FACTORS AFFECTING THE IMPLEMENTATION OF THE NATIONAL TUBERCULOSIS CONTROL PROGRAMME BY PROFESSIONAL NURSES

BY

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DECLARATION

"I, Raesetja Jacobeth Sekotlong, declare that the dissertation hereby submitted to the University of Limpopo, for the degree of Master of Curationis (M Cur) has not previously been submitted by me for a degree at any other university or institution, that it is my own work in design and in executing, and that all materials contained herein has been duly acknowledged."

Signature: ……..... Date…….

Student number: 200818158

DEDICATION

This dissertation is dedicated to the following people:

- My husband: Noko;
- My children: Tlou, Phina and Manale;
- My Parents: Michael and Betty Mahlong;
- My father-in-law: Tlou Sekotlong; and
- All my siblings.

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- To all people who participated in the study, since it was because of you that I completed this study successfully.
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- Above all, I express my deepest gratitude to God Almighty for giving me strength at all times.

ABSTRACT

Study Background

The present study presents data about the factors that are affecting the implementation of the National Tuberculosis Control Programme by the professional nurses in the Mogalakwena Municipality of the Waterberg District in the Limpopo Province. Despite the intervention by the then Waterberg District Department of Health and Social Development through continual training and workshops of professional nurses in respect of the NTCP, there are still more challenges observed in terms of TB management.

Aim of the study

The aim of the study was to identify and describe the factors that are affecting the implementation of the NTCP and the findings may be utilised to describe the strategies to increase TB cure rate in the Mogalakwena Municipality of the Waterberg District.

Research Methodology

A quantitative research approach was used to conduct this study. One hundred and thirty one professional nurses employed at 28 clinics of the Mogalakwena Municipality were selected to participate in the study. The researcher distributed the questionnaires at the clinics. A structured questionnaire with both open and closed-ended questions was administered. The questionnaire was pretested in the Mahwelereng Local Area which did not form part of the main study.

Results

Of the 131 respondents, 33.6% were the largest age group of between 40 – 50 years followed by 24.4% who were older than 50 years in contrast with the smallest age group of 18 – 28 years that comprised 18.3% of the population. Sixteen per cent of the respondents were male while 84.0% were female.

The findings show that 83.2% of respondents held a diploma in nursing while 16.8% had a degree in nursing. The findings indicate that 98.4% of the respondents were reported to be having knowledge about TB while 1.6% reported not having knowledge. The findings

indicate that 98.4% of the respondents had knowledge about TB suspect screening according to the NTCP in contrast with 1.6% of the participants who did not have knowledge about TB screening. About 95.4% of the respondents reported tracing of TB defaulters while 4.6% of the respondents reported that TB defaulters were not traced. Sixty point three per cent 63.3% of the respondents thought that a negative attitude of professional nurses was the main cause of poor implementation of the NTCP while 30.5% of them disagreed with the statement.

Conclusion

Respondents demonstrated non-compliance to the implementation of the NTCP, ignorance to acquire skills and negative attitude towards the programme that was consistently significant with other similar studies. The study recommends an updated training programme of all TB trained nurses, as well as values clarification about the importance of the implementation of the NTCP in the management of the TB disease.

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DEFINITION OF CONCEPTS

Affect

The term refers to something that has an effect, influence, something that produces a change, or something that is capable of inspiring strong emotions (Fowler, & Fowler, 1995). For the purpose of this study, affect referred to the outcome of a TB management programme implemented by professional nurses.

Factors

Something that actively contributes to an accomplishment, a result, or a process (Fowler *et al*., 1995). For the proposes of this study, factors referred to the human and financial resources, as well as the infrastructure required to carry out the NTCP.

Implementation

Implementation is the execution, practice of a plan, a method, or any design for doing something or for realising of an application (Fowler *et al*., 1995). In this study, implementation meant the execution of the TB management programme (NTCP) by the professional nurses.

National TB Control Programme (NTCP)

The National Tuberculosis Control Programme (NTCP) is a practical guideline formulated by the South African Government to provide a standardised short course chemotherapy (SCC) under the Direct Observation Treatment Support (DOTS), for at least the initial phase of treatment for all identified smear-positive tuberculosis cases (Department of Health and Social Development, 2001). For the purpose of this study, NTCP referred to the programme that was used as a guiding tool by all professional nurses for the management of TB related diseases.

Professional nurse

A person, who meets the educational requirements and who is competent to practise independent comprehensive nursing, assumes responsibility and accountability for such practice and is registered and licensed as a professional nurse in terms of the South African

Nursing Act, Act 33 of 2005. For the purposes of this study, a professional nurse referred to a nurse who was registered at the South African Nursing Council (Act No. 33 of 2005).

Tuberculosis (TB)

TB is an airborne communicable disease caused by *Mycobacterium* tuberculosis, or the tubercle bacillus (World Health Organisation, 2003). For the purpose of the study, TB referred to an infectious disease that destroyed the lungs of a human being, which could spread from one person to another if not treated.

World Health Organisation (WHO)

The WHO is an agency of the United Nations that is primarily concerned with worldwide and regional health problems, but in emergencies it is authorised to provide local assistance on request. Its functions include furnishing technical assistance, stimulating and advancing epidemiologic investigation of diseases, recommending health regulations, and promoting cooperation among scientific and professional health (Anderson & Glanze, 1994). For this study, the WHO referred to a body that provided guidelines for health provision in South Africa.

LIST OF ABBREVIATIONS

AIDS:	Acquired Immunodeficiency syndrome
DHIS:	District Health Information System
DOTS:	Directly Observed Treatment Support
HIV:	Human Immunodeficiency Virus
MREC:	Medunsa Research and Ethics Committee
NTCP:	National Tuberculosis Control Programme
PHC:	Primary health care
SA:	South Africa
SCC:	Standardised short course
STIs:	Sexually Transmitted Infections
TB:	Tuberculosis
WHO	World Health Organisation

CHAPTER 1
BACKGROUND TO THE STUDY

1.1 INTRODUCTION

The present study is a quantitative inquiry into the factors that are affecting the implementation of the National Tuberculosis Control Programme (NTCP) by the professional nurses in the Mogalakwena Municipality of the Waterberg District, Limpopo Province. Tuberculosis (TB) is one of the alarming diseases in the Limpopo Province. The present study was conducted with the aim of describing the factors that were affecting the implementation of the NTCP.

TB remains a major global health problem although TB treatment has saved the lives of more than 22 million people, according to the report. The report reveals that the number of people who fell ill with TB in 2012 was 8.6 million, with 1.3 million TB deaths globally (WHO Report, 2013). In 1996, the South African Health Department declared TB a national emergency and also a national priority. The government also increased efforts to offer free diagnoses and treatment for TB to ensure increased accessibility of treatment to the local community (Department of Health and Social Development, 2003). The TB pandemic has led the South African Government to strengthen its management at national, provincial, district, and local health care levels by adding resources to TB training and control, strengthening the DOTS strategy, and emphasising the monitoring of patients' progress that were recorded in TB registers (WHO, 2008).

The functions of the NTCP at the four levels of health care service delivery as indicated in the then Department of Health and Social Development (2001) were:

- supervision of the records, keeping of TB registers, and the laboratory registers; and
- establishing and updating the National Tuberculosis cases detection, sputum conversion, and treatment outcomes by cohorts of patients' programme management.

According to the Tuberculosis Training Manual (1998), the aims of the NTCP were to**:**

- cure 85% of all new smear-positive TB cases; and
- contain and reduce the rising incidence of tuberculosis infection.

The then Department of Health and Social Development (2007) outlined the management procedure for TB in accordance with the NTCP.

1.1.1 Identification of TB infected patients

Identification of TB infected patients involves asking clients about symptoms of TB when they present at health care facilities. The most important symptom of pulmonary TB that should be identified by the health care providers is coughing that is lasting for two weeks or longer. Other common symptoms include unexplained weight loss, loss of appetite, night sweet, general malaise, chest pains, shortness of breath, and fever. Health education is very important to ensure that TB infected patients realise the importance of the need to seek help. Training of staff members is also crucially important in order to identify TB among people with some of the symptoms who are seeking medical assistance.

1.1.2 Diagnosis of TB

The primary diagnostic test to confirm the most infectious form of pulmonary TB is sputum smear microscopy; chest X-rays is also important and often detects TB infection. Frieden, Sterling and Munsif (2003) recommend a rapid diagnosis of infectious TB by simple sputum smear for acid-fast bacilli. Training of health professionals to recognise TB infected patients and to refer them for diagnosis are essential. Health professionals who are found to be lacking skills of recognising possible TB patients might miss more opportunities; hence the infection rate would remain high while the rate of identifying these patients would remain low.

1.1.3 Patients' identity cards

This is used for every TB case and belongs to the patients who keep it. It records the patients' identity, diagnostic category, type and form of TB, selected TB regimen and doses, the date when the treatment is started, and sputum examination results.

1.1.4 Recording of newly diagnosed patients and reporting treatment results

Health providers should record all patients with a diagnosis of TB in the TB register, all TB positive patients' standard treatment outcomes, as well as their laboratory results.

Dye, Bassili and Broekmans (2008) describe TB as one of the ten causes highest of death worldwide; including the human immunodeficiency virus and acquired immunodeficiency

syndrome (HIV / AIDS), hypertension, diabetes, as well as asthmatic and heart attacks. They further indicate that the NTCP is used to assess progress towards targets that are to be achieved, mainly through the diagnosis and treatment of TB cases.

There is still more work to be done in relation to the management of TB, according to the NTCP. If all patients who are visiting the facilities are excluded from TB, according to the NTCP, possible TB infection will not be missed. The then Department of Health and Social Development (2006) outlined that "about 50% of TB suspects may be missed if the facility considers TB only in persons who are already sick with TB".

According to the Tuberculosis Strategic Plan for South Africa (2007 – 2011), the then Department of Health and Social Development set the following targets and indicators that needed to be reached by 2011:

- Tuberculosis case detection rate: = 70%
- Tuberculosis cure rate: = 85%
- Tuberculosis smear conversion rate at 2 months: > 75%
- Tuberculosis smear conversion rate at 3 months: > 85%
- Tuberculosis defaulter rate: < 05%

The then Department of Health and Social Development (2006) indicated that the cure rate for detected smear-positive cases in many parts of South Africa had not exceeded 50% of all diagnosed smear-positive cases. This is a serious problem and the Mogalakwena Municipality is also one of the areas with a low cure rate in the Limpopo Province of South Africa.

This present study was a quantitative inquiry that had identified and described the factors that were affecting the implementation of the NTCP at health unit level in the Mogalakwena Municipality of the Waterberg District, Limpopo Province. Despite the intervention by the Waterberg District Department of Health and Social Development through continuous training and workshops of professional nurses in respect of the NTCP, there were still challenges about TB management. The then Department of Health and Social Development (2001) indicated that the professional nurses should adhere to the functions of the NTCP for quality TB management.

1.2 PROBLEM STATEMENT

Initiatives have been introduced to improve the implementation of the NTCP to control TB disease but with little impact. Professional nurses have been exposed to TB training and workshops at all clinics in Mogalakwena. Training and workshops focus on TB management, including quality recording and reporting. During the follow-up visit to the clinics, the researcher observed the following:

- Low TB smear conversion rate in smear-positive cases;
- Low TB cure rate in smear-positive cases;
- Poor recording and reporting of the possible TB patients and diagnosed cases;
- Poor referral system of TB patients from one clinic to another;
- High TB defaulter rate of smear-positive cases; and
- Information in the TB registers was not corresponding with the TB case identification and follow-up register.

The Department of Health and Social Development (2003) outlined that "tuberculosis management and control should form part of the primary health care (PHC) package as vertical programme (Programme whereby certain nurses are only allocated to manage TB disease) have failed to meet the needs of the populations as a whole, and proved to be wasteful of resources." Based on the above statement it became essential for the researcher to undertake a study that described factors that were affecting the implementation of the NTCP by professional nurses in the Mogalakwena Municipality.

1.3 AIM OF THE STUDY

The aim of the study was to identify and describe the factors that were affecting the implementation of the NTCP while the findings might be utilised to describe the strategies to increase the TB cure rate in the Mogalakwena Municipality of the Waterberg District.

1.4 RESEARCH QUESTION

A research question was developed according to the proposed study objectives:

- What are the factors that affect the implementation of the National Tuberculosis Control Programme by the professional nurses?

1.5 OBJECTIVES OF THE STUDY

- To describe the factors affecting the implementation of the NTCP by professional nurses in the Mogalakwena Municipality of the Waterberg District.

- To make recommendations for the improvement of the NTCP in the Mogalakwena Municipality.

1.6 CONCLUSION

This chapter outlines the problem statement of the study by highlighting the status of the NTCP management**.** The research aim, question, and objectives of the study are also provided.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

A literature review refers to the organised written presentation of what has been published about the topic by scholars and to convey to the reader what is currently known about the topic of interest (Burns & Grove, 2005). This chapter presents the literature about the factors that are negatively affecting the implementation of the NTCP in the Mogalakwena Municipality. The literature review provides the current state of the implementation of the NTCP by professional nurses.

2.2 THE ANALYSIS OF NATIONAL, PROVINCIAL, AND DISTRICT TUBERCULOSIS INDICATORS

The Waterberg District Health Information System (DHIS) revealed that the TB cure rate for 2007 in the Mogalakwena Municipality was 51.7% (45 of 87 TB clients) and still below the 85% of the national target; treatment completed was 14.9% (13 of 87 TB clients). The TB death rate was 12.6% (11 of 87 TB clients).

Table 2.1: New TB smear-positive cure rate in Waterberg District per Municipality in 2010 / 2011

Municipality	2010 / 2011 District TB smear-positive cure rate output	2010 / 2011 National TB smear-positive cure rate target
Bela-Bela	32.1%	85%
Lephalale	43.5%	85%
Modimolle	57.1%	85%
Mogalakwena	25.6%	85%
Mookgophong	50%	85%
Thabazimbi	70%	85%

Municipality	2010 / 2011 District TB smear-positive cure rate output	2010 / 2011 National TB smear-positive cure rate target
District average	65.3%	85%

Table 2.1 shows the percentage of smear-positive patients who were cured of TB after six months of treatment out of off all new smear-positive patients. The indicators were calculated about a year in arrears and measured what was going on in relation to the TB Control Programme (Waterberg District Health Information System, 2010 / 2011). Table 2.1 is indicating that amongst the six Waterberg District Municipalities, Mogalakwena was the lowest on the new TB smear-positive cure rate in 2010 / 2011 annual report.

Table 2.2: New TB smear-positive patients who converted to TB smear-negative at two months in The Waterberg District 2010 / 2011

Municipality	2010 / 2011 TB smear-positive conversion rate annual district report	2010 / 2011 National TB smear-positive conversion rate annual report
Bela-Bela	20%	70%
Lephalale	52.4%	70%
Modimolle	30.8%	70%
Mogalakwena	14.35%	70%
Mookgophong	63.6%	70%
Thabazimbi	63.8%	70%
District average	40.8%	70%

Table 2.2 shows the number of new positive TB patients (the ones who are infectious, since the live bacteria are found in their sputum) who are no longer infectious at two months after being diagnosed out of the new smear-positive patients diagnosed. The national target is 75% and each district need to be experiencing an upward trend. The indicator shows how well the TB Control Programme is functioning, including record keeping, information system,

referral system, as well as the interaction between health workers and patients (Waterberg District Health Information System, 2010 / 2011). Table 2.2 indicates a high TB-positive defaulter rate in the Waterberg District, with Mogalakwena as the highest of the six municipalities.

Table 2.3: TB case findings annual report in the Waterberg District 2010 / 2011

Municipality	2010 / 2011 District annual TB case finding report	2010 / 2011 national annual TB case finding target
Bela-Bela	2.22	5
Lephalale	3.77	5
Modimolle	2.61	5
Mogalakwena	1.08	5
Mookgophong	1.84	5
Thabazimbi	1.85	5
District average	1.87	5

Table 2.3 indicates a low TB case finding in the Mogalakwena Municipality, which has also negatively affected the district average with 1.08 (Waterberg District Health Information System, 2010 / 2011).

The study conducted by Dladla (2013) in the Waterberg District concludes that one of the contributing factors of non-compliance to the NTCP is due to a negative attitude of health care workers towards TB clients. The Limpopo Province summary of the budget allocation for the financial year 2010 / 2011 (Vote: 7) indicated that the TB cure rate had improved from 61.7% in 2008 / 2009 to 67.3% in 2009 / 2010. In the budget speech, it was further outlined that there was an underachievement of the TB cure rate in respect of the national target of 85%. The tuberculosis case defaulter rate was also outlined to be still high at 7.9% while the department planned a reduction of 6.5% case defaulter rate. In conclusion, the premier committed the department to implement the Tracer Team Project to work with communities and also to strengthen the referral system in the Limpopo Province.

The study conducted in the Limpopo Province by Takalane, Pengpid and Peltzer (2011) reveals a lack of knowledge by health professionals in respect of TB management in keeping with the NTCP. Mabunda and Bradely (2011), in their study conducted in the Greater Giyani Local Municipality, indicate that HIV is a key factor in the fuelling of the tuberculosis epidemic. They recommend a strong collaboration between HIV and TB programmes at all levels. According to Waisbord (2005) cited in Mabunda and Bradely (2011), a delay in the diagnosis of TB and non-completion of treatment are the major challenges to TB control. Initiation of TB treatment in South Africa is offered by both doctors and professional nurses for all TB smear-positive patients.

Kandel, Mfenyane, Chandia and Yogeswaran (2008) observe that the factors which may contribute to non- compliance to TB treatment are poor communication between health care providers and patients, financial constraints limiting access to health care facilities, and a lack of nutritious food to support TB treatment. Malik and Ahmad (2009), in their study also found that health care workers attitude is associated with non- compliance to TB treatment.

McKinney (2013) in his study also indicates that a basic approach should be used in promoting compliance to TB treatment; such as access to treatment, education on the benefits of compliance to TB treatment, and providing user-friendly services that are culturally acceptable and convenient to patients.

South Africa is regarded as one of the 22 countries globally designated by WHO as “TB hot spots” due to high levels of TB infections. It is, therefore, a priority for the Department of Health in South Africa to ensure that adequate treatment is available at all health care facilities at district level to ensure access to care for all. TB services are provided by the state free of charge (Health System Trust, 1997).

Epidemiological studies have shown that 60 – 80% of patients with active TB in Botswana are co-infected with HIV. The convergence of the TB and HIV epidemics necessitates a collaborative public health policy approach. However, this has proven difficult, since the control policies and programmes for TB and HIV / AIDS have evolved separately. In 2004, the WHO outlined an integrated policy designed to amalgamate TB and HIV, which seems to have been a problem in Botswana and South Africa.

Luhaiima, Netshiandama and Maselesele (2008) indicate that the NTCP, MDR-TB and XDR-TB policies are available in South Africa (SA), but with little contextual evaluation of its implementation.

Mvisi (2007) indicates that there are several well documented factors fuelling the TB outbreak; including high TB treatment interruption rate, low TB cure rate, as well as a lack of awareness and education of community members.

Hendriks (1998) describes South Africa as a country with the worst TB epidemic in the world. He further indicates that TB accounts for more than 80% of all notified conditions in South Africa, which he confirmed with the figures from the Statistics of the Department of National Health. He concludes that an estimated R500 million was spent in South Africa on the treatment and eradication of TB in 1995, and there has been little evidence of the cost-effectiveness of these activities. He recommends pursuit of further studies about the retrospective drug utilisation to assess the outcomes of treatment for TB patients and prescribing patterns by the health professionals in South Africa.

Leinhardt and Rustomjee (2006) evidenced poor relations between health care providers and patients in the study done in West Africa which resulted in the rejection of the implementation of the NTCP. The researchers furthermore indicated that TB was declared a top health priority by the Department of Health in November 1996 when the then National Health Minister, Dr Nkosazana Dlamini-Zuma, committed the department to implement a new control programme based on the DOTS strategy of the WHO.

The then Department of Health and Social Development (2007), describes the situation of TB as a criminal neglect with millions of lives being lost unnecessarily despite the existence of treatment and effective prevention strategies. According to Ekaterina, Ajeilat and Ershova (2006), cure rates for the new TB positive cases amongst all TB positive adults are below targeted goals. They further explain that the low cure rate should have been addressed by the adoption of DOTS in 2008 but it has not yet been addressed. The above statement clearly indicates that much has been done to improve the implementation of the NTCP but the TB cure rate is still below the national target. Montoro and Rodriques (2007) indicate that in 2004 TB was the seventh leading cause of death in a global ranking.

Singh, Upshur and Padayatchi (2007) in their study indicate that the challenge – well stipulated in the NTCP – that is fuelling the MDR-TB and XDR-TB outbreaks in SA is a lack

of infection control at the institutions which is. Schneider, Ogeden and Lush (2003) in their study recommend that it is necessary to have a collaborative international effort to address failure to implement TB policies which might lead to TB issues being regarded as the "WHO agenda".

According to De Villiers and Toms (2004); while policies, guidelines, indicators, and monitoring mechanisms might be operational, they can but inconsistently applied. According to Maher (2003), in most countries the NTCP has concentrated on promoting access to effective TB cure.

Andi (2005) indicates that some of the challenges in SA are inaccurate recording and lack of sharing of TB notification data. This statement implies in essence that there is poor reporting at the health facilities to such an extent that is a well-recognised problem in the country. Achmat and Roberts (2005) state that the 2004 South African Health Review suggests some of the issues that are contributing to failure to implement NTCP are a "*lack of TB management capacity, poor TB management systems, and inadequately trained and motivated staff at district level*."

The National Tuberculosis Management Guidelines (2008) outline the following roles of the nurse in respect of the implementation of NTCP at facility level of the then Department of Health and Social Development:

- Provide basic information about TB;
- Initiate TB treatment and explain how to take the tablets;
- In consultation with clients, there should be an allocation of DOTS that is most suitable for them;
- Complete clinical records clearly indicate when sputum is due and are maintained in blue clinic files and on green client cards;
- Update TB register;
- Assess clients on a scheduled basis, monitor responses, and encourage treatment completion;

- ❖ Provide monthly treatment to the clients in the community who are receiving DOTS; and

- ❖ Arrange tracing of clients who have defaulted on treatment.

The above roles of the nurse are part of the intervention of the department to strengthen implementation of the NTCP at the facilities but this has not been realised.

2.3 THE FOUR STRUCTURES OF THE NATIONAL TB PROGRAMME AND THEIR KEY FUNCTIONS

The National Tuberculosis Management Guidelines (2009) indicate the following four structures of the National TB Programme as well as their key functions:

(i) The national level and their key functions:

- Implementation of the DOTS strategy.
- Collaborate with the provincial management team in the planning of TB activities.
- Training of provincial and district TB coordinators.
- Develop and update training materials for the case management programme.
- Monitoring and evaluation of TB and drug resistant TB.

(ii) The provincial level and their key functions:

- Monitor the implementation of TB control and strategies.
- Plan training and conduct supervisory support, including laboratory materials.
- Ensure that TB stationery and laboratory material requirements of a district are met and supplied.
- Supervise record keeping of TB case registers and laboratory registers.
- Review quarterly reports provided by the districts.

(iii)The district level and their key functions:

- Implement TB programme and procedure.
- Coordinate training activities at district level.
- Develop an efficient referral system for clients to ensure continuity of care.
- Coordinate and establish the community based DOTS programme.
- Ensure drug supply at all facilities.
- Coordinate and communicate with laboratory services.

(iv)The primary health care facility level and their key functions:

- Early TB case detection and treatment.
- Patient education and counselling.
- Establish and implement a community based DOTS programme.
- Maintain and update patients' records and TB registers.
- Prepare quarterly reports on case detection, sputum conversion, and treatment outcomes before submitting the reports to the districts.
- Maintain an adequate supply of drugs, laboratory supplies, and TB clinic patient cards and registers.
- Ensure tracing and screening of all TB contacts.
- Ensure continuity of care for all TB clients until treatment completion.
- Develop an efficient referral system for clients to ensure continuity of care.
- Coordinate and establish the community based DOTS programme.
- Ensure drug supply at all facilities.
- Establish a proper referral system for tertiary care.

The then Department of Health and Social Development (1998) outlined that about two thirds of the population in the country were infected with the TB bacilli. It also indicated that out of 86 221 TB cases in South Africa, 18% interrupted their treatment and many of these 15 520 TB patients were still spreading the disease in the community.

The then Department of Health and Social Development (2003) also reported the increase of TB cases since the inception of the NTCP in 1996. It further indicated that the improvement in the overall management of the NTCP had not translated into effective control of the TB epidemic. It confirmed the escalation of TB incidences, unacceptably low cure rate, and high treatment interruption rates in South Africa.

The then Department of Health and Social Development (2004) strengthened the importance of observing TB referral systems from the health care facilities to the feeder clinics and the management of TB treatment interruption in accordance with the NTCP. It also outlined the significance of DOTS strategies for the management of TB defaulters.

2.4 THE DOTS STRATEGY

According to the WHO (2003), the DOTS strategy consists of five essential elements, namely:

- Sustained political commitment to increase human and financial resources and to make TB control an integral priority of the national public health system.
- Access to quality assured TB sputum microscopy for case detection among persons presenting or found to have symptoms of TB (cough for more than two weeks) for case detection.
- Standardised short-course chemotherapy to all cases of TB under proper case management conditions, including the direct observation of treatment. Proper case management conditions imply technically sound and socially supportive treatment services.
- Uninterrupted supply of quality assured drugs with reliable drug procurement and distribution systems.

- A recording and reporting system that enables an outcomes assessment of each and every patient and an assessment of the comprehensive control programme performance. This forms the basis for systematic monitoring and correction of identified problems.

2.5 THE ROLES OF DOTS DURING THE MANAGEMENT OF TB

The National Tuberculosis Management Guidelines (2008) outline the following roles of DOTS during the management of TB:

- Visit clients who have commenced treatment at their homes.
- Refer other contacts to the clinic.
- Meet with clients on a daily basis, including weekends if possible, to supervise their treatment.
- Complete the client-held green card to record doses taken.
- Ensure that clients have collected their monthly treatment.
- Provide support to TB clients and their families.
- Motivate TB clients to complete their treatment.
- Remind TB clients to bring their sputa to the clinic for testing at the appropriate time.
- Trace clients who have interrupted treatment.

The health care workers are required to check for TB in any client consulting at health care facilities and the ones who are at greater risk of being infected. For example; all children under age of five years, patients who have coughed for more than two weeks, all TB contacts, and all immunocompromised patients (Department of Health and Social Development, 2004). The register for possible tuberculosis patients at the Mogalakwena Municipality clinics seems not to be correctly managed in accordance with the NTCP and subsequently many possible TB patients might be overlooked. The Department of Health (2013) further indicates that asymptomatic contact of smear-negative TB cases should be rapidly identified and screened.

The World Health Organisation (2003) emphasises that a DOTS information management system is essential to ensure that patients are correctly treated and that an adequate quantity

of drugs is available for distribution. It further emphasises that an effective TB control procedure requires a proper recording and reporting system that is using standardised definitions and classifications at the beginning and the end of the treatment. Seemingly, all the above efforts are failing to reduce the incidence of TB in the Mogalakwena Local Municipality and this issue, therefore, needs further investigations.

The World Health Organisation (2003) reported that, between 1995 and 2000, the African regions experienced a 95.1% increase of all the TB cases reported and a 131.7% increase in reported new smear-positive pulmonary TB cases. As a result of these increases, the region had the highest TB prevalence rates in the world, ranging from 100 to over 700 per 100 000 general population. The WHO concluded by describing TB as an important cause of adult and childhood morbidity and mortality in the African region.

2.6 MONITORING AND EVALUATION OF THE NTCP AND THE TB TREATMENT

The Department of Health and Social Development (2006) describes monitoring as the routine tracing of service process and outcomes information collected on a regular and on-going basis from policy guidelines, routine record-keeping, regular reporting, surveillance systems, occasional heath facility observation, and a client survey. The above information is used to assess the extent to which a policy or programme is achieving its intended activity targets on time. The Tuberculosis Strategic Plan for South Africa (2007 – 2011) indicates that a TB strategic plan was developed in 2001 and the findings indicate that the plan neither identifies clear roles and responsibilities of health care workers who are involved in TB management, nor does it identify a clear monitoring and evaluation framework for all stakeholders.

The then Department of Health and Social Development recommended that it should increase training, supervision, and monitoring activities to improve comprehensive TB management. The recommendations were sent to all provinces. The National Tuberculosis Management Guidelines (2008) have declared South Africa as having the highest TB incidence in the world. Accordingly, the declaration is confirmed by the WHO Global Tuberculosis Report (2008) as quoted by the National Tuberculosis Management Guidelines (2009).

2.7 CONCLUSION

This chapter discusses the analysis of national, provincial, and district tuberculosis indicators; as well as their recommended targets**.** The National Tuberculosis Management Guidelines (2009) outline the roles of the nurse in relation to the implementation of the NTCP at the facility level. The four structures of the National TB Programme and their key functions are discussed. The roles of the DOTS and its strategies on the management of TB are outlined in this chapter. Monitoring and evaluation of the NTCP and the TB treatment according to the National Department of Health and the WHO are also discussed.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter outlines the study design, site of the study, population, data collection and analysis, as well as ethical considerations.

3.2 STUDY DESIGN

A quantitative descriptive survey was used to conduct this study. A quantitative research design is defined as a research design that describes and examines relations, as well as determines causality among variables (Schneider, Whitehead & Elliot. 2007). According to Burns and Grove (2005), a descriptive design may be used for the purpose of developing theory, identifying problems in relation to the current practice, justifying current practice, making judgment, and determining what other researchers in similar situations are doing. Struwig and Stead (2001) report that "to conduct quantitative research, the construct studied must be measured."

A quantitative study design was chosen because it was found to be relevant to the study, since the researcher was able to describe and explain the relationship between variables. The study design also allowed the researcher to use a structured formal instrument to collect relevant information. The factors affecting the implementation of the National Tuberculosis Control Programme by professional nurses were identified and described.

3.3 STUDY SITE

The study was conducted in the Mogalakwena Local Municipality. The Mogalakwena Municipality is divided into four local areas; namely Bakenberg, Rebone, Mahwelereng and Mapela. Bakenberg, Rebone, and Mapela are rural areas, while Mahwelereng is a township situated about 3km from the town of Mokopane. Mogalakwena Municipality has 28 government clinics. The clinics are all providing comprehensive primary health care services. Priority health services include HIV and AIDS, tuberculosis, women's health, youth and adolescent health, maternal health, and chronic conditions.

3.4 POPULATION

The population is the entire group of person or objects that is of interest to the researcher (Brink, 2006). McMillan and Schumacher (2010) describe a population as a group of elements or cases (whether individuals, objects, or events) that conform to specific criteria and to which it is intended to generalise the results of the researcher. The group is also referred as the target population. The study population included all the male and female professional nurses permanently employed at the Mogalakwena Municipality clinics of the Waterberg District. The population size was 131 professional nurses who were working in the Mogalakwena Municipality.

3.5 SAMPLING METHODS

The researcher approached all 131 professional nurses in the Mogalakwena Municipality health clinics. The professional nurses were selected because they were executing all the concluding professional activities and responsibilities with regard to the implementation of the NTCP, e.g. providing TB treatment and allocation of DOTS to TB patients. The professional nurses supplied the best information to address the purpose of the research. There are 28 clinics with 131 professional nurses in the Mogalakwena Municipality. The researcher obtained a sample frame (a list of professional nurses) from the Waterberg District Information System. Those nurses who were willing to participate were approached and requested to participate in the study.

3.6 NUMBER OF PROFESSIONAL NURSES PER LOCAL AREAS

Tables 3.1 – 3.4 are reflecting the number of professional nurses per local area which was obtained from the District Health Information System (2011 / 2012 financial year).

Table 3.1: Mapela Local Area

Name of the clinic	Number of professional nurses
Armoed	3
Mamaselela	5

Name of the clinic	Number of professional nurses
Mapela	9
Mosesetjane	8
Phafola	4
Sterkwater	5
Pholotsi	5
Tshamahansi	8
Vaalkop	2
Total clinics = 9	Total nurses = 49

Table 3.2: Mahwelereng Local Area

Name of the clinic	Number of professional nurses
Bokwalakwala	3
Ga-Madiba	2
Mahwelereng Zone 1	9
Mahwelereng Zone 2	3
Mogalakwena	4
Sekgakgapeng	3
Total clinics = 6	Total nurses = 24

Table 3.3: Bakenberg Local Area

Name of the clinic	Number of professional nurses
Bakenberg	9
Mokamole	5
Jakkalskui	3
Paulos	3
Chalema	2
Tiberuis	4
Total clinics = 6	Total nurses = 26

Table 3.4: Rebone Local Area

Name of the clinic	Number of professional nurses
Rebone	9
Lekhureng	4
Mattanau	3
Bavaria	6
Segole	4
Widevreden	2
Mankuwe	3
Total clinics = 7	Total nurses = 32

3.7 DATA COLLECTION METHODS

Data collection methods refer to the methods used to collect information from the respondents (Schneider *et al*., 2007). The researcher collected information that was appropriate for generating answers to the research questions (Polit & Beck, 2008). A structured questionnaire with both open and closed-ended questions was administered to collect data. The questionnaire was developed by the researcher, using literature with the consultation of the supervisors of the NTCP programme. The questionnaire was divided into three sections. Section 1 contained questions about demographic data of the respondents, Section 2 provided questions relating to the nurse's knowledge of the NTCP, and Section 3 provided questions that addressed the NTCP implementation process. Appointments with the Local Area Assistant Managers were made to explain the purpose of the study and to avoid disruption in the provision of service delivery at the facilities during the data collection process.

The questionnaires were given to the respondents to complete in their own time and the researcher explained and clarified some of the questions. About 131 questionnaires were distributed to the local areas. The researcher allowed two weeks for the questionnaires to be completed. An extension of one week was given to those professional nurses who did not submit on time. The questionnaires for the professional nurses who were not on duty were given to the Operational Managers of the clinics. The response rate was 100%, since the follow-up was closely monitored by the researcher. The analysis of data was done by using a computer program called Statistical Package for Social Sciences (SPSS) version 20.

3.8 RELIABILITY AND VALIDITY

Reliability and validity of the research instrument and data were ensured.

3.8.1 Reliability

The reliability of the research instrument relates to whether an independent researcher would generate the same constructs in a similar situation or to the consistency of the results. Questionnaires that were found to be unclear to the respondents were rephrased and changed for use in the main study (Tladi, 2004). A reliable instrument enhances the power of a study

to detect significant differences or relationships actually occurring in the population under study (Burns & Grove 2005).

Reliability is the degree of consistency or dependability with which the instrument measures the attribute it is designed to measure. If the instrument is reliable, the results will be the same each time the test is repeated. The reliability is concerned with accuracy, consistency, precision, stability, equivalence, and homogeneity. Reliability of an instrument that yields quantitative data is a major criterion for assessing its quality and adequacy. For the research findings to be reliable, the research instrument should accurately reflect or measure true scores of the attribute (Coszby, 2004).

A pre-testing of the research tool was conducted at Mahwelereng Local Area to identify ambiguous and unclear questions in the questionnaire, for example the respondents were asked “to elaborate a detailed TB / HIV / STIs collaboration”. Such questions were unclear and were modified from open ended questions to closed-ended ones. The respondents who were used for the pre-testing were not included in the main study.

3.8.2 Validity

The validity of an instrument is the determinant of the extent to which the instrument actually reflects the abstract construct that is being examined (Burns & Grove 2005). Gerrish and Lacey (2006), furthermore, refer to validity as the extent to which the data collection instrument measures what it is supposed to measure without bias or distortion. An extensive literature review was conducted to ensure content validity. (Coszby, 2004) describes validity as the extent to which specific measures provide data related to a commonly accepted meaning of a particular concept under consideration. Validity of the instrument was ensured by conducting an extensive literature survey on the management of TB disease by health professionals. The questionnaire was submitted to the Waterberg District TB supervisors for approval. Data was collected in different settings, i.e. 28 clinics in the Mogalakwena Municipality.

3.9 DATA ANALYSIS

Brink (2006) defines data analysis as the method of organising the raw data and displaying them in patterns that will provide answers to the research questions. Data, in this study, was analysed by using descriptive statistics. Quantitative data in the form of numbers was

presented by using frequency tables and graphs. The computer program, Statistical Package for Social Sciences (SPSS) version 20, was used to analyse data with the assistance of a statistician at the University of Limpopo (Turfloop Campus) Research Unit.

3.10 SIGNIFICANCE OF THE STUDY

The findings of the study may assist with the improvement on the implementation of the NTCP and also with the monitoring and evaluation of this programme. The study may provide understanding of the NTCP implementation process at health care facilities in the Mogalakwena Municipality.

3.11 ETHICAL CONSIDERATIONS

According to Stommel and Wills (2004), ethics is an academic discipline based in the philosophic and social sciences that is concerned with descriptive and prescriptive questions of morality. Ethical clearance to conduct the study was obtained from the University of Limpopo Medunsa Research and Ethics Committee (MREC). The study proposal was submitted to the Limpopo Department of Health and the Waterberg District Executive Manager who gave written permission to the researcher to conduct the study.

3.11.1 Informed consent

Burns and Grove (2009) describe a consent form as the transmission of essential ideas and content from the investigator to the prospective respondents. The respondents were given information about the benefits, risks, and the fact that they had the right to withdraw from participation without being victimised. Participation was voluntary (Bless, Higson- Smith & Kagee, 2007). Those nurses who agreed to participate in the study were requested to sign a consent form as advised by Tshabalala (2007). This study ensured that respondents were protected from psychological or emotional harm by explaining the purpose of the study, exploring any fears, and addressing them as advised by Babbie and Mouton (2002).

3.11.2 Anonymity

Brink (2006) defines anonymity as the act of keeping individuals nameless in relation to their participation in the research. The names and identities of the respondents were not used but only codes appeared on the questionnaires.

3.11.3 Confidentiality

Confidentiality refers to the protection and unavailability of participants' information and to examine and monitor the ethical standards of on-going research (Brink, 2006). The respondents were assured that the research data would not be divulged or shared with any other person except people who are involved in the research. The collected data were kept under secured conditions.

3.11.4 No harm

This is the most basic principle of research that respondents are not harmed by participating in the study (Bless *et al*., 2007). The respondents were not subjected to any form of harm during the study.

3.12 CONCLUSION

This chapter discusses the study design of using a quantitative descriptive survey to describe factors that are affecting the implementation of the National Tuberculosis Control Programme by professional nurses in the Mogalakwena Municipality. The study population included all the male and female professional nurses permanently employed at the Mogalakwena Municipality clinics of the Waterberg District. The population consisted of 131 professional nurses. The purposive sampling method was used to obtain the study sample. A structured questionnaire with both open and closed-ended questions was used to collect data. Descriptive statistics was used to organise and summarise data. Reliability and validity of the research instrument are also discussed. Ethical clearance and the permission to conduct the study are outlined in this chapter.

CHAPTER 4
RESEARCH RESULTS

4.1 INTRODUCTION

The focus of this chapter is to report on the results of the research that was conducted in order to describe the factors that are affecting the implementation of the NTCP by professional nurses in the Mogalakwena Municipality of the Waterberg District in the Limpopo Province. The 131 professional nurses completed a self-administered questionnaire.

4.2 DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

Table 4.1: Age of respondents

Age in years	Frequency	Percentage
18 – 28	24	18.3%
29 – 39	31	23.7%
40 – 50	44	33.6%
51 +	32	24.4%
Total	131	100.0%

n = 131

The result indicate that (33.6%) of professional nurses who were between 40 and 50 years old while the smallest (18.3%) group of professional nurses was between 18 and 28 years old.

Table 4.2: Gender of respondents

Gender	Frequency	Percentage
Male	21	16.0%
Female	110	84.0%
Total	131	100.0%

n = 131

Table 4.2 indicates that there were more female nurses (110; 84%) than male nurses (21; 16%) at the clinics in Mogalakwena. It is not surprising because the nursing profession is still dominated by females.

Table 4.3: The highest level of education of the respondents

Highest level of education	Frequency	Percentage
Diploma in nursing	109	83.2%
Degree in nursing	22	16.8%
Total	131	100.0%

n = 131

The above results indicate that 83.2% of the nurses were holding a diploma in nursing while a significantly smaller group (16.8%) were holding a degree in nursing.

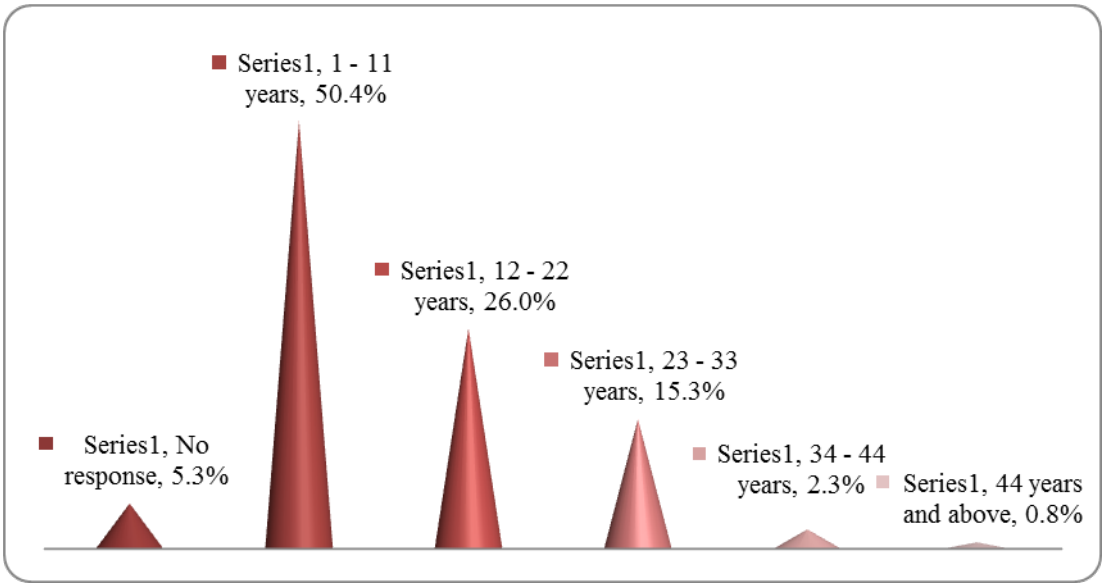


Figure 4.1: Respondents' years of service

The results in Figure 4.1 indicate that more than half (50.4%) of the professional nurses had 1-11years of nursing experience whereas 26% had 12 – 22 years, 15.3% had 23 – 33 years, 2.3% had 34 – 44 years, and 0.8% had 44 years or more nursing experience.

4.3 RESPONDENTS' KNOWLEDGE ABOUT TB POSITIVE SPUTUM CONVERSION

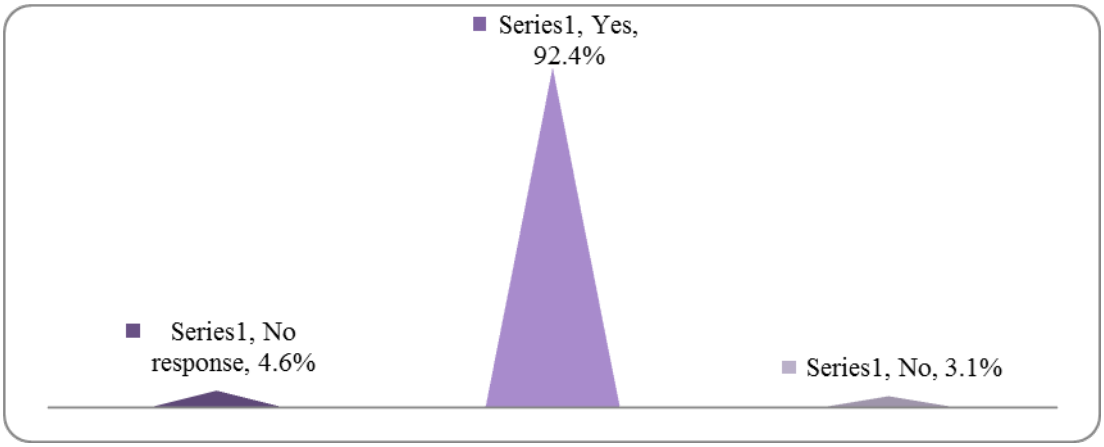


Figure 4.2: Respondents' knowledge about TB positive sputum conversion

Figure 4.2 indicates that 4.6% of the responding nurses did not indicate an answer to this question. The results further indicate that an overwhelming majority (92.4%) of the responding nurses had knowledge about TB positive sputum conversion while 3.1% of them reported that they did not know about TB positive sputum conversion.

Table 4.4: Respondents' knowledge about screening of possible TB patients

Screening of possible TB patients	Frequency	Percentage
Yes	129	98.4%
No	2	1.6%
Total	131	100%

n = 131

The above results indicate that the majority (98.4%) of professional nurses had knowledge about possible TB patient screening while only 1.6% did not know about the screening of these possible TB patients.

Table 4.5: Respondents' integration of TB, HIV / AIDS and STIs

Integration of TB, HIV / AIDS, and STIs	Frequency	Percentage
Yes	127	97%
No	4	3.0%
Total	131	100.0%

n = 131

Table 4.5 indicates that 97% of the respondents were able to integrate TB, HIV and STIs while only 3.0% did not implement integration of these programmes. The NTCP requires that all STI clients who are coming to the clinics should be screened for HIV and TB. If professional nurses for any reason might miss the collaboration of the above programmes, HIV will be spread like wild fire due to untreated STIs.

Table 4.6: Tracing of TB defaulter patients

Tracing of TB defaulters	Frequency	Percentage
Yes	125	95.4
No	6	4.6
Total	131	100.0

n = 131

Table 4.6 indicates that 95.4% of respondents are tracing TB defaulters while 4.6% of the respondents are not tracing the TB defaulters.

Table 4.7: Respondents' attendance of TB workshops

TB workshop attendance	Frequency	Percentage
Last 3 months	15	12.0%
Last 6 months	38	29.0%
Last12 months	33	25.0%
Last 2 years	45	34.0%
Total	131	100.0%

n = 131

The results in Table 4.7 indicate that 12.0% of the respondents reported to have attended a TB workshop in the last three months, 29.0% in the last 6 months, 25.0% in the last 12months while 34% reported to have attended the TB workshop during the past two years.

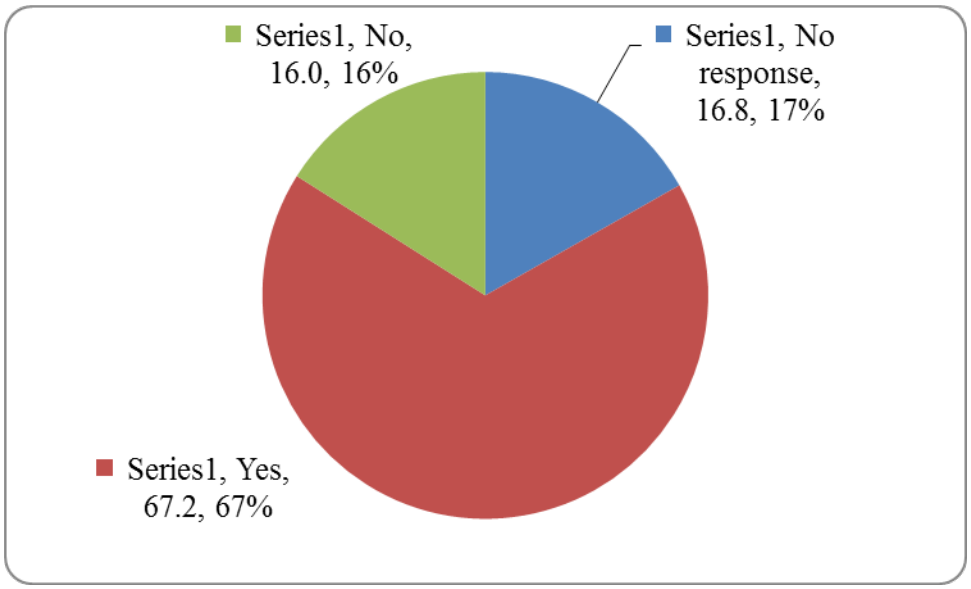


Figure 4.3: Respondents' attendance of in-service training on TB management

The results indicate that 67.2% of the nurses had attended onsite in-service training as and 16.0% of the nurses never attended on-site training while 16.8% did not respondent to the question. In-service training is very crucial, since nurses who did not have the opportunity to attend the district or provincial TB training interventions would get equipped with new information about TB management. If the in-service training is not provided to those nurses

who did not attend the workshops, old TB guidelines will be used for the management of the TB programme.

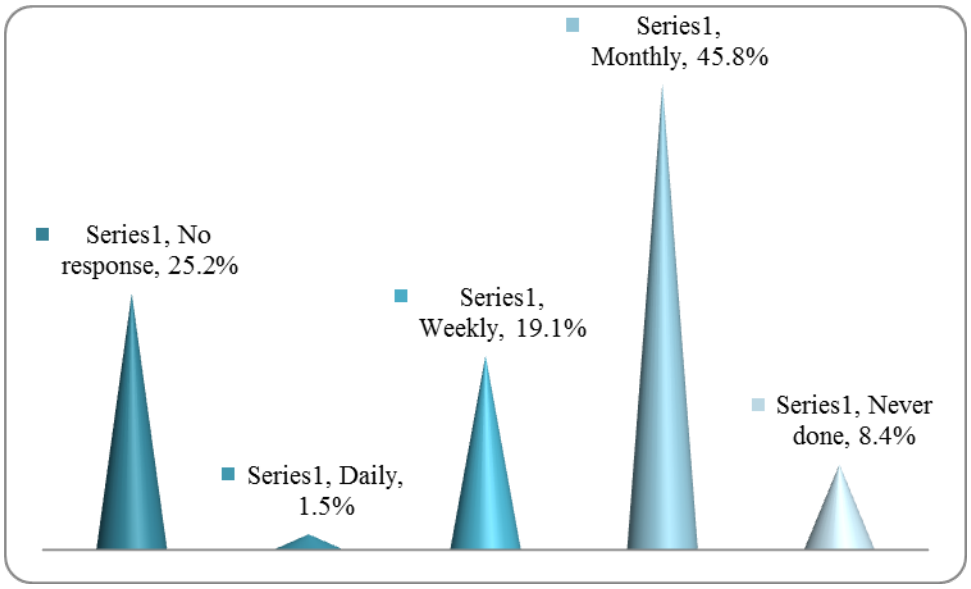


Figure 4.4: The interval of in-service training on TB management

The information above indicates that 1.5% of the respondents attended daily on-site TB training, 19.1% attended weekly, 45.8% attended monthly training, 8.4% never attended training, and 25.2% of the respondents did not respond to the question.

Table 4.8: Monitoring of the NTCP

Monitoring of the NTCP	Frequency	Percentage
Yes	125	95.4%
No	6	4.6%
Total	131	100.0%

The vast majority (95.4%) of the respondents agreed to be visited by the TB coordinators while 4.6% of the respondents disagreed with the statement.

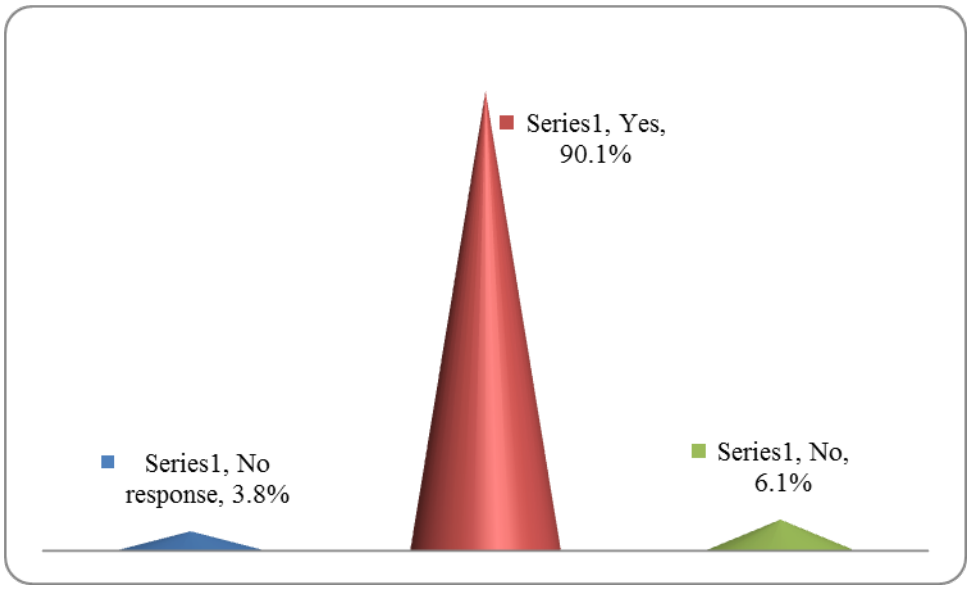


Figure 4.5: Respondents updating of TB registers

The graph (Figure 4.5) indicates that 90.1% of the respondents were updating their TB registers while 6.1% of the respondents were not updating their TB registers. A few (3.8%) of the respondents did not answer the question.

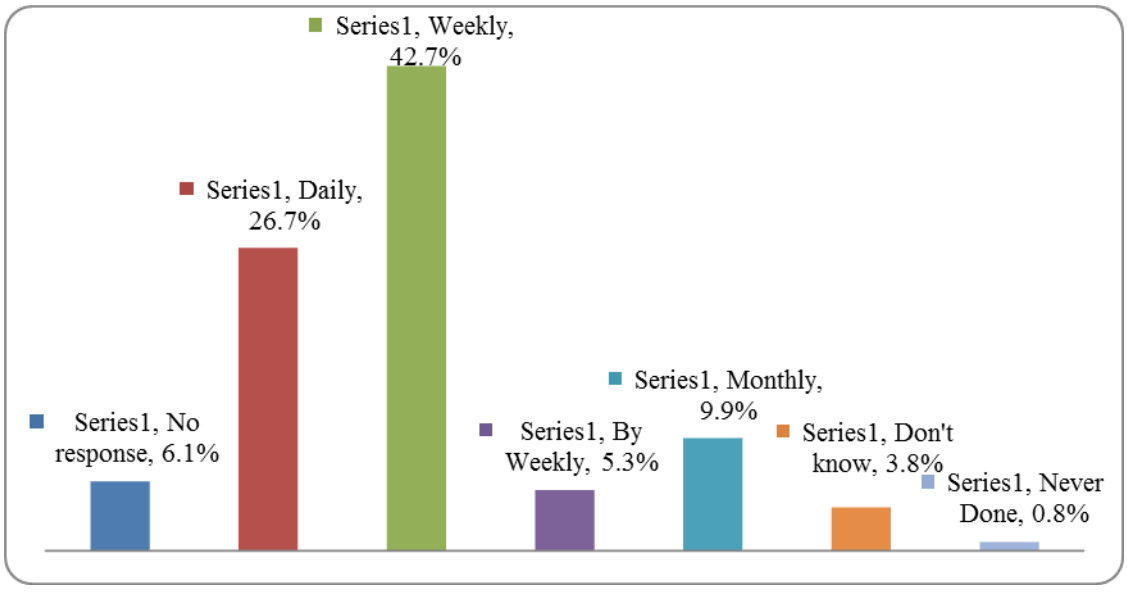


Figure 4.6: Respondents' frequency of updating of TB registers

Figure 4.6 indicates that only 26.7% of the respondents were updating their TB registers on a daily basis, 42.7% were updating registers on a weekly basis, 5.3% had biweekly updates, 9.9% did monthly updates, 3.8% did not know how to update TB registers, and 8% had never updated their TB registers.

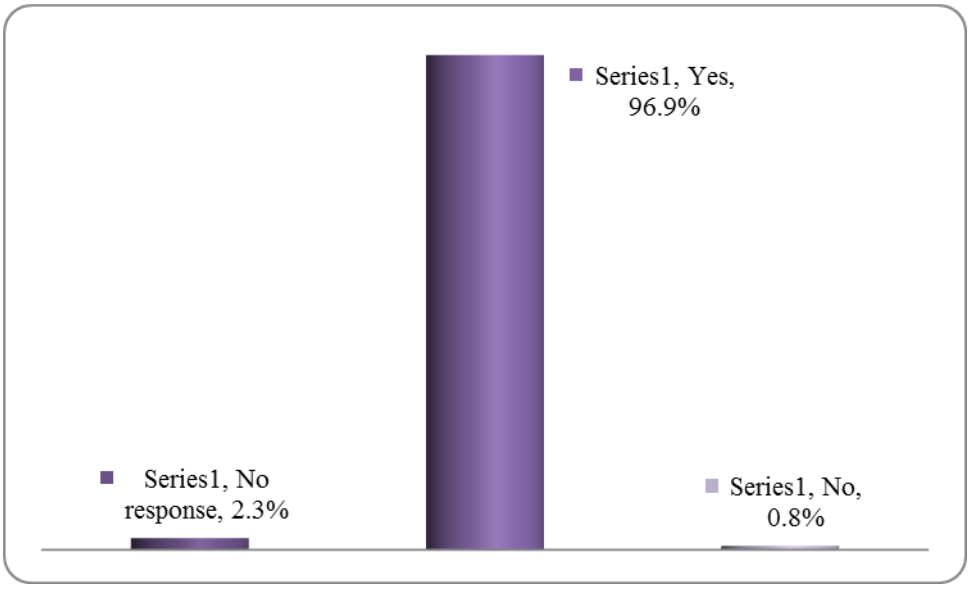


Figure 4.7: Respondents' recording of TB laboratory results

The results Figure 4.7 show that 96.9% of the repondents were recording the laboratory results while only 0.8% did not record the results.

Table 4.9: Respondents' compliance to the NTCP

Compliance to the NTCP	Frequency	Percentage
Yes	103	78.6%
No	28	21.4%
Total	131	100.0%

n = 131

Table 4.9 indicates that more than three quarters (78.6%) of the respondents indicated that the compliance to the NTCP may assist them with reaching their TB cure rate targets, while 21.4% of the respondents reported that even if there was compliance in the management of the NTCP, their targeted TB cure rate would never be reached. The 21.4% might have a negative attitude towards TB management. Therefore, it is important for the TB managers to have debriefing sessions with the aim of motivating those nurses who are demotivated and supporting nurses who have a positive attitude.

Table 4.10: Respondents' recording of the sputum results for TB smear conversion rate

Recording of the sputum results for TB smear conversion rate	Frequency	Percentage
Yes	129	98.5%
No	2	1.5%
Total	131	100.0%

n = 131

The results (Table 4.10) indicate that 98.5% of the respondents were recording the sputum results for smear conversion while only 1.5% of the respondents did not record the sputum results for smear conversion.

Table 4.11: The frequency of recording the results of sputum for smear conversion rate

	Frequency	Percentage
Immediately I receive the results	120	91.6%
Only during weekends	11	8.4%
Total	131	100.0%

n = 131

Table 4.11 shows that 91.6% of the respondents were recording the results of sputum for smear conversion immediately after they had received them while 8.4% of the respondents were recording the results for smear conversion only during weekends. The result is surely indicating that there is a poor recording, however small, of sputum results by professional nurses. A small number of poor recordings may negatively affect the NTCP management.

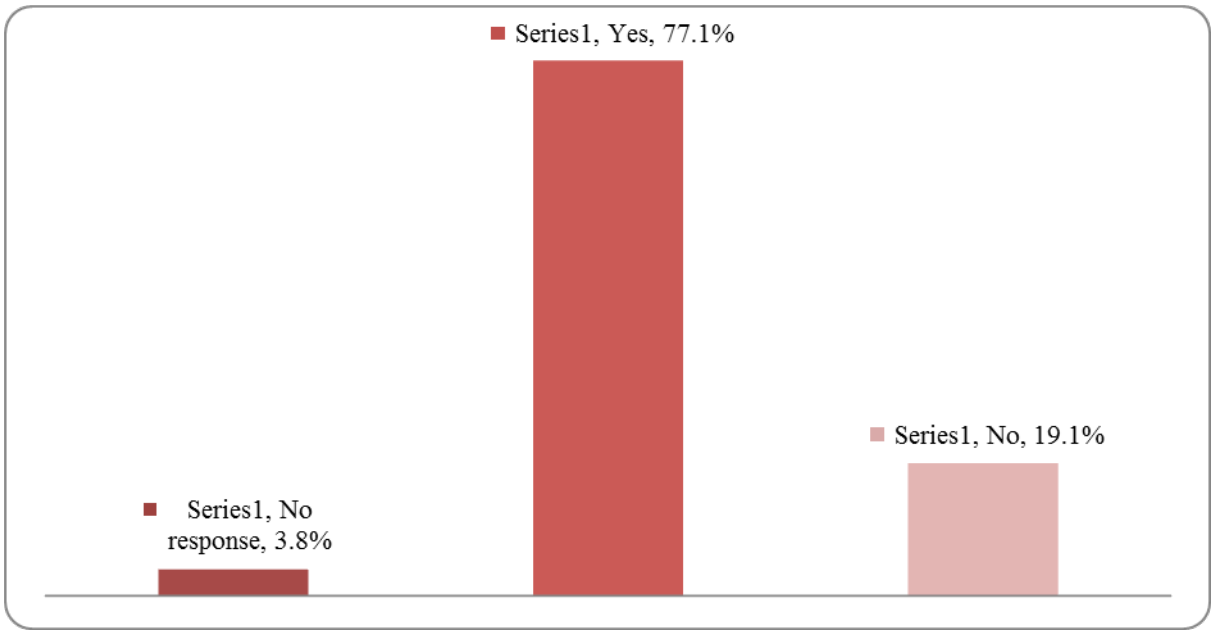


Figure 4.8: Respondents' answer to the availability of TB resources for quality management of the NTCP

Based on the data analysis in Figure 4.8, 3, 8% of the respondents did not respond, 77.1% of the respondents reported to be having enough resources for TB management while 19.1% of the respondents reported not having the necessary equipment for TB management**.** The shortage of basic equipment needs to be taken into consideration as it might negatively impact the management of TB.

4.4 RESPONDENTS' ANSWERS ABOUT THE ATTITUDE TOWARDS THE IMPLEMENTATION OF THE NTCP

Table 4.12: The attitude of the respondents towards the implementation of the NTCP

Statement		Yes		No		Don't know	
		C	%	C	%	C	%
4.1	Do you think the implementation of the NTCP can have an impact on the reduction of TB infection?	116	88.5%	15	11.5%	0	0.0%
4.2	Are all TB patients in your facility allocated DOTS supporters?	86	65.6%	43	32.9%	2	1.5%

Statement		Yes		No		Don't know	
		C	%	C	%	C	%
4.3	Do you think it is important for you to acknowledge transfers from the hospitals?	120	91.6%	11	8.4%	0	0.0%
4.4	Do you think it is important to screen all TB suspects?	131	100%	0	0.0%	0	0.0%
4.5	Do you think adequate recording is important for TB management?	131	100%	0	0.0%	0	0.0%
4.6	Do you think it is important for you to trace TB defaulters?	126	96.2%	5	3.8%	0	0.0%
4.7	Do you have the necessary knowledge about the management of TB?	99	75.6%	32	24.4%	0	0.0%
4.8	Do you have regular monthly TB reviews at your clinic?	86	65.6%	45	34.4%	0	0.0%
4.9	Do you think that a negative attitude of professional nurses is the main cause of poor implementation of NTCP?	83	63.4%	40	30.5%	8	6.1%
4.10	Do you have a TB focal person in your clinic?	110	84%	19	14.5%	2	1.5%

n = 131

The results (Table 4.12) show that 88.5% of the respondents thought that the implementation of the NTCP could have an impact on the reduction of TB infection while 11.5% of the respondents did not think that the implementation of the programme could reduce TB infection. The results also indicate that 65.6% of the respondents confirmed the allocation of DOTS to their TB positive clients while 32.9% of the respondents reported that not all the TB clients were allocated DOTS. A small minority (1.5%) of the respondents reported that they did not know whether TB clients were allocated DOTS at their facilities.

A significant majority (91.6%) of the respondents acknowledged the transfers from hospitals to facilities while 8.4% of the respondents did not consider it as important to acknowledge the transfers. All of the respondents acknowledged adequate recording and screening of all TB suspects as important in the management of NTCP. The vast majority (96.2%) of the respondents thought that the tracing of defaulters is important; 3.8% of them did not see any need for tracing of defaulters.

The results indicate that 75.6% of the respondents had knowledge about the management of TB according to the NTCP while nearly a quarter (24.4%) did not have sufficient knowledge about NTCP. Nearly two thirds (65.6%) reported that regular review meetings were convened at their facilities. However, 34.4% of them indicated that they did not have regular meetings. A negative attitude of professional nurses was indicated by 63.3% of the respondents as the main cause of poor implementation of the NTCP while almost a third (30.5%) disagreed with the statement. Less than 10 per cent (6.1%) of the respondents did not know what the reasons for poor implementation were. A majority (84%) of the respondents reported that they did have a TB focal person at their facilities while 14.5% indicated that they did not have focal persons and 1.5% of the respondents did not know whether they had a focal person or not.

4.5 CONCLUSION

The chapter focuses on the analysis of the results and research findings that were collected during this study by means of a questionnaire. The chapter analyses the biographical information of the respondents to get familiar with their backgrounds. The second part of the analysis deals with the implementation while the third part examines the attitude of the professional nurses towards the implementation of the NTCP.

CHAPTER 5
DISCUSSIONS, RECOMMENDATIONS, LIMITATIONS AND CONCLUSION

5.1 INTRODUCTION

The results of the study are discussed in relation to the subheadings used in the previous chapter. This chapter commences with a restatement of the problem statement, the main aim, and objectives of the study.

5.2 RESTATEMENT OF THE PROBLEM STATEMENT

Initiatives have been introduced to improve the implementation of the NTCP with the aim of controlling TB disease, however, these initiatives do not have required impact. Professional nurses have been exposed to TB training and workshops at all the clinics in Mogalakwena. Training and workshops focus on TB management, including quality recording and reporting. During the follow-up visits to the clinics, the researcher observed the following:

- Low TB smear conversion rate in smear-positive cases;
- Low TB cure rate in smear-positive cases;
- Poor recording and reporting of the possible TB patients and cases;
- Poor referral system of TB patients from one clinic to another;
- High TB defaulter rate of smear-positive cases; and
- Information in the TB registers did not correspond with the records in the TB case identification and follow-up register.

The then Department of Health and Social Development (2001) indicated that the professional nurses should adhere to the functions of the NTCP for quality TB management.

5.3 RESTATEMENT OF THE STUDY AIM

The aim of the study was to describe the factors that were affecting the implementation of the NTCP and the findings might be utilised to describe the strategies for increasing the TB cure rate in the Mogalakwena Municipality of the Waterberg District.

5.4 RESTATEMENT OF THE OBJECTIVES

- To describe the factors affecting the implementation of the NTCP by professional nurses in the Mogalakwena Municipality of the Waterberg District.
- To make recommendations for the improvement of the NTCP in the Mogalakwena Municipality.

5.5 DEMOGRAPHIC INFORMATION

The results indicate that there are older professional nurses in Mogalakwena with 33.6% of them in the 40 – 50 years age group while the 18-28 years age group comprised only 18.3% of the nursing corps. The purpose of determining the number of young and old nurses in the Mogalakwena clinics was to consider the impact of age on the management of the NTCP.

Of the 131 respondents, there were more female (84%) then male (16%) participants. It is not surprising because the nursing profession is still dominated by females. The findings also indicate that 83.2% of the nurses held a diploma in nursing while only 16.8% of them were nursing graduates. The findings indicate that respondents who were fifty one years and older constituted 24.4% of the sample. These older nurses seem reluctant and not comfortable with completing the questionnaire.

The results show that younger nurses aged 18 – 28 years, who constituted 18.3% of the sample, were more knowledgeable about the NTCP than 33.6% of the nurses between 40 and 50 years old. The demographic information reveals that older nurses lack knowledge because of limited training that results from their reluctance to attend workshops.

On a closer analysis of the questionnaire, respondents who held a diploma in nursing (83.2%) provided a *no* answer to having knowledge about the screening of possible TB patients. A small number of respondents (16.8%) with a degree in nursing provided a *yes* answer to

having knowledge about possible TB patient screening. All the respondents with degrees (16, 8%) indicated that they had attended workshops during the last 3 months; these respondents were also from the younger age groups.

5.6 RESPONDENTS' NTCP IMPLEMENTATION PROCESS

5.6.1 Respondents' knowledge about TB positive sputum conversion

The results indicate that a few (4.6%) of the respondents did not answer the question related to this issue. The results further indicate that more (92.4%) of the respondents were knowledgeable about TB positive sputum conversion while a small minority (3.1%) reported that they did not know about TB positive sputum conversion. The results strongly indicate that latter group of respondents might contribute to the poor TB positive sputum conversion in the Waterberg District and, as a result, TB positive clients might be given wrong dates for sputum conversion.

5.6.2 Respondents' knowledge about screening for possible TB patients

The majority (98.4%) of the respondents had knowledge about possible TB patient screening while only 1.6% of them did not have knowledge about the screening of possible TB patients. This latter group of professional nurses might have a negative impact on the low possible TB patient rate that the Mogalakwena Municipality was experiencing. It implies that more possible TB patients might not be identified, therefore, the TB infection rate remains high. The lack of knowledge by professional nurses in the Mogalakwena Municipality is supported by the results of the study that was conducted in the Limpopo Province by Takalane *et al*. (2011).

5.6.3 Respondents' integration of TB, HIV /AIDS, and STIs

The findings indicate that 97.0% of the respondents were able to integrate TB, HIV / AIDS, and STIs while 3.0% of them did not implement integration of the above programmes. The NTCP requires that all STI clients who are coming to the clinics should be screened for HIV and TB. If professional nurses, for any reason, might miss the collaboration of the above programmes, HIV would spread due to untreated STIs. The importance of collaboration is evidenced by Mabunda and Bradely (2011) who strongly advocate for the collaboration of TB and HIV / AIDS programmes at all health service management levels. The WHO (2013)

also outlines the importance of collaborating TB and HIV management, since both can reduce TB mortality in many countries.

5.6.4 Tracing of TB defaulter patients

The findings indicate that 95.4% of respondents were tracing TB defaulters while 4.6% of the respondents were not tracing the TB defaulters. The 4.6% respondents that were not tracing TB defaulters might cause greater negative impact on the low (25.6%) TB cure rate in the Waterberg District in comparison with the national TB defaulter tracing rate of 85%. When the TB defaulter rate is high, it implies that TB drug resistance will be high and more people will be infected with TB. The findings confirm the Limpopo Province summary of the budget allocation for the financial year 2010 / 2011 (Vote: 7) where the premier of the Limpopo Province has committed the department to implement the Tracer Team Project to work with communities in order to assist with the tracing of TB defaulters.

5.6.5 Respondents' attendance of TB workshops

The results indicate that fewer (12.0%) respondents had attended workshops during the last three months while 34.0% of them reported that they had attended TB workshops during the past two years. In this study, 29% of the respondents had attended an appropriate workshop in the last six months whereas 25% had attended one in the last twelve months. Poor attendance of the TB workshops by the professional nurses might negatively affect the quality management of TB programme in the Mogalakwena Municipality, since new information about TB is continually needed. Attendance of TB workshops should be closely monitored by the district TB coordinator by requesting feedback afterwards; some professional nurses might attend workshops for the wrong reasons whilst committed professionals are not identified due to a lack of proper feedback. Professional nurses who display a positive attitude toward TB management should be motivated to attend the workshops.

5.6.6 Respondents' attendance of in-service training on TB management

The results indicate that more than two thirds (67.2%) of the respondents had attended on site in-service training. While 16.0% of the respondents had never attended on-site training, it is alarming that 16.8% of the respondents did not respond to the question. In-service training is very crucial, since nurses who do not attend the district or provincial TB training

interventions will be empowered with new information about TB management. If in-service training is not provided to professional nurses who do not attend the workshops, obsolete TB guidelines will be used for the management of the TB programme. The small number (16.0%) of professional nurses who are attending in-service training organised at the workplace might indicate that nurses who are attending district TB workshops do not provide feedback at the local level. Failure to provide feedback might cause the efforts of the Department of Health to be a futile exercise.

5.6.7 Monitoring of the NTCP

The results show that 95.4% of the respondents agreed to be visited by the TB coordinators while a small minority (4.6%) of the respondents disagreed with the statement. The results indicate that the majority (95.4%) of clinics are monitored by the district TB coordinators. While the 4.6% of the clinics that are not monitored by the district coordinators might look small, it could have huge impact on the poor management of the NTCP. In his study, Andi (2005) concurs with the results, since his findings reveal a lack of capacity at central level to monitor and supervise district programmes.

5.6.8 Respondents' updating of TB registers

The results indicate that 90.1% of the respondents were updating their TB registers while 6.1% of the respondents were not aware of the updating of their TB registers whilst 3.8% of the respondents did not respond to the question. The 6.1% of the respondents who never updated the TB registers might cause a low TB positive cure rate, since records were incomplete as witnessed during support visits.

5.6.9 Respondents' frequency of updating TB registers

The results indicate that slightly more than a quarter (26.7%) of the respondents were updating their TB registers on a daily basis and less than half (42.7%) of them were updating registers on weekly basis. However, it is alarming that 5.3% of the respondents updated their TB registers biweekly, 9.9% did so monthly, 3.8% did not know how to update TB registers, and 8.0% had never updated their TB registers. The more time the nurses take to update the TB registers, the more likely it is that they would forget to update the registers. It specifically applies to the 9.9% of the respondents who only updated the TB on a monthly basis. The 3.8% of the respondents who did not know how to update TB registers and the 8% who never

updated the TB registers might have a huge negative impact on the quality of TB data management because their TB records were incomplete.

5.6.10 Respondents' recording of TB laboratory results

The results show that 96.9% of the repondents were recording the laboratory results while 0.8% did not record TB results. The 0.8% of the respondents who did not record laboratory results might negatively affect the conversion rate, since it depended on the laboratorey results.

5.6.11 Respondents' compliance with the NTCP

In this study, 78.6% of the respondents indicated that the compliance with the NTCP might assist them to reach their TB cure rate targets while 21.4% of them reported that even if there was compliance with the management of the NTCP, their targeted TB cure rate would never be reached. The latter response might indicate a negative attitude towards TB management. Therefore, it is important for the TB managers to arrange regular debriefing sessions during which they can motivate those who are demotivated and support the nurses with a positive attitude.

5.6.12 Respondents' recording of the sputum results for TB smear conversion rate

The vast majority (98.5%) of the respondents were recording the sputum results for smear conversion. However, the 1.5% of the respondents who were not recording the sputum results for smear conversion is significant because it might affect the targeted cure rate, since they had a very low TB cure rate of 25% indicated in Table 2.1 in comparison with the national target of 85%.

5.6.13 The interval of recording the results of sputum for smear conversion rate

The results show that 91.6% of the respondents were recording the results of sputum for smear conversion immediately after they had received them and 8.4% of the respondents were recording the results for smear conversion only during weekends. These results are surely indicating that there is a poor recording of sputum results by professional nurses. A small number of poor recordings may negatively affect the NTCP management.

5.6.15 Respondents' answers about the availability of TB resources for quality management of the NTCP

Based on the data analysis in Figure 4.8, 3.8% of the respondents did not respond, 77.1% of the respondents reported that they had enough resources for TB management while 19.1% of the respondents reported not having the necessary resources for TB management**.** The shortage of basic equipment needs to be taken into consideration.

5.7 RESPONDENTS' ANSWERS ON THE ATTITUDE TOWARDS THE IMPLEMENTATION OF THE NTCP

The results show that 88.5% of the respondents thought that the implementation of the NTCP could have an impact on the reduction of TB infection while11.5% of the respondents did not think that the implementation of TB could reduce TB infection. The results further indicate that 65.6% of the respondents confirmed the allocation of DOTS to their TB positive clients, 32.9% of the respondents reported that not all the TB clients were allocated DOTS, and 1.5% of the respondents reported that they did not know whether TB clients were allocated DOTS at their facilities.

In this study, 91.6% of the respondents acknowledged the transfers from hospitals to facilities while 8.4% of the respondents did not acknowledge the transfers. All (100.0%) of the respondents acknowledged adequate recording and screening of all possible TB patients as important in the management of NTCP whilst 96.2% of the respondents thought that tracing of defaulters is important; 3.8% of them did not see any need for the tracing of defaulters.

In this study, 75.6% of the respondents reported to have knowledge about the management of the TB programme while 24.4% of the respondents reported not having knowledge about TB management. The results confirm the findings of the study conducted in the Limpopo Province by Takalane *et al*. (2011) that reveals a lack of knowledge by the health professionals in relation to the management of TB as the main contributing factor to poor implementation of the NTCP. The 24.4% of the respondents who did not have knowledge contributed to the poor management of the NTCP and the subsequent serious negative consequences for the NTCP implementation. Nearly two thirds (65.6%) reported that they did

have regular review meetings at their facilities while 34.4% of the respondents indicated that they did not have regular meetings.

A large number (63.3%) of the respondents thought that the negative attitude of professional nurses was the main cause of poor implementation of the NTCP, 30.5% of them disagreed with the statement whilst 6.1% of the respondents did not know the reason for poor implementation. The findings of the study that was conducted in Waterberg District by Dladla (2013) concur with the results that indicate negative attitude of health care workers as one of the factors that contribute to poor implementation of the NTCP.

The fact that TB control in the Limpopo Province remains a challenge despite the fact that the province has implemented the DOTS programme for the past decade is evidenced by Mabunda and Bradley (2011) in their study conducted in the Mutale Municipality. A study by Mokgoadi (2002) suggests that a preventative measure to decrease non-compliance to TB treatment is to improve the attitude of health care workers who are dealing with TB patients. Kandel *et al*. (2008) observe that poor communication between health care providers and patients may contribute to non-compliance to TB treatment. Leinhardt and Rustomjee (2006) emphasise the poor relationship between health care providers and patients in the study done in West Africa that resulted in the rejection of the implementation of the NTCP. Singh *et al*. (2007) have different views about the factors that contribute to poor management of the NTCP. Their study indicates the lack of infection control at the institutions as the main contributing factor to non-compliance of the NTCP. Chani (2010), in his study, also believes that a negative staff attitude is associated with TB patients who are interrupting treatment.

5.8 RECOMMENDATIONS

- Skills audit for all professional nurses should be conducted to control workshop attendance.

- National Tuberculosis Control Programme Policy dissemination should be done to all clinics for role clarification of the professional nurses' responsibilities in relation to the NTCP.

- Debriefing of Tuberculosis Programme update to be conducted at all clinics to address the negative attitude that is the major cause of the poor implementation of the NTCP at the clinics in the Mogalakwena Municipality.

- ❖ Monthly facility reviews should be facilitated by the district TB co-coordinators, since the results indicate that a small minority of nurses are conducting in-service training on TB management at their facilities.

- ❖ In-service training on the TB programme at the facilities should be closely monitored.

- ❖ A strong collaboration between TB, HIV / AIDS, and STIs programmes should be strengthened at all PHC levels.

5.9 LIMITATIONS OF THE STUDY

The results of this study are limited, since the population of this study only included professional nurses at the clinics in the Mogalakwena Municipality. At some clinics, there were enrolled nurses who were willing to participate in the study, since they had a passion for the management of TB. Such nurses had also attended TB workshops, since there was a serious shortage of professional nurses in the Mogalakwena Municipality**.** The self-administered questionnaire is another limitation, since some questions were not answered.

5.10 CONCLUSION

The respondents acknowledged the fact that TB was not well managed in the Mogalakwena Municipality. A large number (63.3%) of the respondents at thought that the negative attitude of professional nurses was the main cause of poor implementation of the NTCP while less than a third (30.5%) disagreed with the statement. A minority (6.1%) of the respondents did not know the reason for poor implementation. The findings of the study that was conducted in Waterberg District by Dladla (2013) concur with the results that indicate a negative attitude of health care workers as one of the factors that contribute to poor implementation of the NTCP. The fact that TB control in the Limpopo Province remains a challenge despite the fact that the province has implemented the DOTS programme for the past decade is confirmed by Mabunda and Bradley (2011) in their study conducted in Mutale.

REFERENCES

Achmat, Z. & Roberts, R. A. (2005). Steering the storm: Tuberculosis & HIV in South Africa, **A policy paper of the Treatment Action Campaign.** Available from http://www.WHO. Int/tb/dots/whatisdots/cn/ (Accessed 23 August 2013).

Andi, P. (2005). **Barriers to tuberculosis** Available form http://www. comminit. Com/ strategicthinking/st 2001/thinking-461.html (Accessed 20 September 2013).

Anderson, R. & Glaze, W. D. (1994). Mosby's Medical, Nursing & Allied Health Dictionary. USA: Clarinder.

Babbie, E. R. & Mouton, J. (2002). **The Practice of Social Research** (8th edition). Cape Town: Oxfrod University Press.

Bless C., Higson-Smith, C. & Kagee, A. (2007). **Fundamentals of social research: An African perspective.** Cape Town. Juta & Company LTD.

Brink, H. I. (2001). **Fundamentals of Research Methodology for Health Care Professionals.** Cape Town, South Africa: Juta & Company LTD.

Brink, H. I. (2006). **Fundamentals of Research Methodology for Health Care Professionals.** Cape Town, South Africa: Juta & Company LTD.

Burns, S. N. & Grove, S. K. (2005). **The practice of Nursing Research** (5th edition). St Louis/ Elsevier: Saunders publishers.

Burns, S. N. & Grove, S. K. (2009). **The practice of Nursing Research** (4th edition). St Louis/ Elsevier: Saunders publishers.

Chani, K. (2010). **Factors affecting compliance to TB treatment in Andara Kavango Region Namibia.** Unpublished Masters Dissertation. Pretoria: University of South Africa.

Coszby, P. C. (2004). **Methods in Behavioral Research** (8th edition). Boston: McGraw-Hill.

Department of Health and Social Development (1998). **Tuberculosis: a training manual for health workers.** Pretoria: Government Printers.

Department of Health and Social Development (2001). **The South African tuberculosis control programme**. Practical guidelines. Pretoria: Government Printers.

Department of Health and Social Development (2003a). **TB Indaba, Special World TB Day: Newsletter of the national TB Control Programmed**. Pretoria: Government Printers.

Department of Health and Social Development (2003b). **Stop TB because you can. TB newsletter, National TB Control Programme.** [On-line] Retrieve May 25, 2011. (Accessed from internet). At http:/www.doh.gov.za/tb/newsletter/0302.htm 1).

Department of Health and Social Development (2003c). **Status of Tuberculosis Control in the African region. Stop TB.** Harare: Government Printers.

Department of Health and Social Development (2003d). **South African Health Review.** Pretoria: Government Printers.

Department of Health and Social Development (2006a). **Integrating Tuberculosis and Human Immune Virus (HIV).** Pretoria: Government Printers.

Department of Health and Social Development (2006b). **Management of Tuberculosis Training for Health Facility Staff.** Pretoria: Government Printers.

Department of Health and Social Development (2007 – 2010). **Tuberculosis Strategic Plan for South Africa.** Pretoria: Government Printers.

Department of Health and Social Development (2008). **National Tuberculosis Management Guidelines**. Pretoria: Government Printers.

Department of Health (2010). **Limpopo Province Tuberculosis ETR Report**. Pretoria: Government Printers.

Department of Health and Social Development (2013). **Management of Drug- Resistant Tuberculosis Policy Guideline.** Pretoria: Government Printers.

De Villiers, C. L. & Toms, I. (2004). Management of pulmonary Tuberculosis in nurses-based Cape Town Metropolitan Local Authority clinics. Available. from http://www.Stop.Org/ Conference Decl (Accessed 19 July 2013).

Dladla, C. N. (2013). **Factors contributing to non-compliance to Pulmonary Tuberculosis treatment among patients in Waterberg District Limpopo Province**. University of the South Africa: Pretoria.

Dye, C., Bassili, A. & Broekmans, F. (2008). **Measuring Tuberculosis burden, trends and the impact of control programme.** Geneva: Switzerland.

Ekaterina, B. Ajeilat, S. & Ershova, R. (2006). **Progress Towards Tuberculosis Control and Determinants of Treatment Outcomes**. MMWR. Morbidity & mortality weekly report, 55 (28): 11-25.

Fowler, H. W. & Fowler, F. G. (1995). **The Concise Oxford Dictionary**. Oxford: Clarendon Press.

Frieden, T. R. Sterling, T. R. & Munsif. (2003) **Effect of multidrug resistance on global tuberculosis control**. Lancet 2003Sep 13,362(9387): 887-99.

Gerrish, K. & Lacey. A. (2006). **The research Process in Nursing** (5th edition). Oxford: Blackwell Publishing.

Health System Trust. (1997). **Tuberculosis – Our problem**. 23: 1-23.

Hendriks, J. R. (1998). **The usage of Tuberculosis in Potchefstroom University.** North-West University Library: South Africa.

Heunis, J.C., Van rensburg, H.C.J. & Meulemas, H. (2007**). SANTA vs Public hospital: the patients's experience in the Free State**. 2001/2002. **Curationis.** 30 (1) 4-14.

Kandel, T., Mfenyana, K., Chandia, J & Yogeswaran, P. (2008). **The prevention of reasons for interruption of anti- tuberculosis treatment by patients at Mbekweni Health Centre in King Sabata Daliyendyebo District in the Eastern Cape Province**. South Africa. *Pharmaceutical Practice,* 6(50): 11-12

Limpopo Province. **Summary of the Budget Allocation for the year** (2010/2011) vote 07. Unpublished Report.

Leinhardt, C. & Rustomjee, R. (2006). **Improving Tuberculosis Control: an interdisciplinary approach**. South African Research Council www.mrc.ac.za/clinicaltb/ Publications 2012-13.pdf 367 (18): 949).

Luhaiima, T. R., Netsheandama, V.O. & Maselesele, M. D. (2008). **An evaluation of the implementation of the tuberculosis policies at a regional hospital in the Limpopo Province**. Curationist 31(4).31-38.

Mabunda, J. & Bradley, H. (2011). Factors contributing to poor performance of Directly **Observed Treatment Short Course (DOTS) in Mopani District**: Limpopo province, SOUTH AFRICAN JOURNAL FOR PHYSICAL, HEALTH EDUCATION, RECREATION AND DANCE 2(1).93-107.

Maher, D. (2003). **The role of the community in the control of tuberculosis**. Available from http://www.sciencedirect.com/science?-Ob=ArticleURL&_asset=B-WA-A-B-EVMsSAY (Accessed 8 September 2013).

McKinney, J. C. (2013). **Factors affecting TB compliance.** Available from http://www.ehow.com /list factors affecting TB compliance (Accessed 28 July2013).

McMillan, J. H. & Schumacher, S. (2001). **Research in Education. Evidenced – Based Inquiry** (7th edition). London: New York.

Malik, A. S. & Ahmad, G. (2009). **Tuberculosis: Determinants of Treatment Non-compliance among TB patients**. Professional Medical Journal, 16(1): 70-75.

Mokgoadi, B. (2002). **Knowledge, Beliefs and Feelings about tuberculosis among Hospitalised patients at DR Machupe Mphahlele Memorial Hospital** in the Limpopo Province of South Africa. Polokwane: University of Limpopo.

Montoro, E. & Rodriques, R. (2007). **Global burden of Tuberculosis**. IN: Palomino, J.C., Lea, O. S& Ritacco, V. (Eds) **Tuberculosis from BASIC Science to Patients Care** (1st edition). 269-272.

Mvisi, L. (2007). **Tuberculosis workshop. Professional Nursing Today.** Official Journal of the Forum for Professional Nurse Leaders. 11 (2) 1607-6672.

Polit, D. F. & Beck, C. T. (2008). **Generating and assessing evidence for nursing practice**. (8th edition). London: Lippincott Williams & Wilkins, a Wolters Kluwer business.

Singh, J. A., Upshur, R. & Padayatchi, N. (2007). **Extensive drug resistance Tuberculosis in South Africa: No Time for denial or complacency.** Plos Med 4(1), e50.doi:10.137/journal pmed.0040050.

Schneider, Z. Whitehead, D & Elliot, D. (2007). **Nursing and Midwifery research: Methods and appraisal for evidenced - based practice**. (3rd edition). Marrickvill: Mosby.

Schneider, H. Ogeden, J. & Lush, L. (2003). **An analysis policy transfers in South Africa. Centre for Health Policy:** Witwatersrand, SA. Available form http://www.Wits. Ac.Za/Chp/Docs/R202_R203.Pdf. (Accessed 23 August 2013).

South African Nursing Council Act, **Act No. 33 of 2005**. Denosa: Pretoria.

Stommel, M. & Wills, C. E. (2004). **Clinical Research: concepts and principles for advanced practice nurses**. Philadelphia: Lippincott.

Stop TB Partnership & WHO. (2006)**. Global plan to STOP TB (2006- 2015)**. Geneva: Switzerland.

Struwig, M. & Steed, G. (2001). **Planning, Reporting & Designing Research**. Person education : Cape Town.

Takalane, P. G., Pengpid, S. & Peltzer, K. (2011). **Factors that Ccontribute to TUBERCULOSIS In Primary Health Care Services at Mutale Sub- District of the Limpopo Province**. 29 92): 75-85.In Primary Health Care Services at Mutale Sub - District of the Limpopo Province, 29 (2): 75-85.

Tladi, F. M. (2004). **Factors that influence the accessibility of antenatal care clinics in the Limpopo Province**. Limpopo: University of the North, Medunsa Campus.

Tshabalala, D. (2007). **Tuberculosis treatment interruption**. Unpublished Masters dissertation. Pretorai: University of South Africa.

Waisbord, S. (2005). **Behavioural barriers in tuberculosis control. A literature review. The CHANGE** Project /Academy for Education Development. http://www.k4health.org/popline/behavioural-barrier-tuberculosis-contro-literature-review.

Waterberg District Health Information System. 2008/ 2009 & 2011/2012. **Limpopo: Unpublished Report**.

World Health Organisation. (1998). **Global Tuberculosis control.** Geneva: Government Printers.

World Health Organization. 2003. **Guidelines for workplace TB control activities**. Geneva: Government Printers.

World Health Organization. 2008. WHO report 2008. **Global Tuberculosis Control. Surveillance, Planning, Financing**. Geneva. Government Printers.

World Health Organisation. 2013. **Global Tuberculosis Report**. Geneva: Government Printers

ANNEXURE A: QUESTIONNAIRE

A questionnaire to describe factors affecting the implementation of the Tuberculosis Control Programme in the Mogalakwena Municipality.

INSTRUCTIONS TO RESPONDENTS:

i. Please respond to all questions.

ii. Write legibly and neatly.

Section 1: Demographic data

Tick the correct number in each table.

1.1 Age in years

1.1.1	18 – 28	1
1.1.2	29 – 39	2
1.1.3	40 – 50	3
1.1.4	51 +	4

1.2 Gender

1.2.1	Male	1
1.2.2	Female	2

1.3 Highest level of education

1.3.1	Diploma in nursing	1
1.3.2	Degree in nursing	2

1.4 Years of service

1.4.1	1 – 11	1
1.4.2	12 – 22	2
1.4.3	23 – 33	3
1.4.4	34 – 44	4
1.4.5	44 years and more	5

Section 2: Nurses knowledge of NTCP

2.1 Do you know the interval of sputum conversion for TB positive client?

2.1.1	Yes	1
2.1.2	No	2

2.1.3 If yes, list two reasons.

2.1.3.1		1
2.1.3.2		2

2.1.3.3 If no, list two reasons.

2.1.3.4		1
2.1.3.5		2

2.1.4 How long have you been implementing the NTCP?

2.1.4.1	1 – 5 years	1
2.1.4.2	6 – 10 years	2
2.1.4.3	11 – 15 years	3
2.1.4.4	16 – 20 years	4
2.2.4.5	21 years and more	5

2.1.4.6 Are you able to screen TB suspects?

2.1.4.6.1	Yes	1
2.1.4.6.2	No	2

2.1.4.6.3 If yes, choose the correct answer.

2.1.4.6.3.1	Cough for 5 days	1
2.1.4.6.3.2	Cough for 2 weeks	2

2.1.4.6.4 If no, choose the correct answer.

2.1.4.6.4.1	Not taught	1
2.1.4.6.4.2	Forgotten	2

Section 3: NTCP implementation

3.1 Do you trace TB defaulter patients?

3.1.1	Yes	1
3.1.2	No	2

3.1.3 If yes, how do you trace TB patients who defaulted on treatment?

3.1.3.1	Door-to-door	1
3.1.3.2	Telephone	2
3.1.3.3	DOT supporters	3
3.1.3.4	Tracer teams	4

3.2 Are you able to collaborate TB, HIV / AIDS, and STIs?

3.2.1	Yes	1
3.2.2	No	2

3.2.3 If yes, state the processes.

3.2.3.1		1
3.2.3.2		2

3.2.4 If no, state the problems.

3.2.4.1		1

3.2.3.2		2

3.5 When last did you attend a TB workshop?

3.5.1	Last 3 months	1
3.5.2	Last 6 months	2
3.5.3	Last 12 months	3
3.5.4	Last two years	4

3.6 Do you conduct staff in-service training on TB Management?

3.6.1	Yes	1
3.6.2	No	2

3.6.3 If yes, how often do you conduct staff in-service training on TB Management?

3.6.3.1	Daily	1
3.6.3.2	Weekly	2
3.6.3.3	Monthly	3
3.6.3.4	Never done	4

3.6.4 Is your facility monitored by the district TB coordinator?

3.6.4.1	Yes	1
3.6.4.2	No	2

3.6.4.3 If yes, how often?

3.6.4.3.1	Weekly	1
3.6.4 3.2	Fortnightly	2
3.6.4.3.3	Quarterly	3

3.7 Do you update your TB registers?

3.7.1	Yes	1
3.7.2	No	2

3.7.3 If yes, how often do you update TB registers?

3.7.3.1	Daily	1
3.3.7.2	Weekly	2
3.7.3.3	Biweekly	3
3.7.3.4	Monthly	4
3.7.3.5	Don’t know	5
3.7.3.6	Never	6

3.7.3.7 If no, list 3 obstructive factors

3.7.3.7.1		1
3.7.3.7.2		2
3.7.3.7.3		3

3.8 Are laboratory results recorded in the TB register?

3.8.1	Yes	1
3.8.2	No	2

3.8.3 If no, what are obstructive factors?

3.8.3.1		1
3.8.3.2		2
3.8.3.3		3

3.9 Are you satisfied about the implementation of NTCP in your facility?

3.9.1	Yes	1
3.9.2	No	2

3.9.3 If no, state two obstructive factors?

3.9.3.1		1
3.9.3.2		2

3.10 Do you record sputum results for smear conversion?

3.10.1	Yes	1
3.10.2	No	2

3.10.3 If yes, when do you record the results of sputum for smear conversion?

3.10.3.1	Immediately after I have received the results	1
3.10.3.2	During weekends	2

3.10.3.3	At month end for statistics	3

3.10.3.4 If no, state your challenges.

3.10.3.4 1		1
3.10.3.4.2		2
3.10.3.4.3		3

3.11 Do you have enough resources for TB management?

3.11.1	Yes	1
3.11.2	No	2

3.11.3 If no, list resources that are needed for quality implementation of the NTCP.

3.11.3.1		1
3.11.7.2		2
3.11.3.3		3
3.11.3.4		4
3.11.3.5		5
3.11.3.6		6

3.14 Choose between Yes, No or Don’t know

Statement	Yes	No	Don’t know

Statement	Yes	No	Don't know
3.14.1 Do you think the implementation of the NTCP can have an impact on the reduction of TB infection?			
3.14.2 Are all TB patients at your facility allocated DOTS supporters?			
3.14.3 Do you think it is important for you to acknowledge transfers from the hospitals?			
3.14.4 Do you think it is important to screen all possible TB patients?			
3.14.5 Do you think adequate recording is important in TB management?			
3.14.6 Do you think it is important for you to trace TB defaulters?			
3.14.7 Do you have the necessary knowledge on the management of TB?			
3.14.8 Do you have regular monthly TB reviews at your clinic?			
3.14.9 Do you think the attitude of professional nurses is the main cause of non-compliance to the NTCP?			
3.14.10 Do you have a TB focal person at your clinic?			

ANNEXURE B: APPROVAL FROM LIMPOPO PROVINCIAL DEPARTMENT OF HEALTH

ANNEXURE C: APPROVAL FROM WATERBERG DISTRICT DEPARTMENT OF HEALTH

ANNEXURE D: APPROVAL FROM THE UNIVERSITY OF LIMPOPO ETHICS COMMITTEE

ANNEXURE E: CONSENT FORM

UNIVERSITY OF LIMPOPO (Medunsa Campus) CONSENT FORM

Statement concerning participation in a Research Project

Name of Study

Factors affecting the implementation of the National Tuberculosis Control Programme by professional nurses.

I have read the information about the aims and objectives of the proposed study and have been provided with the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressured to participate in any way.

I understand that participation in this clinical study is completely voluntary and that I may withdraw from it at any time and without supplying reasons.

I know that this study has been approved by the Research, Ethics and Publications Committee of Faculty of Medicine, University of Limpopo (Medunsa Campus). I am fully aware that the results of this study will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this study.

....

Name of participant Signature of participant

....

Place Date Witness

Statement by the Researcher

I have provided verbal and / or written information about this study.

I agree to answer any future questions about the study to the best of my ability.

I will adhere to the approved protocol.

....

Name of researcher Signature

…… .....……

Place Date

ANNEXURE F: EDITING CONFIRMATION

* The stars that tell the spade when to dig and the seeds when to grow *

* Isilimela – iinkwenkwezi ezixelela umhlakulo ukuba mawembe nembewu ukuba mayikhule*

P O Box 65251
Erasmusrand
0165

10 May 2014

Dear Ms Raesetja Sekotlong

CONFIRMATION OF EDITING THE THE MINI-DISSERTATION WITH THE TITLE FACTORS AFFECTING THE IMPLEMENTATION OF THE NATIONAL TUBERCULOSIS CONTROL PROGRAMME BY PROFESSIONAL NURSES

I hereby confirm that I have edited the abovementioned dissertation as requested.

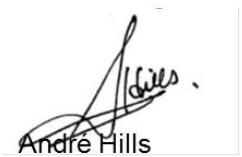
Please pay particular attention to the editing notes AH01 to AH30 for your revision.

The tracks copy of the document contains all the changes I have effected while the edited copy is a clean copy with the changes removed. Kindly make any further changes to the edited copy since I have effected minor editing changes after removing the changes from the tracks copy. The tracks copy should only be used for reference purposes.

Please note that it remains your responsibility to supply references according to the convention that is used at your institution of learning.

You are more than welcome to send me the document again to perform final editing should it be necessary.

Kind regards



André Hills
083 501 4124