Experiences of Nurses Caring for Tuberculosis Patients at Tshilidzini Hospital in Limpopo Province, South Africa

by

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DECLARATION

I, **Hulisani Matakanye (student no: 11550359),** declare that **Experiences of Nurses Caring for Tuberculosis Patients at Tshilidzini Hospital in Limpopo Province, South Africa** is my original work and has not been previously submitted for a degree at this or any other institution. I further declare that all sources cited or quoted are indicated and acknowledged by means of a comprehensive list of references.

Signature _____ date 2016-03-03

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DEDICATION

This study is dedicated to the following people:

- To my mom Mrs. Maria Muthelo, who has always been there for me during the course of my studies to give me all the support I needed.
- To Mrs. C.F Matakanye and Mr. T.M Nemudzivhadi for their love and support that always give me courage to face the future with no fear.
- To all Nurses and healthcare workers who are caring for Tuberculosis patients in resources limited areas.
- To all my family members who were there for me when I felt like I could just give up, but they made me to understand that determination, initiative and persistence are the foundation of success.

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For the achievement of this great work, I feel a deep sense of gratitude to:

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- All Nurses who are working in the TB wards of Tshilidzini Hospital for taking their time and participate in this study without expecting anything in return, may the Lord bless them.

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LIST OF ACRONYMS

Abbreviation	Meaning
AIDS	Acquired Immune Deficiency Syndrome
BCG	Bacillus Calmette-Guerin
CDC	Center for Disease Control
DOT	Direct Observation of Treatment
HIV	Human Immunodeficiency Virus
LTBI	Latent Tuberculosis Infection
MDR-TB	Multi-drug Resistant Tuberculosis
SARS	Sever Acute Respiratory Syndrome
TB	Tuberculosis
UHDC	University higher Degrees Committee
WHO	World Health Organisation
CEO	Chief Executive Officer

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Table 4.1 Themes and Sub-themes for the experiences of nurses caring for TB patients

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ABSTRACT

Background: Tuberculosis (TB) is a disease which is caused by a relatively large, non-motile, rod-shaped pathogen called *Mycobacterium tuberculosis*. TB is a major cause of illness and death worldwide, especially in Asia and Africa. Despite the fact that TB is a curable illness, the tragedy is that TB remains the biggest killer in the world as a single pathogen.

Purpose: The purpose of this study was to determine the experiences of nurses caring for TB patients at Tshilidzini Hospital in Limpopo Province, South Africa.

Methodology: Qualitative, exploratory and descriptive contextual designs were used. Purposive sampling method was used to select the participants. The personal experiences of six nurses caring for TB patients at Tshilidzini Hospital were explored, and it was guided by data saturation. Data were collected through in-depth individual interviews, field notes were taken and data audio-recorded. Data were analysed using Colaizzi's method of data analysis. Trustworthiness was ensured and ethical considerations were observed in this study.

Findings: The research findings revealed six major themes from the raw data: challenges of the working environment, problems impacting on the quality of nursing care, fear, anxiety, stress and risk of contracting infection, nurses perceptions towards patients, support structure available in the Hospital and support needs for the nurses.

Conclusion: According to the findings of this study it is concluded that nurses caring for TB patients at Tshilidzini Hospital have bad experience. They expressed feeling stressed, frustrated and helpless, they were at risk of contracting TB infection due to inadequate physical environment which impact the quality of health provided to the patients.

Recommendations: The findings of this study revealed that nurses caring for TB patients have bad experiences in the wards. Therefore there is an urgent need to address this problem by the Department of Health, Hospital Executive Managers and Nursing Service Manager. Further more studies are also recommended to look at the reason why rural Hospitals do not have TB infection control and prevention measures in place.

Keywords: Caring, Experiences, Nurses, Patients, Tuberculosis.

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Tuberculosis (TB) is a disease which is caused by a relatively large, non-motile, rod-shaped pathogen called *Mycobacterium tuberculosis* (Smeltzer, Bare, Hinkle & Cheever, 2008). TB is a major cause of illness and death worldwide, especially in Asia and Africa. Despite the fact that TB is a curable illness, the tragedy is that TB poses a grave danger to healthcare workers including nurses because of their exposure to TB patients in health facilities. According to Todar (2011), TB remains the biggest killer in the world as a single pathogen.

It is estimated that one third of the world's population is infected with TB which is responsible for 2-3 million deaths annually (World Health Organization (WHO), 2002). A study conducted by Chung, Wong, Suen and Chung (2005) on the experiences of nurses while caring for Severe Acute Respiratory Syndrome (SARS) patients revealed a diversity of emotions expressed by nurses regarding their vulnerability to contracting the disease. In a similar study, Smit (2005) reported that nurses caring for patients living with TB related illnesses, including HIV/AIDS expressed helplessness, powerless, physical weariness and mental fatigue as well as stress as part of their experiences.

Though healthcare workers such as nurses play a major role in caring for patients infected with different infectious diseases, those of them in high TB burden settings are at higher risk of developing latent tuberculosis infection (LTBI) when compared to the general population due to their exposure to the large number of smear-positive TB cases managed at hospitals or healthcare facilities (De vries, Sebek & Lambregts-van Weezenbeek, 2006). According to Dheda (2006), at least 30 nurses die every day of tuberculosis as a result of poor infection control measures at health centres. Working in a high-risk TB setting can lead to harrowing experiences for healthcare workers, especially where health facilities are poorly equipped and managed.

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In the Limpopo Province of South Africa, TB is ranked the 5th among the major causes of death (Tshishonga, 2006). In 2009, the Limpopo Provincial TB Annual Report (2010) states that the number of TB cases in Vhembe district was 2194, and of these, 750 cases were women of child-bearing age (aged 15-44 years). In 2012, Vhembe district was also reported to have the highest number of TB patients in the Limpopo Province (Sukumani, Lebese, Khoza & Risenga, 2012). In their study, Tshitangano, Maputle and Netshikweta (2013) point out that TB infection control plans are not available at hospitals in Vhembe district and this contribute to the high number of TB patients. Infection control requires both human and material resources. In line with this assertion, Gursimrat (2011) argues that one of the major challenges to control TB infection include poor primary healthcare infrastructure. In addition, shortage of space and beds in the wards hinder separation of MDR-TB and TB patients in healthcare facilities and this increases a risk of contracting infection in the wards (Zelnick, Gibbs, Loveday, Padayatchi & O'Donnell, 2013).

According to Eshun-Wilson, Zeier, Barnes and Taljaard (2008), in order to determine how best to establish good infection policies in resources limited healthcare settings, it is important to first determine the impact of TB infection on healthcare workers. In an effort to address issues of TB morbidity and mortality among healthcare workers, the South African National Department of Health developed national infection prevention and control guidelines for TB infection. The main purpose is to reduce the risk of TB transmission in healthcare facilities and protecting healthcare practitioners through voluntary counseling and testing where the risk of transmission may be high TB (South Africa, 2007).

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1.2 Problem Statement

According to Tshitangano (2013), Limpopo Province has over 60% shortage of nurses in its health facilities including Tshilidzini Hospital. In the TB wards of Tshilidzini Hospital, besides managerial duties performed by nurses, they are also involved in providing direct nursing care to the patients. Tshilidzini Hospital is a regional hospital with two TB wards (male and female) consisting of twenty (20) beds. The Hospital has a poor aging infrastructure which is

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in dire need of refurbishment. In the TB ward, there is congestion and patients have no privacy. Whilst the ward has poor ventilation and sanitation conditions, there are also poor hygiene practices in the wards including regular shortage of water. Above all, there is inadequate supply of personal protective materials such as N95 mask. According to the Center for Disease Control and Prevention (2005), improper use of protective masks by healthcare workers in TB wards increases the risk of contracting infection. This deplorable condition has been highlighted in an earlier study by Tshitangano, Maputle and Netshikweta (2013) who state that the high risk of TB infection transmission is due to the fact that TB infection control plans are not available at the Hospitals in Vhembe district. It was, therefore, evident that conditions at Tshilidzini Hospital are not conducive for nurses working in the TB wards, hence the researcher wanted to explore the experiences of the nurses working in the TB wards.

1.3 Rationale for the Study

Health-care-associated TB has become a major occupational hazard for healthcare workers (Bhebhe, Van Rooyene & Steinberg, 2014). TB prevalence is high in the Limpopo Province, especially in the Vhembe district. It was therefore important to conduct this study at Tshilidzini Hospital to determine various experiences and challenges of nurses caring for TB patients.

1.4 The Significance of the Study

The results of this study would help healthcare managers to implement policy on management of TB infection prevention in health facilities. The results would also provide an insight to the real problems facing the nurses in TB wards and find ways to improve the quality of healthcare services rendered to TB patients. It would also help nursing staff to be provided with resources to minimise cross-infection in the healthcare facilities. The findings would also provide a basis for future studies on the same subject.

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1.5 Objectives of the Study

1.5.1 Aim of the study

The purpose of this study was to determine the experiences of nurses caring for TB patients at Tshilidzini Hospital.

1.5.1 Specific Objectives

Specific objectives of this study were to:

- Explore the experiences of nurses caring for TB patients in Tshilidzini Hospital.
- Describe the risks that nurses are exposed to when caring for TB patients.
- Find out the support needs of nurses caring for TB patients at Tshilidzini Hospital.

1.5.3 Research Questions

Research questions were as follows:

- What are the experiences of nurses caring for TB patients in Tshilidzini Hospital?
- What are the risks that nurses are exposed to when caring for TB patient?
- What are the support needs of nurses caring for TB patients at Tshilidzini Hospital?

1.6 Operational Definitions of Concepts and Key Terms

The following terms were defined as essential concepts of the study:

Caring, Experiences, Nurses, Patients, Tuberculosis.

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Caring: Caring refers to assisting, supporting or facilitating acts toward, or for, another individual or group with evident or anticipated needs (Worldreference.com English Dictionary, 2006). For the purpose of this study, emphasis of care was on the nurse-patient relationship during provision of nursing care to TB patients.

Experiences: The term "experience" means knowledge or skill gained over time, accumulated knowledge, especially of practical matters (Wordreference.com English Dictionary, 2006). In this study, experience referred to the practical knowledge and skill derived from nursing TB patients.

Nurses: The term "nurse" according to South African Nursing Council (2005) refers to a person registered in a category under section 31(1) in order to practice nursing or midwifery. In this study, a nurse is a person caring for TB patients at Tshilidzini Hospital in TB wards.

Patients: Patient refers to a person who is under medical care or treatment especially in the Public or Private healthcare facilities (South Africa Nursing Council, 2005). For the purpose of this study, a patient is a person who has been diagnosed with TB infection and is admitted at any TB ward of Tshilidzini Hospital for treatment and management.

Tuberculosis (TB): Tuberculosis is an infectious bacterial disease that may affect almost any tissue of the body, especially the lungs, caused by the organism *Mycobacterium tuberculosis*, and characterized by tubercles (Smeltzer, Bare, Hinkle & Cheever, 2008). For the purpose of this study, TB referred to an infectious disease which has infected patients who are admitted at TB wards of Tshilidzini Hospital.

1.7 Delimitation of the Study

The study only focused on the nurses caring for TB patients at Tshilidzini Hospital, Vhembe District in Limpopo Province. The study did not include nurses from other Hospitals in Vhembe District.

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1.8 Structure of the Study

This study is made up of five chapters, outlined as follows with specific subject matter:

Chapter 1: Introduction and Background of the Study

This chapter consists of the introduction and background, problem statement, rational of the study, significance of the study, aim, objectives and research questions, operational definition of concepts and key terms, and delimitation of the study.

Chapter 2: Literature Review

This chapter presents literature related to the topic and its analysis.

Chapter 3: Research Design and Methodology

This chapter focuses on the general picture of how the study was being carried out. This involves the discussions on study design, study setting, population of the study, study sampling, research instruments, data collection and data analysis.

Chapter 4: Discussion of Research Results and Literature control

This chapter presents the data or facts obtained from the respondents. The data analysis was done using Colaizzi's (1978) methods which comprises of the seven steps.

Chapter 5: Conclusions and Recommendations

This chapter concentrates on the discussion and interpretation of the results. The researcher interpreted the results based on the facts obtained in the previous chapter. Furthermore, the researcher made recommendations based on the results.

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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This section contains the literature review on the experiences of nurses caring for TB patients. It will detail known information regarding the encounters of nurses in TB wards across the world. A literature review is a written summary of the state of evidence on a research problem. According to Polit and Beck (2008), the purpose of the review is to familiarise the researcher with the scope of the field of study. For the purpose of this study, several sources have been consulted, including medical and research textbooks, Department of Health publications, WHO publications and annual reports, the latest relevant journals as well as the internet.

2.2 Risk Factors of TB Transmission in Healthcare Facility

TB is a contagious disease, it is usually spread from person-to-person through the air by droplet nuclei (Kumar, Abbas, Fausto & Mitchell, 2007). Transmission generally occurs indoors, in dark and poorly ventilated spaces where droplet nuclei stay airborne for a long time. Direct sunlight quickly kills tubercle bacilli, but they can survive in the dark for several hours. According to Ahmed and Hasnain (2011), friend, family, health care workers and other people who get in close contact with TB patients are at high risk of contracting the infection with an estimated 22% infection rate. If an infected person with active TB is left untreated he/she may infect 10-15 (or more) other people per year. However, people infected with TB will not necessarily get sick with the disease (WHO, 2002).

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According to WHO (2005), overcrowding, living in poorly ventilated conditions and being in a close contact with an infected individual are other factors that increase the risk of acquiring TB infection. A study conducted by Aggarwal (2009) points out that, overcrowding of patients in the wards is due to the fact that facilities to isolate infectious patients admitted to hospitals in India are scarce, therefore both outpatients and inpatients settings are overcrowded with an unintentional clustering of patients and those susceptible to the disease. A study that was done by Long, Kneafsey, Rynam and Berry (2002) revealed that health care workers are responsible for many roles in the clinical management of a wide variety of disease processes and they are at a high risk of contracting TB infection. According to Joshi, Reingold, Menzies and Pai (2006), health care workers serve on the front lines of the battle against TB infection, and they are at a great risk of contracting the infection since they get in contact with TB patients every day.

TB is a significant occupational health hazard for healthcare workers and the transmission of TB in healthcare facilities can be reduced with the implementation of effective TB infection control measures (WHO, 2006). Transmission of TB infection in health care settings to both patients and healthcare workers has been reported from almost every country of the world, irrespective of local TB incidence. Healthcare workers in high TB burden settings are at risk of developing latent tuberculosis infection when compared to the general population because of their day-to-day exposure to large numbers of smear-positive TB patients that are admitted in the health care facilities (Devasahayam, Christopher, James, Daley, Armstrong, Barney, Isaac, Thangakunam, Premkuman, Zwerling & Pai, 2011). A study that was done by Pai, Kalantri, Aggarwal, Menzies and Blumberg (2006) states that poor infection control measures and deficiencies in knowledge and awareness are two important factors responsible for nosocomial transmission in healthcare facilities.

2.3 TB Infection Prevention and Control in Healthcare Setting

According to South Africa (2007), the following national TB control and prevention guidelines are effective in reducing the risk of contracting TB infection in healthcare facility.

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There are three levels of TB infection control: workplace and administrative (managerial) control measures, environmental control measures and personal control measures (respiratory protection). Each of these levels operates at a different point in the transmission process.

2.3.1 Workplace and Administrative Control Measures

These control measures have the greatest impact in preventing TB transmission. They operate as first line of defense in terms of preventing the spread of TB in healthcare environment. According to WHO (2008), these control measures are made up of five components such as: an infection control plan, administrative support, training of staff, education of patients, and co-ordination and communication with the TB control programme.

A draft national infection prevention and control guidelines state that it is important to know that if work practices or administrative controls are inadequate, environmental controls will not eliminate the risk of contracting the disease (South Africa, 2007). Each healthcare facility should have a written TB infection prevention and control plan as well as an authorized officer who is responsible for overseeing the implementation of infection-control measures. Such plan should include the following: screening of patients to identify persons with TB symptoms, placing TB suspects and patients in separate waiting areas for further diagnostic investigations, staff should also be investigated for free if they show any TB symptoms. According to WHO (2008), each healthcare facility should establish a multidisciplinary infection prevention and control committee to monitor and evaluate the infection prevention and control plan. Training should be conducted in each facility before any staff member can be assigned to their posts. This will enable them to understand the importance of infection prevention and control policies.

Each healthcare practitioner should be reminded of the fact that he/she is at a high risk of contracting TB infection, regardless of previous infection status or BCG vaccination. So it is important for healthcare workers to know basic concepts of TB such as transmission,

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pathogenesis, sign and symptoms of TB, risk of transmitting TB infection from patients to healthcare workers and also the means they can use to protect themselves and patients. Infected patients should be instructed on how they can protect others from contracting TB infection by simple cough hygiene measures, personal hygiene, good nutrition and medication compliance. Patients infected with HIV/AIDS should be instructed on how they can protect themselves from contracting TB infection since they are at high risk of contracting TB infection (South Africa, 2007).

2.3.2 Environmental Control Measures

Environmental control measures include the following; ventilation (natural and mechanical), filtration and ultraviolet germicidal irradiation. If natural ventilation is properly controlled it reduces the risk of spreading TB infection. Well-designed waiting areas and examination rooms in healthcare facilities to maximize natural ventilation is important in reducing the spread of TB. Natural ventilation often relies on open doors and windows to bring fresh air from the outside. When fresh air from the outside comes into the wards, it dilutes the concentration of particles in room air, such as droplet nuclei containing mycobacterium tuberculosis. Controlled ventilation includes regular checks to ensure that doors and windows are maintained in an open position that enhance ventilation. Fans can also be used if there is a free flowing air from the outside to the wards (South Africa, 2007).

Negative pressure ventilation is another method which is used to prevent contaminated air from the outside to flow into the wards. This can be achieved by maintaining an air pressure difference between the two areas. This method also prevents contaminated air from the wards to enter adjacent areas. According to South Africa (2007), the necessary equipment required to achieve this demands continuous maintenance and the air exchange rate may be lower than that achieved by well-designed natural ventilation.

When sputum smear specimens are taken from TB patients for diagnosis purpose, this should be done outside, in an open air and also away from other people to avoid contamination. Mycobacterium tuberculosis is killed if the organisms are exposed to

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sufficient ultraviolent germicidal irradiation. However, the effectiveness of ultraviolet light source can be limited by high humidity which is over 60% and also high dust level. To maintain the effectiveness of ultraviolet light sources, it should be directed to the ceiling of the wards where adequate air flow is maintained. The side effect of using ultraviolent germicidal irradiation units over a long period of time is that patients may develop acute, chronic skin and eye changes. Therefore, this method is not generally recommended as a method to disinfect room air in patient wards (WHO, 2008).

2.3.3 Personal Protective Measures (Respiratory Protection)

According to South Africa (2007), a face mask or surgical mask serves as a physical barrier between the mouth, nose and the environment. The use of face mask is not generally recommended for healthcare staff because they do not protect themselves from TB transmission by aerosol. Healthcare workers are advised to use N95 (or greater) respirator masks, since they filter particles, such as droplets of respiratory secretions emitted by a person infected with TB (De Villiers & Ndou, 2008). N95 masks are restricted to high risk areas in hospitals and referral centers such as rooms where spirometry or bronchoscopy is performed or specialized treatment centers for patients with MDR-TB. N95 respirators can protect healthcare workers from inhaling *mycobacterium tuberculosis* only if standard work practice and environmental controls are in place (South Africa, 2007).

N95 respirator masks are expensive, require specialized equipment to ensure proper fit and are always unavailable in settings with limited resources. Findings from the study that was conducted by Smit (2005) indicate that there are concerns about the low quality and sometimes infrequent availability of gloves, aprons, masks and incontinence aids. This increases the risk of accidental exposure to HIV. According to a study by Yanai, Limpakamjanarat, Uthaivorat, Mastro, Mori and Tappero (2003) at a Hospital in Thailand, healthcare practitioners appeared not to understand fully the prevention benefits of wearing N95 respiratory masks. The reasons provided for not wearing masks included discomfort, interference with the wearing of a nurse's cap and interference with cosmetics.

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2.4 Problems Impacting on the Quality of Nursing Care for TB Patients

According to Arjun (2011), problems that are affecting the nursing care provided to patients with MDR-TB are that patients continue to consume alcohol and smoke. Some patients skip their medication or even abscond from hospital and this affects the patient care outcomes. A study conducted by Peltzer, Onya, Seoka, Tladi and Malima (2002) established that the quality of health care provider and patient communication, coupled with correct causative belief were associated with TB treatment compliance. During the course of their treatment some patients experience side effects such as skin rashes, visual and auditory disturbances, jaundice, burning sensations in the limbs and painful limbs. Due to the fear of those side effects some patients may comply poorly with their treatment. Therefore, it is advisable that healthcare providers should keep close contact with the patients under treatment and communicate with them and also educate them about the possible side effects (WHO, 2008).

A study conducted by Namibia (2007) listed barriers contributing to poor TB treatment compliance, such as communication difficulties, low literacy level, inadequate knowledge and low awareness of TB disease, patient attitudes and belief in treatment efficacy, depression and other psychiatric illnesses, alcohol and substance abuse, unstable living condition, negative health provider attitudes, stigma and discrimination, and overcrowding and access to medicine.

Eastwood and Hill (2004), demonstrated that many patients often consult traditional healers initially before going to healthcare facility due to perceived stigma from health care workers and the community. This often leads to delay in diagnosis which may worsen the situation or condition. This may also lead to delay in seeking treatment or taking appropriate TB treatment. According to Furber, Hodgson, Desclaux and Mukasa (2004), stigma and discrimination of TB and HIV patients result in patients delaying seeking diagnosis and treatment due to the fear of the stigma associated with those diseases. Globally TB and HIV are associated with immoral behavior and patients suffering from these conditions would

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not like to disclose their status to their family members, friends, co-workers and even healthcare workers. These conditions will cause patients not to comply with their treatments since they do not want to be seen taking medicines (Kaona, Tuba, Siziya & Sikaona, 2004). According to WHO (2004), delay in TB diagnosis is common in many regions of the worldwide. This may be due to patient-related factors such as: stigma, lack of information, dissatisfaction with TB service, inaccessibility of treatment; or provider related factors such as: diagnostic delays, knowledge and skill of health workers and inadequate health infrastructure.

According to Delamate (2006), the risk of complications of TB can be reduced by proper adherence to treatment, patient non-adherence to treatment recommendations is often frustrating for TB healthcare professionals. In their study, Delamate, Jacobson, Anderson, Cox, Fisher, Lustman, Rubin and Wysocki (2001) state that to improve patients' adherence it is important to understand how non-adherence occurred. It is helpful to consider demographic, psychological and social factors, as well as health care provider, medical system, and disease treatment related factors. TB infection can be cured if patients take the correct treatment for a sufficient and recommended period of time. According to WHO (2004) the treatment takes a minimum of six months and thus patients may experience pill fatigue, or stop treatment once they feel better, even though the treatment has not been completed. It is important for patients who are taking treatment to be supervised and encouraged to continue taking their treatments either by a healthcare worker, family member or any other community member. Compliance to TB treatment has been shown to reduce mortality, recurrence, and relapse and treatment failure (WHO, 2005).

In their study, Serobatse, Duplessis and Koen (2014) show the great importance of the relationship between health care workers and the patients as it promotes treatment compliance among psychiatric patients. South Africa (2007) states that direct observation of treatment (DOT) may help in improving treatment completion rates. Implementing DOTs on a wide scale in many health care facilities remains a major challenge. A study that was done by Wares, Singh, Acharya and Dangi (2003) in Tarai, Nepal concludes that patients' non-adherence to treatment is related to treatment delivery failures. Healthcare workers need

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training and supervision, better health education for patients and families, more flexibility for treatment supervisors, adequate supplies for treatment centres and decentralisation of treatment delivery to the lowest health service level practicable.

2.5 Fear, Anxiety and Stress Experienced by Nurses Caring for Patients

A study that was conducted by Chung, Wong, Suen and Chung (2005) on the experiences of nurses while caring for Severe Acute Respiratory Syndrome (SARS) patients revealed a variety of emotions experienced by nurses where they considered themselves vulnerable and at higher risk of contracting the disease. They identified a sense of powerlessness as a core element of what they experienced while caring for these patients and they feared the unknown. Literature indicates feelings of frustration when nurses did not follow the infection-control guidelines properly and fell victim to the disease. As a result of this, the nurses were unable to help their patients in a competent manner. In many countries, nurses were the largest single group affected by SARS (Booth, Boone, Tomlison & Detsky, 2003). The findings indicated that their feelings and attitudes changed as compassion was developed towards the patients (Chung, Wong, Suen & Chung, 2005). According to Stone, Clarke, Cimiotti and Correa-de-Araujo (2004), all healthcare workers face a wide range of hazards at their workplace, including blood and body fluid exposure as well as musculoskeletal injuries related to ergonomic hazards from lifting and repetitive tasks; nursing personnel often experience these hazards most frequently. In 2001, U.S. hospitals reported 293,600 nonfatal occupational injuries and illnesses among healthcare workers.

A study conducted by Smit (2005) indicated that healthcare workers express a sense of physical and mental exhaustion and stress from dealing with HIV/AIDS patients that need a serious attention and care. According to WHO (2010), nurses undertake many roles in the clinical management of a wide variety of disease processes. Nurses are often cited as a major source of emotional support for patients and their families during times of illness and stress. Tuberculosis continues to be a global killer, with over 9 million new cases of active TB disease diagnosed every year (WHO, 2010). According to De Villiers and Ndou (2008) HIV-positive patients often tried to expose the nurses and their relatives to their stools, blood or

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secretions on purpose. As a consequence, nurses devised secret signs to inform each other about the HIV status of their patients, in order to make each other aware that they should take extra precautionary measures. Therefore, nurses often distanced themselves from their patients and frequently refrained from touching their patients.

The fact that TB is an airborne disease threatens many health care workers caring for TB patients. Dodor (2008) concludes 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 patients, can lead to stigmatisation of TB patients in the eyes of the community members. Fear of infection was identified as the main reason for the stigmatising attitudes and behaviours of both health professionals and community members towards those with TB.TB patients feel stigmatized since TB is considered as a dirty disease, a disease of poor and marginalized people. The consequences are remarkably similar in different health conditions, culture and public health programs. So it remains the healthcare workers duty to protect TB patients from stigma by not disclosing their health status. Some TB patients are HIV/AIDS patients and it is important to disclose their health status. This means that health care workers end up not knowing as to which patients pose a serious risk. In not disclosing their status, they cannot protect innocent people from contracting the infection (Mafalo, 2003).

2.6 SUMMARY

This chapter looked at the risk factors of TB transmission in healthcare facility, TB prevention and control in healthcare setting, problem impacting on the quality of nursing care for TB patients and in addition it explained the fear, anxiety and stress experienced by nurses caring for patients.

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METHODOLOGY

3.1 Introduction

According to Holly (2005), the methodology adopted in a study provides information about how the research will be conducted not about what will be learned. In order to collect appropriate data to answer the hypothesized questions, both a literature study and an observed investigation based on a qualitative research were undertaken. The design selected should be most suitable for the study in order to achieve the aims and objectives of the proposed research question (Barbour, 2008). This section presents the research design and methods that were be used in this study.

3.2 Study Design

This study used a qualitative, exploratory and descriptive contextual design to explore and describe the experiences of nurses caring for TB patients at Tshilidzini Hospital. According to Burns and Grove (2003), descriptive design is used to gain more information about characteristics within a particular field of study. Its purpose is to provide a picture of a situation as it naturally happens.

In this study the researcher wanted to uncover the personal experiences of nurses and the meanings that they attached to the events, processes and structures of their lives in the TB wards. Therefore, an exploratory and descriptive design was the most suitable design.

3.3 Study Setting

The research setting refers to the place where data are collected. This study was conducted at Tshilidzini Hospital in Vhembe District in Limpopo Province, South Africa. Tshilidzini

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Hospital is public healthcare facility situated in Thohoyandou, Limpopo Province of South Africa. It is a regional hospital in Vhembe district of Limpopo province with two TB wards and twenty beds, it is a referral hospital for seven community hospitals, such as Louis Trichardt, Elim, Donald Fraser, Musina, Malamulele and Hayani Herberg Hospital. The geographical area is predominated as rural and economical growth depends on agriculture, tourism and mining. According to Wolmarans and Asia (2013), the total population is about 1 294 722, comprising of Venda, Tsonga and Sotho speaking people.

3.4 Study Population and Sampling Procedure

3.4.1 Study Population

According to Parahoo (2006), any group that is the subject of research interest from which the researcher wants to collect information and arrive at conclusions or all elements that meet the criteria for inclusion in a study is called a target population. In this study the target population was all nursing staff in all TB wards caring for TB patients at Tshilidzini Hospital in Vhembe District in Limpopo Province at the time of this study.

The study included all 22 nurses caring for TB patients regardless of their ranks, since the target population was very small (De Vos, Strydom, Fouche & Delport, 2005).

3.4.2 Sampling Procedure

A sample is a subset of participants drawn from a population to represent the whole population (McMillan & Schumacher, 2006). In this study purposive sampling was used, since it involves selection of individuals for participation based on their knowledge of a phenomenon that is being studied. It was believed that those participants would provide a researcher with the rich data needed to gain insight and discover new meaning in an area of study. In this study all nurses caring for TB patients were selected as target population since it was believed that they would provide information – rich data.

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3.4.3 Sample Size

The sample size was determined by saturation of information in the study area though it was envisaged to interview 15 participants but only 6 participants were interviewed. Interviews were terminated when data saturation was reached, that is when information was repeated and also when the participant indicated that there was nothing further that they want to say and no new themes or essences have emerged from the participants. According to Streubert-Spezialeand Carpenter (2003), qualitative study usually involves a small sample.

3.4 Data Collection

Data collection is the process of gathering necessary information needed to address a research problem and answer research questions (Polit & Beck, 2004). Cormack (2005) suggests that data collection method should best suit the aim and objectives of the study. Data were collected through in-depth individual semi-structured with guide interviews (Annexure A). All participants who signed written consent form before were included in this study and were interviewed. The interview dates and times were arranged with participants prior to data collection date. The interviews were conducted early in the morning as suggested by participants before they could start with their duties to avoid distracting them from their normal wards routine work. Separate interviews with six participants took place in a private office within TB wards of Tshilidzini Hospital as suggested by Tappen (2011), each lasting approximately thirty minutes. All interviews started with an opening question: *"What is your experience when nursing patients who suffer from TB?"*

The research participants freely responded to open-ended questions in narrative form using their own words, thus sharing their own perspectives with the researcher. Questions were not planned in an inflexible manner. The questions were not asked in a prearranged sequence, but the researcher ensured that all relevant topics were covered and that the research focus was kept in mind. The researcher also asked probing questions (Annexure A) to guide participants to elaborate further upon their responses where additional

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information were required or where unclear answers required more clarity. This resulted in gaining in-depth accounts about participants' experiences while caring for TB patients (De Villiers & Van Der Wal, 2004). Data were collected by means of audio-recorded, field notes and in-depth interview. After each interview, the proceedings were transcribed verbatim and entered immediately into an MS Word document. The transcripts were then printed for manual analysis.

3.6 Data Management and Analysis

The purpose of the analysis is to organise data into a meaningful interpretative framework or theory that describes the phenomenon studied in order to obtain a genuine insight into the participants experience (Burns & Grove, 2007). Qualitative data analysis always takes place concurrently with data collection. Therefore researcher attempted to gather, manage and interpret a growing bulk of data simultaneously. In this study, the audio-recorded interviews were transcribed and coded immediately after data collection.

In this study, data were analysed using Colaizzi's (1978) methods which comprise the following seven steps:

- Each research participant's verbatim transcript was read to acquire a sense of the whole.
- Significant statements and phrases pertaining to the phenomenon being studied were extracted from each transcript.
- Meanings were formulated from the significant statements.
- Meanings were organised into themes, and themes evolved into theme clusters and eventually into theme categories.
- These results were integrated into a rich and exhaustive description of the lived experience.
- The essential structure of the phenomenon was uncovered.
- Validation was sought from the research participants to compare the researcher's descriptive results with their lived experiences.

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3.7 Measures to Ensure Trustworthiness

Trustworthiness is the term which is used in the assessment of validity and reliability of qualitative data, based on the model of Lincoln and Guba (2012). Trustworthiness of research is established in trust value (credibility), applicability (transferability), consistency (dependability), and neutrality (confirmability) which are applied by using research strategies:

3.7.1 Truth Value

Truth value or credibility refers to the extent to which those who read a research report can believe and accept the research findings to be true (Lincoln & Guba, 2012). According to Polit and Beck (2004), prolonged engagement with the subject matter is essential in establishing credibility, since it builds trust and a rapport with the participants where rich information can be obtained.

In this study the researcher spent 30-45 minutes with each participant to obtain a detailed account of their experiences while caring for TB patients. During the course of this study the researcher applied persistent observation which refers to the researcher's focus on the characteristics or aspects of situation or a conversation that were the phenomena which was being studied (Polit & Beck, 2008).

To confirm the credibility of the findings, member checking was used to assess whether the participants would recognise the findings of the study to be true to their experiences, this helped to validate that the reported findings represent the exact experiences of the participants (Lincoln & Guba, 2012). After the findings of this study the researcher met each participant and shared the research interpretations to see if they reflect their experiences and circumstances.

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3.7.2 Applicability

Applicability is an alternative to external validity in which the burden demonstrating the applicability of one set of findings to another context rests more with the investigator who would make transfer than with the original investigator (De Vos, Strydom, Foeche & Delport, 2007). According to Brink, Van der Walt and Van Rensburg (2012), transferability refers to the ability to apply the findings in other contexts or to other participants. Applicability was ensured by providing thick description in this study the researcher involved a selected sample and conduct in-depth interviews. The topic was covered in-depth and breadth to ensure that the data that was obtained supported the provision of thick descriptions. Data was recorded on audiotape to ensure that participants' narratives were well captured in their original format. Then the researcher requested someone who was experienced in research to read randomly selected transcripts and to identify major themes and categories, so that readers may have a clear picture of data.

3.7.3 Consistency

Consistency is alternative to reliability in which the researcher attempts to account for changing conditions in the phenomenon chosen for the study as well as changes in the design created by increasing understanding of the setting (De Vos *et al.*, 2007). It involves the condition of verification such that if the study is to be repeated with the same or similar participants in the same subject or similar context, whether its findings will be consistent or similar (Polit & Beck, 2004). The concern is on whether the instrument will provide the same measurement over time if there is identical repetition. In this study consistency was achieved by describing the research data, findings, interpretations and recommendations in order to confirm that the investigation was supported by data and is internally coherent. A tape recorder was used for all interviews in order to increase reliability.

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3.7.4 Neutrality

Neutrality is concerned with confirming whether the data represent the information provided by the participants and that the interpretations of the data are not fuelled by the researcher's imagination (Brink *et al.*, 2012). This is when the findings, conclusions and recommendations are supported by the data and that there be internal agreement between the investigator's interpretation and the actual evidence. In this study neutrality was ensured by making or providing use of an independent coder. This was reflected by the voice of the participants and not the researcher's perceptions. The techniques that were enhancing neutrality in this study was enquiry audit in which the researcher clearly described, explained, and justified each stage of the research process.

3.8 Application of Ethical Considerations

In order to ensure that participants are not violated, researchers are to adhere to strict ethical standards. The Principle of Beneficence requires the researcher to do good and above all do no harm (Burns & Grove, 2005).

3.8.1 Permission to Conduct a Research

The proposal was submitted and presented to the University Higher Degrees Committee (UHDC) of the University of Venda, and recommended for ethical approval by the University Senate and Ethical Committee. Permission to conduct the study was obtained from the Limpopo Provincial Department of Health and Vhembe District Department of Health. Letters was written to the Nursing Service Manager and Chief Executive Officer of Tshilidzini Hospital informing them of the permission granted to conduct the study.

3.8.2 Informed Consent

Consent forms were given to every participant to complete (Annexure D). The nature of research was described to the subjects participating in the study and they were informed

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that they have the right to refuse to participate or to withdraw from participating if they feel that they cannot continue. The participants were also informed and assured that the information they provided would not be used against them or shared with other people, but would be reported as a finding of this study. The following essential information was included as part one of the consent form, to enable the participants to take informed decision before signing the form: Purpose of the study, explanation of the procedures, description of the risk or discomfort, benefit of the study and confidentiality (Burns & Grove, 2003).

3.8.3 Confidentiality

Information provided by the participants was treated as confidential and under no circumstances, should the information be divulged or made available to any third party except as reports and publications (Brink, 2006).

3.8.4 Anonymity

Anonymity was also insured in which the participants did not write down their names or any personality identification. This allowed the participants to be anonymous. The research participants had the right to anonymity and the right to assume that the data was kept confidential. Complete anonymity exists if the participant's identity cannot be disclosed, even by the researcher, with his individual responses. Data was analyzed in groups not individually to avoid identifying the participants by their responses (Brink, 2006).

3.8.5 Freedom from Harm and Exploitation

The researcher respected the choices and agreements made with the participants. The initial agreement was not changed without the knowledge of the participants. The participants were not victimized for refusing to participate in the study (Brink, 2006).

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3.9 SUMMARY

This chapter outlined the research methodology used in the study. The study design, study setting, population of the study, research instruments, data collection procedure, data analysis, measures to ensure trustworthiness and ethical considerations that were applied in the study were covered.

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DATA ANALYSIS, DISCUSSION OF RESEACH FINDINGS AND LITERATURE CONTROL

4.1 Introduction

The previous chapter outlined the research problem, methodology and design used in this study. The main purpose of this chapter is to present the research findings and describe how data were analyzed thematically.

The purpose of this study was to determine the experiences of nurses caring for TB patients at Tshilidzini Hospital.

The objectives of this study were as follows:

- To explore the experiences of nurses caring for TB patients in Tshilidzini Hospital.
- To describe the risks that nurses are exposed to when caring for TB patients.
- To find out the support needs of nurses caring for TB patients at Tshilidzini Hospital.

Research Questions of this study were as follows:

- What are the experiences of nurses caring for TB patients in Tshilidzini Hospital?
- What are the risks that nurses are exposed to when caring for TB patient?
- What are the support needs of nurses caring for TB patients at Tshilidzini Hospital?

Data were collected through in-depth individual interview with six nurses caring for TB patients at Tshilidzini Hospital. Data were audio-recoded and field notes were also taken. All participants were asked open ended-questions. The interview sessions were conducted in English. The interview dates and times were arranged with participants prior to data collection date. Interviews were conducted early in the morning, as requested by participants, to enable them to perform their duties and avoid distracting them from their

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normal ward routine work. Separate interviews took place in a private office within TB wards, each lasting approximately thirty minutes. Interviews were completed in three days, since only two participants were being interviewed a day before they could start with their normal work routine. Only female nurses participated in this study.

Interview Guide

The researcher's central question was: what are your experiences while nursing TB patients. During the interview the researcher asked the following probing questions so that participants could elaborate or clarify their responses (see Annexure A).

- Tell me more about your experiences with TB patients.
- Tell me about the risks that you are exposed to in this Hospital while nursing them.
- What sort of support is available at this Hospital for nurses?
- What are your needs with regard to caring for TB patients in this Hospital?

Data were analyzed using Colaizzi's (1978) methods of analysis for qualitative data, as detailed in Chapter 3. The researcher moved to a phase of reading to identify and highlight the participants' experiences with TB patients. The researcher then extracted significant phrases and statements from the transcripts that together formed the whole meaning of caring for TB patients. The researcher then analyzed each transcript to identify statements that described each participant's story of their lived experience. The statements were highlighted on each page and then entered into an MS Word document.

4.2 Data Findings

After data organization and analysis, six major themes were developed from the findings of this study and sub-themes were also formulated (See Table 4.1).

4.2.1 Themes and Sub-Themes

Participants shared the same experiences with regards to caring for TB patients at Tshilidzini Hospital. Six major themes emerged from the collected data and the researcher formulated

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various sub-themes under each theme (see Table 4.1 below). The major themes were: (1) Challenges experienced in the working environment, (2) Problems impacting on the quality of nursing care, (3) Fear, anxiety, stress and risk of contracting infection, (4) Nurses' perceptions of patients, (5) Support structures available in the hospital and (6) Support needs for the nurses.

Saturation of data: Interviews were terminated when data saturation was reached; that is, when information was repeated and also when the participants indicated that there was nothing further that they wanted to say.

Table 4.1 Themes and Sub-Themes for the Impact of Tuberculosis Patients on Nurses

Themes	Sub-Themes
1. Challenges experienced in the working environment	1.1: Challenges related to physical environment 1.2: Poor positive practice environment
2. Problems impacting on the quality of nursing care	2.1: Factors influencing adherence to treatment 2.2: Delay in TB diagnosis 2.3: Lack of equipment and working resources 2.4: Lack of sufficient skills and in-service training
3. Fear, anxiety, stress and risk of contracting infection	3.1: Exposure to risk of infection 3.2: Fear of being in contact with patients 3.3: Patients' spreading of disease
4. Nurses perceptions towards patients	4.1: Feelings and emotions of nurses towards the patients
5. Support structure expected in the hospital	5.1: Support versus lack of support from the managers 5.2: Lack of support from the psychologists 5.3 Lack of appreciation from colleagues and patients' family members
6. Support needs for the nurses	6.1 Poor ventilated working environment 6.2 Lack of infection control and preventative measures 6.3 Support needs expected from the management

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4.3 Interpretation of Data

Six major themes emerged after extensive data organization and analysis. These themes were developed from the narratives that were made by the participants during data collection. A discussion of findings follows the presentation of each theme, as it is asserted that integrating the findings and the discussion is an appropriate method for encapsulating the essence of the phenomenon under investigation. Existing literature was searched and used to support the findings of this study.

Theme 1: Challenges experienced in the Working Environment

Participants articulated that the hospital has a poor, aging infrastructure which is in dire need of refurbishment. TB wards were not structured to the standard that is suitable for TB wards and this does not induce the productivity of nurses in the wards. The following sub-themes were highlighted in the context of working environment, physical environment and practice environment.

Sub-theme 1.1: Challenges Related to Physical Environment

The physical environment often influences positively or negatively the mindset of the service providers and their efficiency and ability to innovate in delivering expanded services. A good working environment can facilitate better service and reduce workload. A disorganized working environment impairs the health care teams. Infrastructure includes attention to space, ventilation, comfort and rational layout that facilitates links within the healthcare settings. The workplace has an impact on preventing TB transmission; it serves as the first line of defence for preventing the spread of TB in the healthcare settings. Participants also expressed similar sentiments with regards to poor infrastructure. Below are some of the comments made by the participants.

One participant said: *"the hospital infrastructure is very old and deteriorating, the wards' layout is not conducive for TB wards, hmmm the windows are small and bacteria concentration is high, since*

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patients infect each other. And you know we are exposed to a risk of contracting TB infection because of the set ups in the wards".

Another participant added in support of the challenges related to physical environment and confirmed that: *"the working environment is poor since we sit in the wards with patients all day long. During lunch time we sit in a small room within the TB wards, which accommodates less than 5 people and the door doesn't even close. We do not have a tea room and we start work early in the morning; you can imagine. There is poor hygiene and sanitation since we lack resources such as detergents to wash our hands and sometimes the hospital has a shortage of water or regular storage of water."*

Another participant added that *"all patients are accommodated in the same wards, whether they are XDR, MRD or TB patients, hmmm the wards layout is not suitable for TB patients. We have to sit all day with patients and told that patients who are under treatment are not infectious (emotional). We put our lives as well as that of our families at risk because we do not have detergents to wash our hands. During lunch we squeeze ourselves in a small room just here in the TB wards which cannot accommodate 5 people and the door doesn't even close."*

According to the findings of this study the physical environment was poor and the ward designs were not suitable for TB wards. According to the study that was done by Ulrich, Zimring, Quan, Joseph and Choudhary (2004) on the role of physical environment in the hospital of the 21st century, improved hospital design can help reduce staff stress and fatigue and increase effectiveness in delivering care, improve patient safety, reduce patient and family stress and improve outcomes and the overall healthcare quality. The findings of this study concur with the study that was done by Smit (2005), which indicated that the nurses were concerned with their occupational environment as a whole and voiced concern about the deteriorating hospital infrastructure.

Sub-theme 1.2: Poor Positive Practice Environment

Positive practice environment is the setting that supports excellence and decent work. To ensure positive practice environment in the healthcare setting, it is important to consider health, safety and personal well-being of the staff. These improve productivity and

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performance of the staff. An unhealthy working environment affects the quality of care in the hospital and leads to disastrous patient outcomes and demotivates healthcare professionals. A positive practice environment does not only benefit the healthcare workers but also the healthcare consumers and leads to positive health indicators for the government. Different challenges from healthcare environment cause nurses to be more negative than positive. This brings about poor practice in the wards. Below are the comments made by the participants:

One participant said: *"Sometimes we are supplied with fake N95 masks or required to use surgical masks that do not protect us from contracting infection. We only get 21 masks per week and we are required to use those masks for 7 days which is not good because each mask is supposed to be used once only and discarded, and we share those 21 masks with social workers, doctors and other staff that come to the TB wards. We do not get enough gloves, and we do not have aprons to cover ourselves as we do our work. We sometimes lack soap to wash our hands after coming into contact with TB patients, and we also have limited washing basins. In addition, the windows are too small and there is poor airflow in the wards. UV lights are not regularly serviced and this increases bacteria concentration in the wards."*

Another participant added that: *"This whole thing (emotional) of us being given fake masks results in negative practice for patient-care since we are scared of contracting TB. Each time we look at the patients we get scared of being in the same situation, hmmm, there are more negative thoughts in TB wards than positive ones but we just have to endure and do our work. These also minimize the quality care for the patients (sad) because of the compromising conditions that we are exposed to. There is poor ventilation and there is a high bacteria concentration in the wards since the windows are too small."*

The findings of this study revealed that there was a more negative practice environment in the TB wards than a positive one. According to the study that was done by Booyens (2008), it is important that the working environment enhance productivity. A study that was done by Beauchemin and Hays (1996) found that patients hospitalized for severe depression reduced their stays by an average of 3.67 days if assigned to a sunny rather than a dull room overlooking spaces in shadow. The findings of this study indicated that there was a poor practice environment in the TB wards. There was also an inadequate supply of personal

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protective materials. This leads to negative practice by the nurses, since they are scared of contracting diseases. According to a study that was done by South Africa (2007), nurses may be immune suppressed by other diseases such as HIV/AIDS and be at a risk of developing TB. The findings of the present study concur with those of a study that was done by Mametja, Lekhuleni and Kgole (2013), which revealed that there was more negative practice environment in HIV/AIDS wards which affected the quality of nursing care in the public hospital. In a study that was done by Smit (2004), it was found that there were more negative than positive perceptions and experiences in the workplace.

Theme 2: Problems Impacting on the Quality of Nursing Care

The main reason why patients should be admitted to the hospital is that they should be provided with quality care by healthcare professionals for them to recover. However, there are challenges that impact negatively on the quality that is being provided to patients by healthcare professionals. The following sub-themes will be discussed under the problems impacting on the quality of nursing care; adherence to treatment, delay in diagnosis, lack of equipment and working resources, and lastly lack of sufficient skills and in-service training.

Sub-theme 2.1: Factors Influencing Adherence to Treatment

When medical treatment is complicated or lasts for a long time, as in the treatment of TB, patients often do not take their medication as prescribed by the doctor. Rather, they default, which in turn leads to serious problems. A non-adherent TB patient may remain sick, spread TB to others, develop and possibly spread drug-resistant diseases, and even die as a result of interrupted treatment. Likewise, it is also important that persons with latent TB infection (LTBI) who are prescribed a regimen for LTBI adhere to the regimen. The completion of therapy for LTBI can prevent people with TB infection from developing TB disease. The patient's success in completing a TB regimen depends to a large extent on the health care worker's ability to understand him or her, support or DOT the patient throughout therapy, and anticipate or solve problems as they arise. Patients default on treatment for different reasons, such as no longer feeling sick, lack of knowledge, personal

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or cultural beliefs, lack of access to healthcare facilities, lack of motivation and poor relationship with healthcare workers. Non-adherence is one element that impacts negatively on the quality of nursing care. Below are the comments made by the participants.

One participant indicated that: *"The major problem that we have is that (emotional) our hospital is a rural-based hospital and most patients that are admitted in the hospital are from poor backgrounds; so, they always default on treatment for different reasons, such as collection of the social grant, bad side effects of medicines, social problems and long distances from the clinics where they should collect their medications; lack of money to buy food since TB drugs make them eat more and come back to the hospital when their conditions are worse and almost all of them do not make it, and end up dying. Hmmm some of them consume alcohol and smoke cigarettes and this makes the treatment to fail."*

Another participant added: *"some patients, hey this is terrible because they give their family members sputum so they can be infected by TB to make them qualify for a TB grant. Most of the patients are ignorant even when they are knowledgeable, because even those who are educated, they come here and we educate them about TB and how they should behave but still they do not listen they will still come back again."*

Another participant added that: *"There is a high TB prevalence in surrounding rural areas. Some of them default because they go to traditional healers and the healers tell them that they have been bewitched; they are not really sick. When those patients come back to the hospital their condition will be bad and most of them do not survive a week. Some of them use with the TB grant on liquor and worsen their condition".*

The findings of this study revealed that patients continued to default treatment for different reasons, such as experiencing side effects, alcohol abuse, cultural and religious beliefs and lack of access to healthcare facilities. Some default because they wanted to continue receiving the TB grant. The findings of this study concur with those of a study that was done by Namibia (2007) which listed the barriers contributing to poor TB treatment compliance, such as communication difficulties, low literacy level, inadequate knowledge and low awareness of TB disease, patients' attitudes and beliefs in treatment efficacy, depression and other psychiatric illness, alcohol and substance abuse, unstable living conditions,

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negative health provider attitudes, stigma and discrimination and overcrowding and access to medicine.

Sub-theme 2.2: Delays in TB Diagnosis

Tuberculosis control can be effectively achieved if individuals with the disease receive adequate and timely treatment. Early diagnosis and prompt effective therapy form the key elements of the tuberculosis control programme. Delay in diagnosis results in increased infectivity in the community. Untreated smear-positive patient can infect, on average, 10 contacts annually and over 20 during the natural history of the disease until death. Delays in tuberculosis diagnosis may also lead to a more advanced disease state at presentation, which contributes to late sequelae and overall mortality. Many patients often consult traditional healers before going to the healthcare facilities due to lack of knowledge and due to fear of stigma from the community. Some patients consult private sector repeatedly and private health care providers, who fail to diagnose them. There is a dire need to integrate the private health sector with the mainstream public health intervention since delay in diagnoses is another element that impact quality of nursing care. Below are the comments made by the participants.

One participant said: *"Most of the patients hmmm who are in TB wards are critically ill and their conditions are not good at all. Most of them report to the hospital when their conditions have deteriorated. They first go to traditional healers for help and there they will be told that they have been bewitched. People associate TB with the bad: bad morals and witchcraft. So, patients are afraid to be stigmatized in the communities. This is why they do not want it to be known that they have been infected with TB."*

Another participant indicated that: *"Even when patients are diagnosed with TB they will still go to traditional healers for help because they do not believe they are ill; rather they believe that they have been bewitched. Some of them they won't even disclose their status to their family members because of fear of being stigmatized by both family members and community. Many people in deep rural areas lack understanding. As a result, even when they are showing TB symptoms they still won't go to the hospital. Some will go to private doctors who will not even suspect TB. Patients will go there time and again which will result in fruitless expenditure"*

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According to the findings of the present study, delays in diagnosis were due to the following factors: fear of stigma, patients' dissatisfaction with service from private healthcare providers, lack of knowledge, patients beliefs and patients choose to consult traditional healers than healthcare facilities. According to the study that was conducted by Ehlers (2005), many people in Africa visit traditional healers prior or concurrently with formal health care services. The findings of the current study concur with those of the study done by WHO (2004). Delays in TB diagnosis is common in many regions worldwide, due to patient related factors, such as stigma, lack of information, dissatisfaction with TB service, inaccessibility of treatment, or provider-related factors such as diagnosis delay, knowledge and skills of healthcare workers and inadequate infrastructure.

Sub-theme 2.3: Lack of Equipment and Working Resources

Improving the productivity and performance of health workers to ensure that health interventions are efficiently delivered is important in the healthcare setting. Human resources for health, consisting of clinical and non-clinical staff, are the most important assets of health systems. The performance of a health organization depends on the knowledge, skills and motivation of individuals. It is important for employers to provide suitable working resources to ensure that the performances of employees meet the desired standards. Shortage of medical material hinders the quality of medical practice in healthcare settings. TB wards should have UV lights, ventilation system, fans, air-conditioner and big windows in order to control the environment, to reduce the risk of infection in the wards. Healthcare workers should be provided with gloves, aprons and N95 masks to protect them from contracting infection. Below are the comments made by the participants.

One participant said: *"we do not have essential equipment in the TB wards: UV lights, fans and air-conditioner are not working properly hmmm. I do not think they have ever been serviced since they were installed. Airflow in the wards is very poor because the wards are too small. Poverty is killing us because we have to use N95 masks inappropriately. We receive twenty-one N95 masks every week and each mask has to be used for seven days, whereas it is supposed to be used once. And hmmm we*

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even have doctors, social workers and other staff that come to TB wards that depend on the same N95 masks. So we end up using surgical masks".

Another participant added: *"There is a poor supply of N95 masks (sad) and it puts us in serious danger of contracting infection. But we are surviving by the grace of God. There is a poor diet for patients. Poor hygiene practice since we lack detergents and soap in the wards for washing hands. We are not happy at all about the lack of working equipment since we are expected to do our work but there is no one who is concerned about what we need to do our work (emotional). We are scared of infection because the hospital doesn't even have serviced UV lights, fans, big windows, air conditioners and other equipment needed to control the environment to reduce bacterial concentration in the wards, and this jeopardizes our performance in the wards, because we often times fail to deliver good service because we are not free in the wards".*

According to the findings of this study, there is a shortage of equipment and working resources which impacts on the quality of health in the TB wards. Participants appeared to be scared and were discouraged by the poor supply of resources in the wards. There was poor supply of N95 respiratory masks, UV lights were not regularly serviced, no fans and air conditioners in the wards. The wards had small windows. There was also poor hygiene practice since there was a poor supply of detergents and hand washing soap. A study done by Ogundele and Olafimihan (2009) concluded that inadequate or non-available facilities, equipment and resources, especially basic resources to provide services such as water, steam and electricity, hindered the provision of quality health care, proper conduct of tests, therapies, investigations and surgery. Another study done by Reilly (2013) concluded that patients are almost twice as likely to die in some hospitals because they lack the proper equipment and resources.

Sub-theme 2.4: Lack of Sufficient Skills and In-Service Training

Health-care delivery can be highly labour-intensive and frustrating if the healthcare worker is not well trained. The quality, efficiency and equity of services are dependent on the availability of skilled and competent health professionals. It is essential that health workers be appropriately trained to deliver the required services according to set standards. Due to critical shortages of certain key health workers, the challenge to health authorities is to

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ensure that the available health workers are adequately skilled and motivated to provide effective health-care services to populations living in a vast geographical area. The following are the comments made by the participants.

One participant indicated that: *"our biggest challenge in the wards to be honest, is that we only have one nurse who is knowledgeable about TB. She is the only specialist in the ward; the rest of us know TB a bit because we read about it and from the experience that we have as nurses, even though some of us have attended workshops but I do not recall having to go for training. TB patients undergo different stages and it is important for us to understand them. Hmm some of the behaviors that we see in the wards shock us and we do not understand why patients could behave like they are insane".*

Another participant added*: "When it comes to medications we rely on doctors (laugh). We just believe that whatever prescription given by the doctor is the correct one, but we really want to have a better understanding so that we can help patients recover. We hardly go for in-service training which I believe would play an important role for us to have a better understanding of TB".*

A study by Mo (2006), found that one of the independent functions of a nurse is education. According to a study that was done by WHO (2005), health care professionals need to seek up-to-date scientific knowledge from national, and international, academic and research institutions, including professional associations. The findings of this study revealed that there was a lack of skills and in-service training in the wards. This finding concur with those of a study conducted by Namibia (2007) which indicated various barriers contributing to poor TB treatment, such as communication difficulties, low literacy level, inadequate knowledge and low awareness of TB disease.

Theme 3: Fear, Anxiety, Stress and Risk of Contracting Infection

TB is a contagious disease and it is usually spread through the air by droplet nuclei. Transmission generally occurs indoors, in dark and poorly ventilated spaces. The following sub-themes will be discussed under fear, anxiety, stress and risk of contracting infection: Exposure to risk, fear to contact patients and patients spreading disease.

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Sub-theme 3.1: Exposure to Risk of Infection

Tuberculosis is one of the biggest killers in the world, from ancient time. It is transmittable by the inhalation of airborne particles. When patients with TB visit health care facilities, they are likely to transmit the disease to the health care workers. This feature of occupational risk is largely understudied and preventive measures are frequently not in place. This problem is more in the low- to middle- income countries, due to increased prevalence of TB and lack of effective control programmes. With increasing incidence of multidrug-resistant TB and extensively drug-resistant TB this problem has been further compounded, with the risk of healthcare workers contracting more severe forms of the disease, which are difficult or sometimes impossible to treat successfully (Christopher & Balamugesh, 2013). The following are the comments made by the participants.

One participant said: *"We are exposed to a great risk of being infected by TB, MDR-TB and XDR-TB because of the fact that we do not have personal protective materials in place and the hospital also has poor infection control measures. TB wards are too small they do not have enough space and there is poor air flow in the wards and the wards design is not even for TB wards. We are being provided with few N95 masks and each of us has to use one mask for seven days and sometimes we are provided with fake masks".*

Another participant added: *"The gloves that we get are not enough as well and we do not have aprons to cover ourselves. We put ourselves in a great danger of contracting infection, sometimes I get scared if I will not infect my family because the same clothes that I use at work is the ones that I go with at home and my children will come running when I am back from work I am scared to give them a hug because I do not know if my clothes are contaminated. I leave my shoes in the garage I do not want to get them in the house because patients spit sputum everywhere in the wards and I do not know if I carry that sputum on my shoes. Every time when we give patients medications and injections (sad and emotional) they get angry at us and they tell us that they will infect us with TB because we are giving them drugs that make them worse. I am scared that one day even when I have resigned my immune system will become weak and I will start to show TB symptoms because TB can be dormant for a long time".*

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Another participant added: *"National Department of Health always says to us never go to the TB wards without a mask. (emotionally) TB wards have a high death rate than all other wards in the hospital. When we see people dying in our hands every day we get a message that TB is real and is the number one killer disease. Our main purpose is to save lives but we are failing every day because we are also scared to be infected since we are vulnerable. The more we get scared of the disease the more people are dying and the more stressed we get".*

According to the findings of this study, nurses were scared of contracting TB infection. Even though participants were provided with personal protective materials they were of poor quality. Participants seemed to be more concerned about their safety in the wards and they appeared to be more stressed and emotional about the danger that they are exposed to in the wards. A study done by Chung, Wong, Suen and Chung (2005), reveals that nurses consider themselves more vulnerable and at high risk of contracting infection.

Sub-theme 3.2: Fear of being in Contact with Patients

Tuberculosis in all its forms is a major occupational hazard for healthcare workers (HCWs) worldwide. The transmission of drug-sensitive and drug-resistant strains of *Mycobacterium tuberculosis* occurs through infected droplets aerosolized by patients with active pulmonary TB. The transmission risk to HCWs is highest when patients have unrecognized TB or are receiving inappropriate treatment. However many other factors influence the risk of transmission and progression to active disease, including healthcare setting, occupational category, individual susceptibility/immune status, and the adequacy of TB infection control measures.

One participant said that: *"Most of the patients who are admitted in our wards are being transferred from other wards due to their critical conditions. When some wards such as medical wards realise that TB patients' condition has deteriorated they transfer them to our wards, eeeeh, and by then you will find that they cannot do anything on their own. They need us to feed them, bath them and take them to the toilet. Most of those TB patients are HIV positive but they only find out about it when they get admitted. (Sad) they depend on us in their recovery but we are scared to come into contact with them because our safety is compromised, and the prevention measures in the wards are inexistent"*

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Another participant said: *"Myself, eh, I feel like I am putting myself in danger to be honest. I am scared to come into contact with those patients because most of them are rude and dangerous. Most of them they get mad at us and it's like they always want to infect us because of their behavior. I make sure that I spend less time with them as a way of protecting myself from this killer disease."*

The findings of this study show that nurses were scared to come into contact with TB patients. As a result they tend to spend less time with them. Nurses tend to neglect patients because of fear of getting infected and they provide less nursing care to those patients. According to the study done by Smit (2005), healthcare workers express a sense of physical and mental exhaustion and stress from dealing with HIV/AIDS patients that need serious attention and care. The findings of this study concur with those of a study by De Villiers and Ndou (2008), which showed that HIV/AIDS patients often tried to expose the nurses and their relative to their blood and fluids on purpose.

Sub-theme 3.3: Spread of the Disease

People who have TB disease in their lungs can release tiny particles containing *mycobacterium tuberculosis* into the air by coughing, sneezing, laughing or singing. These particles are called air droplet nuclei. They are invisible to the naked eye. Droplet nuclei can remain airborne in room air for many hours, until they are removed by natural or mechanical ventilation. For TB to spread, there must be a person with TB disease who produces the TB bacilli, and another person who inhales the droplet nuclei containing the bacilli. Although TB is not usually spread by brief contact, anyone who is in close proximity with an infectious person is at risk of getting infected.

One participant said: *"It is sad the way TB is spreading in our communities, eeeh, we have a record of patients who come from one family or who are related. They decide to infect others or share their sputum just for them to get a TB grant. When they realise that they are recovering, they default for the social grant to continue. Most of those patients, when they come back to the hospitals, they will be MDR or XDR; they do not survive. Patients who are admitted are from the surrounding villages, such as Tshisaulu, Itsani, Tswinga, Maungani, Maniini, Dzwerani, Vuwani, Ha-Mutsha. I believe there is a great prevalence of TB in those villages. When those patients are in the wards they do not cover*

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their mouth when they cough. They spit sputum everywhere and spread diseases in the wards and cause cross infection. It is more dangerous to work in TB wards than to work in any other wards."

Another participant said: *"Patients also spread disease when they use public transport. They go to church and when they are in shopping complex. Each time I hear of TB outbreak in the communities i get stressed because I see large number of people who are still going to die of TB. We feel vulnerable because in the whole community we are the first people in the line of danger."*

According to the findings of the present study, TB patients spread TB in the wards and outside. The nurses indicated that they feel vulnerable, since they are at great risk of contracting TB. The nurses indicated that patients continue to spread infection, even when they are outside TB wards and that contributes to an outbreak of TB in rural areas. The findings of this study concur with those of the study done by Arjun (2011) which concluded that TB patients are a risk to community members because when they go to shopping centres and places where there are large numbers of people, such as social gatherings, and church services they become a danger to the people.

Theme 4: Nurses' Perceptions of TB Patients

Nurses provide nursing care to the patients during the period of their hospitalization. The way nurses perceive patients matters; the nurses play a major role in the patients' recovery. The following sub-themes will be discussed under nurses' perceptions of their work; feelings and nurses' emotions towards patients.

Sub-theme 4.1: Feelings and Emotions of Nurses Towards Patients

Nurses who care for dying patients are under pressure emotionally because of their beliefs and values about death as well as the emotions and reactions of the patients and their families. Despite TB being a curable disease, in almost all of new cases, professionals such as psychologists, anthropologists, sociologists, and TB analysts have repeatedly indicated that talking about the disease still causes discomfort and unease in the population, especially within the poorer communities (Porto, 2007). TB is surrounded by intense grief, with

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implications to different spheres of life, including social relationships. This is due to long-standing negative representations about this disease, which result in stigma and discrimination. Healthcare professionals believe besides TB's ability to impact patients' lives and causes death, it also has strong emotional impact in the life of a patient since it evokes disability, impotence and self-discrimination. Below are the comments made by the participants:

One participant said: *"Most of our patients are very ill and their conditions are not good at all, you look at the person and see that chances are he/she might die, even though the hospital doesn't have enough resources for us to do our job, but ish (emotional) we can't just sit here and look we need to help those patients they become our responsibilities, we rather endanger our lives in order to save lives. I remember we have several cases where two patients from one family will be admitted and their beds will be next to each other, it always happen that one will die and the other one will remain, it will be so touching some even ask if he/she will be fine, to avoid frustrating the patient we always request that he/she be transferred to another hospital. If we keep that patient in our wards we will be feeling sorry for him/her and we will allow him/her to do as they please because they will be missing their families and it also affects us. We need to be strong even though it is so painful and not show any emotions in order to help patients recover".*

Another participant indicated that: *"Every time when I get to the wards I look at those kids some of them are very young and I just wish they would recover, they become so close to us like they are our own children or family members, we always encourage them to take medication and injections even when it is painful we help talk to them. Most of patients have side effects and they will vomit after taking medication and we always have to go all out and look for the food because they will be hungry. Nursing TB patients is so stressing and frustrating at times we feel like we are not doing our job because patients die in large numbers in our wards and it is so painful, when new patients come all we see is someone who is going to die (sad)."*

Another participant said: *"When those patients are discharged we make sure we keep checking on them in order to DOT them. If they do not come to take their medications we follow them to their homes."*

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According to the findings of this study, nurses experience stress, frustration and pain due to the conditions of TB patients and they perceive their job as one of the hardest since it deals with emotions. Nurses always go to an extent of risking their lives in order to save lives. When they fail, they always feel bad and become emotionally frustrated. The present study revealed that when patients show side effects, the nurses become frustrated and helpless. There is a high death rate in the TB wards of Tshilidzini Hospital and when a patient dies, nurses feel sad and hurt; they feel that they are not doing their job. The findings of this study are in agreement with those of the study by Chung *et al.* (2005), which showed that participants also experienced a variety of emotions when nursing patients with Severe Acute Respiratory Syndrome, and not knowing what they were facing.

Theme 5: Support Structure Expected in the Hospital

Due to the nature of work that nurses provide to the patients, it is important that they receive special support from their management and colleagues in order for them to offer quality service. The following sub-themes will be discussed under support system available in the hospital; support from the managers, support from the psychologist and appreciation of staff.

Sub-theme 5.1: Support Versus Lack of Support from the Managers

Each hospital aims to deliver good and quality service to the patients. Experienced nursing staff plays a vital role in delivering a highest quality and safest care to the patients with the help of the management of the hospital. Nurses' managers are widely accepted as the most influential force in staff satisfaction and retention because of their role in work environments. Hospital management protects and provides staff with the resources to do their job. Within the clinical settings, managers are consistent in their presence; uniquely positioned with a front-row view of the intricacies of nurse-patient, nurse-physician, and nurse-interdisciplinary team dynamics. Hospitals, together with nursing managers, are expected to oversee the daily demands of unit operations while developing an environment that fosters nursing excellence and promote an engaged nursing staff. On the other hand,

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nursing managers are the vital link between hospital senior executives and direct care nurses. Good management makes a hospital meet its complex target. Below are the comments made by the participants:

One participant indicated that: *"We do not receive full support that we need in the wards from the managers. But we are happy of the fact that the hospital CEO does support us and the nursing service manager gives us support. They always come in the wards and walk around with no masks and they understand how we feel in the wards. Our problem is that we do not receive support from the other staff. They do not want to come in the TB wards because they are scared of contracting TB. TB is always associated with HIV/AIDS and we feel stigmatized and people think we have the disease too and they view working in the TB wards as a punishment. As a result, no one wants to interact with us or train as a TB nurse."*

Another participant said: *"Hmmm we believe that for now we just need a special support from the management and all TB programme leaders, to give us more knowledge and skills on TB. It is crucial that we gain knowledge on how to communicate with those patients and how we nurse them effectively in order to reduce the death rate in the wards, the spread of diseases in the communities and those patients who default maybe because they are showing the side effects and they have no one to DOT them to continue with treatment."*

Another participant indicated that: *"I believe that as a nurse it is more crucial that we have meetings with the doctors and other management staff"*

According to the findings of the present study even though the support structure from the management is available, there is a need for special support for TB patients. Lack of support from the management confuses the nursing staff and causes staff to lose interest in their job. The findings of this study concur with those of the study by Oosthuizen and Ehlers (2008), which revealed that South African hospitals' working environment lacks resources and managerial support.

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Sub-theme 5.2: Lack of Support from Psychologists

Nursing has long been considered one of the most stressful professions. Stress in nursing is attributed largely to the physical labour, suffering and emotional demands of patients and families; long working hours, shift work and interpersonal relationships. Sophisticated healthcare technologies, budget cuts, increasing workload, and constant organizational changes in some healthcare environments appear to be the factors that have increased stress among nurses. Nurses seem to be overexposed to a range of psychosocial stressors. As a result, it is important that they receive psychological support regularly in order for them to cope in their working environment and remain productive. Below are the comments made by the participants:

Participants indicated that: *"The most painful and traumatizing thing in the TB wards is that patients die in large numbers and it is so stressing to see people dying just before you every day. We really need clinical psychologists to come and render counselling, but all they do is to schedule an appointment with us and never come to talk to us. We do not get even debriefing sessions. As a result we feel that we are losing it, at times we just can't cope."*

The findings of this study revealed that nurses do not receive personal psychological support. Even though the support structure is there in the hospital, their needs are not considered and attended to. A study by Minnaar (2005) reported concerns that were raised by nurses, that they needed counselling, not only when they have contracted the disease, but in order for them to cope with the demands of the high number of patients who no longer recover from the illness, but die as the result of HIV/AIDS. The findings of the present study are in agreement with those of the study by Arjun (2011), which concluded that nurses caring for MDR-TB patients did not receive psychological support from the clinical psychologists when they need it; neither was there a functional employee assistance programme available at the institution.

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Sub-theme 5.3: Lack of Appreciation from Colleagues and Patients' Family Members

Hospitalized patients require more than a dozen daily medications that are administered at various hours and in multiply ways. Although physicians have the responsibilities to diagnose infections and prescribe medications for patients, nurses are responsible for actively caring, feeding, bathing and dispensing medication for hospitalized patients throughout the day. Nurses are on the front line of fighting all kinds of diseases in the world, and they risk their lives to provide quality healthcare service in the hospital. Nurses provide primary care services across a wide spectrum of healthcare settings. Their duties range from caring, teaching, counselling and researching more effective ways to deliver care. It is of paramount important that each hospital has a day to appreciate nursing staff for the good work that they are doing of risking their lives to provide care to the patients. Below are the comments made by the participants:

One participant said: *"The hospital doesn't even appreciate us for the good work that we are doing by risking our lives on a daily basis. We do not even get a danger allowance in case we contract infection in the wards. Instead we are being told that if we are found with TB we would be moved to another ward which is not a TB ward. We receive free periodic medical examinations and free medication in case we are diagnosed with TB, hmmm, and if you skip the periodic medical examination and you happen to contract infection, you will be told that you did not get the disease in the wards since TB is everywhere."*

Another participant indicated that: *"We do not have TB awareness campaign, even just for a day, where the management just appreciates us for the great work that we are doing. At times I even consider other opportunities. Even the families of patients blame us for everything that goes wrong with the patients they do not appreciate the effort we put to care for the patients".*

According to the findings of the present study, TB nurses feel unappreciated for what they are doing. TB nurses are on the frontline of the fight against the highly infectious diseases that affect many people. In spite of this, they do not receive a danger allowance and the hospital does not celebrate TB day as a way of appreciating TB nurses as pioneers in the hospitals who risk their lives in order to fight TB disease. In support of these findings, Smit (2004) and Harrowing and Mill (2009) reported that the participants' experiences were that

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the families believed that nurses did not do their best for the patients and that they abuse the patients. The findings of this study concur with those of the study by Oosthuizen and Ehlers (2008) which concluded that South African nurses were not well supported, appreciated, recognized and well-rewarded; unlike in other countries since they provide quality service to patients under very difficult circumstances with limited resources. This is why they leave South Africa to work in other countries.

Theme 6: Support Needs for the Nurses

Evidence indicates that nurses have a heavy workload and they work under pressure on a daily basis. They are expected to have high levels of independence, well-developed problem solving abilities and leadership responsibilities. Regardless of all the skills they have acquired they still express needs that are not met by the healthcare managements. The following sub-themes were developed under support needs for the nurses: good ventilated working environment, good infection control and prevention measurements and special support from management.

Sub-theme 6.1: Poor Ventilated Working Environment

TB is transmitted through the airborne routes. Poorly designed or overcrowded healthcare facilities play an important role of TB transmission and also increases the chances of cross-infection between patients and healthcare workers. HCWs are essential in the fight against TB infection and they should be protected. A good ventilated working environment should have natural, mechanical and negative pressure ventilation to reduce the risk of spreading TB infection in the wards. Natural ventilation relies on open doors and windows to bring fresh air in the wards from outside, which dilutes the concentration of particles such as droplet nuclei containing *mycobacterium tuberculosis.* Negative pressure ventilation prevents contaminated air from the outside to flow into the wards. Mechanical ventilation is used if there is a free flowing air from the outside of the wards. Poorly ventilated TB wards expose healthcare workers and patients to a high risk of contracting TB infection. Below are the comments made by the participants:

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Participants said: *"We are working in an old building that needs refurbishment. The infrastructure is very old but anyhow it is not a big problem. Our biggest concern is that the TB wards are not suitable for TB patients. They are different from all other TB wards from other hospitals. The management promised us that they will build new TB wards that are well ventilated, that have good airflow, fans and regularly serviced UV lights as well as big windows and patients' waiting area to allow airflow. The wards will have nursing station and there will be a demarcation between TB, MDR-TB and XDR-TB. We really need those wards because we are not safe here."*

The findings of this study revealed that nurses the need well-ventilated TB wards in the hospital. The TB wards layout was not suitable and lacked ventilation, which increased risk of TB spread. The working environment was not safe and did not meet the national standards guidelines for TB ward setting, as recommended by South Africa (2007). According to the study by WHO (2005), overcrowding and poorly ventilated environments increase the risk of acquiring TB.

Sub-theme 6.2: Lack of Infection Control and Preventative Measures

Good infection control and prevention in the healthcare settings reduce the risk of contracting TB infection. TB setting should have the following TB infection control and prevention measures: workplace and administrative control measures, environmental control measures and personal control measures. People who work or receive care in healthcare settings are at higher risk of being infected by TB. Therefore it is necessary to have a TB infection control plan. Healthcare facilities should design policies and procedures for TB control. It should be reviewed periodically and evaluated for effectiveness to determine the actions necessary to minimize the risk for transmission of TB. Below are the comments made by participants:

One participant indicated that: *"We have an urgent need for good quality equipment and personal measures such as N95 respiratory masks, gloves and protective clothes like those in theatres, to protect us from contracting infection with our clothes and expose our families to risks of contracting infection."*

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Another participant said: *"We need infection control and prevention to be in place for our safety. It is important that after having contact with patients we should wash our hands with soap. The Provincial government people always say never risk going into TB wards without protective materials."*

The findings of this study revealed that infection control and prevention are not available in TB wards. The nurses expressed a need for those. Nurses and patients were at a great risk of contracting TB infection in the wards. The findings of this study are in agreement with those of the study that was done by Tshitangano *et al.* (2013), which concluded that infection control plans are not available at the hospitals in Vhembe District, and that result in a high risk of TB infection transmission in the hospitals.

Sub-theme 6.3 Support Needs Expected from the Management

Nurses play a vital role in the hospital of caring for patients. They are the core members of the hospital who produce good and quality results. Therefore it is important for the hospital CEO and nursing unit managers to support them in order for them to remain productive. The hospitals should make sure that they order quality equipment, and other materials to assist nurses to do their work effectively. Nurses should be provided with adequate and necessary training to empower them with relevant skills and knowledge. Good management empowers employees in the hospital in different ways and also listens to their requests. Below are the comments made by the participants:

One participant said: *"Hmmm, we believe that for now we just need special support from the management and all TB programme managers, to empower us with knowledge maybe by having workshops with us or arranging in-service training. It is crucial that we gain more knowledge on how to communicate with patients who are showing side effects or who are likely to default when they are at home. I believe that if we can be empowered with knowledge, the death rate and the spread of disease can be reduced. Most patients default because there do not receive support and there is no one do DOT them. Therefore, we need knowledge to empower these patients."*

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Another participant said: *"I believe that it is important to have meetings with doctors and other management to give us in-service training and workshop us."*

According to the findings of this study nurses have various unmet needs when they are doing their job. Participants expressed the need for special support from the management. They were in need of adequate supplies of specialized protective N95 masks, in-service training, workshops, proper equipment and a daily diet for TB nurses. A study by Oosthuizen and Ehlers (2008) revealed that poor working conditions, lack of resources, special managerial support from the hospitals in South Africa were the reasons why nurses left South Africa to go and work abroad.

4.4 SUMMARY

In this chapter data were collected from six TB nurses and analysed using Colaizzi's (1978) method of data analysis. Six major themes emerged from this study: challenges of the working environment, problem impacting the quality of nursing care, fear, anxiety, stress and risk of contracting infection, nurses' perceptions towards patients, support structure available in the hospital and support needs for the nurses. In the next chapter the conclusions and recommendations will be presented.

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CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings, conclusions, recommendations and limitations of the study, based on the data analyzed in the previous chapter. Some limitations have been identified. The personal experiences of nurses caring for TB patients at Tshilidzini Hospital were uncovered.

5.2 Summary of the Study

The main purpose of this study was to determine the experiences of nurses caring for TB patients at Tshilidzini Hospital.

The objectives of the study were to:

- Explore the experiences of nurses caring for TB patients in Tshilidzini Hospital.
- Describe the risks that nurses are exposed to when caring for TB patients.
- Describe the support needs of nurses caring for TB patients at Tshilidzini Hospital.

Research questions were as follows:

- What are the experiences of nurses caring for TB patients at Tshilidzini Hospital?
- What are the risks that nurses are exposed to when caring for TB patient?
- What are the support needs of nurses caring for TB patients at Tshilidzini Hospital?

A qualitative, exploratory and descriptive research approach was adopted. The target population was nurses caring for TB patients at Tshilidzini Hospital in Limpopo Province, South Africa. The researcher used purposive sampling, since it was believed that participants would provide a researcher with the rich data. Six nurses were the participants of this study.

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Data was collected through unstructured and in-depth individual interview. Data analysis was done using Colaizzi's (1978) methodology. Data were transcribed, analyzed and coded into themes.

5.3 Limitation of the Study

The study focused on the experience of nurses caring for TB patients at Tshilidzini Hospital in Limpopo Province, South Africa and therefore the findings cannot be generalized. However, according to Streubert-Speziale and Carpenter (2003), generalizability in a qualitative study is not intended. The hospital where the study was conducted is situated in the rural area. Therefore, if other hospitals had been included, it could have led to different data findings.

5.4 Conclusions of the Study

This study described the lived experiences of six nurses caring for TB patients at Tshilidzini Hospital. All participants were women who had more than five years' experiences as nurses.

Themes that emerged from the study were as follows:

Theme 1: Challenges Experienced in the Working Environment

The study discovered that the from the nurses' view point the physical environment was inadequate and the structure of the wards was unsuitable for use as TB wards since it exposed nurses at a high risk of contracting TB infection. The infrastructure was old and in dire need of refurbishment. The wards had poor ventilation system, poor airflow and environmental control measures could not reduce bacteria concentration in the wards. It was also found that there were poor practices in the wards and these made nurses more negative, which impacts negatively on the quality of patients care.

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Theme 2: Problem Impacting on the Quality of Nursing Care

It was discovered that the following problems negatively impact the quality of nursing care for TB patients; adherence to treatment, delay in diagnosis, lack of equipment and working materials, lack of sufficient skills and in-service training. Even though patients were given medication and were advised to be on treatment for a period of six month, they always default for various reasons, such as bad side effects, and these always affect their outcomes. Patients always delay in consulting healthcare facilities when they show TB symptoms. This is because they first visit traditional healers and they are afraid of stigmatization by their communities. There was a lack of essential equipment such as fans, ultraviolet lights and ventilation system. There was a poor supply of personal protective materials such as N95 respiratory mask. Participants disclosed that they lack sufficient skills to care for TB patients since there is no in-service training that they receive.

Theme 3: Fear, Anxiety, Stress and Risk of Contracting Infection

It was discovered that nurses feel vulnerable since they are exposed to a high risk of contracting TB infection in the wards. Nurses did not feel safe in the wards since patients did not care about their health, they would spit sputum everywhere in the wards. Nurses were afraid to have contact with patients since they felt that they were putting their live in danger. Patients were spreading TB throughout the communities and the wards, this resulted into high TB outbreak. It was discovered that nurses appeared to be stressed, frustrated, and fearful about the whole issue of TB infection but yet they had to be strong to save lives.

Theme 4: Nurses Perceptions Towards their Job

It was discovered that nurses perceive their job as one of the hardest since it has to deal with the emotions. Participants indicated that there is high death rate in the TB wards as compared to other wards. Each time when they see patients dying they feel bad and sad

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and wish they should have done something to save them. Participants express feeling of stressed, frustrated and helpless because of TB deaths in the wards.

Theme 5: Support Structure Expected in the Hospital

It was discovered that various support structures are available in the hospital but do not provide a full support to the nurses. Participants disclosed that they do not receive full support from management. They expressed a need for the full support from the TB programme managers and doctors, to empower their knowledge on TB. They also indicated that they need support from psychologists, since caring for TB patients is a source of stress and burnout amongst nurses. Participants also indicated that they need to be appreciated for the good work they are doing because they put their lives in danger to save lives. The hospital must provide them with danger allowance and any token of appreciation by having a TB day at the hospital.

Theme 6: Support Needs for the Nurses

According to the findings of this study, infection-control measures, and safety measures are not available in the hospital. Nurses are in need of personal protective materials, regularly serviced infection control and prevention measures. Nurses are also need in-service training and workshops, so they can provide quality nursing care to the patients. Nurses are also in need of a special diet for both nurses and TB patients to boost their immune system.

5.5 General Conclusions

The hospital infrastructure is old. The physical environment is inadequate since the wards layout was not suitable for them to be used as TB wards. Nurses were scared of contracting TB because the wards did not have infection control and prevention measures. Nurses are stressed, frustrated and very emotional about what they experienced in the TB wards and these feelings impact the quality of health provided to the TB patients. There is high death rate in TB wards which is why nurses are in need of special support from the management,

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colleagues and psychologists. Patients do not comply with TB treatment and are continuing to spread TB in the wards and communities. Therefore, there is a need to educate communities about TB infection. There is also a need for in-service training, workshops and appreciation of the TB staff in the hospital.

5.6 Recommendations

Based on the findings of this study, the following recommendations are made based on each theme from the research findings respectively, in order to enable nurses to remain committed to their work of providing quality nursing care to the patients. The recommendations are referred to the Limpopo Provincial Department of Health, Vhembe District Department of Health, Hospital CEO, Hospital Nursing Manager, Hospital Human Resources and nursing staff in general of Tshilidzini Hospital. The researcher recommends the following:

- Employers should ensure that TB wards are suitable and adequate to be used as TB wards.
- They must ensure that the wards have extractors such as ultraviolet lights, fans, big windows and air conditioner to prevent risk of contracting infections. They must also install hands washing basins.
- They must develop infection control policies in the wards and health and safety measures must be in place.
- They must ensure procurement of good quality personal protective materials such as N95 respiratory masks, glove and apron and also follow their usage protocol.
- District must have TB programmes in the communities to educate people about the spread and control of TB infection as well as treatment.
- Health education should be given to patients and their relatives in order for them to DoT the patients.
- Hospital must ensure that they provide their staffs with regular in-service training and workshops to equip them on how to provide a quality nursing care.

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- Management and nurses from other wards should give support to their colleagues who are working in the TB wards.
- Managements should appreciate TB nurses by having a TB day in the hospital just to appreciate them on the great work that they are doing.
- The hospital should give danger allowances to the TB nurses.
- TB nurses should be provided with special diet to boost their immune systems.
- TB nurses should be screened for free every month to monitor their health status.
- Psychologist must schedule a monthly counseling with TB nurses.

5.7 indications for Further Research

This study has highlighted a number of researchable aspects that could be pursued in future. The findings of this study prove that nurses caring for TB patients have bad experiences in the wards. Therefore there is an urgent need to address this problem by the Department of Health and Hospital Executive Managers. Future researchers could look at the reason(s) why hospitals in rural areas do not have TB infection controls and prevention in place.

5.8 SUMMARY

In this chapter, the study was summarized in relation to the aims and objectives achieved, research questions answered, limitations of the study mentioned, and recommendations and indications for further research were also provided.

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Annexure A: TOPIC GUIDE

The Interview schedule and Questions

Time Limit: 30 - 45 minutes

The researcher will start by thanking participant for taking part in the research study, he will then briefly talk about the ethical considerations and confidentiality pertaining to the research process.

The researcher's central question is: "*What is your experience when nursing patients who suffer from TB?*" During the interview the researcher asked the following probing questions so that participants could elaborate or clarify their responses:

- Tell me more about your experiences with these patients.
- Tell me about the risks that you are exposed to in this hospital.
- What sort of support is available at this hospital for nurses?
- What are your needs with regard to caring for TB patients in this hospital?

General Probing questions and Comments

(1) Would you explain further? (2) How do other nurses feel? (3) Would you give an example of what you mean? (4) Can you say a bit more about that? (5) Is there anything else? (6) Please describe what you mean?

Interviews will be terminated when data saturation was reached, that is, when information will be repeated and also when the participant will be indicating that there is nothing further that they want to say.

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Annexure B: Covering Letter.

Dear Participants,

My name is Hulisani Matakanye, I'm conducting a research study on the **Experiences of Nurses Caring for Tuberculosis Patients at Tshilidzini Hospital in Limpopo Province, South Africa**. The research study is undertaken towards the fulfillments of the requirements of Masters Degree in Public Health. The main purpose of this qualitative research is to determine the experiences of nurses caring for TB patients at Tshilidzini Hospital.

The information which will be provided will remain confidential and all participants will remain unanimous. There is provision for name and address on the consent form. The results of this study will be made available for readers at the University of Venda library. Should any participant have any question regarding to research, he/she can contact me at the following contact detail.

Thank you,

Mr. Matakanye H
073 886 8949

_____

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Annexure C: Consent Form

I, Hulisani Matakanye a post-graduate student at the University of Venda, Department of Public Health. I am conducting a research study on the: **Experiences of Nurses Caring for Tuberculosis Patients at Tshilidzini Hospital in Limpopo Province, South Africa**. The main purpose of this study is to determine the experiences of nurses caring for TB patients at Tshilidzini Hospital.

The study may contribute to the understanding of the experiences of nurses caring for TB patients. The research findings may help policy makers and healthcare facility managers to review their policies on management of TB infection at Tshilidzini hospital. The results may also contribute knowledge to improve the quality of healthcare services rendered to TB patients. It may also help nursing staff to be provided with minimize cross-infection resources to control TB epidemic in the healthcare facilities. The research information may also benefit scientific community and library users. Future studies that will be conducted on the same research topic will benefit from the finding of this study.

I would like to request you to participate in the study. All nurses who are caring for TB patients at Tshilidzini hospital are welcomed to participate in this research study. The information obtained from you will be treated as confidential. Your participation in this study is voluntary and your decision not to take part in this study will have any negative effects in your life or health.

Researcher's signature_____ Date_____

Participant

I_____

On this day_____of_____

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Hereby consents to be interviewed. I understand that I can withdraw my consent at anytime without jeopardizing any healthcare benefits for me and my family. The researcher grants anonymity and data will not be reported in such a way that will reveal my identity. More than one interview might be necessary. The researcher will make no reimbursement for information given on my participation in this study.

Participant's signature_____ Date_____

For more information please contact Matakanye H at: **073 886 8949** or **hmatakanye1@gmail.com**

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Annexure D: Approval from the University of Venda Ethical Committee
Project No: SHS/15/PH/07/1604
Hulisani Matakanye
Student No: 11550359

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NAME OF RESEARCHER/INVESTIGATOR:
Ms H Matakanye

Student No:
11550359

PROJECT TITLE: Experiences of nurses caring for Tuberculosis patient at Tshilidzini Hospital in Limpopo Province, South Africa.

PROJECT NO: SHS/15/PH/07/1604

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr AK Tugli	University of Venda	Supervisors
Dr DU Ramathuba	University of Venda	Co-Supervisor
Ms H Matakanye	University of Venda	Investigator - Student

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: April 2015
Decision by Ethical Clearance Committee Granted
Signature of Chairperson of the Committee: .....
Name of the Chairperson of the Committee: Prof. G.E. Ekosse

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Annexure E: Letter to inform the hospital CEO of the approval to conduct a research study in TB wards.

University of Venda
P/Bag X5050
Thohoyandou
0950

30 May 2014

The Hospital CEO & Nursing Service Manager
Tshilidzini Hospital
P/Bag X924
Shayandima
0931

Dear Sir/Madam,

I, Mr Hulisani Matakanye would like to inform you that Limpopo Department of Health and University of Venda have granted me permission to collect data on the research topic: **Experiences of Nurses Caring for Tuberculosis Patients at Tshilidzini Hospital in Limpopo Province, South Africa.** The main purpose of this study is to determine the experiences of nurses caring for TB patients at Tshilidzini Hospital.Data will be collected from nurses who are providing nursing care to TB patients in TB wards. Protocols will be followed in order to avoid interfering with participants working hours during the process of interviews. Please see attached copy of approval.

The objectives of the study are to: To explore the experiences of nurses caring for TB patients. To describe the risks that nurses are exposed to when caring for these TB patients. To describe the support needs of nurses caring for TB patients at Tshilidzini hospital.

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The study may contribute to the understanding of the life-world of nurses who are working in TB wards of Tshilidzini hospital. The research findings may be used by the nursing managers to develop strategies to minimise the risks which nurses are exposed to in TB wards. It is believed that this may eventually lead to improved patient care. This study furthermore will contribute towards the knowledge base of the nursing profession by documenting the nurses' views on their working circumstances, their experiences in the workplace and the influence of such experiences on the beneficial relationship with TB patients.

_____ _____

Researcher's signature Date

Contact number: _____

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ANNEXURE F: PERMISSION FROM LIMPOPO DEPARTMENT OF HEALTH

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LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Ref:4/2/2

Enquiries: Stols M.L.

Matakanya H
University of Venda
Private Bag X 5050
Thohoyandou
0950

Greetings,

RE: Experiences of nurses caring for Tuberculosis patients at Tshilidzini Hospital in Limpopo Province, South Africa

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.
2. Kindly be informed that:-
   - Research must be loaded on the NHRD site (http://nhrd.hst.org.za) by the researcher.
   - Further arrangement should be made with the targeted institutions.
   - In the course of your study there should be no action that disrupts the services.
   - After completion of the study, a copy should be submitted to the Department to serve as a resource.
   - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   - The above approval is valid for a 3 year period.
   - If the proposal has been amended, a new approval should be sought from the Department of Health.

Your cooperation will be highly appreciated.

Head of Department

26/06/2015
Date

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Creating Future Leaders

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

VHEMBE DISTRICT

Ref : S13/2

ENQ : Muvari MME

DATE : 06/07/2015

TO: The CEO Tshilidzini Hospital

Attention: Mr Matakanye H

Subject: REQUEST TO DO RESEARCH AT TSHILIDZINI HOSPITAL

1. The above matter refers.

2. Your request to do research at Tshilidzini hospital in the Vhembe district has been received.

3. The district has no problem with your endeavor to conduct the research. You are however advised to make the necessary arrangements with the hospital you wish to visit to avoid disappointments and unnecessary disruptions of services.

4. Hope that your research will run smoothly

Faithfully yours

.....

ACTING DISTRICT EXECUTIVE MANAGER

Private Bag X5009 THOHOYANDOU 0950Old Parliamentary Building Tel: (01961000(Health) (015) 962 4958(Social Dev) Fax (015) 962 2274/4623.

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EXPERIENCES OF NURSES CARING FOR TUBERCULOSIS PATIENTS AT TSHILIDZINI HOSPITAL IN LIMPOPO PROVINCE, SOUTH AFRICA

by

Hulisani Matakanye

(Student number: 11550359)

A mini-dissertation submitted in partial fulfillment of the requirement for the degree:

Masters of Public Health (MPH)

UNIVERSITY OF VENDA

SCHOOL OF HEALTH SCIENCE

DEPARTMENT OF PUBLIC HEALTH

Supervisor	*Co-Supervisor*
Dr A.K. Tugli	**Dr D.U. Ramathuba**

2015

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