gap in the participants' knowledge about the causes, symptoms and treatment of TB. Also, some factors inducing the fear of TB were found in this study. Therefore, the study findings suggest that more interventions in TB education need to be introduced to increase public awareness about the serious consequences of TB infection. Especially health education and health policy makers should develop programmes that would promote the community's understanding that TB is both curable and preventable.

At clinic level, the study suggests that service providers could help the public to view TB infection more seriously by engaging every day with TB information, education and communication. This could be done by specifically distributing pamphlets to the public, by showing them pictures of people suffering from TB and by giving them the opportunity to share and discuss the information with infected individuals. HIV and TB health education could be combined. These actions could be included in the clinic's daily routine and could help in breaking down some of the factors that induced the fear of TB as observed in this study.

### 5.9.2 Recommendations for policy makers

At the provincial level, the study suggests that the service providers should organize sensitizing campaigns related to the health priorities at clinics. More specifically, a TB destigmatization programme (Health education programme) could be developed to ensure that people have the correct perception of the disease. The problems identified in this study could be solved by implementing such a programme. The Health Believe Model could serve as a guide in the evaluation of the programme.

One participant in this study linked TB transmission to immigration. In addition, two participants who knew very little about TB were migrants. While it is impossible to generalize from these results it is suggested that education campaigns should be target at these groups as well.

Some participants in this study stated that they knew about TB from the radio or television. Therefore, the study suggests that media could help in sensitizing the population about TB causes, transmission symptoms, prevention and treatment; and should be used often in health communication.

Some participants' TB information source was the hospital and yet they still had some gaps about some aspects of TB. The study suggests that the Western Cape Provincial Department of Health could organize in-service training to meet these needs.

### 5.9.3 Recommendations for further research

- This study was conducted with a qualitative approach and a small sample and is therefore, not generalizable. In addition, the study found that the knowledge of the cause of TB, symptoms, transmission, prevention and treatment was not well understood by some participants. Therefore, the findings suggest that the research topic may be replicated using a larger sample with maybe a quantitative approach.
- Immigrants' knowledge about and attitude towards TB should be explored.
- The effect of health education on the destigmatization of people affected by the dual epidemic of HIV and TB should be investigated.
- The impact of the relationships between patients and health care workers in TB prevention could be determined.

### 5.10 Conclusion

The research question for this study was "*What is the knowledge about and attitude towards TB among non-TB infected clinic attendees?*" The study objectives were to explore the knowledge of the cause, symptoms and treatment of TB among non-TB infected clinic attendees and to explore their attitudes towards TB. Although the sample

size was small, this study showed that there was a gap in participants' knowledge regarding the cause, symptoms and treatment of TB.

Despite this gap, participants demonstrated encouraging attitudes: almost all participants acknowledged that TB can kill and TB can be cured; almost all participants stated that they would seek medical care for help if they had TB symptoms. Also some participants reported that their ignorance of the symptoms could delay them to seek early help; importantly some of the participants acknowledged that TB can be prevented and that they were vulnerable to contact the disease.

However, negative attitudes characterized by the perceived fear of TB (fear of reinfection, avoiding contact with a TB infected patient, looking like a patient infected with HIV, feeling ashamed and mostly fear of being stigmatized and discriminated) observed in this study, could impact negatively on the participants' willingness to seek early help. As a result, the study recommends that at clinic level, the service providers could help the public view TB infection seriously by engaging every day in TB information through education and communication.

The Provincial Department of Health could develop a TB destigmatization programme (Health education programme) to ensure that people have the correct perception of the disease. The problems identified in this study could be solved by implementing such a programme. The Department could also organize in-service training as part of the programme.

The study also recommendeds that the media should be used more regularly in the implementation of TB information campaigns.

The research objective for this study has been explored and the results are similar to findings reported in the literature, namely that poor knowledge, low awareness and stigma could impact negatively on people and delay their need to seek medical care and treatment.



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## Appendix A: Ethics Committee approval



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21 April 2011

**MAILED**

Mrs C Semengi  
Department of Nursing  
2nd Floor  
Teaching Block

Dear Mrs Semengi

**Socio-environmental factors contributing to the prevalence of tuberculosis in an urban township in the Western Cape.**

**ETHICS REFERENCE NO: N10/08/192**

**RE : APPROVED WITH STIPULATIONS**

It is a pleasure to inform you that a review panel of the Health Research Ethics Committee has approved the above-mentioned project with STIPULATIONS on 21 April 2011, including the ethical aspects involved, for a period of one year from this date.

1. The interview guide could be significantly improved; the researcher is advised to discuss this with the supervisor and a statistician. The statistical department can be contacted at 021 938 9181 or [jharvey@sun.ac.za](mailto:jharvey@sun.ac.za).
2. The interview guide must link with the stated project objectives.

This project is therefore now registered and you can proceed with the work. Please quote the above-mentioned project number in ALL future correspondence. You may start with the project. Notwithstanding this approval, the Committee can request that work on this project be halted temporarily in anticipation of more information that they might deem necessary.

Please note a template of the progress report is obtainable on [www.sun.ac.za/rds](http://www.sun.ac.za/rds) and should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly and subjected to an external audit.

Translations of the consent document in the languages applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372  
Institutional Review Board (IRR) Number: IRR00005239

The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

Please note that for research at primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health ([healthres@pgwc.gov.za](mailto:healthres@pgwc.gov.za) Tel: +27 21 463 9907) and Dr Hélène Visser at City Health ([Helene.Visser@capetown.gov.za](mailto:Helene.Visser@capetown.gov.za) Tel: +27 21 400 3981). Research that will be

21 April 2011 15:07

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Fakulteit Gesondheidswetenskappe · Faculty of Health Sciences



Verbind tot Optimale Gesondheid · Committed to Optimal Health  
Afdeling Navorsingsontwikkeling en -steun · Division of Research Development and Support  
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conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

Approval Date: 21 April 2011

Expiry Date: 21 April 2012

Yours faithfully

**MS CARLI SAGER**

**RESEARCH DEVELOPMENT AND SUPPORT**

Tel: +27 21 938 9140 / E-mail: [carlis@sun.ac.za](mailto:carlis@sun.ac.za)

Fax: +27 21 931 3352

21 April 2011 15:08

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## Appendix B: City of Cape Town Health approval



CITY OF CAPE TOWN ISIXEKO SASEKAPA, SWA NAMPSTAD

City Centre  
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Cape Town 8001  
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CITY HEALTH — Specialised Health

2011-06-15

**re: Research Request: Knowledge and attitudes towards tuberculosis among non-TB patient attending a clinic in Cape Town. (ID No: 10251)**

Dear Chanceline

Permission has been granted to do your research as per your protocol at:

**Tygerberg Sub District:**

Contact People:

**Parow Clinic**

Mrs M Alexander (Sub District Manager)

Tel: (021) 938-8279 / 084 222 1471

Mrs D Titus (Head: PHC & Programmes)

Tel: (021) 938-8281 / 084 308 0596

**Please note the following:**

1. All individual patient information obtained must be kept confidential.
2. Access to the clinic and its patients must be arranged with the relevant Manager such that normal activities are not disrupted.
3. A copy of the final report must be sent to the City Health Head Office, P O Box 2815 Cape Town 8001, within 3 months of its completion and feedback must also be given to the clinics involved.
4. Your project has been given an ID Number (10251). Please use this in any future correspondence with us.

Thank you for your co-operation.

Yours sincerely

DR G H VISSER

**MANAGER: SPECIALISED HEALTH**

cc. Mrs Alexander & Ms Titus  
Dr K Jennings  
Ms Caldwell



## Appendix D: Participant information leaflet and consent form

**TITLE OF THE RESEARCH PROJECT:** An exploration into the knowledge about and attitude towards tuberculosis among non-TB infected attendees.

**REFERENCE NUMBER:** N10/06/192

**PRINCIPAL RESEARCHER:** Chanceline Kwakep epse Semegni

**ADDRESS:** 20 Tierhof Victoria Street Parow 7500

**CONTACT NUMBER:** 0719033599

You are being invited to take part in a research project. Please take some time to read the information below, which will explain the details of this project. Please ask any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research is about and how you could be involved. Also, your participation is **entirely voluntary** and you are free to refuse to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you have already agreed to take part.

This study has been approved by the Committee for Human Research at Stellenbosch University and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

### **What is this research study all about?**

You have been selected to participate in this study about “An exploration into the knowledge about and attitude towards TB among non-TB infected attendees at a Cape Town community clinic”. Your participation will bring new information that may be useful for TB management in

South Africa. The study will be conducted at the Parow community health centre. If you decide to participate you will be interviewed by me at the venue and time that suits you.

Your interview will be audio recorded to ensure accurate documentation. I will transcribe the recordings and later ask you to check the transcript for accuracy before the data is analyzed.

The information you give will be treated with complete confidentiality at all times.

Your name will not appear on the transcripts and you will not be identified in the final report. All recordings and transcripts will be stored in a locked cupboard and the recordings will be destroyed at the end of the study.

### **What will your responsibilities be?**

Your responsibility is to be as honest and open as possible during the interview.

The researcher is interested in your experience and unique point of view.

### **Will you benefit from taking part in this research?**

You will be given an opportunity to describe your knowledge of TB and so contribute to enhancing the effort in TB control in South Africa.

There is NO financial reward for taking part in this study.

### **Are there any risks involved in your taking part in this research?**

There are no anticipated risks involved with your taking part in this study.

You may get tired during the interview. To prevent you from feeling tired, the interviews will be limited to about 30 - 45 minutes. But if you require additional time to tell your story, please tell the researcher.

### **If you do not agree to take part, what alternatives do you have?**

Your refusal to take part in this study will in no way affect you personally. Your participation is entirely voluntarily.

**Is there anything else that you should know or do?**

You can contact me, Mrs Semegni on my cell phone number 071 903 3599 if you have any further questions or if you experience any problems.

You can contact the Health Research Ethics Committee at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed.

You will receive a copy of this information and consent form for your own records.

**Declaration by participant**

By signing below, I ..... agree to take part in a research study entitled “An exploration into the knowledge about and attitude towards tuberculosis among non-TB infected attendees at a Cape Town community clinic”.

**I declare that:**

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

Signed at (place) ..... on (date)  
..... 2011

.....  
Signature of participant

.....  
Signature of witness

**Declaration by investigator**

I Mrs C. Kwakep epse Semegni declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use a interpreter. *(If a interpreter is used then the interpreter must sign the declaration below.*

Signed at (place) ..... on (date) ..... 2011.

.....  
Signature of investigator

.....  
Signature of witness

**Declaration by interpreter**

I (name) ..... declare that:

- I assisted the investigator (name) ..... to explain the information in this document to (name of participant) ..... using the language medium of Afrikaans/Xhosa.

- We encouraged him/her to ask questions and took adequate time to answer them.
- I conveyed a factually correct version of what was related to me.
- I am satisfied that the participant fully understands the content of this informed consent document and has had all his/her question satisfactorily answered.

Signed at (place) ..... on (date)  
.....2011.

.....  
Signature of interpreter

.....  
Signature of witness

## Appendix E: Semi-structured Interview guide

An exploration into the knowledge about and attitude towards tuberculosis among non-TB infected attendees at a Cape Town community clinic.

Researcher: Chanceline Kwakep epse Semegni (Student No: 15 469 808)

ParticipantNo: ..... Contact details:.....

Age: (Must be between 20-40 years)

Gender: Male / female

1. Have you ever had TB? (Inclusion criteria)
2. What do you know about TB? (Knowledge of cause of TB)
3. What will you look like if you have TB? (Knowledge of symptoms)
4. What will frighten you most about getting TB? (Uncover prejudice / fears)
5. What happens to people who have TB? (Knowledge about treatment)
6. Is there anything else you would like to tell me? (Ending off question)

## Appendix F: Transcript of the interview

- 1 Transcribed interview.
- 2 Re = Researcher
- 3 P = Participant.
- 4 Participant # 1: male, 36 years old.
- 5 Re: Thank you for accepting to be Part of my study.
- 6 P1: It is my pleasure.
- 7 Re have you ever had TB before?
- 8 P1: I never had TB before.
- 9 Re: What do you know about TB?
- 10 P1: Actually I don't know anything about it. Because I am new in that thing that you are asking  
11 me. What I can say is that it is only somebody who has once had a patient like that...then he  
12 can tell you what the patient is passing through or what he has. He must have experience for  
13 the patient then he can explain to you. But to me I don't think I have something to say about  
14 that. To me I only know if somebody is sick of TB you have cough like if you go to the hospital  
15 they diagnose you and are positive with the case that is all I know... but I have never have a TB  
16 patient before in my live. So I don't really know much.
- 17 Re: You mean you don't know that much about TB but only people who know...
- 18 P1: Yes only people who can testify about the illness is somebody who have once experience  
19 the case yes... or maybe the family somebody the wife, the brother most have passed trough  
20 that experience he will maybe explain to you that or maybe something my brother was passing  
21 through that kind of symptoms
- 22 Re: How do people with TB look like?
- 23 P1: TB people?
- 24 Re: Yes
- 25 P1: I always see them when I come to the hospital and... they are always tin and they are not  
26 good health looking and ... and... but I just think if they don't take their medication they will go

27 more thin and thin that kind of thing but they take their medication at least they will be fine you  
28 see. So... so... anyway as you ask me how do they look like, for a TB patient who have been  
29 sick for long is tin or she and... or he or she is not healthy. You see, that is what I must talk  
30 about.

31 Re You mean if you have TB you are tin, not good health looking

32 P1: Yes.

33 Re: And if you are on medication...

34 P1: Yes. Very well. If they are on medication you see when somebody is sick from TB you see,  
35 when he started taking his medication, if you look at him, the health is not good... you see...  
36 when they take their medication at least after sometime, everything must be fine. If you look at  
37 them, they are very healthy and that is the thing. Something that they can take away if they fight  
38 all you see.

39 Re: What will be your biggest fright if you have TB?

40 P1: I really do pray that it should not come... but if it comes one day, nobody knows... I...I...will  
41 do everything to go to the hospital. First of all... what is there is that... You know when you have  
42 TB you see, you have to prevent it from others. As they explain to the hospital you must keep  
43 your windows open, your doors must be open when you get up in the morning, you must open  
44 every where... maybe the disease should go out or that kind of things like that. Because when  
45 you are in the house when you cough, already the disease is inside the house when the  
46 windows are closed now somebody might contact it at the same time. When everywhere is  
47 close... but if you open everywhere I think it is better to help others from not having the disease

48 Re: You mean the best way to prevent the disease is to open the windows and...

49 P1: Anyway to open the windows is one of the key issues of that disease. You see, for example  
50 when you are in the open air like this I don't know how the contagion might come

51 but in the house it is very contaminated to an extant when it concern house in a blocked area it  
52 is very easy to somebody to contact it that time. Yes.

53 Re: You said you were really praying not to have TB why?

54 P1: Nobody... nobody... nobody... nobody is happy to be sick and... and... and... and I never  
55 happy to be sick. To me I can... if there is a way for me... to live the whole of my live without  
56 been sick I will be very happy but if... so if it happen the sickness come, I will embrace it nobody  
57 knows. (Laugh)

58 Re: You mean you pray not to have TB because you are not happy to be sick and open the  
59 window was the key issues to prevent TB.

60 P1: Yes.

61 Re: Do you think TB patients can socially be mixed with others?

62 P1: Yes. Why not? If they started taking their medication I don't see any reason why they should  
63 stay away from people. All of us are being when you start taking your medication you see the  
64 risk of contamination to others is very slim you can eat one spoon with the TB patient if he is  
65 taking his drugs. But if he is not taking his drug, that is how the risk is.

66 Re: What happen to those people who have TB?

67 P1: Yes what do you want me to do? I can only say they should keep on taking their drugs and  
68 therefore they should keep on alive that they will make it. Because it is something that kills you  
69 know but if you start taking your medication you can't die anymore. I do advise those who have  
70 TB to go ahead and take their medication and everything will be fine for them.

71 Re: Is there anything else you should want to tell me?

72 P1: I wish you the best

73 Participant #2: female, 28 years

74 Re: Thank you for participating

75 P2: My pleasure

76 Re: Have you ever have TB before?

77 P2: No.

78 Re: What do you know about TB?

79 P2: TB, what I know is... like... is an airborne disease that one can get or maybe contacted  
80 through... I can say when somebody cough, yes when they are infected through the sputum, if  
81 he got the germ, and then you like get it contact with that, maybe you stay in a closed room  
82 somebody who is coughing that much, maybe open the window, it like always closed all the  
83 time, maybe you can get infected like that so it is more like airborne. That is all I can say all  
84 about TB.

85 Re: You mean TB is and airborne disease?

86 P2: Yes it is an airborne disease

87 Re: And you get infected if you don't open the windows?

88 P2: Yes maybe you can also get it through maybe sharing things like in the room... like I can  
89 say maybe if the person doesn't know that they have the disease  
90 using the same things like utensils like cups, if they don't know that are infected and you drink  
91 using the same cup... using the same spoon maybe you can get it like that

92 Re: How do people with TB look like?

93 P2: Mostly when it attacks you that much you look... you lose weigh yes. They cough all the  
94 time and they look so tin. Others I don't know maybe, pale usually they look tin, lose a lot of  
95 weigh they cough a lot, you can just look at this person and say this person is infected.

96 Re: You mean you can recognize the TB patient by the excessive weigh lost and cough?

97 P2: Those are the first sign that I can see with somebody I don't stay with. Maybe like that but  
98 with the person I stay with, if I started noticing that they sweat during the night they lose a lot of  
99 weigh they cough sputum with blood, then I know that there is a danger.

100 Re: You mean if you live with a person and you notice that he sweat at night, cough out sputum  
101 with blood, and then you know these are alarming signs?

102 P2: Yes others, they feel chest pain, a lot of pain in the chest others feels very cold, it depend  
103 the way it infect you.

104 Re: What will fright you the most if you have TB?

105 P2: What scare me the most is... I know it is treatable but... I don't know I haven't research it  
106 yet but rumor has it... is that once you have it it can either restart again after some time. You

107 can be cure after taking correct medication at the correct time with a well balance diet but what  
108 scares me is that it may come back again. And then also, if I don't get treated early if I don't  
109 have those symptoms for TB itself, if I don't know them early it may kill. I may end up just... but  
110 I know it is treatable.

111 Re: I didn't get what scares you.

112 P2: My fear is just to get sick of it.

113 Re: Why?

114 P2: I don't know I have no reason.

115 Re: Are you not scared of what people would say?

116 P2: Probably from the public maybe that will be my fear, discrimination, maybe that is the only  
117 fear. I know some people say that once you have TB it is like you have HIV. No it is not like that.  
118 I take it as any other disease but it is much better than I can say AIDS because it is treatable.

119 Re: What do you think what happens to those who are infected with TB?

120 P2: Some it takes long for the disease to start manifesting it depends on how healthy one is  
121 others, they can stay strong but others start showing the symptoms and start getting sick that is  
122 what happens.

123 Re: You mean in some people it takes long to manifest and to others it comes earlier do you  
124 think they seek medical help or not?

125 P2: Yes if they seek medical help they will get well after taking their medicine if they don't stop.  
126 Because if they stop, they get immunized and it becomes difficult to treat. So if you know you  
127 have the symptoms or you suspect you cough too much you go for treatment, if you go for  
128 treatment, you take it correctly you will be fine afterward.

129 Re: You mean they take their medication if they are diagnosed with TB?

130 P2: Yes. And eat well.

131 Re: Is there anything else that you want to share with me?

132 P2: I don't think so.

133

134 Participant #3: female, 30 years old.

135 Re: Thank you for your participation.

136 P3: It is ok.

137 Re: Have ever had TB before?

138 P3: No never.

139 Re: What do you know about TB?

140 P3: I know... I just know because my uncle had it before I also heard about it. It is not that bad,  
141 because it gets cure actually. It is the person you have to take your medication; you have to  
142 take your 120 days medication. So it is not that bad. Everybody, we hear about TB on radio, TV  
143 everywhere. So you must just be careful.

144 Re: What did they say on TV and radio?

145 P3: They talk about medication like especially people TB when you spit around in the street...  
146 because like if you go and touch it on the floor, on your shoe, that is how TB goes around,  
147 because of the spit.

148 Re: You mean you heard about TB on the media and people get TB trough touching or  
149 stepping the spit?

150 P3: trough the spit.

151 Re: You said your uncle had TB, how did he look like?

152 P3: He was fine no more, just the coughing and everything, he was sick very sick, but he got  
153 find afterward because he has to drink his medication.

154 Re: generally how do people with TB look like?

155 P3: First thing when I was young, obviously you think is like for young person, you think it is like  
156 HIV/AIDS. They will be thin you know, you got that stigma that you don't want to know that  
157 person because he got TB. But TB is not that bad, you can sit in room with a person with TB.

158 Actually it depends on your gene if you will contract the TB. So for now I don't think like this  
159 person got TB I must stay away from him. No it is not that.

160 Re: you mean you don't have to be scared of people with TB?

161 P3: They are not supposed to be scared. As long as they are taking their medication, they can  
162 socialize with people. But remember you can contract TB also if you stay in a close room.  
163 Remember to open the window to get some air.

164 Re: You mean TB patient must socialize with people as long as they are on medication?

165 P3: Yes they must socialize with people they cannot stay in a close box by themselves  
166 otherwise they will be sick.

167 What will scare you the most of getting TB?

168 P3: (hesitation) we hear about this stuff, if I get TB I just have to stay positive... and motivate  
169 myself... drink the medication. It happens, it all goes his life, everybody got it it goes around.

170 Re: You mean TB can affect everybody and if it is you, you will stay positive?

171 P3: Be strong, be positive with oneself.

172 Re: What happen to people with TB?

173 P3: It depend, if they don't take their medication they get sick very fast, bad sick... and the way  
174 people say it, I have not experience it... somebody dies. People say it some dies.

175 Re: You mean some people die if they don't take their medication?

176 P3: Yes if they don't take their medication.

177 Re: What happen to your uncle?

178 P3: When he had TB he got better then he later pass away.

179 Re: oh. After he got better?

180 P3: Yes. he was fine.

181 Re: Did he complete his treatment?

182 P3: Yes he did.

183 Re: You mean when you complete your treatment you get better and if you don't...

184 P3: Some people die that is what they say. But TB can go far as AIDS because it is the same.

185 You never know what is TB what AIDS is. It is like it goes into your immune system you get

186 what I saying? (Laugh)

187 Re: TB and AIDS?

188 P3: What I know is that... how I can say it... because normally if you get HIV/AIDS you can get

189 TB easily and that affect your immune system and you got weaker and weaker, because you

190 got TB and you got HIV.

191 Re: you mean TB and HIV weaker the immune system?

192 P3: Yes, if you don't treat that TB as fast as you can also.

193 Re: you said your uncle had TB, he was fine, later on he passed away and if you have TB ...

194 P3: Yes if you don't take your 120 days medication

195 Re: Ok you will be feeling worse

196 P3: Ok yes

197 Re: And it is like TB and HIV go together?

198 P3: yes that is what I am trying to say (laugh) not go together but if you have ... how can I

199 explain it, I don't know how to put it in words. I don't know it is like... normally people say ...what

200 people say... but my own opinion is that if you have TB and HIV, obviously your immune system

201 will get weak, because you are sick of HIV and you got TB, It affects your body because you will

202 start coughing you know that kind of stuff, it happens.

203 Re: When you said you live and you don't open the window...

204 P3: When you live in a close box, obviously the people that stay in the house will contract the

205 TB. So open the window to get some air in the space. If you don't open up, that air that is inside,

206 you will be attached in that place so you need some fresh breath.

207 Re: Is there anything else you want to add?

208 P3: Nothing much

209

210 Participant # 4: male, 34 years old.

211 Re: Thank you for helping.

212 P4: No problem.

213 Re: Have you ever had TB before?

214 P4: No I never had TB before.

215 Re: What do you know about TB?

216 P4: I know it is a disease like Malaria, HIV. The difference is that TB is very dangerous. If you  
217 have TB to stay in the same place with people, you can infect another people, that is what I  
218 know.

219 Re: you mean if you stay in the same place with someone who has TB; it may affect others,  
220 how?

221 P4: If you stay with someone who had TB you must be careful it can affect others like you use  
222 the same glass, you eat in the same plate, and you sleep in the same bed. Yes it would affect  
223 other people to get the TB.

224 Re: How can you prevent yourself from getting TB?

225 P4: Like you can go to get injection to protect your body to have TB. And you must not get close  
226 to someone who has TB otherwise you can also be infected with TB.

227 Re: How do people with TB look like?

228 P4: He is not different from someone who has HIV. He looks like someone sick, like someone  
229 who has HIV. He looks the same that is why it is very dangerous to have TB.

230 (Interruption) before the interruption the participant was saying that his aunty had TB before.

231 Re: What happen to your aunty?

232 P4: she takes the tablets for eight months. The tablets change. The tablets are not the same for  
233 those eight months. After two months the tablets change. You must respect, you must take the  
234 tablet every time, everyday. If you try to forget to take the tablets you can die. Yes that is what I  
235 know about TB. And after eight months my aunty, she became very strong, you can't even know  
236 that she had TB before, until today she is still alive.

237 Re: because she completed her treatment?

238 P4: Yes.

239 You mean when you start TB treatment you must complete it?

240 P4: Yes you can't stop; if you stop you can die. It is very dangerous if you stop, you can die.

241 Re: And you are very scared of TB because it is like HIV?

242 P4: I am very scared of TB because it is like HIV. Because it looks the same. I can say it the  
243 same level. You can't say HIV is more than TB or very dangerous than TB. But it is the same  
244 level. All I can say is that HIV doesn't have medicine to treat, to give you live. But TB has  
245 medicine that can give you live, give you a new live that is the difference, but the sick is the  
246 same.

247 Re: How cans a TB patient infected someone and how do you recognize that someone has TB?

248 P4: I can see like he is sick. All the sick is not the same. From to tell you someone who is sick of  
249 TB is like someone who is sick of HIV. There are people like that when HIV comes there is also  
250 TB inside, you must be careful to get close to people like that. For someone who has HIV, it can  
251 transform to TB, he can still be sick, but he has HIV but that HIV comes like TB, he can also  
252 cough like TB and people like that can infect you with the TB not with HIV. They have HIV but  
253 they can infect you with the TB, people like that you must be careful. If he is in your family; your  
254 brother, your sister, you can't live her but you must be careful, you must protect your body  
255 otherwise you also can get sick.

256 Re: Apart from taking injection to protect your body what is another way?

257 P4: Like people who cough every time and you want to be close to them, you can't be close to  
258 people like that; you must protect your body. If you go to the bus, taxi and see someone who is  
259 coughing every time, you must open the window; you must tell him my friend you can't cough...

260 Re: In the midst of people like that?

261 P4: Yes true that is what I am trying to say. It can't be like that you must tell the people like that,  
262 they must stop. Otherwise you people who are in there you must open the window to protect  
263 your body and you can't sleep together with someone who coughs every time, who has TB. He  
264 can infect you. If it is your father, then you said my friend my sister, you must sleep there and I  
265 must sleep here. Otherwise he will infect you. It is not that you don't want him but you must  
266 protect your body that is all I can say.

267 Re: Is there anything else you would like to tell me?

268 P4: I can say they must look for strong medicine to protect people against TB. I know you are  
269 trying to help people for TB and I pray that God will give intelligence to take nice medicine to  
270 combat TB. That TB must never again come into the world. I know they have the medicine but  
271 you must bring nice one which can stop TB

272 Re: Stop TB definitely?

273 P4: Not come again into the world.

274

275 Participant # 5: Male, 22 years

276 Re: Thank you for accepting to be Part of this study.

277 P5: It is my pleasure.

278 Re: Have you ever have TB before?

279 P5: No never

280 Re what do you know about TB?

281 P5: what I do know is... it is a sort of... like a bad disease for the body system. And there are  
282 various symptoms that arise, that can give suspicions to someone having TB. For example  
283 coughing, dry chest, be unable to breath, and all that. So... I never actually went and research  
284 to TB into it. But what I do know is that it is the number 1 killer when somebody is HIV positive.  
285 TB is the number 1 killer of people who are HIV/AIDS infected. Ok yeah

286 Re: you mean that TB is the number 1 killer among people leaving with HIV. And when you  
287 have TB, you have dry chest.

288 P5: yes! Coughing for more than 2 weeks and... Smoking, that is another thing. And it is the  
289 most common thing among people who are HIV infected. Because it messes the lungs and  
290 everything.

291 Re: how do people with TB look like?

292 P5: weigh lost, you lose weight and... that the only main thing that I know. Another thing is also  
293 cough. Your cough sounds terrible you see... Unable to breath, so what is visible to the naked  
294 eyes is that the person loose weigh. Yes!

295 Re: you mean that people with TB normally lose weight?

296 P5: yes it is true

297 Re: what is your biggest fright about getting TB?

298 P5: yes! For me, what frightened me the most before was HIV/AIDS. That was before I was  
299 expose to go over sea, being at the AIDS conference but TB, I only really realize how deadly it  
300 is in connection with HIV/AIDS. So it didn't bother me that much... it didn't bother me that much  
301 with... ok if it is a deadly disease if you are only infected by it but not to HIV/ AIDS. So it didn't  
302 bother me that much because it can be cure. So it was not something that I take as a worry  
303 effect too much because I know early treatment, early detection, there is cure available for it.  
304 My biggest fright is that if I do have it... It would not fright me in the fact that I will know that I  
305 have it. It will fright me in the fact that as I was sitting I was thinking who will I going to infect  
306 because I know for myself that it can be cure. But the people who don't know anything about it,  
307 who stigmatizing. People who don't know quietly about, TB the reaction they will give me  
308 afterward (you know) that it is my worry right now. Be scared... I am... I am mean the symptoms  
309 that I have I don't know whether I do have it or not, It just that I do find it difficult to breathe. I  
310 don't know whether I have it or not I am not sure about it. I have not being coughing blood,  
311 (etc.... so I am not scare that much but what make me scare is what if I have it? The reactions  
312 of the people around, what would they think? Their reaction about me; would they view me  
313 differently? Because they are not educated about it. There is also a fear that I may be put out of  
314 my flat. Because I am renting the place, so I might be put out. So will say that you can stay here  
315 you are sick. Yes I am hopping and it is quite difficult. I have never been in a hospital all my life,

316 this my first time I am coming to the hospital. The first time and I am coming to test for TB. The  
317 result will have a big outcome for me generally. For me it is my first time but the big time

318 Re: [counselling]. [Laugh] thank you

319 Re: what happen to people with TB?

320 P5: they are affected emotionally as a person they obviously always see the world differently if  
321 they are not well informed about it. What put people at ease now is that the doctor will tell you  
322 “look, you have TB but it is curable it is treatable” but another side to that is that to those people  
323 who he/she knows that he/she have TB, they may stigmatize against. They may want to stay  
324 away from him you know, treating him differently because of this stigma, discrimination you  
325 know, that place a large tools on the person, most of all, because it is shocking! it is sad! it is  
326 hurting! that one hears that they have TB but there is a healing factor that it can be cure but  
327 another wound is the fact that they will be stigmatize, discriminate in the community

328 Re: Ok thank you. You mean people with TB are emotionally affected because of stigma?

329 P5: Yes

330 Re: Is there anything you want to tell me?

331 P5: Ok I will say if you notice the main point that we both agree on in this chat is stigmatization,  
332 discrimination of people I think that more people need to be educated about TB. It can be cure.  
333 To those who are... It is very important to test for TB because the important thing is that it can  
334 be cure if it is detected early. For me personally I find it difficult to breath but I say I wouldn't  
335 take note. Because I thought let me first find out the symptoms, let me caught out blood first  
336 before could check. You know maybe I am TB test positive because I found it difficult to breath  
337 and because I am tested early I will be able to manage it. The main thing is to be positive and  
338 no stigmatization and discrimination. It is all to be educated very important

339 Re: How do you do to prevent TB at home?

340 P5: Hygiene is very important, no smoking, always open the windows don't split on the ground,  
341 those are basis.

342 Re: Thank you

343 P5 It is my pleasure.

344

345 Participant #6: males, 38 years old.

346 Re: Thank you for your participation.

347 P6: You are welcome.

348 Re: Have you ever had TB before?

349 P6: never.

350 Re: What do you know about TB?

351 P6: What I do know about Tb is that it is a contagious disease which once was very dangerous;  
352 and today according to the information that I have, there is a cure for TB and now it is not that  
353 dangerous than before. That is all I know about TB. I know that it is a disease that killed many  
354 people before, but with the available drug for treatment, TB is less dangerous than before. Yes  
355 that is. I really don't have enough information about it.

356 Re: You mean TB is less dangerous since there is a cure?

357 P6: I am saying TB is a disease that has a normal treatment. It is not like HIV/AIDS. Look for  
358 example HIV/AIDS until today if you have HIV/AIDS there is no appropriate treatment to  
359 completely eradicate the disease in your system. That is why I say TB which has cure compare  
360 to HIV which hasn't. I didn't mean... a disease is always dangerous; I was trying to explain that  
361 at least there is a treatment for TB.

362 Re: How do people with TB look like?

363 P6: Personally I came from DRC and the conditions are not the same. In DDRRC there for me it  
364 was a bit easy to... you know the economic situation play an important role in this. At home  
365 when someone has TB you can recognize him by the excessive weight loss, the skin coloration  
366 changes to pale, also the coloration of the hair changes. That is all I know in fact.

367 Re: How do you do to prevent from getting TB?

368 P6: According to what I have heard you must avoid using the same utensils like bowl, cups,  
369 glass with a TB patient, also may be avoid sharing the same toilet.

370 Re: You mean in your country you can recognize a TB patient by the excessive weight loss and  
371 the discoloration of the skin.

372 P6: Yes.

373 Re: Also to prevent from getting TB you must avoid sharing things with a TB patient

374 P6: Yes.

375 Re: What is frighten you the most of getting TB?

376 P6: Nobody has ever wanted to be sick. Of course I will be scare of getting TB you know a  
377 disease is never a good thing (laugh).

378 Re: especially for TB why are you scared of be infected with TB?

379 P6: Particularly as I was saying I don't know about here in South Africa. Because I arrived just  
380 few months ago. But in DRC TB is like a shameful disease like HIV/AIDS. Once you are infected  
381 you lose your credibility in the society. You are considered like someone who is not eating well  
382 and you suffer rejection. But here in South Africa, apparently it is normal here to have TB. So  
383 my opinion is according to my country where I know the most. For example here someone can  
384 be HIV positive and come to the hospital freely and calm to take his medication. On the contrary  
385 at home, you cannot see someone who has TB to come in midst of people like this to take his  
386 medication, it is a bit disturbing.

387 Re: Now that you are here in South Africa, because IN DRC TB is not well view, what do you  
388 think is the situation here?

389 P6: Personally I don't care about that.

390 Re You mean TB patients suffer rejection and stigma in DRC and the situation of TB here in  
391 South Africa does not bother you?

392 P6: Yes at home if you have TB you suffer

393 Re: What do think happen to people with TB?

394 P6: I don't know that much in fact... what I do know is...

395 Re: Do they take their medication?

396 P6: I don't know what about here in South Africa, as I told you I arrived few months ago, but in  
397 DRC I saw people with TB start treatment then later stop when they felt better, and the  
398 experience a relapse and the TB came back this time more dangerous. Others follow their  
399 treatment normally and were cure at the end. There are some who also die because of TB due  
400 to a neglect from the patient side; the fact that they did not finish their treatment. That is all I  
401 know, but in South Africa I don't know anyone who is infected with TB.

402 Re: Anything else you want to add to our little chat?

403 P6: No thank you.

404

405 Participant #7: female, 22 years old.

406 Re: Thank for helping.

407 P7: It is my pleasure.

408 Re: Have ever had TB before?

409 P7: No never

410 Re: What do you know about TB?

411 P7: Well I know someone can contract it like... if you kiss someone also, I think the symptoms...  
412 can I talk about the symptoms also?

413 Re: Anything you know

414 P7: The symptoms are like coughing out blood, sweatiness, dehydration...and I know that when  
415 you get TB you have to go to the clinic and collect your medicine. It takes like ...how long  
416 (holding the chair and playing with her index finger) two weeks what! (Still playing with the  
417 finger) four days.

418 Re: for the treatment?

419 P7: I don't know that, but I think two weeks maximum I think it is 48 pills or something like that I  
420 don't know.

421 Re: to do what? 48 pills to do what.

422 P7: Excuse me?

423 Re: To what to happen?

424 P7: Oh! To get cure of TB I think.

425 Re: How do you do to prevent TB.

426 P7: Well, what I will do if I started coughing out blood, I will go to my nearest clinic because  
427 coughing out blood is the first sign that you have contacted TB and I will let them know, I will go  
428 to for check up and if it turns out that it is TB I will just start getting treatment right away. That is  
429 the best thing to do because I don't thing at home... what will you do at home

430 Re: How do people contact TB?

431 P7: Do you know the okapipe. Well if someone has TB and you smoke with him in that you can  
432 contact it like that. Also if you cough in open air and you don't protect your mouth, the germs the  
433 split if you kiss someone like French kiss with the tongue the saliva the split like that also.

434 Re: You said symptoms are like coughing out blood, sweat.

435 P7: You lose a lot of weigh.

436 Re: You are not very sure about how long it takes to be cure

437 P7: Yes.

438 Re: But you know that it is treatable.

439 P7: Yes it is.

440 Re: How do people with TB look like?

441 P7: Most of them are thin but if you are naturally fat you will not lose automatically so much  
442 weigh, I think sometime the pills they dry, skin maybe because you lose a lot of water,  
443 dehydration, but there are mostly like you also loose weigh.

444 Re: You mean TB patient are thin because you lose a lot of weigh, dry skin due to dehydration.

445 P7: Yes.

446 Re: What will frighten you the most of getting TB?

447 P7: Yes I am scare of having TB I don't think I will like to have it, I know it is curable but... like  
448 most people are ashamed that they have TB. They use like that when I touch you (touched the  
449 researcher) I can infect you, they don't really know actually about TB. So I will feel ashamed if I  
450 have it because of what people will think about me, because first they will think how do I get it;  
451 they will not ask you question but they will just assume their own thing.

452 Re: You mean your fright is other people mind?

453 P7: Yes.

454 Re: Do you think TB patients can mix with others?

455 P7: Yes. but of cause they should just know that when they cough they must cover their mouth  
456 with something, don't smoke like cigarette like if you make the cigarette wet so I don't know if  
457 you can contact it by drink in the same glass it depend...

458 Re: On?

459 P7: [laughing] someone saliva gets into the glass something like that maybe you can...

460 Re: What will you do to prevent the disease at home?

461 P7: (hesitation) I will open the window to let the fresh air coming because when they close all  
462 the air stay inside and you must have a clean house regularly especially the dust, you must  
463 always vacuum if you have a mat and dirty dishes and bacteria all that just have a clean house.

464 Re: You mean hygiene is very important?

465 P7: Very important I think that can make TB worse if you don't take care of yourself.

466 Re: What do you think happen to people who have TB?

467 Re: I think most people that have TB now, sometime they are ashamed to go to the clinic  
468 because if you go to the clinic in your home town most people know you there and at the clinic  
469 there is room specially for TB "TB room" like if someone sees you go in that room, they assume  
470 that you have TB although you can also go there just to have information. But I think it best to  
471 go and get the treatment because TB is curable it is not like AIDS or something like that so it is  
472 better to...especially if you get the symptoms to go immediately to the clinic I can't remember  
473 how long it takes to be cure. I had information about it I must just go to read through it again

474 Re: About six to eight months.

475 P7: Six months?

476 Re: Yes.

477 P7: Because I heard about the advert on the TV that you must go to the clinic because they  
478 want to see that you get your pills

479 Re: You mean what happen to them is that they must go to the clinic if they feel the symptoms  
480 and take their pills.

481 P7: Go immediately.

482 Re: What...

483 P7: If you have TB and don't eat well like fruits and vegetables, that also can make the TB  
484 worse; it is better to look after yourself when you have it, also when you don't you still have to  
485 look after yourself and eat the right food so it could be because I have not experience it myself.

486 Re: Do you have someone who had TB and what happen to the person?

487 P7: One person, I didn't actually speak to him I heard from another person. TB can be  
488 prevented. Especially when you smoke okapipe you don't know if that person has TB that is  
489 what our parent told us. You must not smoke with everyone or taking something from someone  
490 mouth like lollypop you won't know because they are scare to tell you. So TB can be prevented.  
491 I feel that if you get it and that person didn't tell you they have it and give it to you deliberately  
492 then it is not your fault so you don't have to be ashamed... and HIV also it can be you own fault  
493 sometime specially if you don't use protection it is your own fault but like if someone like rape  
494 you and you have it then it is not your own fault.

495 Re: Is there anything else?

496 P7: No

497

498 Participant #8 male: 31, years old

499 Re: Thank you for helping.

500 P8: No problem.

501 Re: Have you ever have TB?

502 P8: No.

503 Re: What do you know about TB?

504 P8: I always heard about TB but I really don't know anything about the disease it is you that will  
505 tell me about the disease and I will ask you some questions about it.

506 Re: Right now I would first to know your state of mind about TB after our chat you can ask me  
507 question and I will assist you. You mean you don't know anything about TB?

508 P8: About TB I heard about it but I don't know what TB is, where it comes from how does it  
509 spread and how does people get it. I really don't know anything.

510 Re: If you don't know how TB is spread you don't know how people with TB look like?

511 P8: No I don't know

512 Re: Are you scared of having TB?

513 P8: Yes. I must be because it seems that it kills because I remember I had an uncle who die of  
514 TB I don't know if it was because of neglect or there is no cure for TB

515 Re: You said your uncle die of TB how was he looked like when he had TB?

516 P8: I don't know I was very young when it happened and later I heard that he died of TB.

517 Re: So you mean you have no information concerning TB?

518 P8: None.

519 Re: What do you thing happen to people with TB?

520 Pa: I think they are people who drink a lot because I heard that my uncle was drinking a lot of  
521 alcohol.

522

523 Participant #9: female, 35 years old

524 Re: Thank you very much for accepting.

525 P9: Don't mention

526 Re: Have ever had TB

527 P9: No.

528 Re: What do you know about TB?

529 P9: I don't know anything about TB that is why I asked why you are interviewing me for  
530 something I don't know. I just know that is it an illness... that can be treated.

531 Re: What type of illness?

532 P9: A contagious illness... a contagious disease that can be treated that is all I know.

533 Re: You mean TB is a contagious disease that can be treated?

534 P9: Yes. Like... as I told you I don't know anything about TB. TB you can take from somebody  
535 who knows.

536 Re: How do you get into contact with TB?

537 P9: I don't know!

538 Re: You mean you don't know how TB spreads?

539 P9: Yes.

540 Re: How does people with TB look like?

541 P9: (laugh) they look like sick people... I don't know I just know they are sick and I cannot tell if  
542 somebody get TB if the person doesn't tell me, so I would not know except the TB is so serious  
543 that everyone knows or the person is just showing... maybe it showing that he is sick I don't  
544 know.

545 Re: You mean you cannot recognize physically that someone is suffering from TB?

546 P9: Yes. Because I heard that it can take six month to treat TB maybe if the person is on  
547 medication of TB I would not know the person will still look healthy.

548 Re: what will fright you the most if you have TB?

549 P9: I don't think I will have any fright because once I know TB can be treated if I have TB I will  
550 just go to the clinic or hospital where the TB can be treated and I will be free from it.

551 Re: You mean you will seek medical assistance if you have TB?

552 P9: Yes. because you know TB is like... is part of flu cough or whatever but people always say  
553 TB can kill (laugh) I don't really know how to explain it maybe when they said when it stay  
554 longer in your system it can kill ... so obviously when I notice I have TB I will just rush to the  
555 hospital.

556 Re: You mean you are not scared of having TB because you know it is treatable?

557 P9: Yes. Running to the hospital means I am scared, but running to the hospital will make me  
558 not to be scare I will only be scare if I have TB and stay at home.

559 Re: So what people will think? Does it bother you?

560 P9: What people will think? Why will it bother me? It is an illness it can attack everyone what I  
561 will be interested if for TB to get out of me and not what people will say because they can also  
562 contact it when somebody get any illness I don't see the need to be scared to go to hospital that  
563 they will be laughing or saying anything about him.

564 Re: What do you do to prevent TB

565 P9: I don't know how I can prevent myself because you even ask me that question I do... I know  
566 that someone contact TB I don't know but I... maybe someone is like coughing, maybe the air  
567 especially someone who are not on medication. So normally when someone is coughing  
568 because I don't know if it is TB or not I just like... if there is a means, I turn my face from that  
569 person... but I can't make the person knows that I am running away from him he might feel bad  
570 so I can just like turn away.

571 Re: You mean to protect your body you can just avoid people sputum to reach you?

572 P9: Maybe...like... let me say if I cough or have flu for sometime ... I can go and consult also to  
573 find out if it is TB or what.

574 Re: What happen to people with TB?

575 nP9: I think they just go to the hospital for treatment I don't know.

576 Re: Do you know someone who has TB?

577 P9: I don't know but I heard of a boy that died of TB and they said that before they realized that  
578 it was TB, the body system was already damaged. The boy was sick at Karlbremer and they  
579 wanted to transfer him to Tygerberg he died

580 Re: You mean TB can kill?

581 P9: Yes. Like I said before it can kill let me ask you also that boy was smoking a lot it is the  
582 cause? Because I don't know.

583 Re: You mean you don't know

584 P9: I don't know this is just the rumor from people saying because he was smoking a lot and  
585 drinking.

586 Re: Is there anything else?

587 P9: No. Has it be that I had that illness before I could have advice the people so that I can be  
588 sure of what I am telling them now that I have not studied TB and don't know anything I can be  
589 saying wrong things.

590 After the playback.

591 P9: Ask me that question again.

592 Re: What will frighten you the most to have TB?

593 P9: I know people can die because of TB. So that will be my fright and that is why I will rush to  
594 the hospital for treatment.

595 Re: You mention earlier that when you notice that you have TB how will you notice that you  
596 have TB?

597 P9: I mention earlier that if I have fever I am coughing I can go to the clinic for check up maybe  
598 they can diagnose that I have TB so I can't just stay at home.

599

600

601 Participant #10: female, 32 years old

602 Re: Thank you for your participation.

603 P10: you are welcome

604 Re: Have you ever have TB?

605 P10: No.

606 Re: What do you know about TB?

607 P10: I know that TB makes you very sick if you don't look after yourself. But I also know that  
608 sometime you can treat it and you can get better.

609 Re: You mean TB is treatable

610 P10: You just need to take your treatment because taking your treatment for that period of time,  
611 then after those six months you will feel better

612 Re: How do you get into contact with TB?

613 P10: TB it depends sometime you can get it if you are in the place with people with TB you can  
614 get it normally when they cough... sometime those people they don't care even though they  
615 know that they are sick they can just cough anyhow and you can get it.

616 Re: You mean where there are a lot of people with TB you can get infected

617 P10: I mean if you don't have it and when people are not careful because if people are careful  
618 then you are safe. But if they are not like maybe cover their mouth when coughing you might be  
619 in a high risk of getting it. TB is still growing because there is HIV as well and people need to be  
620 more educated about TB. I don't think they really know what they are facing, they kind of taking  
621 it for granted, they think it is something that you can just live with and it can heal itself but it  
622 doesn't, it eats you and kills you if you don't treat it.

623 Re: You mean TB problem is very serious?

624 P10: it is more and, more serious the more HIV grows the more TB grows in the country as well.

625 Re: You mean TB and HIV goes along?

626 P10: They don't, it just that HIV kills the immunes system so it open the way for other diseases  
627 to get you like pneumonia and TB some other things but all this can be treated. You can treat  
628 them; you can manage them as long as you can treat them and manage them. If you take care  
629 of yourself it helps and you will be fine.

630 Re: How do you do to prevent yourself from getting TB?

631 P10: I think because seriously, sometime you are in the taxi and you don't know people around  
632 you, and you don't know if they have TB or not. And some people don't like when you open the  
633 taxi window, they want everything to be closed. You know we survive only by the grace of God. I  
634 can't say something that I do for me not to have TB, is... I mean I do have friend who are HIV  
635 positive and maybe they look after themselves that is why I don't have it. Because many are not  
636 taking care of themselves.

637 Re; You mean in the taxi it is difficult to recognize someone with TB and most of the people  
638 don't like when the window are open and people only survive by the grace of God?

639 P10: Yes, they don't get it that you need a bit of fresh air. That the windows must be open when  
640 there are a lot of people in the taxi. The windows need to be open for other people to be safe.  
641 You can't tell him I have TB or not and you just come and sit next to me and the next thing, I am  
642 coughing without even covering my mouth; because people are like that. Some people they  
643 grow up like that, they don't really care about other people. But if people care more, maybe TB  
644 will not be this much. It will not be growing like this, because now it is growing fast.

645 Re: How do you do to prevent TB at home?

646 P10: Everywhere I think you most make sure that everything is clean and sterilize, make sure  
647 the space is clean; I mean you don't need to have bacteria working around because you don't  
648 know what you will get from there. You don't need to have like a pile of dirty dishes or dirty  
649 clothes, you can get hold of other diseases except like TB. But I am sure TB you can get it from  
650 dirty space as well especially dust.

651 Re: You mean hygiene is very important?

652 P10: It is very important.

653 Re: How do people with TB look like?

654 P10: Sometime you cannot recognize them (laugh) at all unless someone is seriously sick then  
655 you can tell that maybe that is TB or HIV. But I know that they symptoms are like you lose  
656 appetite, you sweat a lot, and you don't have energy, so you can pick it up there. That maybe  
657 this person has TB. And if there are treated they can still become healthy.

658 Re: You mean the symptoms are lost of appetite, sweat a lot?

659 P10: Yes all that. I mean you can pick it from there, I mean it is just that people are ignorant at  
660 school, we are been thought these things from grade 1 to... I mean when we were very young,  
661 they told us that these are signs of TB if you are like this, like that, go to the clinic and we grew  
662 up with that knowing that these are the symptoms of TB. But now a day, people if you know you  
663 don't have TB maybe you are HIV you don't want to go and do your test or something like that. I  
664 mean people get sick, very sick and people will think you are HIV positive, another people run  
665 away they don't want to go to the clinic and they end up dying. Sometime it is just like normal  
666 TB but people are running away because there are scare that they will be tested at clinic or  
667 forced to test. So they run away and stay at home thinking the disease will just vanish, but it  
668 doesn't so you just have to go to the clinic, get tested, take your treatment, finish your treatment  
669 and everything will be back to normal.

670 Re: You mean TB is treatable?

671 P10: It is, you can treat it and you will be fine afterwards

672 Re: What will frighten you the most of having TB?

673 P10: I am very scare of having TB because there a lot of people coming to South Africa. You  
674 don't know where you will get it, some people they are working outside the country. So they  
675 travel and comeback, some people they don't know they have caught it and maybe you are two  
676 weeks with them, you don't even know that. So the next thing you come... seriously I am  
677 working as a waitress obviously I meet a lot of people, we shake hands we laugh we do this and  
678 that. Sometime people will just cough around me and I don't really care sometime. That comes  
679 back later when you think of going to the hospital, maybe you are going for some prevention, or  
680 something then you think maybe I should check if I don't have it. But sometime our facilities like  
681 hospitals and clinics they are failing us as well, because sometime they refuse something that  
682 the government wants to be for free for patients they refuse to give us they don't want to give  
683 you a HIV test sometime when you request. They will give you a king of turning you back. That  
684 we can't do this now but in the polite way. They will give reason not to do it at that moment and

685 postpone it for next week. I mean you are there now and they don't want to do it. Though it  
686 actually very quick to test someone for TB and HIV.

687 Re: I didn't get what is frightening you.

688 P10: I am not really scared because I know there is help. The only thing that worries me is that if  
689 our government doesn't see that the hospitals and clinics, doctors and nurses, whoever is  
690 working for the government are failing us like in this facility (referring to the research site),  
691 maybe there will be a problem later. Because they don't really care. Seriously that is the only  
692 thing that worries me. Otherwise I am not scared because I know there is a cure. But it cost you  
693 too much to go to a private doctor for this kind of thing, because you pay them, they give you  
694 prescriptions and you still have to go and buy them, where you can get them for free at the  
695 clinic. The clinics are there but the people working there are holding thing backward.

696 Re: You mean your fright is the health facility and the type of services delivery?

697 P10: Yes they need to know that those things are there for the people. But it is not there for  
698 them to hold it. Because there are people who are not working, who cannot afford private  
699 doctors, some are disabled, so they need those treatments. So if our government can work  
700 around this aspect, maybe to let them know that these things are for our people. So that is  
701 where I am scared, otherwise I am not really scared of TB because I know it is treatable.

702 Re: What do you think happen to those who have TB?

703 P10: I think they do have a chance of living afterward. A chance of being healthy again as long  
704 as they look after themselves, eat healthy, stay healthy and keep checking themselves if they  
705 are still ok. Rather than stay at home and say that I have completed my treatment, I am alright  
706 now. Because there is no guarantee that once you have you will not have it again. So you need  
707 to check if you have it as long as you had it before, just twice a year to make sure you are ok.

708 Re: You mean people with TB although they have been cured; they must constantly check if  
709 they are still in good health?

710 P10: Yes just to be safe, just after treatment, you keep going and get tested just to be sure.

711 Re: You seemed very concern about this facility; do you think they don't give enough  
712 information to patients?

713 P10: I think they are tired. They get tired of people coming. They don't have that patience to  
714 give more information to patients. I think they are very tired. They get irritate easily and they  
715 take a short cut by giving you treatment and let you go. First of all if you do have TB, I am  
716 sure... look at the clinic for itself it is a small clinic. I am sure people who have TB need to  
717 volunteer themselves to put the mask on. But if you check in there in the TB room, they are not  
718 there, they will sit in the other side (referring to the waiting area) comfortably and we don't know  
719 that... if they are treated yet... and you are just there sitting next to them, shake hands with  
720 them and laugh, they will not even tell you that they have TB. I think if they can educated more  
721 people if it is TB about TB , if it is HIV about HIV and let them know that they need to take care  
722 of themselves and people around them.

723 Re: Is there anything else you want to tell me?

724 P10: Not really, I think I have said enough.

725

726 Appendix G: Generating categories

The following excerpts summarize participants' responses to question number one and the generation of categories. The question asked was: *What do you know about TB?*

Participants' responses	Categories
<p>Participant P1:</p> <p><i>Actually I don't know anything about it. Because I am new in that thing that you are asking me. What I can say is that it is only somebody who has once had a patient like that then he can tell you what the patient is passing through or what he has. He must have experience for the patient then he can explain to you. But to me I don't think I have something to say about that. To me I only know if somebody is sick of TB you have cough like if you go to the hospital they diagnose you and are positive with the case that is all I know... but I have never have a TB patient before in my live. So I don't really know much.</i></p> <p>Participant: P3:</p> <p><i>I know... I just know because my uncle. I also heard about it on the radio. It is not that bad, because it gets cure actually. It is the person you have to take your medication; you have to take your 120</i></p>	<p>From these responses, the following categories were identified:</p> <p>I don't know (Ignorance) because I am new in that thing (Ignorance) people who know are people who have experienced the disease (ignorance); I don't think I have something to say (ignorance); you go to the hospital and they diagnose (seek help); you have a cough (symptom); I never have a TB patient in my life (ignorance).</p> <p>I know because my uncle had it (information); it is not that bad (danger) because it can be cured (treatment); you have to take your medication, your 120 days medications (treatment); we heard about it on radio/ television (Information); you must just be careful (danger), TB goes around because of the spit (transmission).</p> <p>Major categories:</p> <p>I don't know (Ign); You go to the hospital (Sh). You have cough (Sym); I know because my uncle had it (inf); It is not that</p>

<p><i>days medication. So it is not that bad. Everybody, we hear about TB on radio, TV everywhere. So you must just be careful. They talk about medication like especially people TB when you spit around in the street... because like if you go and touch it on the floor, on your shoe that is how TB goes around, because of the spit.</i></p>	<p>bad (dan); It can be cured (trea); TB goes around because of the spit (tran).</p>
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## 727 Appendix H: Coding list

Clinic attendees and questions number	Answer	Codes
1(question2)	I don't know, because, only people who can testify are TB patient or someone who knows, I never had TB, you have cough, you go to the hospital	Ignorance, symptoms, seek help
2 (question 2)	TB is an airborne disease, one can get through cough, when you get in contact with the infected sputum, stay in close room, open the window, get infected trough sharing things if they don't know they are infected	Airborne symptoms , transmission prevention, contact with sputum, habitation
3 (question2)	I know because my uncle had it, it is not that bad because it get cure, take your medication, your 120 days medication we heard about on radio, TV, they talk about medication like people, like people get TB when you spit on the ground and you go and touch it, TB goes around because of the spit, my uncle got better because he has to drink his medication	Information source, less dangerous, treatment, contact with spit, transmission drink the medication
4 (question 2)	TB is like HIV, TB is very dangerous, you can infect someone with TB if you have it and stay in the same place, like you use the same glass, you sleep in the same bed, like you can go and take injection to protect your body, you can't go close to people who have TB	TB=HIV, danger, habitation transmission, avoid contact prvention, ustensile transmission, immunisation
5 (question 2)	TB is a bad disease for the	danger, symptoms, death-

	body, symptoms are cough, dry chest, be unable to breathe, it is the number killer when somebody is HIV positive coughing for more than 2weeks, TB messes the lungs	HIV, affects lungs ,
6 (question 2)	TB is contagious, was very dangerous, there is a cure compare to HIV TB is less dangerous than before, it is a disease that killed, I don't have enough information,	Transmission, Danger, treatment, less dangerous, death, ignorance,
7 (question 2)	Someone can contact it trough kiss, you cough out blood, sweat, dehydration, when you have TB you have to go to the clinic to collect your medication, it take 2 weeks to get cure, if I started coughing out blood I will go to my nearest clinic, I will start treatment right away if TB, that the best thing to do, if you smoke the okapi with someone who has TB, if you cough in open air and you don't protect your mouth, the spit, like French kiss, the saliva	Kiss transmission, symptoms, seek help collect medication, symptoms seek help, ignorance-length of treatment, smoke with someone, saliva transmission, poor hygiene transmission
8 (question 2)	I heard about it but I don't know anything	Ignorance
9 (question 2)	I don't know anything about it, why are asking me for something that I don't know, it is a contagious illness it can be treated, you can take for it from somebody who knows	ignorance, transmission , treatment ignorance,
10 (question 2)	TB make you very sick, you can treat TB, you just need to take your	Danger, treatment, take medication, habitation transmission, blame, HIV

	<p>medication for that period, sometime if you stay in a place with people with TB you can get, they don't care even though they know they have it, TB is still growing because of HIV, TB eats you and kills you if you don't treat it, HIV kills the immune system an open the way o other disease like TB, pneumonia, you can manage them as long as you take care of yourself, some people doesn't like when you open the taxi window, open the window people don't really care, you must make sure that everywhere is clean,, you can get TB from a dirty space</p>	<p>affect the immune system, death, take care of yourself, blame, open the window, good hygiene, dirty space, in the taxi</p>
1 (question3)	<p>I see them when I come to the hospital, they thin not good health looking, if not on medication they will be more thinner, but if they take the medication they are fine, they can socialise if they are on mediation, you can eat one spoon with a TB patient</p>	<p>Seek help, symptoms, treatment, take , don't take medication, take medication-cure, socialisation</p>
2 (question 3)	<p>You lose weight, cough all the time, look so thin you can just look at this person and say he is infected, if I stay with a person then I notice sweat during the night, cough with blood, chest pain feel cold, it depend the way it infect you</p>	<p>Symptoms,</p>
3 (question 3)	<p>When I was young you think it is like AIDS, you got the stigma that you</p>	<p>Stigma, less dangerous, immune system transmission, take</p>

	<p>don't want to know that person because he has TB, you can sit in a room with a TB patient, TB is not that bad, it depend on your immune system if you will contact the TB, as long as they on medication they can socialise, TB you can contact it also if you stay in a close room, remember to open the window</p>	<p>medication, socialisation habitation transmission prevention, open the window</p>
4( question 3)	<p>He is not different from someone who has HIV, he looks like some who has HIV that why it dangerous to have TB, like people who cough every time you can be close to them, it you go in the bus some is coughing every time you must open the window and you can't sleep together with some who cough every time</p>	<p>TB patient look like HIV patient effect, danger, symptoms, avoid contact prevention, bus transmission, open the window, avoid contact prevention</p>
5 (question 3)	<p>Weigh loss is the main thing I know, your cough sound terrible, be unable to breathe</p>	<p>symptoms</p>
6 (question 3)	<p>Weight loss, pale skin, discoloration of the hair, you must avoid to use the same utensil with TB patient, may be avoid to share the same toilet</p>	<p>Symptoms, prevention avoid sharing utensil</p>
7 (question 3)	<p>Thin, dry skin, dehydration, coughing out blood. Weight lost,</p>	<p>symptoms</p>
8 (question 3)	<p>I don't know</p>	<p>Ignorance</p>
9 (question 3)	<p>The look like sic people ,I just know they are sick, I can't tell if someone has TB if the person doesn't tell me, I heard that it take 6 months to be cured so if the person is on</p>	<p>Symptoms, length of treatment, Ignorance</p>

	medication I will not know	
10 (question 3)	Sometime you can't recognise them at all unless the person is seriously sick, you lose appetite, sweat a lot you don't have energy, if they are treated they can still be fine just that people are ignorant, we were taught at school that if you are like that you go to the clinic. People get sick and people will think you are HIV positive, another people don't want to go to the clinic and they end up dying so you just have to go to the clinic, take your medication finish and everything will back to normal	Ignorance- symptoms, information source, seek help, HIV effect, death, seek help, take medication, complete medication
1 (question4)	I really do pray that it should not come, but if it comes I will do everything to go to the hospital, when you have TB you have to prevent it from other, at the hospital they said you must keep the window open, when the window are closed ,when you cough, somebody may contact it	Fear of infection, seek help, prevention, information source, open the window, habitation transmission,
2 (question4)	I know it is treatable but what scare me is that it may come back again , you can also get cure after taking correct medication at the correct with a well balance diet, if I don't treat it early, if I don't know those symptoms it may kill, also discrimination from the public	Treatment, fear of reinfection, take correct medication Good Nutrition, fear of Ignorance of symptoms, death, fear of public discrimination,
3 (question 4)	If I have TB I just have to	Positive mind, take

	stay positive motivate myself and drink the medication, everybody got it it goes around	medication, transmission
4 (question 4)	I am scare because TB is like HIV, it is the same level, all I can say is that TB has medicine and HIV doesn't have, you must be careful to get close to people like that he can cough like TB	TB=HIV, treatment, avoid contact, symptom
5 (question 4)	TB I on ly realise how deadly it is in relation to HIV, I I don't know I have it how many people will I infect, I am scare of the raction of people who are ignorant and stigmatise the symptoms that I have I don't know if I have it or not, people reaction is what bothers me because their uneducated about it, I may be put out of my flat, it my first time at clinic and I coming to test for TB, the result will have a big outcome	Death- HIV, anxiety, fear of people who stigmatise, who are ignorant ignorance, fear of discrimination, anxiety
6 (question 4)	I am scare because a disease is never a good thing, in DRC TB is a shameful disease like HIV, like someone who is not eating well, you can't see someone with TB comes in the midst of people like this to take their medication, it is disturbing	Fear of Infection, shameful disease, poor nutrition, stigma,
7(question 4)	I don't think i would like to have it, i know it is curable, like most people are ashamed they use like when I touch you I can infect you, so I will feel ashamed, they can mix	Fear of TB Infection, treatment, feeling ashamed, socialisation, good hygiene

	with people as long as they are on medication, protect their mouth when they cough, open the window, clean house	
8(question 4)	Yes I am scared because it seems that it kills	danger
9 (question 4)	I don't think I will have any fright, I know it can be treated, so if I have it I will just go to the clinic, I will only be scare if I have TB and stay at home people reaction does not bother me I will only be interested in getting help, it can affect every one	Positive mind, seek help, fear of ignorance, ignorance, seek help transmission
10(question 4)	I am scare because there are a lot of people coming to south Africa, you don't know where you will get it, as a waitress I meet a lot of people , we shake hands, laugh, and they will just cough around me and don't really care, our facility sometime are ailing us, they don't have that patient to give information to the patient,	Immigration transmission , facility service failure, place of transmission, hand shake, laugh transmission, blame of TB patient, facility service failure
1( question 5)	I can only say they should keep on taking their medication because it is something that kills	Take medication, death
2 (question 5)	For some it takes long for the disease to start manifesting, it depend how healthy one is, if they sick medical help they will be fine after taking the correct medication, it they don't stop because if you stop it become difficult to treat, so you know you have the symptoms or you suspect too much you go for	Time of transmission, immune system strength, seek help, take correct medication, don' stop medication symptoms, HIV affects the immune system, take medication correctly, good nutrition,

	<p>treatment take it correctly, and eat well, if you are HIV positive I think your body is weak to any disease, especially when your immune system is low</p>	
3 (question 5)	<p>It depends if they don't take their medication they get sick quickly, bad sick, and people say somebody die my uncle had it and get better, TB can go far as AIDS because it is the same, it goes into your immune system, normally if you got AIDS you can get TB and that affects your immune system and you go weaker, when you live in a close box the people inside will come back the TB, so open the window to get some fresh air</p>	<p>Don't take medication, danger, death, cure, HIV affects the immune system, habitation transmission, open the window</p>
4 (question 5)	<p>my aunty has TB she took the tablets for eight months, after 2 months the tablets change, you must respect, you must take the tablets every time everyday, if you try to forget to take the tablets you can die, my aunty became strong, you can't even know that she was sick</p>	<p>Information source, length of Treatment, take medication correctly danger, death, cure</p>
5 (question 5)	<p>They are emotionally affected as a person, they obviously see the world differently, if they are not well informed about it is treatable, but people who don't know will stigmatise discriminate and that place a huge tool on the person, it sad shocking to hear</p>	<p>Emotionally affected, stigma, discrimination, TB can be cure</p>

	that one has TB, but it can be cure	
6 (question 5)	I know in DRC people with TB start treatment, then stop when they feel better, after a while the seek came back mere dangerous another follow their treatment and was cure, some also die because they did not complete their treatment	Stop treatment- danger, complete treatment- cure death-stop treatment
7 (question 5)	I think most people who have TB are ashamed, because if you go the clinic in your home town people know you there, and at the clinic there is a room for TB, like if someone sees you go in that room they will just assume their own thing, I think it best to go and get the treatment because it is curable, I can't remember how long it takes to be cure, because I heard on advert on TB that you must go to the clinic because they want to see that you got your pills, if you have TB and you don't eat well like fruit and vegetable that also can make TB worse, it is better to look after yourself when you have eat, even not you still have to look after yourself so eat the right food, TB can be prevented, especially when you smoke the okapi, with someone, our parent told us you must not smoke with everyone, you know because they	Ashamed, seek help, TB room, seek help, take medication at clinic , cure, prevention, information source, ignorance-length of treatment, poor nutrition, look after yourself, good nutrition, prevention, source of information, don't share cigarette, blame of TB patient

	are scared to tell you they have TB and give it to you deliberately	
8 (question 5)	I think they are people who drink a lot	Alcohol transmission
9 (question 5)	I think they just go for treatment, I heard of a boy who die of TB and they said before they realise that it was TB the body system was already damaged, the boy was smoking a lot	Seek help, death, danger, smoke transmission
10 (question 5)	I think they do have a chance of living a chance of being health again as long as they look after themselves, eat healthy, stay healthy and keep on checking themselves it they still ok, rather than stay at home because there is no guarantee that once you have it will not come back again, so you just need to check at least twice a year, I think people working at the clinic are tired, they need to educate more people if TB about TB if HIV about HIV, if you have TB you need to volunteer yourself to put a mask	Look after yourself, good nutrition, regular check up facility service, blame of TB patient
1 (question 6)		
2 (question 6)		
3 (question 6)		
4 (	I think they should look for strong medicine to protect people against TB, that TB must never come back in the world	prevention
5 (question 6)	The main point in this chat was stigmatization, discrimination, I think more people need to educate	Stigma and discrimination, Prevention, TB can be cured, symptoms, seek help, positive mind, no

	<p>about TB, it can be cure, to those who are sick it very important to test for TB because it can be cure if detected early, I found it difficult to breathe but I couldn't wait to cough out blood before I could check, may be I am TB because I found it difficult to breathe, the main thing is be positive, no stigma and discrimination it all about been educated, very important, hygiene is very important , no smoking, always open the windows, don't spit on the ground</p>	<p>stigma and discrimination, prevention, good hygiene, no smoking, open the window</p>
6 (question 6)		
7 (question 6)		
8 (question 6)		
9 (question 6)	<p>Has it be that I have that before I would advise people</p>	<p>Ignorance</p>
10 (question 6)		