PERCEPTIONS OF HEALTH BELIEFS AND THE SPREAD OF TUBERCULOSIS (TB) IN THE MOKOPANE AREA, MOGALAKWENA MUNICIPALITY

by

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RESEARCH DISSERTATION

Submitted in fulfilment for the requirements of the degree

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Declaration of Authorship

I declare that THE PERCEPTIONS OF HEALTH BELIEFS AND THE SPREAD OF TUBERCULOSIS (TB) IN THE MOKOPANE AREA, MOGALAKWENA MUNICIPALITY is my own work. All the sources that I have used or quoted have been indicated and acknowledged by complete references, and this work has not been submitted before for any other degree at any other institution.

……... ……

Full names **Date**

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- **Ms Sue Harman for editing my Dissertation.**
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- **Almighty God for divine intervention in my academic endeavor.**

Abstract

This study was prompted by the number of people who die daily from tuberculosis (TB) in the study area. The study investigated the perceptions of Mokopane residents, and their level of understanding and knowledge of the disease, tuberculosis (TB). The aim of the study was to profile people's perceptions of health beliefs, the causes of the increase and spread of TB and its prevention and their knowledge about TB awareness campaigns in the Mokopane area.

Data was collected by means of both qualitative and quantitative methods. Ten (10) medical doctors who operate private practices in the Mokopane area were interviewed. Data was collected from four hundred and one (401) participants from both Sandsloot and Tshamahansi villages outside Mokopane.

The major findings of this study showed that firstly residents have a firm belief that traditional methods cure TB; secondly, they are largely ignorant of TB, its prevention, and consequences; and lastly that there is a lack of TB related education.

Keywords: Tuberculosis (TB), Health Communication Messages and Beliefs.

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Chapter 1: Introduction and Background

1.1 Introduction

Most developing countries are faced with HIV/AIDS and Tuberculosis (TB) related health problems (Mokwena, 2012). Globally, in 2013, it was estimated that there are approximately nine million people who had TB; while 1.5 million had died from the disease, whilst 360,000 of those were HIV positive (WHO, 2013). According to the Global Report from the Joint United Nations Programme in 2007, approximately 140,000 people had developed TB in Mozambique and 18,000 of this total had died.

This study was prompted by the fact that medical doctors and nurses in the Mokopane area at various clinics in the villages in the area complain about TB patients who do not believe that the disease exists (SABC News, 2014:30 May). Three learners at Dumazi School in Tshamahansi were found to be infected with TB and one patient was a case of Multi-Drug Resistant TB" (ibid). The SABC online article further states that the infected and affected families of TB patients believe if a person is infected with TB, they have been bewitched. Mokwena (2012) commented on the broad networks of interactions and exchanges involved in the labelling and articulation of TB in the Bushbuckridge area in South Africa. Mokwena (2012) stated that as in the case of sorcery during the TB epidemic, the invocation of witchcraft was a means to reconfigure culpability by shifting their blame onto different sets of networks (Mokwena, 2012).

According to Airhihenbuwa (2007), people who are infected or those who are sick need conservative care when alternative treatment for the disease with which they are afflicted fails. In most cases, when a person has TB, most people in uninformed communities believe the person concerned is HIV positive, which may develop into Acquired Immune-Deficiency Syndrome (AIDS). Airhihenbuwa (2007) stated that the identified causes for cough-related illnesses could be classified as biomedical (germs, internal body dysfunction and worms), environmental (seasonal changes and dust), cultural (inheritance), socio-economic (hard work, malnutrition and tobacco), or witchcraft. The article claimed that most traditional healers believed, besides a proper connection with ancestors, there was one herb, when correctly prepared and boiled could cure all sorts of diseases.

According to the WHO (2012), TB is a chronic, infectious disease caused by bacteria, which attacks the lungs. Africa has the highest percentage of TB infections worldwide. The article stated that a person could be infected with TB by an exchange of bodily fluids, such as mucus and/or saliva from an infected person. The article further stated that TB was not passed on by means of contact with a patient's clothing, bed linen, dishes or cooking utensils. This was true unless someone infected with TB had contaminated them a fluid, such as saliva. In this case an infected person can be dangerous (WHO, 2012).

This study was motivated by health-belief related questions that related to an increase in the number of TB patients in the Mokopane area. The researcher wanted to establish if there were TB communication messages and whether Mokopane area patients were well informed about the disease, and how it was transmitted from one person to another.

1.2. Research Problem and Rationale

According to Stats SA (2014) the Limpopo province has a TB incidence of 354/100,000 people. The South African Government has discovered that of all the districts of Limpopo, the Waterberg district has the higheest number of TB cases than the other six priority districts, and the number of cases increase daily (Jana, Letsela, Scheepers, Weiner, 2015). There have been a limited number of studies that have established the nature of the increase in the spread of TB and its prevention in South Africa, particularly in Limpopo, specifically in the Mokopane area. The continual increase in TB cases has influenced this researcher to profile the perceptions of health beliefs and examine the causes that influence and increase the spread of TB in the Mokopane area of Mogalakwena municipality.

1.3 Literature Review and Theoretical Framework

This section discusses both a literature review (namely the PEN-3 Cultural Model of health beliefs) and provides a theoretical framework. It further discusses the epidemiology, policy frameworks and grounds the study theoretically.

1.3.1 Epidemiology

Epidemiology discusses patterns and determinants of health and disease in defined populations. In this instance, the defined population is in the Mokopane area, where the data was collected. Epidemiology is a cornerstone of public health, and it shapes policy decisions and evidence. According to Dye, Scheele, Dolin, Pathania and Raviglione (1999) in the 2013 South African National Tuberculosis Association (SANTA) article, South Africa had the third highest TB infection cases globally, after India and China, with a growth of 400% over the past 15 years. TB remains one of the illnesses that kills most South Africans. 12% of the total number of deaths in SA in 2009 were attributed to TB (StatsSA, 2014). Tshitangano, Maputle and Netshikweta (2013) argue that most health practitioners in Limpopo do not take advantage of the available information about TB infection control. In 2005, around 1.4 million people who were infected with TB died (Tshitangano et al, 2013). The World Health Organisation (WHO) declared that, nationally, the average number of deaths caused by TB in 2010 was 6.5%. In 2009 WHO research revealed that numbers of infected people increased at a high rate. According to Tshitangano.et al, by 2009, this figure had increased to 12%. This means that Limpopo had a rate of death above the national average of 8.5%. According to a 2015 Soul City Institute of Health and Development Communication report, a person with active TB can spread the diease very quickly (Tufte, 2001). The report further states that one infected person can infect about 10-15 people annually, and that both children under five years and the elderly are most at risk of being infected by chronic diseases, such as TB. According to the WHO, the Tuberculosis Infection Control (TB IC) plan detects TB transmission risks and creates TB information which is made available to health practitioners and people who are infected (Tshitangano et at, 2013). The TB IC plan endorses the procedures to be affected in each facility to enable smoother, better control of the disease. It is unclear whether these plans are accessible in other rural hospitals and clinics or not (Tshitangano et al, 2013).

1.3.2 Policy Frameworks

In 2006, the WHO launched the Stop TB Strategy as an internationally recommended approach to reduce the number of TB infections (Tufte, 2001). Tufte (2001) further explained that this approach aimed to reduce the global challenge of TB by 2015 and this goal was in line with both the Millennium Development Goals (MDGs) and the Stop TB Partnership targets. The article WHO website (2010), found that in 2008, the WHO launched the STOP TB Policy Paper: The objective was to toughen the already existant plan of action with a focus on the role of the health system. The South African National Department of Health (NDoH) in 1994 initiated the National Tuberculosis Programme (NTP), wherein they partnered with all South African provinces, international and local Non-Government Organisations (NGOs) and technical and implementation partners (RSA, 2014). For Mokopane health care facilities to achieve their goals, serious research regarding the contributing factors to new infections needs to be undertaken.

1.3.3 Role of Theory in the Study

Health communication messages are based on the sharing of information, ideas, and emotions. These messages are most often designed to improve lifestyle behaviour, reduce the risk of disease, provide social support, and help people to allow them to make better health decisions. The aim of health communication is to improve both the health and lives of society. There are numerous health communication models, approaches and theories, each adapted to a specific domain, situation and type of health problem. Many models have a wide application applicable to various health communication contexts. They include the therapeutic, the health-belief, the interaction, the Pen-3 cultural and the development model (cf. Kirscht, Becker, Haefner, and Maiman, (1978). An examination of the Pen-3 model of health beliefs is suited to this study and will be discussed

1.3.4 The Pen 3 Cultural Model of Health Beliefs

Airhihenbuwa (2007) highlighted that over the past ten years, there has been an increase in the amount of evidence that focuses on the role that culture plays in healthcare. This indicates not only a widespread and growing interest in the influence of culture but also the realization of its importance in eliminating health disparities, addressing health literacy, and designing and implementing effective public health interventions (Airhihenbuwa and Liburd 2006; Airhihenbuwa and Webster 2004). This increasing focus, however, requires a clear understanding of the impact of culture on health. Culture in this context refers to shared values, norms, and codes that collectively shape a group's beliefs, attitudes, and behavior through their interaction in and with their environments (Airhihenbuwa 1999). Singhai (2003) believed cultural beliefs were vital for effective and sustainable public health involvement. The PEN-3 model was important since it explored the way family structure plays a vital part to assist and promote positive health behaviour and health. This model was also used to investigate cultural practices that play an important part in creating health behaviour. The model was further used as an analysis tool, to sift through text and data to separate, define and delineate emerging themes. PEN-3 model was also significant with exploring not only how cultural context shapes health beliefs and practices, but also how family systems play a critical role in enabling or nurturing positive health behaviors and health outcomes.

1.4 Purpose of the Study

The main reason for this research was to investigate the perceptions of Mokopane residents of Tshamahansi and Sandsloot villages and their level of understanding and knowledge of TB.

1.4.1 Aim of the Study

The aim of the study was to profile the health beliefs of people in the target area and examine their understanding of the causes of the rapid increase in TB cases; as well as its prevention.

1.4.2 Objectives

To ensure that reliable results are achieved, the researcher identified relevant objectives. Three objectives were selected as are listed below:

i) To assess people's perceptions as to the causes of the spread of TB and its prevention.

ii) To investigate whether socio-demographic factors contribute to the perceptions of the people of Mokopane.

iii) To identify and understand methods used by residents in the Mokopane area to prevent the spread of TB

1.4.3 Research Questions

In order to determine relevant research questions for this study the researcher carefully assessed, refined and finalised questions. Since relevant research questions will enable the researcher to achieve the objectives of the research, three key research questions were identified to be addressed by the study to ensure that the objectives of the study are achieved:

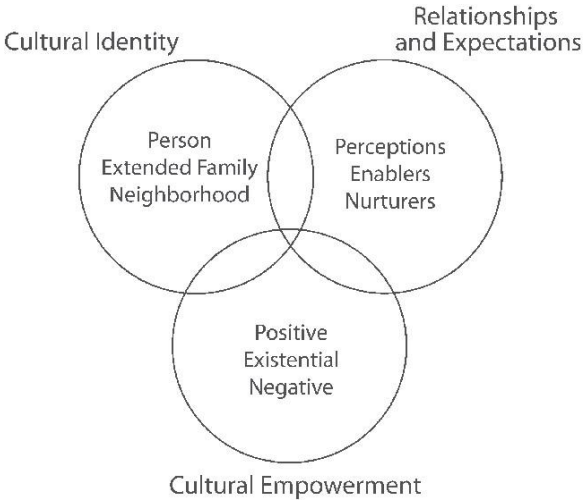
i) What are people's perceptions on the causes, increase and prevention of TB?

ii) How socio-demographic characteristics of people affect their perceptions which relate to the causes of TB?

iii) Do the people in Mokopane know and understand the indigenous measures that can prevent TB?

1.5 Research Hypothesis

Hilborn and Mangel, (1997) explain the term “hypothesis” as an assumption about a particular matter that needs to be tested/researched thoroughly. Lawshe (1975) defines validity analysis as a procedure, a process or a strategy in which a researcher collects or generates data to determine the extent or the degree or strength of an inference or inferences that can be made from a set of test scores. Lawshe (1975) explained that, when a hypothesis is tested, an analysis of data will provide findings. Major contributing variables can be identified which should assist the researcher to answer the research questions of the study. The following hypotheses, which should be read in conjunction with the conceptual model (c.f. section 1.11), were set for this study:



Hypothesis 1(0): All Pen 3 Cultural Model variables identified from the qualitative phase (identified as Cultural Identity: Person, Extended Family and Neighborhood; Relationships and Expectations: Perceptions, Enablers and Nurturers; Cultural Empowerment: Positive, Existential and Negative) have a significant effect on the perceptions of TB in the study area ($p>0.05$).

Hypothesis 1(A): All PEN 3 Cultural Model variables identified from the qualitative phase (identified as Cultural Identity: Person, Extended Family and Neighborhood; Relationships and Expectations: Perceptions, Enablers and Nurturers; Cultural

Empowerment: Positive, Existential and Negative) do not have much significance in the perceptions of TB in the study area ($p<0.05$).

Hypotheses 2(0): A dependent variable can be identified from the variables that have a high significance on the perceptions surrounding TB in the study area ($p>0.05$).

Hypothesis 2(A): A dependent variable is not identifiable from the variables that have a high level of significance on the perceptions of TB in the study area ($p<0.05$).

Hypothesis 3(0): There is a correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions of TB related behaviour ($p>0.05$).

Hypothesis 3(A): There is no correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions of TB related behaviour ($p<0.05$).

1.6 Research Methodology

The study was conducted in the Mokopane area of the Mogalakwena municipality. The researcher made use of both qualitative and quantitative methods since these suited the nature of the research. Qualitative data was collected by means of semi-structured interviews. The questions which were asked allowed the researcher an insight into the levels of understanding related to health beliefs and the causes and prevention of TB in the Mokopane area. The researcher designed an interview that asked questions that yielded detailed, qualitative responses which provided information about the key issues and addressed the aims and objectives of the study. Some of the qualitative questions were open-ended. In addition, ten medical doctors who operate private practices in the Mokopane area were interviewed. After the collection of detailed, qualitative data, the researcher designed quantitative questions to investigate the hypotheses of the study. The participants were comprised of 401 villagers from Sandsloot and Tshamahansi, outside Mokopane town. The PEN-3 model was used to construct the questionnaire.

1.7 Research Design

The researcher made use of an exploratory sequential design. According to Creswell and Ackerman (2004), exploratory sequential is a research design where the researcher first collects qualitative data, followed by quantitative. This research focused on health-related issues and the perceptions of people to these issues and the health challenges experienced by the residents of the villages. According to Tashakkori and Teddie (2003), the triangulation model integrates all the data so as to clarify the problem for the researcher. The results of this model have been stated separately and they bring the relevant points together (Tashakkori and Teddie, 2003). In this study, the researcher used a mixed method design. Firstly, a qualitative method, by use of interviews was employed, followed by a quantitative method by means of questionnaires. In the first stage, qualitative interviews provided an understanding of health beliefs and the causes and the prevention of TB. Ten medical doctors in the Mokopane area were interviewed. This comprised the qualitative interviews. The researcher was aware that during the qualitative phase of data collection, the interviews needed to include questions that had been designed to provide detailed information about TB and the topic of the study. The participants in the quantitative phase of the data collection were the residents of two villages, Sandsloot and Tshamahansi.

1.8 Sampling

This research first employed qualitative design to gain knowledge and a better understanding of the causes of the increasing number of TB cases in the area. Based on the findings of the qualitative phase, a questionnaire was constructed for the second quantitative phase. Here, the researcher interviewed ten private health care professionals from the Mokopane area, by means of a simple, random sampling technique. The researcher wrote down the names of all the private doctors in Mokopane and placed them in a container, then selected names, randomly. The first ten doctors whose names were picked out were interviewed. The qualitative phase had provided sufficient data to inform the construction of the questionnaire in the quantitative phase. By the ninth participant, the researcher reached data saturation. The selection of the two villages of Tshamahansi and Sandsloot was determined by their easy access and the researcher's familiarity with the area. To determine the

sampling rate, the researcher divided the total population by the number of questionnaires that needed to be distributed. The total population of Sandsloot (consisting of GaMabusela and GaMasenya), comprised approximately 1005 (StatsSA, 2011) and Tshamahansi 1937 (StatsSA, 2011). The combined population of these two villages amounted to 2942. 401 questionnaires were required to gather sufficient data. Participants were recruited by means of systematic random sampling. Moreover, the required sampling rate was calculated by dividing 2942 by 401. This amount to 7. Therefore, every 12th household was approached in each village until the desired sample of 401 was reached. The researcher used a sample size of 450 which allowed for a 95% confidence level and allowed for 50 spoilt questionnaires (c.f. Du Plooy, 2013). However, only 49 questionnaires were spoilt. The sample size was determined in consideration of both Slovin's formula and the table provided by Du Plooy (2013). When Slovin's formula is used, the sample size calculates as follows:

$$n = \frac{N}{1+Ne^2}$$

Hint: n=no. of samples; **N**= total population; **e**= margin of error

n=2942/1+2942*0.05^2

= 2942/8,355

=351 + 50 (for spoilt questionnaires)

Total = 401

Figure 1.1: Slovin's Formula

Secondly, table 1 (below) provided by Du Plooy (2013) can also be examined:

Table 1.1: Simple Random Sample Sizes at 95% Confidence Level (Du Plooy, 2013)

Target population size	Sample size
Infinity	384
500 000	384
100 000	383
50 000	381
10 000	370
5 000	357
3 000	341
2 000	322
1 000	278

It should first be noted that Slovin's formula calculates to 391. Also, an examination of the population of 16247, according to Du Plooy, should calculate to a sample size of 381. Slovin requires a higher sample size. The correct sample size is accepted as 450 which allowed for a maximum of 59 spoilt questionnaires.

1.9 Data Collection

1.9.1 Qualitative

Qualitative data collection was achieved by means of semi-structured interviews. Ten semi-structured interviews were conducted with medical doctors, all of whom have their own medical practices in Mokopane. It is important to note that only two of the ten medical doctors interviewed originated from the Mokopane area. All the interviews

conducted were recorded and transcribed by the researcher to ensure that a thorough analysis of the data was undertaken. The semi-structured interviews contained open-ended questions which were prepared beforehand and enabled the informants to express their views individually. This interview technique provided information about their understanding of the health beliefs of the people in the study area. This interview technique also provided considerable understanding of the understanding of causes and the prevention of TB by the people in the study area. Furthermore, the interviews also provider an overall impression of the TB situation in the study area. Once the interviews were complete, the researcher used the data they provided to draft questions to assist in the analysis and interpretation of the quantitative data of the study.

1.9.2 Quantitative Phase

Questionnaires were used to determine the demography of the respondents, followed by Likert-Scale type questions to quantify their attitudes towards health beliefs that had already been determined by the qualitative phase. Likert-Scale questions were also used, as they provide a reliable means to measure opinions, perceptions and behaviour in a study area.

The questionnaires were distributed in the two villages, situated about 15 kilometers outside Mokopane. Data collection was done by the researcher alone and did not incur costs but it took more than four months collecting data and this was time consuming. Systemic Random sampling was used to determine how the questionnaires were to be distributed. A sample size of 401 was used as that provided a 95% confidence level.

1.10 Data analysis

The researcher analysed the data by means of NVivo (qualitative) and the Statistical Package for Social Sciences (SPSS) for quantitative. Since the qualitative and quantitative data was analysed separately, they have been presented as such below.

1.10.1 Qualitative Phase

The researcher qualitatively analysed data by means of NVivo to identify emergent themes. A recorder was used to record responses, which were later transcribed. These results were presented and discussed in descriptions, following an analysis of the responses obtained from the participants.

The Interviews provided information about the perceptions of health beliefs and the causes and prevention of TB in the study area. Furthermore, they helped clarify the situation in the study area, which also assisted the researcher to draft relevant questions for the quantitative phase. Certain themes began to emerge from the data that related to the research questions. Thereafter findings were derived.

1.10.2 Quantitative

The quantitative phase analysed and interpreted the empirical findings obtained by means of the quantitative data collection from the 401 participants. Both SPSS and MS Excel software were used to determine both descriptive and inferential statistics. The demographic section provided firstly the socio-demographic information of the participants, then it analysed the perceptions and experiences of the participants with regards to the causes and the increase in the rate of the spread of TB in their area. Inferential statistics that were used included Pearson Product Correlations to define any correlation between variables.

1.11 Conceptual Framework

The researcher made use of a conceptual framework to analyse the conceptual framework of this research. Figure 1.2 presents a summarized conceptual framework for this study.

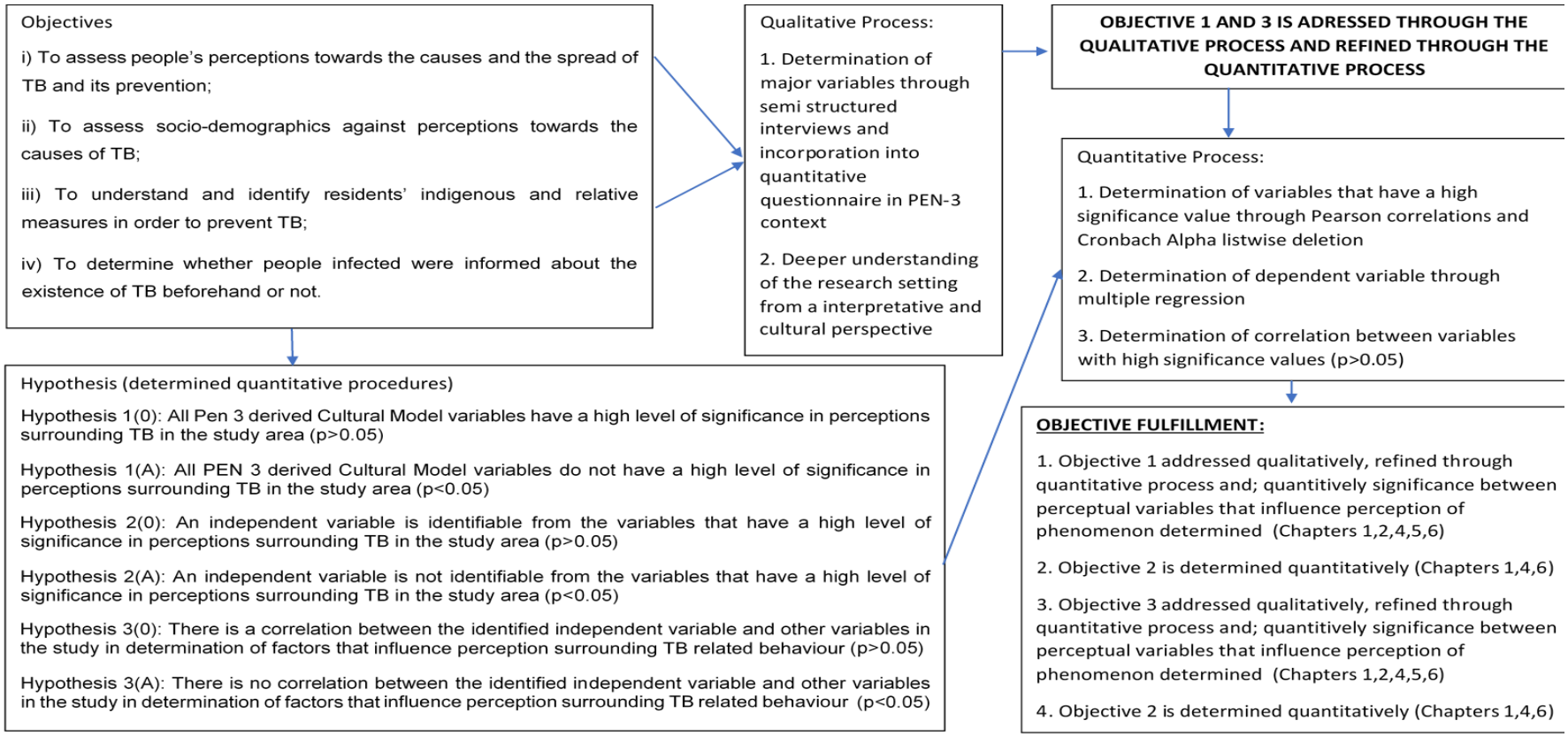


Figure 1.2 Conceptual Framework

1.12 Quality Criteria

This study was based on both qualitative and quantitative approaches. The quantitative approach includes the aspects of validity, reliability, and objectivity while the qualitative approach, addresses the aspects of credibility, transferability, dependability, and conformability.

1.12.1 Quantitative

1.12.1.1 Validity

The researcher ensured the validity of the study since all questions from the Likert type scale were answered, the study objectives were achieved, and alignment with the research aims; objectives and questions were achieved.

1.12.1.2 Reliability

To confirm that the study was reliable, the researcher made sure that all questions that were asked were answered by the participants. Furthermore, the researcher made sure that a sufficient and reliable number of study participants took part in the study. They also ensured that the questions asked were clear and specific. The number of study participants in the quantitative phase was checked with a reliability co-efficient such as that in Cronbach's Alpha as reflected in chapters 3 and 4.

1.12.2 Qualitative

1.12.2.1 Objectivity

The researcher used open-ended questions which made sure that in-depth information was revealed to achieve the objectives of the study.

1.12.2.2 Credibility

According to Smith and Ragan (2005), credibility in qualitative research is defined as the extent to which the data and data analysis are believable and trustworthy. The information from the recorded interviews was transcribed accurately to achieve credibility and the researcher did not influence or direct responses in any question way. The information gathered for this research reflects the direct views of participants collected and recorded.

1.12.2.3 Transferability

The researcher compared the findings of this study to information which was already available from similar earlier studies. The literature review also provided information, findings and recommendations from similar studies that had been conducted previously.

1.12.2.4 Dependability

The researcher reviewed data to achieve dependability because research study requires that the data and descriptions of the study should be all inclusive and complete. Dependability means observing the same findings in the same circumstances. According to Merriam (1998), it refers to the extent to which research findings can be replicated with similar subjects in a similar context. To make sure that dependability was achieved, the researcher reviewed other research studies, methods, as well as their conclusions and recommendations to ensure that he did not include any personal opinions or bias in the recommendations.

1.12.2.5 Confirmability

According to Moser, Korstjens and Series (2017), confirmability is the degree to which the research findings can be confirmed or verified by others. The researcher complied with all the regulations to ensure correct data collection processes. (Distribution of confirmation letters and contact with all relevant bodies involved in data collection). Participants were also asked to sign an agreement letter that ensured their free, voluntary participation.

1.13 Significance of the Study

This study informed recommendations on health promotion which might help reduce the rising number of TB cases in the Mokopane area. People residing in Mokopane area may be able to benefit from this study, as it will assist them to find solutions to the rising numbers of TB cases.

1.14 Ethical Considerations

Informed consent was obtained prior to data collection, and the participants were reassured regarding the confidentiality of the information which they had provided. The participants were involved voluntarily and their rights and privacy will be kept confidential and respected as is required by the University of Limpopo Research Ethics Committee. All the respondents who agreed to participate in the study signed a consent form.

1.15 Respect for Persons

Study participants were informed that their participation was voluntarily and that they could freely withdraw from the research at any time. Participants were also informed

that they had the right to provide or withhold any information that they felt should not be kept confidential.

1.16 Principle of Beneficence

No questions were directed to participants that made them feel uncomfortable or undignified. The respondents were free to ask questions or for extra clarity when necessary.

1.17 The Principle of Justice

The respondents were randomly selected for this research. They were selected using a procedure that included criteria such as gender, age and area of residence to prevent manipulation. At all times the identity of the respondents remained confidential.

1.18 Confidentiality

The information collected from the participants will not be shared with anyone and will be used exclusively for academic purposes of this research project. The names of those who participated will only be known to the researcher and the supervisor. Those who participated were reassured that no unauthorised persons would have access to their details or data.

1.19 Anonymity

To ensure anonymity of the participants the researcher provided each person with a number or a code name. The matching codes and names of respondents were kept in a secure place.

1.20 Conclusion

In conclusion, this chapter has outlined and discussed the research problem and rationale, the literature review and theoretical framework, the purpose of the study, research

hypothesis, research methodology, research design, sampling, data collection, data analysis and conceptual framework. This chapter further discussed relevant aspects such as of quality criteria, data analysis, Conceptual Framework and Quality Criteria among others. This is repetitive. Chapter 2 deals with an overview of current and relevant literature.

Chapter 2: Literature Review and Theoretical Framework

According to Christensen and Laegraid (2007), a literature review is important in the sense that it helps us to gain a full understanding of the current state-of-affairs regarding the selected topic. It shows whether the identified problem has already been researched or not, and further provides insights on how to continue with the design of the study and attain answers to the research question (Mokwena, 2012).

2.1 Introduction

The literature review in this study shows how people living with TB are being treated by the public and government institutions within the communities where they reside. It continues to show the actions taken against stigma and discrimination by authorities. This situation influenced the choice of this topic. According to Dye et al (1999), South Africa has been ranked third highest as far as TB is concerned, after India and China. Worldwide many people continue to die daily from TB and in 2009 12% of the total deaths South Africa were caused by TB (StatsSA, 2014). Tshitangano et al (2013) argue that most health practitioners in Limpopo province do not take advantage of the information that is available about TB Infection Control. In 2005, TB was declared an emergency by all African health ministers who were at the Maputo meeting during the opening of the World Health Organization Regional Office for Africa (WHO, 2015). In 2011, 8.7 million new cases of TB were reported in Africa alone. From this total, approximately 1.4 million people who were infected with TB died from the disease (Tshitangano et al, 2013). The World Health Organisation (WHO) disclosed that, in 2010, in South Africa overall average death TB accounted for 6.5% of the total deaths while in Limpopo TB deaths accounted for 8.5%.

According to a South African Government Report (RSA, 2015), a person with active TB can infect others very quickly. One infected person can infect about 10-15 others annually. Once a person is infected with TB, the advance of this disease to full-blown TB depends on the strength of the person's immune system. According to the Soul City Institute of Health and Development Communication in the Government report in 2015, it was estimated that, TB had advance in only 10% of the general population who had normal immunity, while half the cases will be exhibit a progressed of the disease within 2 years after infection. (Tufte, 2001). According to WHO, the TB IC plan

identifies TB transmission risks and creates TB information which is available to health practitioners and patients (Tshitangano et al, 2013). Presently, South Africa does not have enough information related to the availability of TB IC plans. It is not known whether these plans exist or not (Tshitangano et al, 2013**)**

Results from a study conducted by Edginton, Sekatane and Goldstein (2002) indicated that there was a strong belief in Mokopane area that TB was the result of breaking cultural rules that forbid sexual intercourse both after the death of a family member and after a woman had suffered a spontaneous abortion. Edgiton et al continued to maintain that, people believed that TB could only be treated by traditional healers. This meant delays before TB patients consulted hospitals or clinics. However, the study conducted by Govender and Mash (2009) discovered that the time taken by patients while consulting and taking treatment from traditional healers before they could consult at the clinic or hospital remained the most important factor in accessing the services in public health clinics and hospitals. According to the findings from this study, health clinics and hospitals are at times located considerable distances from patients infected with TB. In some circumstances, it may be justifiable to consider the possibility of admitting such patients, although in most hospitals there is a limit on the number of days that a patient should be hospitalized (Govender and Mash, 2009). Mash and Govender maintained that consideration should also be given to better transport options, or to the supply of more community-based health services in rural areas, such as where the study was conducted (Govender and Mash, 2009). A discussion of the theoretical framework follows.

2.2 Theoretical Framework: The PEN-3 Cultural Model of Health Beliefs

Health communication messages are based on sharing information, ideas, and emotions. These messages are often designed to improve lifestyle and behaviour. They reduce the risk of disease, provide social support and help people make better decisions about their own health. The aim of health communication is to improve the living and health conditions of society (Airhihenbuwa, 2007). There are numerous health communication models, approaches and theories, each adapted to a specific

domain, situation and type of health problem. There are many models that have a wide application to various health communication contexts. These include the therapeutic model, the health-belief model, the interaction model, the Pen-3 cultural model and the development model (Airhihenbuwa, 2007). Application of the Pen-3 model of health beliefs is particularly suited to this study because it has assisted in finding the way family structure plays a vital part in the decision making of health behaviour Airhihenbuwa (2007) highlighted that in the last decade the body of evidence of the impact of culture on health has increased globally. Culture here refers to the shared values, norms, and codes that collectively shape a group's beliefs, attitudes and behaviour through their contact in and within their settings (Airhihenbuwa, 1999). This implies that the impact of culture should not be excluded when plans are made to reduce TB infections, especially in Africa. Exploring the cultural context of different people in different geographical locations allows people to understand the ways in which people from different ethnic groups are shaped (Singhal, 2003). An understanding of these cultural beliefs is vital for effective and sustainable public health improvements.

The Pen-3 cultural model was selected to provide a theoretical framework for this study because this model emphasises the role played by culture. It is seen as a link which connects people's perceptions, choice of lifestyles and the way these perceptions shape lives (Airhihenbuwa 1995). The PEN-3 cultural model was used to provide a theoretical framework for the impact of culture on the health behaviour of the Mokopane residents and TB patients in the Mokopane area. The model was used to analyse data to distinguish and explain the emergent themes. The researcher believed that the PEN-3 model was important to explore how family structures play an important role to create and promote positive health behaviour and results. This model was also used to investigate which cultural practices could be dangerous and negatively impact on lives. For example, unique cultural practices could have a negative impact on people's health.

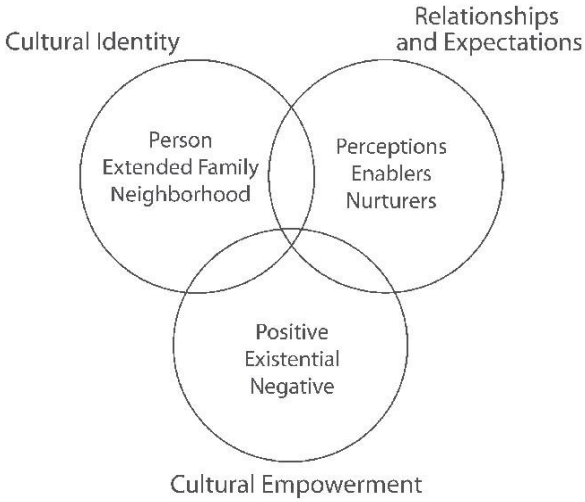


Figure 2.1: An illustration of the PEN-3 Cultural Model of Health Beliefs

Figure 2.1 illustrates the three main elements of the model as three, intersecting circles. These three elements influence culture and influence how people understand health messages about TB. These elements of the model were used in the quantitative phase of this study to identify which were most significant. Furthermore, a clear understanding of the role played by culture in respect of health was also discussed with reference to the data results. In one of his articles, Airhihenbuwa (1999) mentioned that to explore the influence of culture on individual health. It is important for researchers to understand the influence that culture has in health decisions of most people. This study shown that, culture plays a considerable role in influencing people's health decisions. The PEN-3 Cultural Model of Health Beliefs was chosen for this study because this model has assisted the researcher to obtain better results. The PEN-3 cultural model places culture in a central position in the study of health beliefs, behaviors, and health outcomes (Airhihenbuwa 1995). The model also places culture at the core of the development, implementation, and evaluation of successful public health interventions (Airhihenbuwa and Webster 2004; Airhihenbuwa, 1995). It focuses on the role of culture as a connecting web which shapes the perceptions which define the actions of individuals about their health choices and decisions. Airhihenbuwa (1995). Further, the PEN-3 cultural model offers a frame centralize which places culture at the centre when health problems are defined and solutions sought (Airhihenbuwa 1995).

2.3 Defining Tuberculosis (TB)

Most Scholars define TB as an infectious bacterial disease characterised by the growth of nodules (tubercles) in the tissues, in the lungs. However, Sun, and Zheng (2015) define it as a bacterial infection that can spread throughout the body from the lymph nodes and through the bloodstream. HIV is the most powerful influence in the conversion of infection to active TB because a person who is infected with TB, and then HIV will develop full-blown TB (Rieder, Cauthen, Kelly, Bloch and Snider, 1989). Rieder et al (1989) maintain that, HIV further fuels the rate of persistent TB in an infected patient/person. Researchers have expressed the notion that HIV positive people are vulnerable to TB infections since their immune systems have been compromised.

2.3.1 Defining TB Related Stigma

Stigma related to TB include all critical and negative attitudes, beliefs and policies about people who have TB, by their friends, relatives, partners and the families of those who have tested positive or those who are suspected to be living with this chronic sickness by members of communities where these people reside (Anderson, 2008). Anderson (2008) continues to indicate that stigma includes people's attitudes and the social structures that reject those who are infected and/or affected. Stigma make infected people and those affected feels rejected and unwelcome within their communities. (Von ELM, 2007). UNAIDS defines TB related stigma as; "a process of devaluation of people either living with or associated with TB and HIV/AIDS" (WHO, 2004). It further says that discrimination follows stigma and is the unfair and unjust treatment of an individual based on his or her real or perceived health status (Guenter et al, 2000). People need to know more about the influence and the extent of harm that is being caused by stigma and discrimination (Skinner and Mfecane, 2004).

Skinner and Mfecane (2004) emphasised that stigma and discrimination related to people living with TB and HIV/AIDS makes victims feel rejected by their community members and this negatively affects infected people. Stigma and discrimination brand

infected people. Instead infected people should be supported and encouraged to undergo treatment to live a healthy lifestyle (Mokwena, 2012). According to Mokwena (2012), in most communities, TB and HIV/AIDS patients are being discriminated against and excluded from community activities. They are considered as disgraceful and are punished with rejection community members (Mokwena, 2012).

2.3.2 The Impact of HIV on TB Patients

2.3.2.1 Patterns of HIV-Related TB and the Effect of HIV on Diagnosis

According to Rieder et al (1989), TB is usually easier to detect or can be more easily spotted in early HIV infection. To defeat this (leave out emotional descriptive words, shows bias) epidemic in the sub-Saharan countries of Africa, there is a serious need to come up with an improved testing for TB that is sensitive, precise, quick and reasonable (Perkins, 2000).

2.3.2.2 Response of HIV-Infected TB patients to TB Treatment

There is a higher mortality rate for HIV patients during and after TB treatment than those who are not HIV positive. (Mukadi, Maher and Harries, 2001). According to Mukadi et al (2001), in Sub-Saharan Africa only, up to 30% of HIV-infected TB patients die within twelve months after commencing TB treatment/ Check this is correct.it is so muddled. This is a serious concern which should be taken care of by the health practitioners in the afore-mentioned countries of Africa. Being HIV positive may mean patients are stigmatized as both HIV/AIDS positive and as a TB sufferer. Also, patients may experience poor social support from family and significant others, when they are sick and unable to access a clinic or deal with the complex therapeutic regimens (Govender and Mash, 2009). The history of the development of TB in South Africa can provide information about what the government has done in the past to curb TB in South Africa.

2.4 Historical Development of TB and the South African Health Department

History is the compass or atlas that gives direction on solutions for problem which face the country. Bond and Nyblade (2006) believe a new disease stigma has unfolded namely that of TB-HIV. "Entrenched partly in judgment, blame and shame, fears of TB transmission, and public health practice and policy, means that TB-HIV stigma has serious implications for TB consequences and for the management of HIV" (Bond and Nyblade, 2006).

2.4.1 Before 1994

Prior to 1194, Karim (2009) argues that many black people who were working in the cities were forced to reside in congested, poorly ventilated, single-sex hostels. These hostels were often served by prostitutes who were called "town wives" then (Karim and Bhat, 2009). These workers were migrant and did not live in one place for long periods of time. Karim and Bhat (2009) explained that these men frequently relocated from one city to another because many were temporary employees at the mines. If better job prospects presented themselves, they relocated. According to research conducted by Karim and Bhat in (2009), these men's wives were not allowed to visit them, instead men would regularly visit their wives and families in rural areas. This was a dangerous lifestyle because this meant they could become infected with disease and to their families during their visits (Karim and Bhat, 2009). History explains the nature of HIV and TB epidemics in South Africa. Both illnesses have become central public health issues in the post-apartheid era. Furthermore, their control is important for the sake of economic growth and development of the country. The change in administration in 2008, and the elections in 2009 have brought new hope that South Africa will defeat the ever-growing cases of TB (Churchyard, Karim, Karim, Lawn 2009). Churchyard et al (2009) further maintain that finding the best means available and taking serious action will be the key to controlling both TB and HIV.

2.4.2 Post-Democracy

After South Africa had its first democratic election in 1994, the country began to implement WHO policies to control TB (WHO, 2015). However, under the Mandela government where a new, politically stable, non-racial society was established HIV/AIDS and TB were not given high profile political support. In 2007, Madlala-Routledge's honesty about the effectiveness and usefulness of Antiretroviral Therapy (ART) was dismissed by Mbeki (Churchyard et al, 2009), who also stated that during that time, South Africa's 5-year Strategic Plan for HIV/AIDS had been developed and adopted by SANAC. In 2008, Mbeki was forced to resign from the presidency and was replaced by Kgalema Motlanthe. The then Minister of Health, Barbara Hogan, established a new health programme as a response to HIV/AIDS and TB. In 2009, after national general elections, the new government was then steered by President Jacob Zuma who appointed Aaron Motsoaledi as the Minister of Health. After 22 years, South Africa still struggles with the outcomes of the apartheid era and the challenges to transform society and promote equity in development (Mokwena, 2012). Many developing countries are faced with HIV/AIDS and TB related health problems such as lack of planning and drugs to cure or control these diseases (Mokwena, 2012). Globally, in 2013, it was estimated that 9 million people had TB and 1.5 million had died from the disease, 360,000 of whom were also HIV-positive (WHO, 2013). According to a Global Report from the Joint United Nations Programme in 2007. This study was prompted by the fact that medical doctors and clinic nurses in the Mokopane area have complained that some TB patients do not believe that TB exists (SABC News, 2014:30 May). According to this article, "three learners at Chris Hani Primary School in Mahwelereng were found to be infected with TB, one with a case of Multi-Drug Resistant TB". The online article on the SABC website further stated that the infected and affected families of TB patients believed that if a person was infected with TB, they were bewitched.

2.4.3 South Africa compared to other African Countries

Stigma and discrimination related to TB and HIV/AIDS can be defined as the unfair treatment of people who are infected by these diseases, based on their status in their respective countries (Mokwena, 2012). In Africa, stigma and discrimination can have a considerable impact on people and whether they are respected by their families and communities. People are respected and judged according to their standards of living. In 2003, South Africa, for the first time, announced that there would be an antiretroviral treatment provided to citizens of this country who were HIV positive (Nattrass, 2006).

2.4.4 TB in Sub-Saharan Countries

The effect of HIV on people living with TB has had serious implications for the policies designed to fight TB (Maher; Harries and Getahun, 2005). The impact on programmes has been felt by those infected, those affected and those living with an HIV diagnosis. In Sub-Saharan countries, the impact of national TB programmes (NTPs) indicates that difficulties have been experienced when attempts have been made to best control TB (Maher et al 2005). Implications for policies include the promotion of a collaboration between TB and HIV/AIDS programmes, which are targeted at improving the performance of National TB Programmes; quality and continuous care; and monitoring and interpretation of the progress of TB control objectives (Maher et al, 2005). Maher et al (2005) maintain that, for Sub-Saharan countries to maintain the endorsed international standard of care for TB patients, health care workers must be alert to the impact of HIV on people living with TB and the implications for the policies that supply the framework for this standard.

The economic status of sub-Saharan countries also contributes to the deeply rooted, rapidly rising number of TB and HIV cases (Corbett, Watt, Walker, Maher, Williams, Raviglione and Dye, 2003). Since the discovery of a new effective TB vaccine, better diagnostic TB tests, and better quality preventive and therapeutic approaches developed by scientists, most countries including South Africa have experienced dramatic progress in the control of TB (WHO, 2004).

2.4.5 Communication between Health Care Workers and TB Patients

Steyn, van der Merwe, Dick, Borcherds and Wilding (1997) indicated that when patients are satisfied with their interaction with a health service provider, they tend to adhere to the prescribed treatment. They further maintain that training in communication skills should be introduced at TB clinics, to improve the interaction and understanding between patients and health professionals. If this was the case it could mean an improved adherence to treatment (Steyn et al, 1997). Gjengedahl (1994) further revealed numerous vital discrepancies between nurses' patients' perceptions of communication problems. It was established that most nurses did not recognise communication as a problem when they communicated with patients during their visits to the clinics. Gjengedahl (1994) argued that there should be clear, two-way communication between health care workers and their patients, and equally patients needed to feel comfortable to be freely express themselves and their concerns about their illnesses. The study also recommends that health care workers needed to be clear when explaining to patients; and they need to help patients to see the importance of completing their full course of treatment. An empathetic health care professional might change the thinking of the next person because sometimes touch could be interpreted as a sign of care and comfort. Routasalo and Isola (1996) mention three types of touch that can provide a sense of care for patients: a comforting touch, a task touch and an affectionate touch. Estabrooks and Morse (1992) analysed how healthcare workers, especially nurses, understood and touched their patients and whether a tactile massage could send a positive message to the patient. A further contributing factor is that health practitioners might work in foreign countries with citizens who might not understand their language (Maputle and Donovan, 2013). In this study, Mokopane is a rural area where the predominant mother tongue is Sepedi. Some residents are not well-educated and cannot speak English. Most health practitioners in and around Mokopane come from Vhembe and they speak Tshivenda and Xitsonga. Mokwena (2012) indicated that in and around Mokopane, most residents speak Sepedi. This is another contributing factor that might lead to miscommunication because most of the nurses here cannot speak Sepedi. Findings

from the study conducted by Watermeyer, Penn, Scott and Seabi (2019) discovered that, in the area where the study was conducted, responsibility for communication seemed to be unduly placed on patients, while, treatment guidelines were not implemented consistently across sites and assumptions were made about the role of others in the chain. They further indicated that patient and healthcare worker reports suggested their confusion and frustration. This means that communication maybe an essential yet neglected feature in the care and research of the field of tuberculosis Watermeyer et al (2019).

2.4.6 Communication between Public and TB Patients

According to WHO (2014), most people live in fear of being infected by TB because it could prove fatal. Some cannot afford to pay for the treatment, especially in Sub-Saharan countries. HIV and TB patients tend to hide when they know that they are ill because they are afraid of being judged and rejected by their communities (Mokwena, 2012). They are afraid of being stigmatised and being discriminated against because of their illness. According to Mokwena (2012), most TB patients do not want to be seen going to clinics or at the clinic because they are afraid of what other people will think. Older women are the ones who do it easiest to seek treatment because a perception exists that women most commonly visit the clinic on a monthly basis, so people will not suspect the reason for their visit. For men, it is more difficult, because they are afraid of what will people think about them (WHO, 2004).

2.5 Perceptions of TB by Citizens of South Africa

The active participation of people who are infected or affected by TB is central to the fight against stigma (Mokwena, 2012). It is not the responsibility of the patient alone; but all government departments, health structures, traditional leaders and churches must work together to educate the citizens of this country that it is important to support and encourage people living with any disease to start and complete treatment for their illness to improve their health. (Mokwena, 2012). Mokwena (2012) further indicated

that when the people living with these diseases are shown love and care, they tend to recover very quickly because of the support they receive from community members.

2.5.1 Individual's Context (TB Patient)

Age, gender, religion and education all have an impact on the behaviour and actions of people infected with TB Many rural patients do not believe that TB can be cured (Cramm, Finkenflügel, Møller and Nieboer, 2010). The study conducted by Maputle and Donovan (2013) showed that the youth often indicated that as TB and HIV/AIDS patients, they are being supported by members of their families and, at times, their friends and relatives. Most people especially those in rural areas often complain about long delays and queues at the clinics and women indicated that "they were afraid people would talk about their visit to the clinic" (Cramm et al, 2010). Cramm Et al (2010) found that a high number of respondents know and can point out people who are infected by TB, in the area where they reside. Greater knowledge about TB can be considered as being a good thing in most communities.

2.5.2 Family Contexts

Most people, especially Africans, believe people with TB often hide their TB status because of their fear of being stigmatised and being victimised (Cramm et al, 2010). Most Africans and health practitioners believe that it is most often irresponsible patients who do not take or complete their treatment who are to blame for spreading TB. Most health practitioners believe that TB patients interrupt treatment because they think they are cured, since they have taken treatment for two to three months (WHO, 2004). Infected patients need to complete a full course of six months treatment, for best results. People should carefully consider that most people believe the stigma to be a real problem in adhering to TB treatment which is why most of them do not want to undergo treatment (WHO, 2013).

2.6 State of TB in Mokopane Area

Mokopane has a higher number of people who work in mining related industries where cleanliness is a challenge. At times, these people are negligent and don't take their health seriously (Gillespie, Stuarta; Kadiyala, Suneethab, Greener and Robert, 2007). The Mokopane area contains three mines which frequently use dynamite, which results in heavy clouds of dust after controlled explosions. Many people live in temporary accommodation and live in unhealthy conditions because they have better, cleaner permanent homes elsewhere. In mining communities, high levels of both TB and HIV are found. Many migrant mine workers are foreigners who have left their wives back home. Since they appear to have money, young girls throw themselves at these miners for the love of money and to satisfy their financial needs (Gillespie et al 2007).

2.7 Stigma and Discrimination in the South African Health Department

There is a weaker link or relationship between national wealth and HIV prevalence across countries in sub-Saharan Africa (Gillespie, Greener, and Kadiyala, 2007). According to Gillespie et al (2007), poor countries continue to experience high numbers of TB infections. There is a huge income inequality between these Southern African countries. There is evidence from household income levels to demonstrate clearly that poverty is a major cause of the TB and HIV epidemic (Gillespie et. al 2007). People who live in poorly built infrastructure or houses where streets are dusty and houses and floors are built from mud and cow dung are vulnerable to TB because during windy seasons, they inhale dust even when they are in their houses (Mokwena, 2012). A study conducted by Watermeyer and Penn (2019) also indicated that HIV-related stigma has been extended to those living with TB.

2.8 Communication Messages about TB by the South African Government

According to Makhado and Davhana-Maselesele (2011), the South African Government is doing its level best to communicate health-related messages across all media available to make sure that the message is understood by all citizens, irrespective of race and disability status. There are also many non-profit organisations and support structures like Soul City and “We Beat TB” campaigns available. Countless billboards which display information about safety and prevention of diseases such a HIV and TB can be seen on the streets of the state (Makhado and Davhana-Maselesele, 2011). Flyers can be found in government departments, hospitals and at clinics which educate citizens about the prevention of chronic diseases and how to recognise someone who has TB. Others encourage people to go to a clinic and be tested for HIV and TB. However, there are people who cannot read these of many messages. Also, some choose to ignore these messages, not because they cannot read, but because of their ignorance and negligence (Simelela and Venter, 2014). Language barrier in most villages like Sandsloot and Danisani might be a challenge because most messages on billboards are written in English and People residing in this area speaks Sepedi and Tsonga and most of them don’t have formal education (Mokwena, 2012).

2.8.1 Level of Education of the People of Limpopo Province

According to Delobelle, Rawlinson, Ntuli, Malatsi, Decock, and Depoorter (2009), there is a need for better TB and HIV/AIDS training for nurses who work in rural area. In addition, there should be sufficient visible communication messages available to the citizens of Southern Africa. Delobelle et al (2009) maintained that age and race determine people’s level of education. Most people in Limpopo reside in rural areas, particularly in villages where drugs and sex are basic desires. Most people work on farms and have failed to pass primary school in terms of their level of formal education. The level of health education is poor because very few health practitioners go to the villages to tell the residents about the dangers and treatment of diseases such as TB and HIV.

2.8.2 TB Infection Control Plan Awareness

A previous study conducted in the Vhembe District by Tshitangano et al (2013) revealed the importance of TB Infection Control (IC) plans to set goals, establish compliance requirements, lay out the roles, responsibilities, policies, and procedures to indicate who would administer and manage TB IC programmes. However, the WHO (2007) argue that a TB IC plans in most rural areas are not effective and there is a high risk of TB transmission among health care workers and patients. Their study further discovered that TB IC policies, procedures and plans are measures to be implemented in every hospital or clinic to control TB infection.

2.9 HIV prevalence among TB patients

According to a report by the World Health Organisation (2004), there is a relationship between HIV and TB, and, in most cases, TB patients are also tested for HIV as to find the root causes of TB because when a person is HIV positive, that person is vulnerable to TB. When a person's CD4 counts is low, it is easier for that person to contract TB and other diseases because the immune system is weak (WHO, 2004). CD4 count is a count of cells in a person's blood streams. This report further outlined that there are only few TB patients who did not know their HIV status. The stigma attached to HIV may discourage people with symptoms of TB from looking for help to take care of TB or from taking treatment (Ngamvithayapong, Winkvist and Diwan, 2000).

Furthermore, if there is a policy of compulsory HIV testing of TB patients (which is good for controlling HIV and TB in the country) this could result in patients being frightened away from looking for care (Guenter, Esparza and Macklin, 2000). The study conducted by Watermeyer and Penn (2019) indicated that patient nonadherence to TB treatment is an ongoing challenge, since the arrival of drug resistant TB and further complications caused by HIV/AIDS. Watermeyer and Penn (2019) further mentioned that there was a strong relation or link between TB and HIV in the community where their study had been conducted.

2.10 Conclusion

The research has indicated that there is a huge stigma surrounding TB. Community members often exclude infected people from community activities and view them as being disgraceful. This, in turn, leaves them feeling rejected. Stigmatisation and discrimination against sufferers of TB is rife in many communities across South Africa. Furthermore, those who suffer from HIV/AIDS face a high risk of contracting TB (Bond and Nyblade, 2006). TB can be cured in HIV positive persons if the treatment is sought, administered and completed by the patient. Before 1994, for at least ten years, most South Africans were in denial of the epidemics that were occurring globally. This has led to the situation the country is facing today. Organisations such as the SANTA and Friends of the Sick Association (FSA) began to help sufferers. Since 1994, South Africa has begun to make use of the policies of the World Health Organisation to control TB. Mokopane villages are surrounded by the platinum mines that hire foreigners and people from other provinces of South Africa because of their levels of education and experience in the mining industry. Africans in general prefer consulting at churches and at traditional healers to heal their diseases. The above-mentioned factors are some of the problems that are responsible for rising number of TB cases. The existence of many, varied factors that affect the TB epidemic in rural areas influenced this choice of topic and study area.

Chapter 3: Research Methodology

3.1 Introduction

This chapter describes the research methodology, provides background descriptions of the geographical area where the study was conducted as well as the study design, population and sample. Furthermore, this chapter describes the instruments used for data collection, and methods implemented to maintain validity and reliability of the instrument. This chapter additionally explores the research design, sampling and population throughout the data collection period, as well as ethical considerations and data analysis.

Burns and Grove (2003) define a research design as a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings. They describe a research design as a plan that describes how, when and where data are to be collected and analysed. In this study the researcher used triangulation methodology to combine multiple methods to collect data at different times and in different places. Triangulation of data strengthens the data because it increases its credibility and validity. The triangulation of data occurs when multiple theories, materials or methods are used (Parahoo,1997). In the first stage the researcher used interviews (qualitative) to gain an understanding of health beliefs, the causes and the prevention of TB in the study area. In the second stage, the quantitative data was collected by questionnaire. This provided a clear understanding of the situation that exists in the study area. This also assisted the researcher to draft appropriate questions for participants from two villages outside Mokopane (Tshamahansi and Sandsloot). The questions in the quantitative questionnaire were formulated based on the findings of the qualitative data.

3.2 Research Orientation

According to Creswell et al (2003), mixed methods is a research methodology for conducting research that involves collecting, analysing and integrating qualitative and quantitative research. They further highlight that there are varieties to data collection that can improve validity if the approach is properly applied during data collection.

Tashakkori and Teddie (2003) define mixed methods as a research design that involves the mixing of data and as a method which involves both qualitative and quantitative data collection. These scholars argue that mixed methods are also called 'multi-methodology', that is triangulation which developed from evaluation research. The use of both qualitative and quantitative approaches allowed the study the freedom to achieve comprehensive, unbiased results. These approaches allow for the convergence of data, to connect data or embed data (Tashakkori and Teddie, 2003).

3.3. Research Design

The researcher made use of an explanatory, triangulatory design, most often used in health care research. This research involves health related issues, specifically TB related and information was acquired from data that queried the perceptions of people in the study area. According to Tashakkori and Teddie (2003), the triangulation model integrates all data to clarify information and provide a better understanding of the problem. Tashakkori and Teddie (2003) further argue that the triangulation model allows for both qualitative and quantitative models with equal weight. The results of this model are reported separately and they combine relevant points. (Tashakkori and Teddie, 2003). In this study, the researcher used a mixed method design. Interviews (qualitiative) were used followed by a quantitative phase during which questionnaires were employed.

The study was conducted in the Mokopane area of Mogalakwena municipality. In the first stage, qualitative interviews aimed to establish the level of understanding of health beliefs

and the causes and the prevention of TB in the Mokopane area. The second, quantitative phase, consisted of questionnaires as the data collection instrument. A questionnaire is a printed self-report form designed to elicit information and to obtain answers by means of written responses. The questions are not too in-depth, in other words, questionnaires do not gather deep answers (Burns and Grove, 1993).

3.4 Methods, Design and Analysis

3.4.1 Population and Sampling

According to Greene (2013), sampling is a process by which the researcher selects units from a population of interest for their research. The results obtained from the sample may be generalised to include the entire population from which the sample had been chosen (Greene, 2013). It should be remembered that the study consisted first of a qualitative phase and second of a quantitative phase. Multiple repeats of same points make this cumbersome!!!The population and sampling processes of each are discussed separately.

3.4.1.1 Population and sampling phase 1: The qualitative phase

This research consisted of a qualitative phase aimed to theorise, to examine and unearth the health beliefs of the participants. The interview schedule is attached as Appendix A. Based on the findings of the qualitative phase, a questionnaire was then constructed for the second, quantitative phase (attached as Appendix B).

The researcher interviewed ten (10) private health care professionals from the Mokopane area. They were selected by means of random sampling. Names were chosen from the complete list at random.

The qualitative interviews asked whether residents of Mokopane consulted private medical practices and healthcare professions or not when they had contracted TB or any other related diseases. Moreover, the researcher used this phase to find out

whether TB patients immediately sought help after finding out that they had TB or whether they waited for their condition to worsen before they sought treatment.

3.4.1.2 Population and sampling phase 2: The quantitative phase

Large sample sizes are used in quantitative analysis to allow for a generalisation of the findings to the entire population with confidence. In this study, two villages in the Mokopane area (Tshamahansi and Sandsloot) were chosen because the researcher was familiar with the area, they were easily accessible and they were convenient for data collection. To determine the sampling rate, the researcher took the total population size and divided it by the number of questionnaires that needed to be distributed. In this case, the total population of Sandsloot (consisting of GaMabusela and GaMasenya), combined was approximately 1005 (StatsSA, 2011) and Tshamahansi 1937 (StatsSA, 2011). The combined population of these two villages thus amounted to 2942. 401 questionnaires were required to gather sufficient data. Therefore, participants were recruited using method of sampling referred to as systematic random sampling. Moreover, the required sampling rate was calculated by dividing 2942 by 401. Therefore, every 7^{th} household was approached in each village until the desired sample of 401 was reached. The researcher conducted data collection alone hence it took him more than three months to complete data collection.

According to StatsSA (2011) the area comprised a population of 2942. The researcher used a sample size of 450 which allowed for a 95% confidence level and allowed for 50 spoilt questionnaires (c.f. Du Plooy, 2013). However, spoilt questionnaires were 49 which led to the total valid questionnaire being 401. The sample size was determined considering both Slovin's formula and the table provided by Du Plooy (2013). If Slovin's formula is used, the sample size calculates as follows:

$$n = \frac{N}{1+Ne^2}$$

Hint: n=no. of samples; **N**= total population; **e**= margin of error

$$n=2942/1+2942*0.05^2$$

$$= 2942/8,355$$

$$=351 + 50 \text{ (for spoilt questionnaires)}$$

$$\text{Total} = 401$$

Figure 3.1: Slovin's Formula

Second, table 1 provided by Du Plooy (2013) should also be examined:

Table 3.1: Simple random sample sizes at 95% confidence level (Du Plooy, 2013)

Target population size	**Sample size**
Infinity	384
500 000	384
100 000	383
50 000	381
10 000	370
5 000	357
3 000	341
2 000	322
1 000	278

It should be noted that Slovin's formula calculates to 341 and while examining the population of 2942, according to Du Plooy, should calculate to a sample size of 322. Slovin requires a larger sample size. Thus, the decided sample size was arrived as at 450, which allowed for a maximum of 49 spoilt questionnaires.

3.5 Data Collection

3.5.1 Qualitative

Qualitative data collection was conducted by means of semi-structured interviews. Semi-structured interviews contained questions which had been prepared beforehand. Semi-structured interviews also allowed informants the freedom to express their views in their own way. Since semi-structured interviews contain open-ended questions, the researcher used a recorder to record the interviews and the responses and later transcribed the recordings for later analysis.

The aim was to determine the perceptions of the health care practitioners in Mokopane about the underlying health beliefs of their patients towards TB, and the degree of exposure to health communication messages by the people in the study area. Most participants had sufficient time to share their experiences as they were longtime residents of the area.

During the data collection, the researcher first put the informants at ease so that they would relax and freely share information. The researcher told the medical practitioners why he was conducting this research and obtained their willingness to participate, to comply with the ethical requirements of the study.

The researcher used a recorder and took notes during the interview while the respondents spoke. Before interviewing the participants, he also informed the research participants that the conversation would be recorded. Taking notes allowed the interviewer to highlight key points. Before the interview, the researcher also tested the recorder. The researcher asked the respondents the questions. The researcher was aware that it is important to have a good data collection method and management

thereof to enable storing and retrieving of the information at a later stage. The questions posed have been attached as Appendix A.

3.5.2 Quantitative

Questionnaires were used to determine the demography of the participants, which included Likert-Scale type questionnaires to quantify their attitudes towards health beliefs that had been revealed in the qualitative phase. Questionnaires were personally distributed by the researcher to the participants to complete. This activity took the researcher three months and seven days to complete.

3.5.2.1 Questionnaires as Research Method

The questionnaires consisted of two major sections, demographics and the Likert-scale type questionnaires section. The construction of the quantitative questionnaire was influenced by the finding from the qualitative interviews. The questionnaire has been attached as Appendix B.

3.5.2.2 The Demographics and Likert-Scale questions

The questionnaire consisted of two sections. Each section dealt with a different aspect relating to the study. The first section dealt with the demographics of the research participant; the age of the person, their ethnicity, their gender, their level of education and their level of income.

The second section was broken up into three sections of Likert-scale questionnaires. The researcher used the Likert-scale questions because they offered a range of answer options from one extreme attitude to another and they are one of the most reliable ways to measure opinions, perceptions, and behaviour.

Again, each section dealt with a different aspect which related to the study. The first section dealt with the perceptions of the research participant regarding the causes and increase in the rate of spread of TB. The research participant responded to questions on their cultural identity as this helped the researcher define the targeted research participants. The second section dealt with the indigenous and relative measures used by the research participants in order to prevent or cure TB. Section three dealt with the research participant's knowledge of TB and the communication about TB.

3.6 Data Analysis

The researcher analysed data using NVivo for the qualitative data and Statistical Package for Social Sciences (SPSS) for the quantitative data. Since they were analysed separately, they are discussed separately and in separate chapters.

3.6.1 Qualitative Analysis

The researcher analysed data by means of NVivo since this allowed themes to emerge. Then interviews were summarised and this helped to understand the data and recognise common themes. Exploratory analysis revealed themes. The researcher also made connections to the research questions from the data which addressed the major research questions.

The researcher identified possible themes from words that appeared frequently in the responses and used them as subheadings. According to Bauer and Gaskell (2000), thematic analysis focuses on the human experience subjectively. The themes were derived from what most participants heard or had encountered while living in the Mokopane area. This means that the research participants shared their perceptions and emotions about the questions. From these their perceptions, feelings and experiences were identified. The researcher's selection of relevant words that identified themes was an important instrument used to determine the important and

emergent themes. A careful identification of and selection of relevant vocabulary was necessary.

The themes that the researcher used were those that provided an accurate understanding of the answers to the research questions, and provided clarity and emphasis. At the end of the data analysis, the total number of themes that emerged during thematic analysis was sufficient to provide findings. Qualitative data saturation was obtained.

3.6.2 Quantitative Analysis

Descriptive statistics were based on a summary count of the questionnaire structure, and the use of frequencies and percentages provided insights into participants' perceptions. The researcher quantitatively used descriptive statistics to describe the basic features of the data. Descriptive statistics provided simple summaries about the data which had been collected.

Inferential statistics included the calculation of Pearson Product Correlations as well as multiple Regression Analysis. The Pearson correlations, in addition to the Cronbach Alpha Listwise Deletion Procedure, assisted the researcher to determine items that were significant for the analysis. In the multiple regression analysis pre-determined, nine significant items from the first stage were analysed to determine their respective contribution to the phenomena.

3.7 Rigour and Reliability

The next section will discuss qualitative rigour followed by quantitative reliability.

3.7.1 Qualitative Rigour

To obtain rigour in the qualitative collection, the researcher interviewed ten private medical doctors in Mokopane. These medical doctors who own private practices indicated that there was an increase in TB infections in the area. Also, most TB patients consult elsewhere first, consult at medical clinics or hospitals. The researcher recorded the interviews and transcribed them at a later stage. Analysis of the qualitative data led the researcher to formulate the quantitative questions that would be given to residents of Mokopane.

3.7.2 Reliability

When all variables in the questionnaire were analysed, an unacceptably low Cronbach Alpha score was obtained. This was also an indication that not all items were significant contributors to the phenomenon and thus provided a preliminary answer to Hypothesis 1:

Hypothesis 1(0): All Pen 3 Cultural Model variables identified from the qualitative phase have a high level of significance in perceptions surrounding TB in the study area ($p>0.05$)
Hypothesis 1(A): All PEN 3 Cultural Model variables identified from the qualitative phase did not have a high level of significance in perceptions surrounding TB in the study area ($p<0.05$)

At this stage, it was thus easy to reject the null hypothesis and accept the alternative hypothesis, which stated that all variables measured did not have a high level of significance in relation to the phenomenon in the study area. This hypothesis was further confirmed by the results of Pearson correlations (section 5.3.2). What became important was to identify the variables that did significantly contribute to the phenomenon, and the listwise deletion procedure was used in addition to Pearson correlations. A total of nine variables were identified which contributed significantly to

the phenomenon, jointly providing a Cronbach Alpha score of 0,741. Only these nine variables were used for the inferential analysis (section 5.3.2 and 5.3.3).

The total statistics table included indicates the level of correlation of items to scale mean and scale variance. For the sake of obtaining the recommended .70 level of Cronbach Alpha reliability, all variables that did not correlate sufficiently were deleted with SPSS to obtain an acceptable correlation with the best level of reliability. This ensured that only the significant variables were identified as required in hypothesis 1; and confirmed the reliability of the identified significant items.

Table 3.2: Cronbach Alpha ‘s Item to Total Statistics

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Cultural Identity1	29.00	19.817	.058	.757
Enablers1	29.13	20.032	.073	.752
Nurturers1	28.98	19.709	.102	.752
ExistentialBehaviours1	29.53	13.735	.822	.639
ExistentialBehaviours2	29.53	13.734	.828	.639
ExistentialBehaviours3	29.48	13.365	.848	.631
ExistentialBehaviours4	29.48	13.370	.838	.632
ExtendedFamily3	30.38	17.806	.126	.781
RelationExpectation5	30.19	17.291	.136	.789

The above variables relate to the following questions (Questionnaire – Appendix B):

Code	**Question (Likert Scale)**
Cultural Identity 1	I understand the way TB is medically transmitted
Enablers 1	The only way to reduce this rising number of TB infections in this area is through TB testing and that those with TB starting to take proper treatment from health clinics
Nurturers 1	People who come to provide health training should use Sepedi (in Mabusela)
	and Xitsonga (in Tshamahansi)
Existential behaviours 1	Medication from Traditional Healers can cure TB
Existential behaviours 2	The use of alternative medicines and home remedies can help cure TB
Existential behaviours 3	Holy tea and water from church or herbs from a traditional healer can fasten the process of curing TB
Existential behaviours 4	A prayer from a pastor or priest or a prophet can cure TB
Extended Family 3	TB can be genetically transmitted
Relational Expectations 5	I can catch TB because one of my forefathers died from it

Table 3.3: Cronbach Alpha Cases and Reliability Statistics

Scale: ALL VARIABLES Case Processing Summary

		N	%
Cases	Valid	401	100.0
	Excluded[a]	0	.0
	Total	401	100.0

a. Listwise deletion based on all variables in the procedure **Reliability Statistics**

Cronbach's Alpha	N of Items
.741	9

According to the case processing summary, 401 people participated in this study as has been indicated. The Cronbach Alpha scored 741 when 9 items from data collected were analysed. Although the criterion to determine the acceptable level of reliability is something that has not yet been resolved thoroughly, there are several recommendations and the most frequently cited recommendations say that .70 or above amounts to an acceptable score. Consequently, only the nine variables identified were included for the multiple regression analysis.

3.8 Ethical Considerations

Informed consent was attained before data was collected and the researcher reassured the participants regarding the confidentiality of their information. The participants were not forced to participate in the data collection of this research, and

they participated freely and voluntarily. The information that they have provided will be kept confidential in accordance with the University of Limpopo Research Ethics Committee (TREC Certificate attached as Appendix E). All the study participants who agreed to take part and participated in the study were asked to sign a consent form. The consent form is attached as Appendix C.

3.8.1 Respect for Persons

Respondents were told that they had the right to participate or withdraw at any time. Participants were further made aware that if any questions caused discomfort they were not obliged to provide answers. The answers given by all study participants were captured accurately without omission or addition.

3.8.2 Principle of Beneficence

Respondents were not asked to answer any questions that might make them uncomfortable. In instances where the respondents did not understand, they were free to ask for clarity.

3.8.3 The Principle of Justice

The respondents had a right to fair selection and treatment (Brink et al, 2012). The respondents were selected because they practiced near the study area. No study participants were known to the researcher, so bias was avoided.

3.8.4 Confidentiality

The data gathered from the respondents during the data collection will only be used for the purpose of research and the study participants were assured that their names

would be kept confidential. Information as well as the names and codes of particpantscollected during data collection was stored securely.

3.8.5 Anonymity

The researcher provided each respondent with a number or code name and the names were coded as respondent #1 to respondents #10 for the medical doctors who participated.

3.9 Conclusion

In conclusion, the researcher explained the research methodology used in the study. The researcher also explained the way data would be analysed both qualitatively and quantitatively in the next chapters

Chapter 4: Qualitative Data Analysis

4.1 Introduction

This chapter discusses and analyses the findings of the qualitative data (interviews) and elaborates on the emerging themes. All the data was transcribed data for analysis purposes. The transcribed results have been presented and described. following an analysis of responses from the participants. From the interviews, the researcher began to understand issues related to health beliefs as well as the causes and the prevention of TB in the study area. Interviews further helped the present a greater understanding of what was the situation in the study area. This assisted the researcher to draft questions for the quantitative data collection. This chapter further discusses the significant aspects of the emerging themes and sub-themes.

4.2 Demographics

The demographic information included in the table below displays information about the medical doctors who have practices in Mokopane. The table displays respondents' area of origin, ethnicity, age and gender. Demographics are important in this study because they provide a clear understanding of relevant socio-economic aspects. Age and the number of years that these private doctors spent practicing in this area are also important. They have practiced in the area for a considerable number of years where they have gathered impressions and dealt with patients. This provided valuable information for the study.

This table shows that not all medical doctors practising in Mokopane are from the area. Respondent 1, from Durban in Kwazulu Natal, is an Indian and has run a practice in Mokopane for the past 30 years. His experience assisted this study to obtain information from his experiences and observations. However, there were six of the doctors who were from Limpopo. Of the six, two were from the local area.

The two doctors who grew up in the Mokopane area said that the government is not doing enough to educate the communities, especially those in remote areas. One of these doctors suggested that the government should increase its awareness

campaigns and present these as oral campaigns in addition to television and radio campaigns. She further recommended that the government should take the health practitioners to the field, so that they could educate the people in remote, rural areas.

Respondent 6 who also grew up in Mokopane, and owns a medical health practice in Mokopane town said that since he had begun his practice in 2010, he had become aware that the government was trying to educate all citizens about diseases. He further attested that he had seen billboards, posters and flyers almost everywhere in the country, and that they were in two languages, including the languages that was most dominant in the Mokopane; which was Sepedi and Xitsonga. Respondent 6 further said that he had never seen a communication in isiNdebele, even though isiNdebele is one of the predominant languages in the Mokopane area. He said black Africans, in general, love their culture and unfortunately, he only saw patients when their disease had deteriorated. TB patients only consult the medical doctors when their condition worsens. Respondent 5, who was a 34-year old male medical doctor from Tzaneen, also attested to the fact that patients come to consult after the traditional doctors have failed to help them. The divergence of perceptions related to patients who consult professional medical doctors was also noted in the literature. For instance, Mokwena (2012) patients consulting traditional health practitioners first when they are ill. All the doctors said that they always make sure that they educated patients about whatever disease they had before prescribing medication. Respondent 2 was a 51-year-old medical doctor from Pretoria, in Gauteng, who had owned a private medical centre in Mokopane since 2001. He said that the social standing of the people is what determines their beliefs. According to him, the deeper into the rural area one went one would find people who still lack information about these diseases. Mokwena (2012) also spoke about the lack of relevant information about their health-related matters. He further said, "*only educated people understand these kinds of diseases.*" He explained that since he had started practising in the Mokopane area, he had never seen any billboard or poster about TB in and around the Mokopane area. One of the three primary domains of the PEN 3 cultural model (Cultural identity) highlightes the intervention points of entry such that information from people who believe that TB can be transmitted through witchcraft can influence other family members, extended family members or even their neighbours who might be unsure about whether TB can be

transmitted through witchcraft into believing that, indeed, TB can be transmitted through witchcraft. This statement relates to the statement made by the 51-year-old medical doctor.

Respondents	**Area of Origin**	**Ethnicity**	**Age**	**Gender**
Respondent 1	Durban (KwaZulu Natal)	Indian	57	Male
Respondent 2	Pretoria (Gauteng)	White	51	Male
Respondent 3	Lephalale (Limpopo)	Black	42	Female
Respondent 4	Belabela (Warmbaths) (Limpopo)	White	55	Male
Respondent 5	Tzaneen (Limpopo)	Black	34	Male
Respondent 6	Mokopane (Limpopo)	Black	39	Male
Respondent 7	Mokopane (Limpopo)	Black	40	Female
Respondent 8	Pretoria (Gauteng)	White	61	Male
Respondent 9	Seshego (Limpopo)	Black	43	Male
Respondent 10	Bloemfontein (Free State)	White	64	Male

Table 3.1: participants' Demographic Information

4.3 Emerging Themes

Theme 1:

4.3.1 Perceptions surrounding the causes of TB infections

The impression gained from participants was that there was a perception that most people in the Mokopane area understood the way TB was medically transmitted because seven medical doctors who participated in this study said that most, if not all residents of Mokopane, had been educated about the issues of TB and HIV. Five medical doctors who participated in this study said that the government was trying to ensure that information about TB was available to all, but it appears that the people of Mokopane ignore the health messages that are meant to educate them. Delobelle et al (2009) maintained that age and race determine people's level of education. Culture, traditions and beliefs are what drive the decisions of residents of Mokopane to place trust in traditional healers who they consult first for treatment. Airhihenbuwa (2007) highlighted that over the past ten years, there has been an increase in the amount of evidence that focuses on the role that culture plays in healthcare. It appears that the people of Mokopane trust traditional healers more than medical doctors and nurses.

4.3.1.1 Involvement of Traditional Healers in TB Workshops held by the Government

It emerged that there is a need for government to organize training for traditional healers on health-related matters such as hygiene and dosage of herbs for their patients. Steyn, van der Merwe, Dick, Borcherds and Wilding (1997) indicated that when patients are satisfied with their interaction with a health service provider, they tend to adhere to the prescribed treatment.

Most people in this area consult traditional healers when they are not feeling well. They only come to us (Medical Doctors) when their cases are more complicated.

But nowadays, most traditional healers are becoming more educated about issues of TB and HIV. The government has started to work with traditional healers. Workshops are being conducted and traditional healers are attending in large numbers. Some traditional healers who are educated about these issues of health are registered with the Department of Health to offer proper care to patients. These traditional healers refer patients to the medical clinics, medical doctors or even to hospitals. When they see that the situation of the patient needs the medical doctor's attention.

Respondent #9: (Male; 43; from Seshego; Black)

Traditional healers who now receive education on the issues of TB and HIV will be able to help the residents of Mokopane to reduce the number of new infections in their area. If traditional healers are educated on these issues, they will also be able to educate their patients about these diseases before they start treatment. According to Delobelle, Rawlinson, Ntuli, Malatsi, Decock, and Depoorter (2009), there is a need for better TB and HIV/AIDS training for nurses who work in rural area. In addition, there should be sufficient visible communication messages available to the citizens of Southern Africa.

The Department of Health's initiative is admirable because advertisements and workshops will never change the society's decisions to consult traditional healers irrespective of how much the advertisements and workshops educate communities about such diseases. Even when community members know very well that consultation, testing, medical prescriptions and treatment are free at public health clinics, they still prefer to pay traditional healers for these services. Traditional healers should also be educated. Currently, infected patients reject the free TB treatments available to them in preference of those of the traditional healers, who they must pay. "*Many South Africans believe that if a person is sick from any disease, they are being bewitched and, if the person starts to lose weight, most people think that the person has HIV/AIDS. If a person starts losing weight, the public tend to think that the person is HIV positive; that is the stigma attached to TB patients. She said there is a small*

percentage of traditional healers who come to consult when they are sick, not only from TB but other diseases also. She added that some of them are being infected by their patients because they are not educated enough to be careful around certain diseases," Said respondent #9.

Respondent 7 has further highlighted that the black people in general love their culture and, unfortunately, most people consult somewhere else before coming to see professional medical doctors. "Some go to their churches while others consult traditional healers." She said that she does not refer her patients to churches or traditional healers for further help about their conditions; people just go there on their own.
Respondent #7: (Female; 40; From Mokopane; Black)

Respondent 7's emphatic statement confirms that the only way to reduce TB and similar diseases in black communities is by educating their traditional healers, church pastors and prophets. There is a need for church leaders and church prophets to attend these workshops that are organised for traditional healers by the Department of Health. If church leaders are excluded from attending these workshops, the rate of infection could continue to increase because some of these residents rely on holy water and or prayer to cure their diseases.

People need to understand that 'holy water', cannot heal diseases. People should be informed about the dangers of relying on holy water or holy tea as a cure for TB. These practices might assist if the person is also undergoing medical treatment or drinking medications from a health clinic or from medical doctors. Prophets and pastors from churches should also attend health workshops that will educate them so that they could advise church members to seek help from health clinics or medical doctors.

Witchcraft also comes into play because, according to Respondent 7, the reason why people consult the traditional healer is that they automatically assume that if they are infected they have been bewitched. Historically, when people were sick, they would consult a traditional healer and that traditional healer would diagnose their condition with bones. After diagnosis, the traditional healer would prescribe medication to the

person who was sick. The PEN-3 model was important since it explored the way family structure plays a vital part to assist and promote positive health behaviour and health.

Respondent 7 believed traditional healers of earlier years had more knowledge about healing diseases as opposed to traditional healers of today. She said that the reasons why some still consult their churches is that certain religious beliefs prohibit their members from consulting traditional healers. These practices have been transferred from one generation to the next. The older ones teach the younger generation how things are done and the new generation continues to teach the upcoming generations about this cultural practice.

"We are in Africa and traditional healers form a huge percentage of the healthcare network in such a way that the community consults traditional healers before they go to the western type of medical doctors. Traditional herbs can be grown and measured to produce better and healthier medicines. We grew up using the African herbs to heal our diseases and here we are, alive and healthy, nothing wrong has happened to us. We are where we are today because of traditional healers. There should be research done in the field of traditional herbs so that it can be developed and educate our traditional healers.

Respondent 4 said that there is a need for the government to work together with traditional herbalists and traditional healers. "We are Africans and we always believed in them." He said his practice received numbers of traditional healers who sought information and sometimes treatment from him. He added that he works hand in hand with traditional healers to make sure that there is an improvement of health in the Mokopane area. "Almost all my patients start at traditional healers before they come to consult at my practice, but this is a very sensitive issue because, sometimes, the traditional healers give their patients unmeasured quantities of herbs which, at times results in severe side effects or complications. We need to educate our traditional healers about the quantities to be given to patients."

Respondent #4: (Male; 34; from Tzaneen; Black)

Respondent 4's statement highlights the issue of access to the professional health care facilities in rural villages.

Contrary to the above-mentioned statement, he also mentioned that people have options to make choices and the people of Mokopane choose to go to traditional healers not because of the issue of access but because they have grown up using African herbs to heal their diseases and this has been successful, so they trust this treatment. "*We are where we are today because of traditional healers*." His statements mean that people consult traditional healers because they believe that traditional healers have abilities to assist them to heal their

diseases. This is where the Pen-3 model comes in because one of its purpose is to understand the impact of culture on health. Culture in this context refers to shared values, norms, and codes that collectively shape a group's beliefs, attitudes, and behavior through their interaction in and with their environments (Airhihenbuwa 1999).

He urges the government to work together with traditional herbalists and traditional healers to cure diseases. "*We are Africans and we have always believed in them*."- By this statement he means that, he believes that traditional healers have an important part to play in the treatment of diseases and that they should not be excluded when solutions are sought However, he did highlight the problem that, sometimes, the traditional healers give patients excessive quantities of herbs which, at times, can result in severe side effects and complications. Singhai (2003) believed cultural beliefs were vital for effective and sustainable public health involvement. The PEN-3 model was important since it explored the way family structure plays a vital part to assist and promote positive health behaviour and health. He said traditional healers and herbalists need to be educated about appropriate quantities of herbs to give to patients. He even indicated that thorough research should be conducted and the herbs that traditional healers use need to be examined. Because he grew up using medication from traditional healers, he can even tell the younger generations that, as Africans, they can use herbs from traditional healers for healing because herbal medicines do have their place and can assist. According to WHO, the TB IC plan identifies TB transmission risks and creates TB information which is available to health practitioners and patients (Tshitangano et al, 2013). This TB IC plan is important since even medical doctors believe that herbs from traditional healers heal diseases. Thorough research on whether herbs could heal diseases should be conducted

According to Respondent 4, medicine from traditional healers can help to cure diseases.

4.3.1.2 The Role of Poverty in TB Infections

"Most people who live in large families in very small houses are also at risk of being infected if one of them has TB. "Poverty also contributes towards the rise of TB in the Mokopane area." She said that public transport is one of the risky areas where people can be infected.

Respondent #7: (Female; 40; from Mokopane; Black)

Many of the residents around Mokopane are employed in local mines and local farms. If poverty was the key factor, most residents in the area could not afford the fee that they pay to traditional healers. The professional treatment options available to them are free services that are available at local medical clinics that were built in their villages to help them curb health issues such as TB treatment.

According to Gillespie et al (2007), poor countries continue to experience high numbers of TB infections. According to Respondent 7, some Africans have large families and live in small houses. She said these conditions increase their chances of being infected. A communicable disease such as TB is transmitted by means of small particles which are inhaled from the expelled air or sneezes of an infected person.

She also said that in places such as townships where houses are close to each other, there are many new TB cases reported. Respondent 7 highlighted that the housing arrangements in the townships contribute towards TB infections. There is evidence from household income levels to demonstrate clearly that poverty is a major cause of the TB and HIV epidemic (Gillespie et. al 2007). Respondent 7 said that people can be easily infected with TB when they use public transport. Even though not everyone who uses public transport is poor, in most cases, people use public transport because they cannot afford to buy their own cars. Unfortunately, they get infected when they use public transport because they are enclosed in a small space. With little ventilation, where the disease is easily transmitted among the passengers.

4.3.1.3 Knowledge about Communicable Diseases such as TB

"I believe the only people who are well-informed about these communicable diseases are those who have formal qualifications. Those who are illiterate know nothing about these communicable diseases." He said since he started practicing, he has always made sure that he educates his patients about all sorts of diseases before he gives them medication.
"It doesn't help giving people medicines if they do not even know how the medicines will help them, and what to do to prevent themselves from continually spreading that disease." Sometimes he gets patients who do not even understand English, but he tries very hard to put it in simple language. "The same applies to these posters and flyers; people don't understand them because they cannot even read at all.

Respondent # 8: (Male; 61; from Pretoria; White)

Respondent 8 believes that most people who lack formal education are not informed about these communicable diseases. He said since he had started operating as a medical doctor, he made sure to educate patients about their diseases even though he sometimes gets patients who do not even understand English. He tries very hard to put this information into simple language. Makhado and Davhana-Maselesele (2011), the South African Government is doing its level best to communicate health-related messages across all media available to make sure that the message is understood by all citizens, irrespective of race and disability status. The issue of language could be a contributing factor in the rise of communicable diseases such as TB in the Mokopane area. Some people might be afraid to go to clinics or medical doctors since they fear that they might not be able to express themselves very well in English. Patients might not be able to express themselves nor understand the information the healthcare professional gives them. This means that language could be one of the factors that affects patients chose which TB treatments to take. some choose to ignore these messages, not because they cannot read, but because of their ignorance and negligence (Simelela and Venter, 2014). Language barrier in most villages like Sandsloot and Danisani might be a challenge because most messages on billboards are written in English and People residing in this area speaks Sepedi and Tsonga and most of them don't have formal education (Mokwena, 2012).

Theme 2:

4.3.2 Health Communication Messages

The availability of health communication messages in the residential area and in the villages in the form of radio advertisements, television advertisements, flyers, posters and billboards could help to reduce the in the increase of TB cases in the Mokopane area.

4.3.2.1 Channels of Communicating Health Messages

"The government is doing its best to educate all South African citizens but it is not enough. Health care workers in public clinics and hospitals should go out to the people to educate the public about these diseases. He said he educates all his patients about the diseases that they have and what might be the causes of those diseases before he treats them.

Respondent 1 further explained that he usually comes across posters and flyers that inform people about TB and other diseases such as cancers and HIV in the Mokopane area and those materials were written in Sepedi, IsiZulu and in English. "I have never seen any poster or flyer written in Xitsonga even though there are villages of Tsonga speaking people in Mokopane and in some other parts of this country. The government should consider communicating these health messages in all eleven official languages. Mokopane is a mining area and there are many people who don't speak or understand the languages that are spoken in this area such as Xhosa speakers who work in local mines,"

Respondent #1: (Male; 57; from Durban; Indian)

Respondent 1 indicated that channels or platforms that the government uses to communicate the health messages to the targeted communities should be written or translated in languages used by the communities. Respondent 1 further said that because many people in the study area work on the mines and are not local, they do

not speak the languages which have been used in the healthcare messages. Respondent 1 continued to say that, Nowadays, most people spend most of their time on social media platforms and the government should take advantage of that avenue. He said most people no longer listen to radios or read what is written on the flyers; they take these flyers and throw them all over the place which causes land pollution. It is useless to print messages that will not be read using the budget that could have been used to curb other problems. Delobelle et al (2009) maintained that age and race determine people's level of education.

The following is a recommendation: Social media platforms such as WhatsApp, Facebook, Twitter and Instagram are the most widely used platforms nowadays and the government should take advantage of that by advertising or posting the health messages on these platforms. Workshops need to be conducted in these villages using languages that the villagers speak.

Television can be used to convey health messages during popular soapies such as Skeem Saam, Generations the Legacy on SABC 1 because these soapies are mostly watched by Africans. There should be advertisements during soapies that are aimed at educating viewers about the issues of communicable diseases such as TB and HIV. Dramas such as Soul City should be screened because they are useful in communicating health messages.

Furthermore, there should be advertisements containing health messages during soccer matches because most people, especially men watch these football games. Advertisements that cross the screen in the middle of the football match can be read by the viewers because that is when their attention and focus is at the highest level. Makhado and Davhana-Maselesele, (2011) mentioned that, there are countless billboards which display information about safety and prevention of diseases such a HIV and TB can be seen on the streets of the state. Flyers can be found in government departments, hospitals and at clinics which educate citizens about the prevention of chronic diseases and how to recognise someone who has TB. Billboards that are aimed at communicating health messages should be targeted for the areas where most people are passing, walking or driving. Nowadays, there are mobile advertising billboards and electronic screens that could be used to advertise these messages.

These forms of advertising could be strategically placed on the busiest roads where they will catch the attention of almost everyone who passes them.

Advertising is a very powerful form of disseminating information but, at the same time, can be costly to the advertisers. The government should also consider other forms of advertising which are not as costly. Chain messages on social media can also be used to send messages to the people to educate citizens about diseases.
The social media advertisements that are catchy could be videos of either the MEC of Health or the Minister of Health who will be educating the viewer about health matters

"There are advertisements about TB and HIV campaigns on televisions and radio stations and those who have access to either television or radio will obviously know what TB is because those advertisements clearly explain what TB is and how to avoid being infected and how to prevent themselves from infecting other people. People know how to prevent TB, but it is difficult for them to prevent themselves from catching TB."

Respondent #3: (Female; 42; from Lephalale; Black)

Even though people know about TB, they frequently need to be reminded that TB exists, and these health messages should be communicated through all media platforms including social networks. Respondent 3 says the problem is that it is still difficult for most people to prevent infection, even when they know about TB.

Nowadays social media (Facebook, LinkedIn, WhatsApp (Chain Messages), Instagram and Twitter) plays an important part in most lives. Social media is an important platform that the Department of Health should make use of to advertise.

Respondent 3 said that it is difficult for people to prevent themselves from catching TB because some don't believe that TB exist while some are ignorant.

4.3.2.2 Language Choices of Health Messages

"In terms of printed material such as posters and banners, there is a lot that were distributed in the Mokopane area lately. We also had TB flyers in this practice and they were distributed to the people who were coming to consult here, but they didn't even take time to be finish reading. He said there were about 5 000 pamphlets. At most clinics if not all, there are posters about all sorts of diseases that is why I am saying the government is doing enough to educate communities about such diseases."

Respondent 5 said, currently, English pamphlets and posters are dominating other languages and, according to him, the government should use the languages that are used in Mokopane if the targeted communities are in Mokopane, for instance. "I believe in South Africa all languages are equal and, therefore, an equal number of printed materials should be distributed. There shouldn't be a language which is superior to other languages. All language speakers have equal rights.

Respondent #5: (Male; 34; from Tzaneen; Black)

Choosing the appropriate language/s for a specific community is very important if one wants to effectively convey and communicate a message. Most people in the Mokopane area, especially in the two villages where quantitative data was collected, do not have formal education. The quantitative data that was collected indicated that most people in Tshamahansi and Sandsloot only attended primary school, and very few had passed grade 12. Therefore, this statistical information should guide the level of information on pamphlets and flyers before their distribution.

The government should first study the area before disseminating the information to the community. Big billboards in the Mokopane area, for instance, should be written in Sepedi, Xitsonga and isiNdebele because these are the languages spoken in the Mokopane area. English can also be used to include other language speakers who are in Mokopane for work-related or other reasons. Mokwena (2012) indicated that in and around Mokopane, most residents speak Sepedi. This is another contributing

factor that might lead to miscommunication because most of the nurses cannot speak Sepedi.
Pictures can also be used to demonstrate because only written text might be ignored. Pictures attract the reader's attention.

Respondent 4 said that he has seen billboards about TB around Mokopane but that was a long time ago and they had been written in Sepedi and English. He suggested that the government should also include advertisements in Afrikaans to accommodate the Afrikaans speakers in Mokopane.

4.4 Research Objectives Attainment: Qualitative Data

The qualitative data was collected from semi-structured interviews. There were two research objectives that were addressed in the qualitative process and refined by the quantitative process. These research objectives are objectives one and three; namely, to assess people's perceptions about the causes and the spread of TB and its prevention as well as to understand and identify the more indigenous measures residents use to prevent and treat TB.

The qualitative process allowed for a deeper understanding of the research setting from an interpretative and cultural perspective. It also allowed for major variables to be determined from the semi-structured interviews and their incorporation into the quantitative questionnaire in PEN-3 context.

4.5 Conclusion

Although qualitative research is not designed for hypothesis testing, it assisted the researcher to explore an area that was later tested by a hypothesis based on a quantitative approach. From the qualitative data analysed, there was an indication that residents of Mokopane lack proper education about most prevalent diseases.

Of the ten medical doctors, five (5) believe that there is a need for the Department of Health to educate the people of Mokopane about TB and other communicable

diseases. If they want to reduce TB infections the government should start organising workshops for communities from various villages in Mokopane to educate them about such communicable diseases. Alternatively, or in addition, the Department of Health, media platforms such as flyers, billboards, community radio stations and social media networks could be used to communicate these health messages.

The Department of Health should only use the languages that are spoken in the villages to avoid a possible language barrier. People who cannot read should be invited to the workshops that will educate them in their own, mother-tongue languages. Department of Health employees who are working in the health clinics that are situated in the villages should be able to speak the languages that are spoken in those villages. This would prevent misunderstanding and miscommunication between patients and healthcare professionals, particularly nurses.

All medical doctors, as study participants mentioned that almost all patients who come to consult at their practices would have first consulted elsewhere, either at their churches or traditional healers. Those who start at churches believe that either prayer, or holy tea and holy water could heal TB. Those who consult their churches, spend a lot of their time drinking holy tea or water in the hope that they will be healed, despite never being properly diagnosed.

Pastors pray for the people who are sick in the belief that they will be healed. Those who believe in traditional healers consult the traditional healers and spend most of their time drinking herbs, in the hope of being healed. These people only go to medical doctors or health clinics when they see that their health is not improving.

Since Africans choose their pastors and traditional healers over than hospitals and health clinics, the Department of Health should consider educating the church leaders and traditional healers within the communities where the people reside in an attempt to defeat TB.

The researcher made use of interviews which provided an understanding of the prevalent health beliefs and the causes and the prevention of TB in the study area. This assisted the researcher to draft some of the questions for phase two, which was to be directed at participants from two villages outside Mokopane town (Tshamahansi

and Sandsloot). Issues that emanated from the responses of the ten medical doctors informed the questions which were included in the questionnaire.

Chapter 5: Quantitative Data Analysis and Interpretations

5.1 Introduction

This chapter analysed and interpreted the empirical findings obtained from the quantitative data from the 401 participants. Both SPSS and MS Excel were tools were used to analyse the data.

This chapter began with a provision of demographic information of the participants. Thereafter, the perceptions and the experiences of the participants with regards to the causes and the increase in the rate of spread of TB in the Mokopane area will be discussed.

Inferential statistics which include Pearson Product Correlations to define correlations between variables follow. The purpose of this is twofold: (1) to confirm earlier suspicions (Chapter 3) regarding the outcome of hypothesis 1, that not all variables make a significant contribution ($p>0.05$) to the overall construct; and (2) to establish significant relationship patterns for investigation with multiple linear regression. This step was then followed by multiple linear regression. These results were used to affirm hypotheses 2 and 3.

This chapter concludes with a brief discussion of the findings of the study in relation to both the literature review and conceptual model.

5.2. Demographics

5.2.1 Age

The participants were requested to indicate their ages, which were categorised in the following fashion:18 – 25; 26 – 35 and 35+.

Figure 5.1: The Age Categories of the Study Participants

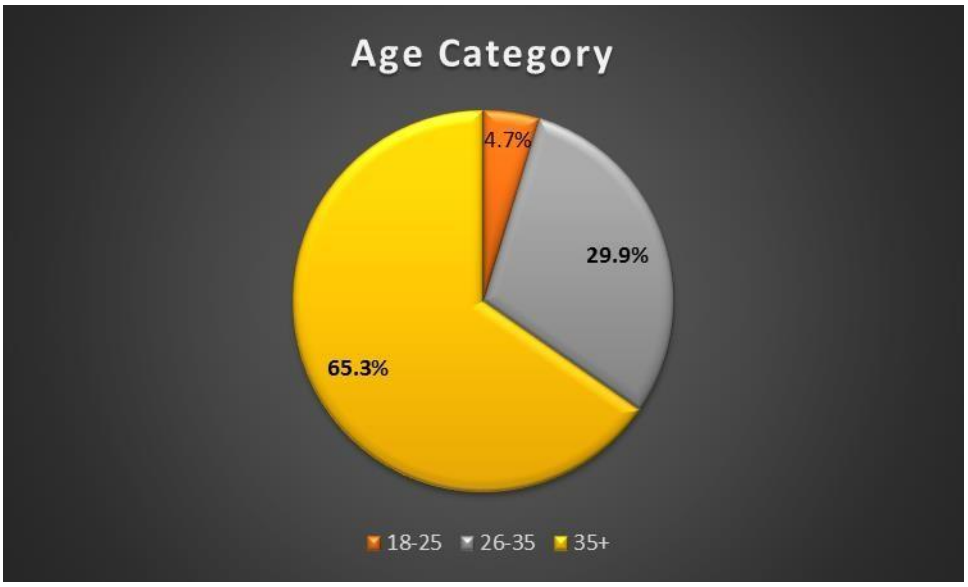


Table 5.1: The Age and Number of Study Participants

Age Category					
Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	19	4.7	4.7	4.7
	26-35	120	29.8	29.9	34.7
	35+	262	65.0	65.3	100.0
	Total	401	100	100.0	
Missing	System	0	.00		
Total		401	100.0		

According to Figure 5.1, 65.3 % of participants were 35 years and older, while 29.9% were between the ages of 26 and 35 years. 4.7 % were between 18 and 25 years. The chart clearly shows that most participants in the study were 35 years and older. The pie chart further indicates that all the participants were older than 18 years.

Table 5.1 shows that, all 401 participants, only 19 are between 16 to 25 years, 120 participants between 26 to 35, while the majority are 35 years and older.

5.2.2 Ethnicity

The participants were also requested to indicate their ethnic group, which was categorised as follows: African; White; Indian; Coloured and Other.

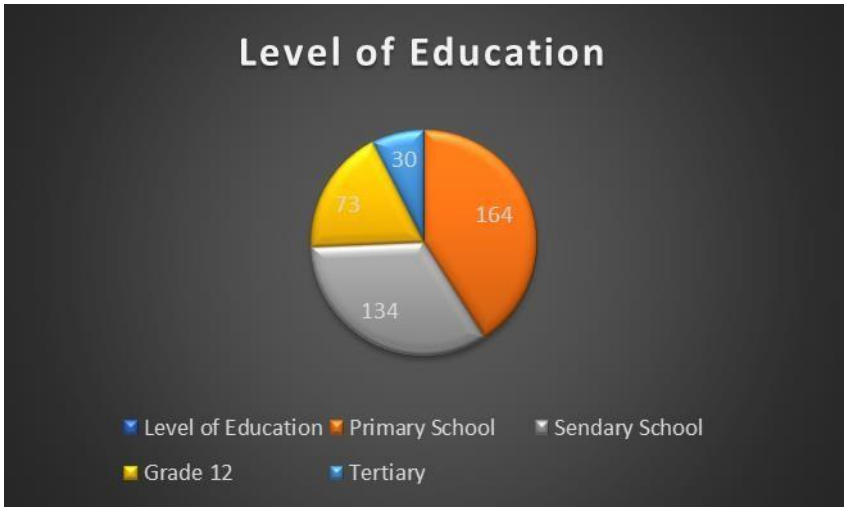
Table 5.2: Ethnicity of Participants

Ethnicity of Participants					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Africans	401	100.0	100.0	100.0
Missing	System	0	.0		
Total		401	100.0		

According to the above table, all 401 participants were Africans. This is because both villages where data was collected are in a rural area where only black Africans reside.

5.2.3 Level of Education

Figure 5.2: Level of Education of Participants



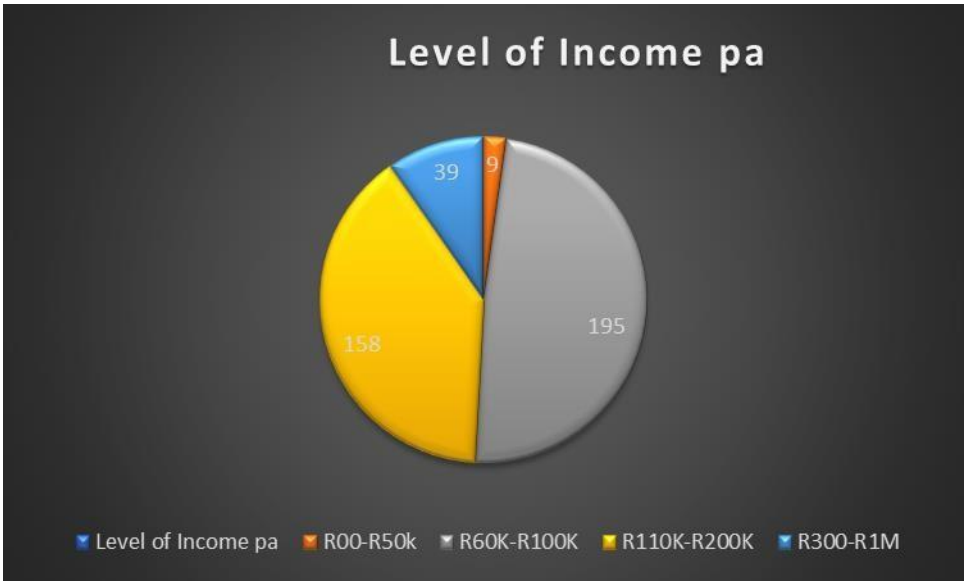
The participants were also requested to indicate their level of education because, according to Delobelle et al (2009) as indicated in chapter 2, age and race determine people's level of education. Of the total of 401, 164 had attended primary school, 134 secondary school, 73 passed had Grade 12, while only 30 had obtained a tertiary qualification. This indicates low levels of formal education.

Table 5.3: Participants' Level of Education

Level of Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary School	164	40.9	40.9	40.9
	Secondary School	134	33.4	33.4	74.3
	Passed Grade 12	73	18.2	18.2	92.5
	Attended Tertiary	30	7.5	7.5	100.0
	Total	401	100.0	100.0	

5.2.4 Level of Income

Figure 5.3 Participants' Level of Income per Annum



The participants also indicated their level of income. In most cases, there is a link between the level of income and level of education. Figure 5.3 indicates that, of the 401 participants, only 9 of them earn R50 000 or less per annum (pa). This number includes participants who are unemployed. The chart further indicates that, of 401 participants, 195 participants earn between R60 000 and R100 000 pa, while 158

receive an income between R110 000 and R200 000 pa, while 39 between R300 000 and R1 Million pa.

Table 5.4: Participants' Level of Income per Annum

Income Per Annum					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	R00-R50K	9	2.2	2.2	2.2
	R60K-100K	195	48.6	48.6	50.9
	R110K-R200K	158	39.4	39.4	90.3
	R300-R1M	39	9.7	9.7	100.0
	Total	401	100.0	100.0	

5.2.5 Gender

Gender could play another important role when talking about perceptions, so this information was also necessary because it is important.

Figure 5.4 Gender Statistics of Participants

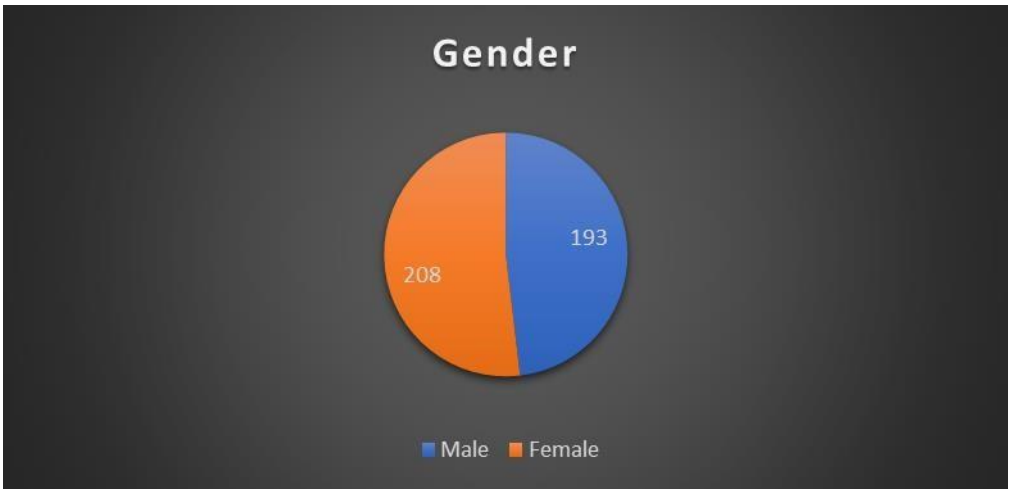


Figure 5.4 indicates that there were more females than males. Of the total of 401, 208 (51%) were female and 193 males (4%). This means more females participated than males. This corresponds with the current gender distribution of South Africa. Table 5.5 further indicates that 48.1% are males whereas females contribute 51.9% of the study participants.

Table 5.5: Gender of Participants

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		193	48.1	48.1	48.1
	Female	208	51.9	51.9	100.0
	Total	401	100.0	100.0	

5.3 Descriptive Statistics

Since the questionnaire consisted of 63 questions (excluding the demographics) it was decided that the descriptive statistics discussion should only include a discussion of data which contributes to the solution of hypotheses and answer the research questions. As indicated in Chapter 2, whilst the observations obtained from significant data were taken into consideration for inferential analysis (c.f. Section 3.7; 5.3.2 and 5.3.3), this was not the only consideration for the inclusion of data in the descriptive section. Every question, its relevance to the research questions and its results were reviewed before its inclusion or exclusion. The issues that were included for discussion in this section are as follows:

- The overall statistics of participants' knowledge of TB
- Cultural identity of the study participants
- Extended family and neighbourhood
- Relationships and expectations
- Cultural empowerment
- The poor vs the wealthy

5.3.1 Participants knowledge of TB

Figure 5.5: Participants' knowledge of TB

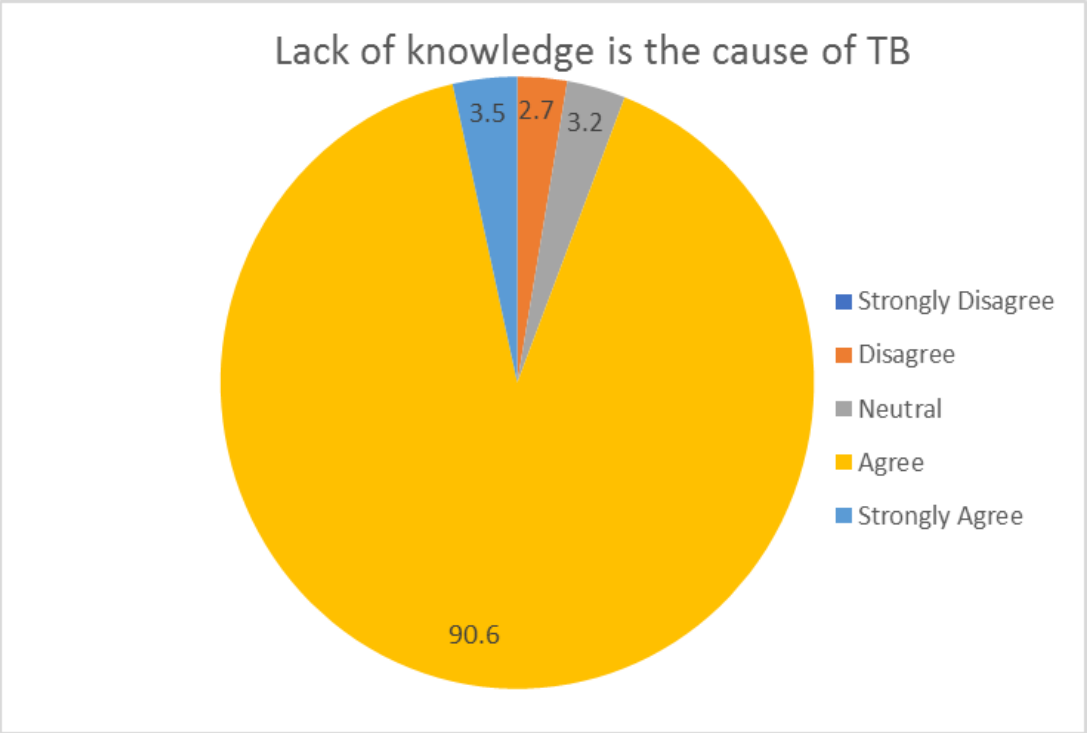
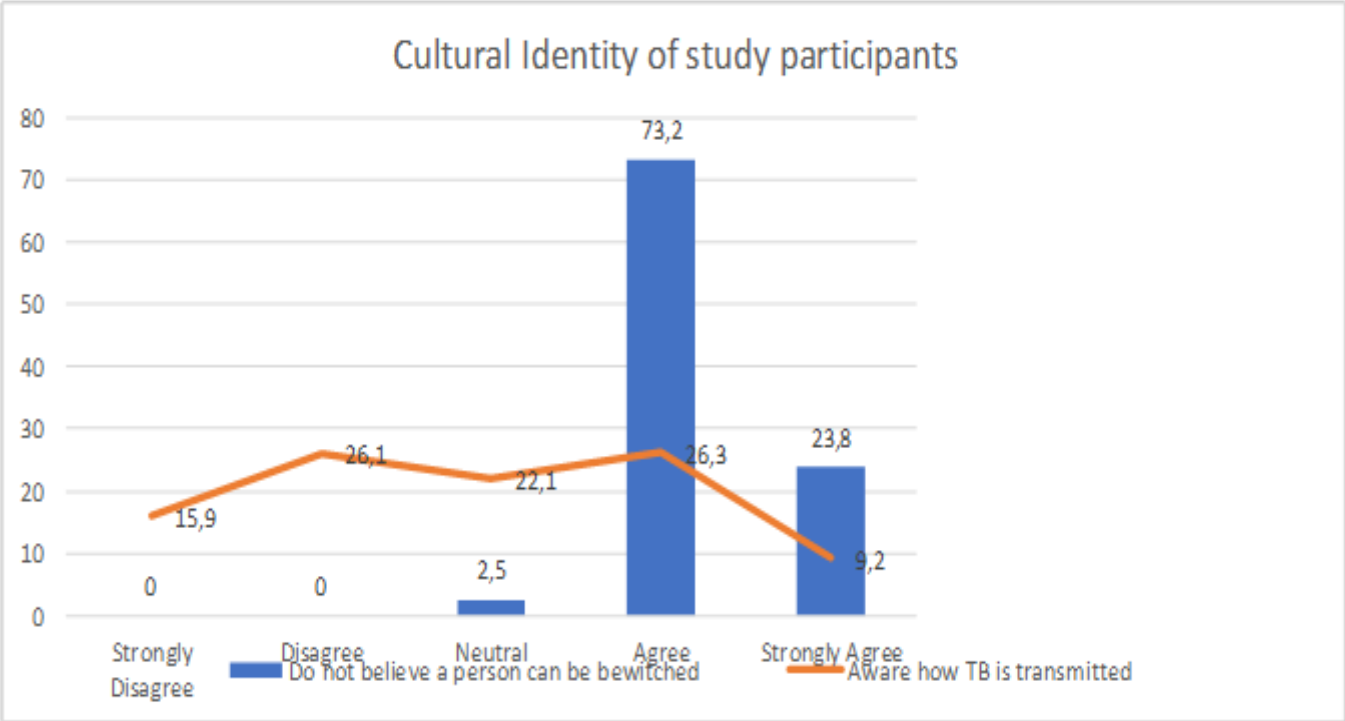


Figure 5.5 indicated that 90.6% of the participants believed that most people in Sandsloot and Tshamahansi still lack knowledge of TB. This could be a contributing factor in the increase of TB infections in Limpopo according to StatsSA (2014) as indicated in Chapter 2. Only 2.7% of the participants disagreed that a lack of knowledge could be contributing factor in the Mokopane area

5.3.2 Cultural Identity

Figure 5.6: Cultural Identity of Study Participants



The data indicated that almost all participants understand how TB was transmitted. Figure 5.6 indicates that 73.2% of the participants did not believe that a person was bewitched and then caught TB. 26.3% agreed that they know how TB is transmitted from one person to another. This implies that there are still people who are not sure whether a TB could be the result of being bewitched. 2.5% of the participants were not sure whether TB could be the result of witchcraft. These people still need to be educated about TB. According to Airhihenbuwa (2007), health communication messages are based on sharing information, ideas, and emotions. These messages are often designed to improve lifestyle and behavior (Airhihenhuwa, 2011). Airhihenbuwa (2007) continued to highlight that, health related messages reduce the risk of disease, provide social support and help people make better decisions about their own health.

One of the three primary domains of the PEN 3 cultural model (Cultural identity) highlights the intervention points of entry such that information from people who believe that TB can be transmitted through witchcraft can influence other family members, extended family members

or even their neighbours who might be unsure about whether TB can be transmitted through witchcraft into believing that, indeed, TB can be transmitted through witchcraft. This means that the PEN 3 Model could help to explore the way family structures play an important role to assist or promote behaviour and health results. This indicates that health decisions may be influenced by an extended family member, friends or neighbours.

Only 26.3% of the study participants indicated that they knew how TB was transmitted from one person to another. This means that the remaining percentage of the participants was not sure or did not know how TB was transmitted between people. According to WHO (2014) in chapter 2, most people live in fear of being infected by TB because it could prove fatal. This is a big challenge because most participants don't know how TB could be transmitted from one person to another.

Chapter 2 indicated that a study conducted by Watermeyer, Penn, Scott and Seabi (2019) discovered that, in the area where the study was conducted, responsibility for communication seemed to be unduly placed on patients, while, treatment guidelines were not implemented consistently across sites and assumptions were made about the role of others in the chain. These researchers further indicated that patient and healthcare worker reports suggested their confusion and frustration. This means that communication maybe an essential yet neglected feature in the care and research of the field of tuberculosis Watermeyer et al (2019).

This was only one variable and the correlation could not be tested or compared alone, consequently there was no correlation or significant value. Figure 5.6 further indicated that 23.8% of participants were sure that a person could not catch TB from being bewitched while only 15.9% did not know how TB was transmitted from one person to another. This means that there were still people who lacked knowledge of TB. This was confirmed by the 2.5% who were not sure whether a person could be bewitched and catch TB. This percentage could be easily influenced by people who believed that TB could be the result of being bewitched, which was indicated in the model's cultural identity element.

Section 5.4.2.1 discussed and examined all Pearson's Product-Moment Correlation Coefficients which stated that if the p. value was less than .05, it was significant. This further implies that there is a correlation between two variables. In this case, there was no correlation coefficient because there was only one variable. In this case, the following null hypothesis $1_{(0)}$ which is relevant to cultural identity, was rejected because it was not statistically significant, and the alternative hypothesis appeared to be true.

Hypothesis 1(0): All Pen 3 Cultural Model variables identified from the qualitative phase have a high level of significance in the perceptions of TB in the study area ($p>0.05$).

Hypothesis 1(A): All PEN 3 Cultural Model variables identified from the qualitative phase did not have a high level of significance in the perceptions of TB in the study area ($p<0.05$).

Hypothesis 1 was rejected because this study discovered that not all variables had a significant effect on the phenomenon under investigation. The alternative hypothesis appeared to be the one that was true and was accepted. The nine identified items were tested for normality and found to be mostly non-normal, which lead to the decision that these nine identified variables should be compared for correlation by means of the Pearson Product Moment Correlation.

73.2% did not believe, while 2.5% of study participants were unsure whether a person could be bewitched and catch TB. while 73.2% did not believe that TB could be transmitted through witchcraft. Most did not believe that a person could be bewitched and catch TB. Therefore, the Null Hypothesis was rejected.

5.3.3 Extended Family and Neighborhood

Figure 5.7: Cultural Identity of Study Participants compared with the extended family and neighborhood

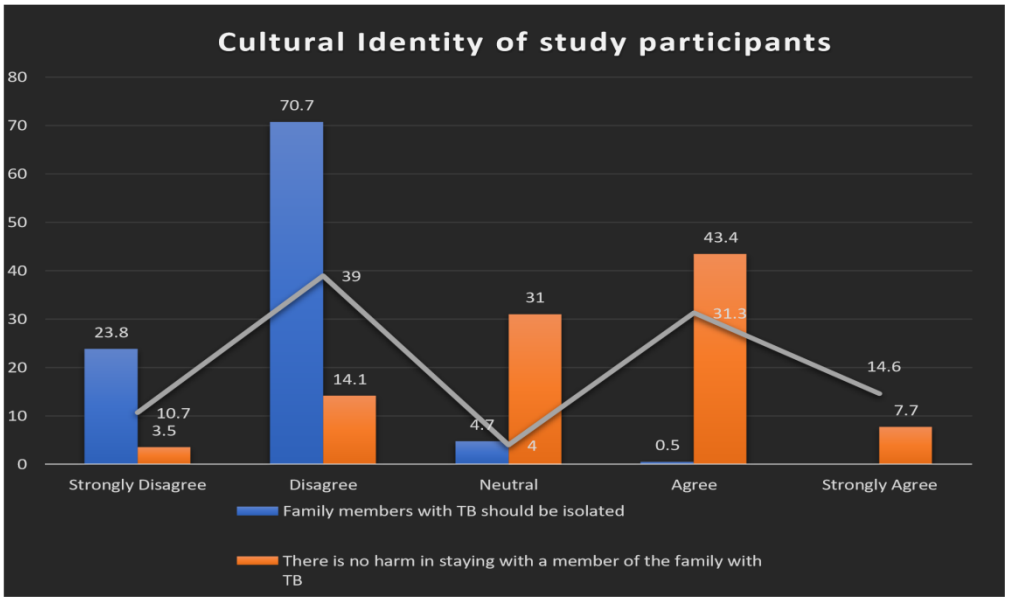


Figure 5.7 presents the cultural identity of study participants in the Mokopane area while it also compares the extended family and neighborhood phases of cultural identity.

Figure 5.7 showed that, even though the literature review had indicated in the South African Government Report (2015) that a person with active TB could spread TB very quickly, (one infected person could infect about 10-15 people annually) 70.7% of study participants did not agree that people with TB should be isolated from other community members. Of the nine identified items that were tested for normality and found to be mostly non-normal, cultural identity variables did not correlate, and as such, they were deleted during Pearson Product Moment Correlation listwise deletion.

The cultural identity element of the model indicated that most people did not want to be isolated from their family members or even extended family members. A high percentage of study participants who did not agree that people who had TB should be isolated from their family members or neighbours because of the possibility that others could be infected. There

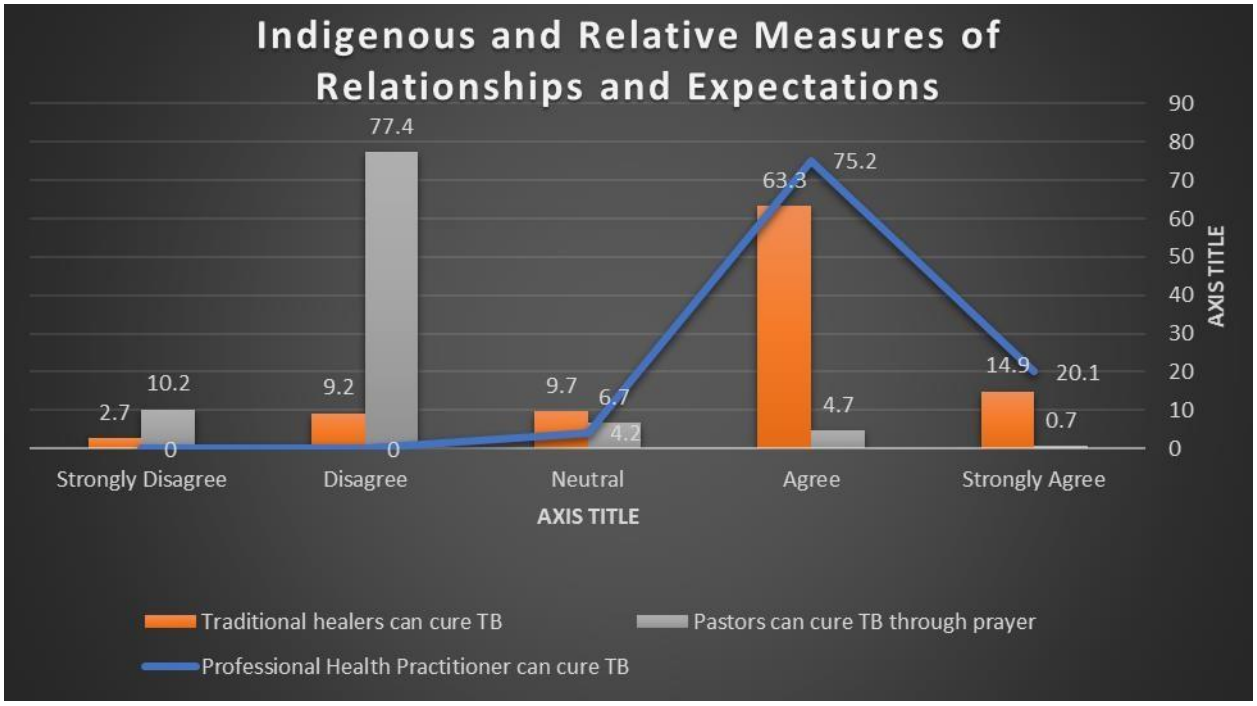
were also 43.4% of study participants that said that there was no harm in staying with a member of the family with TB. Mokwena (2012) in chapter indicated that when the people living with these diseases are shown love and care, they tend to recover very quickly because of the support they receive from community members. He said TB patient should work together with family members, government departments, health structures, traditional leaders and churches to ensure that TB is not transmitted to other people.

However, 31% of study participants were not sure whether to stay in the same house with a person who had been infected by TB. The model's cultural identity is of the view that family members and neighbours of infected people do not fear TB. This also indicates that culture plays a role in the spread of these diseases because culturally, a sick person would usually stay with family members who will nurse them until recovery.

Figure 5.7 further shows that 4.7% of study participants are not sure whether to stay with infected family members or isolate them until they are fully cured. In contrast, 31.3% of study participants believed that a person with TB should not visit neighbours because they might spread the disease, while 7.7% of study participants strongly agreed that a person with TB should not visit neighbours. The study conducted by Maputle and Donovan (2013) showed that the youth often indicated that as TB and HIV/AIDS patients, they are being supported by members of their families and, at times, their friends and relatives.

5.3.4 Relationships and Expectations

Figure 5.8: Indigenous and Relative Measures of Relationships and Expectations



63.3% of participants believe that traditional healers can cure TB and this question is at the p value of .034 with a Pearson correlation of .106*. 4.7% believe that pastors can cure TB by prayer. The question of whether a traditional healer can cure TB is at the p value of .034 which is less than .05 with a Pearson correlation of .106* while the question of whether a pastor can cure TB with a prayer is a p value of .001 and Pearson correlation of .158**. According to Banerjee, Harries, Nyirenda and Salaniponi (2000), most African traditional healers believe they can cure TB, and have, therefore, been briefed on the infectious form of TB. The article written by these scholars stated that most traditional healers believe there is one herb, when properly prepared and administered that can cure all sorts of diseases, in consultation with the ancestors.

The Pen 3 cultural model highlights the impact of culture (positive, existential or negative). In this case, it indicates that the impact of culture in this study area is of the

highest percentage because literature or previous studies have proved that only scientifically tested medications can be used to cure TB and other related diseases. Nevertheless, people still use their traditional ways of healing diseases. People still follow their shared values, norms, and codes that collectively shape their beliefs, attitudes, and behaviour through their contact in and within their settings, as was indicated by Airhihenbuwa (1999) in his PEN-3 cultural model.

75.2% of participants believe that professional health practitioners can cure TB while 14.9% strongly believe that a traditional healer can cure TB. 77.4% do not believe that pastors can cure TB through prayer. However, the findings indicate that there are 6.5% of participants who are still not sure whether professional health practitioners can help cure TB. This means that these 6.5% do not believe in scientifically tested medications; they either rely on traditional herbs or on prayer and holy water from pastors or prophets. This implies that the impact of culture should not be excluded when plans are made to reduce TB infections, especially in Africa.

The graph further indicates that there are 0.7% of participants who strongly believe that pastors can cure TB through prayer. This is a further indication that there are people who still need to be educated on the issue of TB and related diseases. If the three questions above are plotted, (see Table 5.8: Pearson's Correlation Coeficiency of variables), there is high level of significance in correlation. The question of whether a traditional healer can cure TB is at the p value of .034 at the Pearson correlation of .106* while the question of whether a pastor can cure TB with a prayer is at a p value of .001 and Pearson correlation of .158**. This shows that there is strong correlation because it is indicated by two asterisks (**) next to the number .158. The relevant hypothesis for this variable is discussed below:

Hypothesis 3(0): There is a correlation between the identified dependent variable and other variables in the study in determination of factors that influence perception surrounding TB related behaviour ($p>0.05$).

Hypothesis 3(A): There is no correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions of TB related behaviour ($p<0.05$).

Even though Banerjee et al (2000) argue that most African traditional healers believe they can cure TB, Airihenbuwa and Dutta (2007) highlight that, African herbs need to be tested in laboratories to find out whether African medications can heal diseases or not. Nonetheless, the null hypothesis which is scientifically significant and has been accepted, because there is a correlation between the identified dependent variable and other variables in the study in determination of factors that influence perceptions surrounding TB-related behaviour ($p>0.05$).

Regarding relationships and expectations variables, a high percentage of participants believed that traditional healers could cure TB. 63.3% of study participants believe that traditional healers can cure TB. This means that 6.5% of study participants did not believe in scientifically tested medications or they were not sure whether to trust scientifically tested medications or not.

Pearson's Correlation Coeficiency of these questions achieved a high level of significance, because the question of whether a traditional healer could cure TB was at the p value of .034 with Pearson correlation of .106* while the question of whether a pastor could cure TB with a prayer was at a p value of .001 and Pearson correlation of .158**. This may contribute to the problem in the area, where more than half of the participants rely on traditional healers and pastors' prayers for TB treatment.

It could thus be seen that with hypotheses 3 the null hypothesis was accepted.

5.3.5 Cultural Empowerment

Figure 5.9: Cultural Empowerment

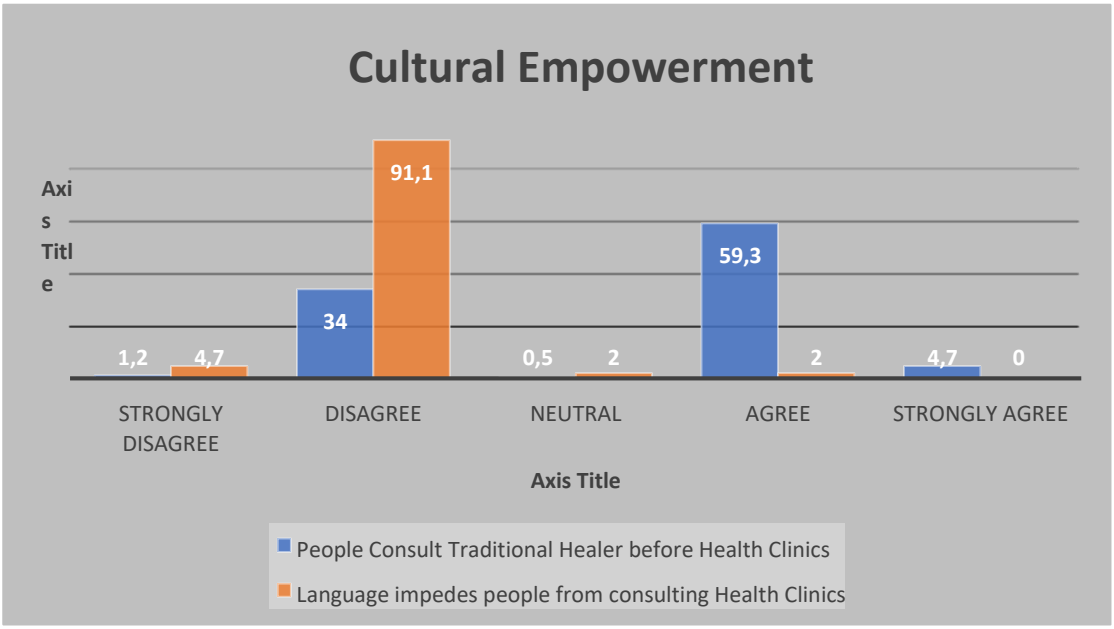


Figure 5.9 Cultural Empowerment, the question of whether people consult traditional healers before they consult at health clinics and whether language impedes people from consulting health clinics.

According to Figure 5.9 above, 59.3% of the participants consult traditional healers first before health clinics or medical doctors. Of this percentage, 4.7% strongly agreed that they consult traditional healers before going to a health clinic. In this case, the Pearson correlation is at .993** and the p value is at .000 (p>0.05). This means that the correlation is significant. This validates the Pen-3 model which stated that culture plays a very important role in a person's decision making on health matters.

2% of participants agreed that language barriers impede people from consulting health clinics while another 2% were not sure. The study established that 91.1% of participants did not believe that lack of knowledge about TB was because of a language barrier between the health practitioners and community members. This further emphasises that culture has an impact on how a person behaves. According to Maputle and Donovan (2012), most health practitioners, especially in and around Mokopane, come from Vhembe district and they speak Tshivenda and Xitsonga.

Mokwena (2012) further indicated that, Mokopane is the land of Bapedi speakers which was another contributing factor that might lead to a communication mismatch because most of the nurses could not speak Sepedi.

This means that language barrier was a contributing factor that leads people to choose rather to consult churches or traditional healers because nurses at the health clinics could not speak Sepedi.

The following hypothesis was found to be relevant to this variable and the null hypothesis was accepted because existential behaviour correlates with almost all variables as a dependent and as an independent variable. Therefore, the alternative hypothesis was rejected.

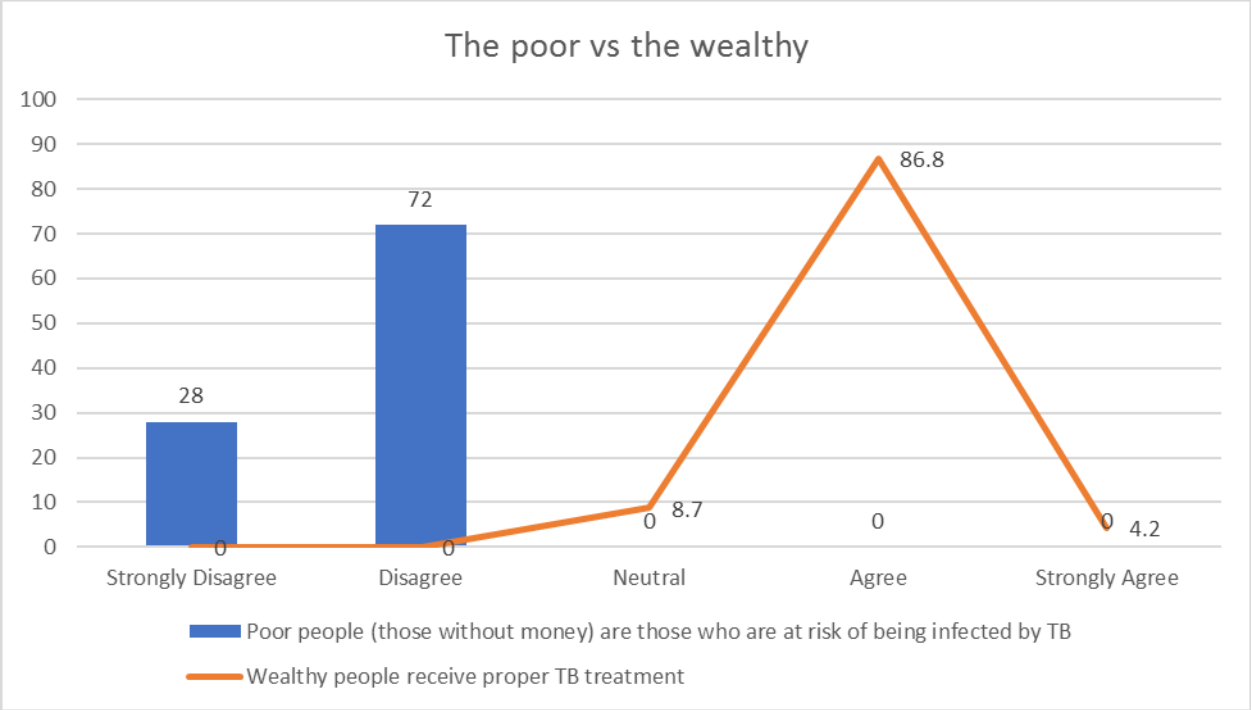
Hypothesis 3(0): There is a correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions surrounding TB-related behaviour ($p>0.05$).

Hypothesis 3(A): There is no correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions surrounding TB-related behaviour ($p<0.05$).

The correlation is significant because of the 2-tailed asterisk at the end of the number .993**. There is a correlation between the question of whether people of Mokopane consult traditional healers before health clinics and whether language barriers deter people from consulting health clinics. The findings show that some people do not consult at health clinics because of they do not understand the language spoken by the nurses. 2% of the participants believe that language impedes people from consulting health clinics. Therefore, language barrier issues should be included as a possible contributing factor to the reasons why people don’t consult health clinics.

5.3.6 The Poor vs the Wealthy

Figure 5.10: The Poor vs the Wealthy



Although Karim and Bhat (2009) has argued that many black people who are working in bigger cities were forced to reside in congested, poorly ventilated, single-sex hostels and that these hostels were often served by prostitutes who were called “town wives” during those years (Karim and Bhat, 2009). Prostitutes could be carriers of TB and other related diseases because they move from one person to another and might infect those that they come across. Figure 5.10 indicates that 72% of participants do not believe that poor people are at risk of being infected by TB because of where they live or their living conditions. These variables are at the p value of .000 which is less than .005 (p>0.05).

The study further illustrates that 86.8% of participants believe that wealthy people receive proper TB treatment. This might be because they can access better medical facilities, but the South African government provides free TB treatment for every citizen of the country. If treatment is taken and completed, TB can be cured.

However, 28% of study participants strongly disagreed that poor people are most at risk of being infected by TB. This might be because the standard of living and times have changed, things are done different from the way they used to be in the past. The Cultural Empowerment of the PEN-3 Model of Health Beliefs indicates that there was a high correlation between Existential Behaviour 3 and Existential Behaviour 4. This means that, the question of whether poor people are at risk of being infected by TB and whether wealthy people receive better TB treatment than poor people correlate.

The two variables correlate at the significance of p value of .000 and Pearson correlation was at .993**. This was the highest correlation because of the two asterisks at the end of the number .993 (**) and indicates that the Existential Behaviour variable is the most significant variable, applicable to this model because it correlates with almost all variables as a dependent and even as an independent variable after Cronbach Alpha listwise deletion procedure was applied. It also appears more than any other variable even after deletion had taken place. The following hypothesis appeared to be relevant to this variable:

Hypothesis 3(0): There is a correlation between the identified dependent variable and other variables in the study in the identification of factors that influence perceptions surrounding TB-related behaviour ($p>0.05$).

Hypothesis 3(A): There is no correlation between the identified dependent variable and other variables in the study in the identification of factors that influence perceptions surrounding TB-related behaviour ($p<0.05$).

The significance is at the p value of .000 with the Pearson correlation of .933** This means the p value is less than ($p>0.05$). Therefore, the Null hypothesis is accepted, and the alternative hypothesis is rejected. Existential Behaviour element is the most applicable variable in this study because it appears to relate to almost all variables after listwise deletion. Figure 5.10 proves that most participants (86.8%) think that people with money have access to better healthcare treatment, which might not be

true because the South African government does give all citizens of this country free TB treatment.

The lifestyle of poorer people, who are live in townships increases their chances of being infected by TB.

5.4 Inferential Statistics

This section consists of three subsections. The first discusses the normality of the data, the outcome and implications of hypothesis 1 for the suitability of the data for inferential analysis. The second Pearson product-moment correlations coefficients between questions found suitable for analysis, whilst the last performs a multiple regression analysis of significant items to determine interrelatedness.

5.4.1 Normality tests; Hypothesis 1 and choice of variables for inferential analysis

As highlighted in Section 3.7, initial Cronbach Alpha scores of all 63 questions (excluding demographic data) revealed an unacceptably low score, which resulted in listwise deletion to determine which factors had played a significant role in determination of a higher Cronbach Alpha score. The initial low score was attributed to too many items. A Cronbach Alpha score of 7.4 was obtained if the following questions were included in the analysis:

Table 5.6: Significant Variables

Code	Question (Likert Scale)
Cultural Identity 1	I understand the way TB is medically transmitted
Enablers 1	The only way to reduce this rising number of TB infections in this area is through TB testing and those with TB to start taking proper treatment from health clinics
Nurturers 1	People who come to provide health training should use Sepedi (in Mabusela) and Xitsonga (in Tshamahansi)
Existential behaviours 1	Medication from traditional healers can cure TB
Existential behaviours 2	The use of alternative medicines and home remedies can help cure TB
Existential behaviours 3	Holy tea and water from church or herbs from a traditional healer can speed the process of curing TB
Existential behaviours 4	A prayer from a pastor or priest or a prophet can cure TB
Extended Family 3	TB can be genetically transmitted
Relational Expectations 5	I can catch TB because one of my forefathers died from it

Based on the above, hypothesis 1 was rejected and it was accepted that not all the variables had a significant effect on the phenomenon under investigation. The nine identified items were tested for normality and found to be mostly non-normal, which led to the decision that these nine identified variables should be compared for correlation using the Pearson Product Moment Correlation.

5.4.2 Pearson's Product-Moment Correlation Coefficients

This Section consists of two subsections, (1) which includes Pearson results for all significant variables as identified in Chapter 3 (c.f. Section 3.7); and (2) which is a discussion (with tables derived from the Pearson results) which shows which variables proved suitable for the next section, multiple linear regression.

5.4.2.1 Discussion and Results

This section firstly examines all Pearson Correlations for the variables identified in Section 3.7 and 5.3.1 and secondly, followed includes a tabular discussion of variables that were found to have strong correlations using the Pearson procedure.

Pearson Correlation determines whether one variable is associated with another and whether it is either positive or negative. It thus measures the extent of the significance of a correlation between one variable and another. Table 3 presents the Pearson correlations of the data collected for this study. As presented in this table, the Existential Behaviours variable is shown to be the one that controls all variables because this correlates with almost all the variables presented in the table after the listwise deletion of non-correlating variables.

For analysis purposes, the Pearson's Correlation procedure was run on SPSS with all variables to check which correlated with each other. Following this, listwise deletion of non-correlating variables was performed as with the Cronbach Alpha procedure discussed in Sections 3.7 and 5.3.1. Variables which were not related, according to Cronbach Alpha listwise deletion, were deleted from the procedure and only highly significant variables were included. Fig 5.7, examined results and those results' correlation is significant at the 0.05 level and is indicated by a show of one asterisk symbol (*); or better than 0.01, with two asterisks (**).

For example, in the table, Extended Family 3 correlates with Existential Behaviours 1 at the significance level of .012. This means that there is a strong correlation between these two variables. When using the decision rule for assessing whether the test is significant for this study, there is an indication that most variables have positive relationships. If the p. value is less than .05, it means that the test is significant, and it implies that there is a correlation between two variables. The highlighted areas in yellow in the table indicate the variables that have strong correlations.

Table 5.7: Pearson Product Moment Coefficients

		Cultural Identity1	Extended Family3	Relation Expectation5	Enablers1	Nurturers1	Existential Behaviours1	Existential Behaviours2	Existential Behaviours3	Existential Behaviours4
CulturalIdentity1	Pearson Correlation	1	.073	.044	.087	-.005	.013	.010	.037	.044
	Sig. (2tailed)		.146	.381	.082	.925	.798	.848	.456	.383
	N	401	401	401	401	401	401	401	401	401
ExtendedFamily3	Pearson Correlation	.073	1	.045	-.015	.051	.126*	.123*	.102*	.096
	Sig. (2tailed)	.146		.371	.763	.305	.012	.014	.042	.055
	N	401	401	401	401	401	401	401	401	401
Relation Expectation5	Pearson Correlation	.044	.045	1	.055	-.075	.106*	.107*	.166**	.158**
	Sig. (2tailed)	.381	.371		.271	.136	.034	.033	.001	.001
	N	401	401	401	401	401	401	401	401	401
Enablers1	Pearson Correlation	.087	-.015	.055	1	.014	.028	.030	.089	.089

	Sig. (2tailed)	.082	.763	.271		.774	.572	.549	.075	.075
	N	401	401	401	401	401	401	401	401	401

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Nurturers1	Pearson Correlation	-.005	.051	-.075	.014	1	.139**	.137**	.116*	.123*
	Sig. (2tailed)	.925	.305	.136	.774		.005	.006	.020	.014
	N	401	401	401	401	401	401	401	401	401
Existential Behaviours1	Pearson Correlation	.013	.126*	.106*	.028	.139**	1	.997**	.923**	.911**
	Sig. (2tailed)	.798	.012	.034	.572	.005		.000	.000	.000
	N	401	401	401	401	401	401	401	401	401
Existential Behaviours2	Pearson Correlation	.010	.123*	.107*	.030	.137**	.997**	1	.931**	.922**
	Sig. (2tailed)	.848	.014	.033	.549	.006	.000		.000	.000
	N	401	401	401	401	401	401	401	401	401

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Existential Behaviours3	Pearson Correlation	.037	.102*	.166**	.089	.116*	.923**	.931**	1	.993**
	Sig. (2tailed)	.456	.042	.001	.075	.020	.000	.000		.000
	N	401	401	401	401	401	401	401	401	401
Existential Behaviours4	Pearson Correlation	.044	.096	.158**	.089	.123*	.911**	.922**	.993**	1
	Sig. (2tailed)	.383	.055	.001	.075	.014	.000	.000	.000	
	N	401	401	401	401	401	401	401	401	401

5.4.2.2 Tables, Patterns and Results for Multiple Linear Regression

In this section tables are presented. These tables were derived from variables that had a significant correlation. This allows for a detailed discussion of variables that had significant correlations. There is a strong correlation between Extended Family 3 and Existential Behaviours 1, 2 and 3. This implies that, there is a correlation between study participants who believe that TB can be genetically transmitted and the perception of those who say medication from traditional healers can cure TB; those who say the use of alternative medicines and home remedies can help cure TB; those who believe that holy tea and water from church or herbs from a traditional healer can fasten the process of curing TB.

There is a strong correlation between Relational Expectation 5 and Existential Behaviours 1,2,3 and 4. This implies that the question of whether a person can catch TB because one of their forefathers died from TB correlates well with whether the use of home remedies and alternative medicines can help cure TB. Holy tea and holy water from church or herbs from traditional healers can accelerate the process of curing TB; prayers from a pastor, priest or prophet can cure TB and the questions that asks whether medication from traditional healers can cure TB.

There is a strong correlation between Nurturers and Existential Behaviours 1 and 2. This implies that the question about whether health practitioners who engage with community members about TB should be able to speak the local languages of a specific area has a strong correlation with the question of whether medication from traditional healers can cure TB and the one which ask whether the use of home remedies and alternative medicines can help cure TB. These relationships will now be discussed.

Extended Family 3 and Existential Behaviours 1-3

If the questions are plotted, the following emerges:

Table 5.8: Pearsons Correlation Coeficiency of variables: Extended Family and Existential Behaviours.

Extended Family	Existential Behaviours	Pearsons Correlation Coeficiency	P-Value
TB can be genetically transmitted	Medication from traditional healers can cure TB	.126*	.012
	The use of home remedies and alternative medicines can help cure TB	.123*	.014
	Holy tea and holy water from church or herbs from traditional healer can fastens the process of curing TB	.102*	.042

The Extended family variable correlates with Existential Behaviours 1 to 3. Extended families believe that TB can be genetically inherited, and the use of home remedies can cure TB. This statement further confirms that the Pen-3 model assisted to find the proper relationships for these variables. In this case the extended family has an influence on the behaviour of a family member hence the correlation between the Extended Family and Existential Behaviour is significant at .102.

Table 5.8 further indicates that the question of whether TB can be genetically transmitted correlates with the perception that holy water from church or herbs from traditional healers can cure TB more quickly because they are significant at p=0.102. The Cultural Empowerment dimension helped to expose information that the extended families believe that holy water or herbs from a traditional healer can also be used to speed up the cure of TB and they transfer this information to younger generations. This implies that the impact of culture should not be excluded when plans are made to reduce TB infections, especially in Africa (Mokwena, 2012).

If the first two variables in Table 5.8 are examined, it is evident that that there is a perception that the extended family can contribute to the rising number of TB cases because Existential Behaviour beliefs that medication from traditional healers can cure TB showed a high level of correlation with beliefs that it can be genetically transmitted. In the same way it was indicated that correlation between the belief that TB could be genetically transmitted and the use of home remedies and holy tea or holy water were high, which showed a very poor level of understanding of the disease. If their extended family members take medication or herbs from traditional healers, and they fail to be cured, then an unborn child could be put at risk of being infected by the infected mother. The correlation of the variables shows that there was a very strong relationship between the person infected by TB, the extended family and the behaviour of both persons.

Pen 3 Cultural Model variables identified have a high level of significance in the perceptions which surround TB in the study area ($p>0.05$). Variables in the Table 5.8 correlate significantly at the level of less than .05 (.012; .014 and .042), all of them are $p>0.05$. The PEN-3 model further shows that culture plays a considerable role as indicated by the correlation coefficiency.

Relational Expectation 5 and Existential Behaviours 1-4

Table 5.9: Pearsons Correlation Coeficiency of variables: Relationship Expectations and Existential Behaviours.

Relationships & Expectations	**Existential Behaviours**	**Pearsons Correlation Coeficiency**	**P-Value**
I can catch TB because one of my	The use of home remedies and alternative medicines can help	.107*	.033
forefathers died from TB	cure TB		
	Holy tea and holy water from church or herbs from traditional healer can shorten the process of curing TB	.166**	.001
	A prayer from a pastor or priest or a prophet can cure TB	.158**	.001
	Medication from traditional healers can cure TB	.106*	.034

Table 5.9 indicates a correlation between relationships and expectations with existential behaviour variables. There is .107 correlation coeffiency between the relationship and expectation question of whether the participants believe that it is possible for a person to inherit TB and whether they believe that home remedies could help cure TB or not.

There is a significant perception or behaviour that holy tea or holy and herbs from traditional healers can speed up the cure of TB. This has been influenced by the education from the earlier generations because there is also a correlation coefficiency at .166 between the two variables. Some of the participants who do not believe in

medication from traditional healers prefer to use holy water or rely on prayer to cure TB exclusively.

The correlation between what the forefathers have passed down to this generation at .158 further proves that most people in the area trust their traditions. Cultural practices are very prominent in the Mokopane because most people still believe in traditions that have been passed down to them. Even families and relatives of the person with TB influence the thinking of the patient. Relatives are also affected when a family member of relative is infected.

Relationships and Expectations and Existential Behaviour variables indicate that there is a significant positive relationship between all the variables as displayed in Table 5.9. All variable's p. values are below .05. Therefore, the Pen-3 model assisted to reveal the relationships between these variables.

Culture and religion play a significant role and influence a person's health decisions. There is a link between an independent variable and all dependent variables. If extended family members take medication or herbs from traditional healers, and they are not cured, then an unborn child could be at risk of infection from an infected mother.

The following hypothesis is relevant to this study and the Null hypothesis has been accepted because an independent variable is identifiable from the variables that have a significant impact on the perceptions of TB in the study area ($p>0.05$).

Hypothesis 2(0): An independent variable has been identified from the variables that significantly affect the perceptions of TB in the study area ($p>0.05$).

Hypothesis 2(A): An independent variable was not identified from the variables that significantly affect perceptions of TB in the study area ($p<0.05$).

Nurturers and Existential Behaviours 1-2

Table 5.10: Pearsons Correlation Coeficiency of variables: Nurturers and Existential Behaviour.

Nurturers	**Existential Behaviours**	**Pearsons Correlation Coeficiency**	**P-Value**
Health practitioners who engage with community members about TB should be able to speak languages	Medication from traditional healers can cure TB	.139**	.005
spoken by those community members			
	The use of home remedies and alternative medicines can help cure TB	.137**	.006
	Holy tea and holy water from church or herbs from traditional healer can shorten the process of curing TB	.116*	.020
	A prayer from a pastor or priest or a prophet can cure TB	.123*	.014

Table 5.10 further displays the existing correlation of Nurturers variable with four Existential Behaviour variables. There is a strong relationship between Nurturers and these four Existential Behaviour variables hence the correlation coefficiency is above .115. This further indicates that relationships between family members, relatives and friends of those infected play a very important role.

As far as education of the people in the study area health practitioners who engage with community members about TB should be able to speak languages spoken by the community members. Otherwise, if the community members are aware of potential

language barriers with healthcare professionals they may continue to consult traditional healers who their language.

This statement is supported by a strong correlation between the Nurturers variable in relation to the question of whether health practitioners who engage with community members about TB should be able to speak their languages. and Existential Behaviour, and whether participants believe that medication from traditional healers can cure TB variable. The two variables have a high correlation coefficiency of .139. Those who are afraid to consult to medical health clinics or doctors because of language barriers do instead seek treatment from a pastor, priest or a prophet to cure TB. Correlation coefficiency between the two variables is at .123.

This means that people who do not believe in traditional healers tend to use prayer, holy tea and holy water because they avoid medical clinics because of their fear/awareness of a potential language barrier. Even in this case, the p. value of variables is below .05. According to Makhado and Davhana-Maselesele (2011), the South African Government is doing its best to communicate health-related messages across all media to make sure that the message is understood by all citizens irrespective of race or disability status.

Makhado and Davhana-Maselesele (2011) continue to argue that flyers can be found in government departments, hospitals and clinics aimed to educate the citizens on how to prevent infection of chronic diseases. However, there are people who cannot read and some who choose to ignore these messages not because they cannot read but because of ignorance. (Simelela and Venter, 2014). Of the 401 participants, only 30 of them had attained a tertiary qualification and this shows that if these messages are only written in English, most people will not even attempt to read about TB. In this situation, language would be a barrier. Most people in this study had only attended primary and secondary schools. More than 100 of the participants cannot even read what is written in their own language.

Therefore, those who cannot read, should be afforded an opportunity to be educated by nurses who work in the health clinics in these villages, and the education should be in the languages spoken by the local villagers or residents.
The following hypothesis is relevant to table 5.10.

Hypothesis 1(0): All Pen 3 Cultural Model variables identified from the qualitative phase have a high impact on perceptions of TB in the study area ($p>0.05$).

Hypothesis 1(A): All PEN 3 Cultural Model variables identified from the qualitative phase do not have a high impact on perceptions of TB in the study area ($p<0.05$).

In Table 5.9, the Null hypothesis has been accepted because on Table 5.9 alone variables identified from the qualitative phase have a high level of significance ($p>0.05$). Existential behaviour as a dependent variable correlates with Nurturers as an independent variable. Again, the PEN 3 model shows that a language barrier can influence people to consult traditional healers, thus the language barrier is a contributing factor because a small number of participants believe language barriers impede people from attending a health clinics, instead they seek help from churches and/or traditional healers.

Existential Behaviour Variables

To understand and identify people's indigenous and relative measures to prevent TB, Table 5.11 summarises the correlations between Existential Behaviour variables under the Cultural Empowerment. These variables further address objectives outlined in Chapter 3. The perceptions of Tb held by participants are indicated by the level of correlation between variables.

Because culture plays a role in the decisions of these participants, it confirms that most participants think that medication from traditional healers can cure TB. Existential Behaviours 1 correlates with Existential
Behaviours 2 at the coefficiency of .997. It further correlates with Existential Behaviours 3 at the coefficiency of .923.

Table 5.11: Pearsons Correlation Coeficiency of Variables: Existential Behaviours.

Existential Behaviours	Existential Behaviours	Pearsons Correlation Coeficiency	P-Value
Medication from traditional healers can cure TB	The use of home remedies and alternative medicines can help cure TB	.997**	.000
	Holy tea and holy water from church or herbs from traditional healer can accelerate the process of curing TB	.923**	.000
	A prayer from a pastor or priest or a prophet can cure TB	.911**	.000

These two statements further confirm that culture plays a considerable in shaping the thinking and the behaviour of the partipants. Existential Behaviours 4 confirms that religion and beliefs also come into play and contribute to the behavior of the participants, because it correlates with Existential Behaviours 1 at the coefficiency of .911. When some of the participants saw, or discovered that they had a disease, they would approach a pastor or prophet for a cure.

The relationship between existential behaviours variables is at the p.value of .000 at all variables. This is a clear indication that there is a strong relationship between all these variables. Airhihenbuwa (2007) highlighted that in the past ten years, research has grown on the influence of culture on health. Culture, in this context, refers to the shared values, norms, and codes that collectively shape a group's beliefs, attitudes, and behaviour through their contact in the group and within their settings (Airhihenbuwa,1999).

Exploring the cultural context of different people in different geographical locations allows people to understand the ways in which people from different ethnic groups behave towards phenomena, diseases like TB. This includes the way they interact with

each other and the messages that they communicate among one another (Singhal, 2003). Therefore, the PEN-3 model was important to explore how family structures play a vital part to assist and promote positive health behaviour.

Hypothesis 3, has been identified as relevant to the correlation between Existential Behaviours variables.

Hypothesis 3(0): There is a correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions of TB-related behaviour ($p>0.05$).

Hypothesis 3(A): There is no correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions of TB-related behaviour ($p<0.05$).

In Table 5.10, Existential Behaviours element is the most significant variable that is applicable to this model because it correlates with almost all the variables as a dependent or independent variable after Cronbach Alpha listwise deletion procedure has been applied. The Null hypothesis has been accepted because there is a correlation between the identified dependent variable and other variables in the study ($p>0.05$). All questions of existential behaviours are at the p value of .000 which is below .05.

5.4.3 Multiple Regression Analysis

This section consists of 4 subsections, which, in turn, contain a multiple linear regression analysis, unearthed when relationships were examined.

There is a strong correlation between Relational Expectation 5 and Existential Behaviours 1,2,3 and 4. This implies that the question of whether a person can catch TB because one of their forefathers died from TB correlates well with the questions that ask whether the use of home remedies and alternative medicines can help cure TB. Again, whether holy tea and holy water from church or herbs from traditional healer can accelerate the process of curing TB; whether a prayer from a pastor or priest or a prophet can cure TB and whether medication from traditional healers can cure TB or not. Relational Expectation 5 was used as the dependent variable.

There is a strong correlation between Nurturers and Existential Behaviours 1 and 2. This implies that the question of whether health practitioners who engage with community members about TB should be able to speak relevant languages has a strong correlation with the question of whether medication from traditional healers can cure TB, and the question of whether home remedies and alternative medicines can help cure TB. Nurturers were used as the dependent variable.

There is a strong correlation between all the existential behaviour variables. In this case, Existential Behaviours 1 was used as the dependent variable.

The existential behaviours element is the most significant variable that is applicable to this model because it correlates with almost all the variables as a dependent or independent variable after Cronbach Alpha listwise deletion procedure was applied.

5.4.3.1 Regression: Extended Family 3/Existential Behaviours 1-3

It was clear from the Cronbach Alpha listwise deletion procedure that Extended Family 3 had the highest value if deleted. In addition to this, it can also be seen when the Pearson table was examined, that this was the only variable that strongly correlated with all three of the elements that have the highest correlation values (as the same variable); Existential Behaviours 1-3. It was decided to run a regression with this factor, as the dependent variable against three Existential Behaviour items as the independent variables. It was also clear that these independent variables had the highest corrected item to total correlation, and that the Pearson Correlations on these four factors scored the highest.

Table 5.12: Regression: Extended Family 3/Existential Behaviours 1-3

Model Summary				
Model	R	R Square	R Square	Std. Error of the Estimate
1	.146[a]	.021	.011	1.12245
a. Predictors: (Constant)				

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.884	4	2.721	2.160	.073[b]
	Residual	498.922	396	1.260		
	Total	509.805	400			
a. Independent variable: TB can be genetically transmitted						
b. Predictors: (Constant), Most TB infections are caused by lack of knowledge, A prayer from a pastor or priest or a prophet can cure TB. The use of home remedies and alternative medicines can help cure TB, holy tea and holy water from a church or herbs from a traditional healer can accelerate the process of curing TB.						

Coefficients[a]						
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.946	.596		4.947	.000
	The use of home remedies and alternative medicines can help cure TB	.254	.167	.208	1.522	.129
	Holy tea and holy water from church or herbs from traditional healer can accelerate the process of curing TB	.262	.539	.224	.487	.627
	A prayer from a pastor or priest or a prophet can cure TB	-.370	.504	-.319	-.735	.463
	Most TB infections are caused by lack of knowledge	-.163	.138	-.059	-1.177	.240
a. Dependent Variable: TB can be genetically transmitted						

The above model summary table scored an R-Square value of .021, which explains that the independent variables explain 21% of the variation on the dependent variable. This is an acceptable figure, since a figure that is too high is normally an indicator of multicolinearity. The Anova table test R-square is significantly greater than Zero (0). The p-value of .073 under the label Sig in the Anova table, is greater than .05 which shows a low level of significance.

The Coeficients table tests each of the predictors individually. This is where the p-value for all four independent variables is checked. The researcher evaluated each of these tests at an alpha of .05. Of the four dependent variables, there is no significant relationship between the dependent predictors and the independent variable.

Even though the PEN-3 Model argues that culture plays a considerable role in determining a person's health decisions, of all four independent variables there was no significant relationship between the independent predictors and the dependent variable. Furthermore, Hypothesis 3 was rejected because out the four independent variables there was no significant relationship between the independent predictors and the dependent variable.

There is no correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions of TB related behaviour ($p<0.05$). The Null hypothesis was rejected and the alternative has proved to be true because there is no significant relationship between the independent predictors and the dependent variable.

Hypothesis 3(0): There is a correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions of TB-related behaviour ($p>0.05$).

Hypothesis 3(A): There is no correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions of TB-related behaviour ($p<0.05$).

5.4.3.2 Relational Expectation 5 and Existential Behaviours 1,2,3 and 4

Table 5.13: Regression: Relational Expectation 5/Existential Behaviours 1-4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.221[a]	.049	.039	1.22789

a. Predictors: (Constant), Medication from traditional healers can cure TB.; a prayer from a pastor or priest or a prophet can cure TB; holy tea and holy water from a church or herbs from a traditional healer can accelerate the process of curing TB; as well as the use of home remedies and alternative medicines can help cure TB.

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	30.789	4	7.697	5.105	.001[b]
	Residual	597.051	396	1.508		
	Total	627.840	400			

a. Independent Variable: I can catch TB because one of my forefathers died from it

b. Predictors: (Constant), Medication from traditional healers can cure TB; a prayer from a pastor or priest or a prophet can cure TB; holy tea and holy water from a church or herbs from a traditional healer can accelerate the process of curing TB; as well as the use of home remedies and alternative medicines can help cure TB.

Coefficients[a]						
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.375	.253		9.382	.000
	The use of home remedies and alternative medicines can help cure TB	-.827	.990	-.611	-.835	.404
	Holy tea and holy water from church or herbs from traditional healers can accelerate the process of curing TB	1.344	.606	1.034	2.218	.027
	A prayer from a pastor or priest or a prophet can cure TB	-.667	.579	-.518	-1.152	.250
	Medication from traditional healers can cure TB	.313	.937	.233	.334	.738
a. Dependent Variable: I can catch TB because one of my forefathers died from it						

The model summary table indicates that the R-square of .039 is significantly greater than (Zero) 0 because the P value under the Sig label in the Anova table is less than .05. Since the p-value is less than .05, the predictors can account for the significant amount of variance in the dependent variable. In other words, the overall regression model was significant.

The Coefficients table examines each of the predictors individually. It checks the p-values of independent variables. The independent variable which is at the p-value of .027 is a significant predictor of the dependent variables because its p value is less than .05. This means that, since participants believe that TB can be genetically transmitted, they consequently believe that holy tea or holy water from a church or herbs from traditional healers can speed up a cure.

The Pen-3 model assisted the researcher to find the proper relationships for these variables. Culture and religion, in this case, play a significant role on health decisions. There is a relationship between an independent variable and all dependent variables.

The following relevant hypothesis, the Null hypothesis has been accepted because there is a correlation between the identified dependent variable and other variables in the study in the determination of relevant factors. The alternate hypothesis was not found to be true.

Hypothesis 3(0): There is a correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perception of TB. ($p>0.05$).

Hypothesis 3(A): There is no correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions of TB-related behaviour ($p<0.05$).

5.4.3.3 Nurturers and Existential Behaviours 1 and 2

Table 5.14: Regression: Nurturers/Existential Behaviours 1-2

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.158[a]	.025	.015	.42250

a. Predictors: (Constant), A prayer from a pastor or priest or a prophet can cure TB; medical practitioners do not spend enough time educating their patients about diseases; the use of home remedies and alternative medicines can help cure TB, and holy tea and holy water from church or herbs from traditional healers can accelerate the process of curing TB

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.804	4	.451	2.526	.040[b]
	Residual	70.690	396	.179		
	Total	72.494	400			

a. Dependent Variable: Health practitioners who engage with community members about TB should be able to speak languages spoken by those community members.

b. Predictors: Constant: A prayer from a pastor or priest or a prophet can cure TB; medical practitioners do not spend enough time educating their patients about diseases; the use of home remedies and alternative medicines can help cure TB; and holy tea and holy water from church or herbs from traditional healers can speed up the process of curing TB.

Coefficients[a]						
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.057	.121	33.433		.000
	Medical practitioners do not spend enough time educating their patients about diseases	-.012	.023	-.026	-.524	.600
	The use of home remedies and	.102	.063	.222	1.627	.104
	alternative medicines can help cure TB					
	Holy tea and holy water from church or herbs from traditional healers can accelerate the process of curing TB	-.293	.203	-.663	-1.440	.151
	A prayer from a pastor or priest or a prophet can cure TB	.252	.190	.577	1.328	.185
a. Dependent Variable: Health practitioners who engage with community members about TB should be able to speak languages spoken by those community members.						

Table 5.13: Regressions of Nurturers as a dependent variable and Existential Behaviours as an independent variable

This table indicates cored an R-Square value of .015, which explains that the independent variables explain 15% of the variation on/of the dependent variable. The Anova table tests whether the R-square is significantly greater than Zero (0). The p-

value of .04 under the label Sig in the Anova table is greater than 0,005 and shows little impact.

The Coeficients table tests each of the predictors individually. This is where the p-value for all four independent variables is checked. The researcher evaluated each of these tests at an alpha of .05. Of all dependent variables, there was no significant relationship between the dependent predictors and the independent variable.

Hypothesis 3 was rejected because, of all independent variables, there was no significant relationship between the independent predictors and the dependent variable. There was no correlation between the identified dependent variable and other variables in the study. ($p<0.05$). The Null hypothesis was rejected, and the alternative has proved to be true because there was no significant relationship between the independent predictors and the dependent variable.

Hypothesis 3(0): There is a correlation between the identified dependent variable and other variables in the study ($p>0.05$).

Hypothesis 3(A): There is no correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions surrounding TB-related behaviour ($p<0.05$).

5.4.3.4 Existential Behaviours Only

The summary table scored an R-Square value of .007, which explains that the independent variables explain 7% of the variation on the dependent variable. The Anova table tests whether the R-square is significantly greater than Zero (0). The p-value of .395 under the label Sig in the Anova table is greater than .05 and indicates a low level of significance.

The Coeficients table tests each of the predictors individually. This is where the value of all four independent variables was checked. The researcher evaluated each of these tests at an alpha of .05. From all the dependent variables, there was no significant relationship between the dependent predictors and the independent variable.

Hypothesis 3 was rejected because there was no significant relationship between the independent predictors and the dependent variable. There was no correlation between the identified dependent variable and other variables in the study. ($p<0.05$). The Null hypothesis was rejected and the alternative proved true, because there was no significant relationship between the independent predictors and the dependent variable.

Hypothesis 3(0): There was a correlation between the identified dependent variable and other variables in the study into the determination of factors that influence perceptions surrounding TB-related behaviour ($p>0.05$).

Hypothesis 3(A): There was no correlation between the identified dependent variable and other variables in the study into the determination of factors that influence perceptions of TB. ($p<0.05$).

Table 5.15: Regression: Existential Behaviours

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.086[a]	.007	.000	.94198

a. Predictors: (Constant), A prayer from a pastor or priest or a prophet can cure TB, the use of home remedies and alternative medicines can help cure TB, Holy tea and holy water from church or herbs from traditional healers can accelerate the process of curing TB.

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regressio n	2.646	3	.882	.994	.395[b]
	Residual	352.266	397	.887		
	Total	354.913	400			

a. Dependent Variable: Medical practitioners do not spend enough time educating their patients about diseases

b. Predictors: Constant, A prayer from a pastor or priest or a prophet can cure TB; the use of home remedies and alternative medicines can help cure TB; and holy tea and holy water from church or herbs from traditional healers can accelerate the process of curing TB

Coefficients[a]						
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.755	.194		19.341	.000
	The use of home remedies and alternative medicines can help cure TB	-.106	.140	-.104	-.755	.451
	Holy tea and holy water from church or herbs from traditional healers can accelerate the process of curing TB	.772	.452	.791	1.710	.088
	A prayer from a pastor or priest or a prophet can cure TB	-.675	.422	-.697	-1.599	.111

a. Dependent Variable: Medical practitioners do not spend enough time educating their patients about diseases.

The model summary table indicates that the R-square is .000 which was significantly greater than (Zero) 0 because the p-value under the Sig label in the Anova table was less than .05. Even in this case, the p-value was less than .05. This means that the predictors account for the significant amount of variance in the dependent variable. In other words, the overall regression model was significant.

Even in this case the Coefficients table indicates that there was no independent variable which was a significant predictor of the dependent variable because there was no independent variable that indicted a significance of less than .05.

5.5 Discussion of Hypotheses

Based on the two data chapters, hypotheses are accepted/rejected as follows:

Hypothesis 1(0): All Pen 3 Cultural Model variables identified from the qualitative phase have a high level of significance in the perceptions of TB in the study area ($p>0.05$).

Hypothesis 1(A): All PEN 3 Cultural Model variables identified from the qualitative phase do not significantly affect the perceptions of TB in the study area ($p<0.05$).

It was clear in Chapter 3 that the null hypothesis was rejected and that the alternative hypothesis was accepted. The Cronbach Alpha listwise deletion procedure, as well as the Pearson product correlations were indicative of this. This could possibly be due to the fact that the questionnaire contained too many items. The accepted significant variables were provided in sections 3.7.2, 5.4.1 and 5.4.2.2.

Hypothesis 2(0): A dependent variable was identified from the variables that have a high level of significance on perceptions of TB in the study area ($p>0.05$).

Hypothesis 2(A): A dependent variable was not identified from the variables that have a high level of significance on perceptions of TB in the study area ($p<0.05$).

Whilst the Pearson's correlations showed a high level of correlation between different selected variables, and dependent variables with associated independent variables were identified with four possible models, none of the regression models proved to be significant, and on the basis of this, the alternative hypothesis appears to be true for Hypothesis 2.

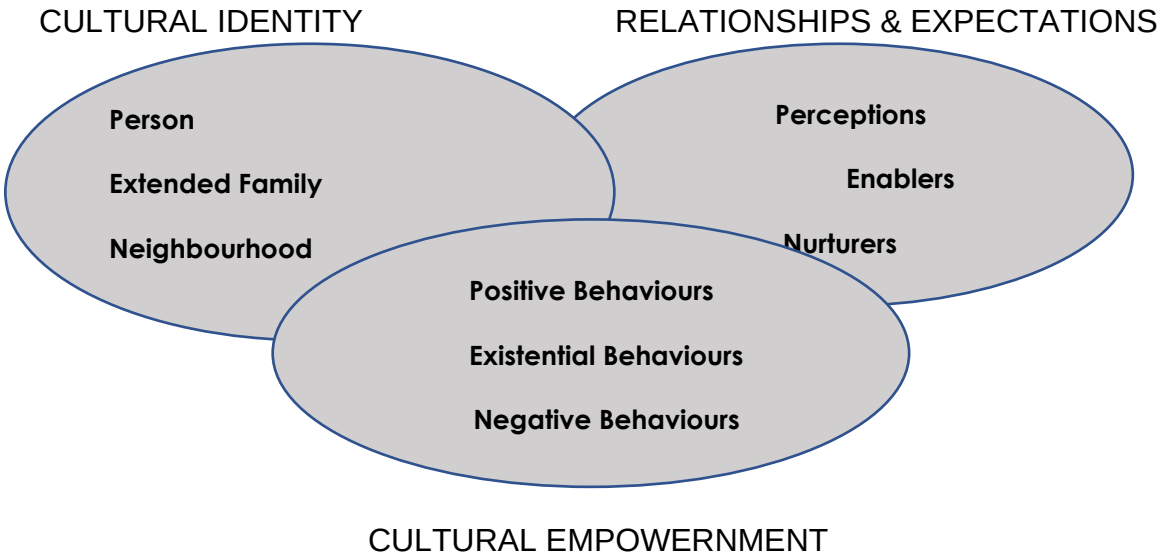
Since the Pearson's correlations were significant, but only between sets of variables and clearly not in a regression model, this is indicative that the relationships between individual variables should be studied independently using other statistical models, such as social factor analysis or even cluster analysis.

Hypothesis 3(0): There is a correlation between the identified dependent variable and other variables in the study into the determination of factors that influence perceptions surrounding TB-related behaviour ($p>0.05$).

Hypothesis 3(A): There is no correlation between the identified dependent variable and other variables in the study into the determination of factors that influence perceptions surrounding TB-related behaviour ($p<0.05$).

It is clear from hypothesis 2 that the alternative hypothesis will be true for Hypothesis 3. Since the alternative hypotheses were true in all 3 hypotheses, the discussion of the model should use the identified significant variables individually and not combine them in statistical models.

5.6 Discussion of the PEN-3 Model Based on Pearsons Results



Fig, 5.7: The PEN- 3 Model (Source: Airhihenbuwa & Webster, 2004)

When one looks at the correlations of all variables of the PEN 3 Model, the Existential Behaviours element was the most prevalent, applicable to this model because it contained more variables than any other of the PEN 3 variables.

In this sense, Relational Expectations 5 had a high Pearsons values with all four of the Existential Behaviours variables. When the Pearson table was examined, this was the only variable that correlated significantly with all four of the elements that have the highest correlation values (as the same variable); Existential Behaviours 1-4.

Using the variable questions, the perceptions are that medication from traditional healers can cure TB; that prayer can cure TB; that holy tea and holy water can speed up the cure of TB; and that the use of home remedies and alternative medicines can help cure TB. Most of the significant items relate to perceptions surrounding the health beliefs and are contrasted these perceptions inform behaviour. These beliefs are culturally based, as have been confirmed by the qualitative analysis. Of the cultural variables, Extended Family 3 showed high levels of significance in Pearson's variables with Existential Behaviours 1-3.

Figure 5.6 depicts the cultural identity of the participants and indicates that almost all participants understand the way TB is transmitted. It indicates that 73.3% of participants do not believe that a person with TB has been bewitched. 26.3% agree that they know how TB is transmitted from one person to another. This implies that, there was still many people who need to be educated about the true nature of the transmission of TB.

One of the three primary domains of the PEN 3 Cultural Model (Cultural identity) highlights the intervention points of entry that information. People who believe that TB can be transmitted through witchcraft can influence other family members, extended family or even their neighbours. This means that the PEN 3 Model helps to explore the way family structures affect and promote specific health behaviour. Elders may influence the health decisions of extended family, friends or neighbours.

Figure 5.6 presents the cultural Identity of the study participants. This graph compares the Extended Family and Neighbourhood phases of Cultural Identity. It appears that, even though the literature review has shown in the South African Government Report (RSA, 2015) that a person with active TB can spread TB very quickly and that one infected person can infect about 10-15 people annually, 70.7% of study participants do not agree that people with TB should be isolated from others.

Furthermore, the cultural identity element of the model proves that people do not want to be isolated from their family members or even extended family members because a high percentage of study participants did not support separation and isolation of infected community members.

Also, there 43.4% of the participants supported the idea that an infected patient should stay with family members. However, 31% of participants were not sure whether it was advisable to live in the same house as an infected person.

The PEN-3 Model's Cultural Identity element is of the view that family members and neighbours of the people who are infected, do not fear TB. This indicates that culture plays a role in the spread of TB because traditionally, a sick person would be nursed and supported by family members. The patient would also be advised on treatment options. This graph further shows that 4.7% of study participants were not sure whether to stay with infected family members or isolate them. In contrast, 31.3% of study participants believed that a person with TB should not visit neighbours because they might spread the disease, while 7.7% of participants strongly agree that a person with TB should not visit neighbours, in case they spread TB.

Only 26.3% of the study participants agree that they know how TB is transmitted. The Existential Behaviours variable appears to be the one that controls all others, as it correlates with almost all variables presented in the table after the listwise deletion of non-correlating variables.

The graph indicates that 59.3% of participants consult traditional healers first before health clinics or medical doctors, while 4.7% strongly agree that they consult traditional healers before to health clinics. This validates the Pen-3 model which stated that culture plays a very important role in a person's health decisions.

However, there were 2% of participants who agreed that language impedes people from consulting health clinics while another 2% were unsure whether language barriers inhibit people from going to health clinics. In contrast 91.1% of study participants do not believe that the lack of knowledge about TB is because of a language barrier between health practitioners and community members. This further emphasises that culture has an impact on how a person behaves.

Figure 5.6 further indicated that 0.7% of participants strongly believe that pastors can cure TB through prayer. This further suggest that many people still need to be educated on the issue of TB. If the three questions above are plotted, (see Table 5.9: Pearson's Correlation Coeficiency of variables), there is high level of significance in these

correlating factors. The question of whether a traditional healer can cure TB is at the p value of .034 at the Pearson correlation of .106* while the question of whether a pastor can cure TB with a prayer at a p value of .001 and Pearson correlation of .158**.

5.7 Conclusion

Overall, from a complete analysis of all aspects of the research, it appears that the Existential Behaviours element of the PEN-3 model of health beliefs is the most significant of the variables applicable to this model, because it correlates with almost all the other variables as either a dependent and independent variable. This after Cronbach Alpha listwise deletion procedure was applied.

This implies that culture have a strong influence over a person's decision-making in relation to their health beliefs. Airhihenbuwa (1999) in his PEN-3 Model of health beliefs explained cultural empowerment as shared values, norms, and codes that collectively shape a group's beliefs, attitudes, and behaviour through their contact in and within their settings.

The Existential Behaviours element proved to be the most significant variable applicable to this PEN 3 Model because it correlated with almost all other variables. Table 5.11 summarises the correlations between the Existential Behaviours variables under Cultural Empowerment. These variables address the objectives outlined in Chapter 3. The perceptions of the participants towards TB are indicated by the level of correlation between variables. Because culture plays a role in both their thinking and decision-making, it confirms that most of the study participants think that medication from traditional healers can cure TB.

The nine identified items were tested for normality and found to be mostly non-normal, which led to the decision that these nine identified variables should be compared for correlation by means of the Pearson Product Moment Correlation.

There was a strong correlation between Extended Family 3 and Existential Behaviours 1,2 and 3. This implies that, there is a correlation between those who believe that TB can be genetically transmitted and the perception of those who believe in the curative powers of traditional healers those believe in the use of alternative medicines and

home remedies; and those who believe that holy tea or water can increase the rate of a cure.

Secondly, there was a strong correlation between Relational Expectation 5 and Existential Behaviours 1,2,3 and 4. This implies that the question of whether a person can catch TB from n infected forefather correlates with the questions that ask whether the use of home remedies, medication from traditional healers, church liquids, prayers and alternative medicines can help cure TB;

Lastly, there was a strong correlation between Nurturers and Existential Behaviours 1 and 2. This implies that the question whether health practitioners who engage with community members about TB should be able to speak languages spoken by community members, has a strong correlation with the question of whether medication from traditional healers can cure TB.

Chapter 6: Conclusions and Recommendations

6.1 Introduction

The purpose of this study was to investigate the perceptions of Mokopane residents and their understanding and knowledge of TB. It also examined their knowledge of the causes of TB; how it could be prevented and why the disease was increasing in their community.

The study further examined whether people around Mokopane were informed about the existence of TB; and had in-depth knowledge of TB. The study profiled the perceptions of people's perceptions regarding their health, specifically TB.

Data was collected by means of qualitative and quantitative methods. Qualitative data was assembled from semi-structured interviews. Ten medical doctors who operate private practices in the Mokopane area were interviewed. After gaining insight into the level of understanding related to health beliefs, the causes and the prevention of TB in the Mokopane area from the data collected qualitatively, the researcher then designed quantitative questions to investigate the hypothesis of the study.

The researcher used the PEN 3 Model of health beliefs to formulate the quantitative questionnaire. The participants of the quantitative phase were made up of 401 villagers from two villages outside Mokopane town, Sandsloot and Tshamahansi.

6.2 Findings from Qualitative Data

These medical doctors indicated that the people of Mokopane knew of the existence of TB and immediately someone fell ill and began to cough they suspected a TB infection. Major findings from the qualitative data showed that residents of Mokopane lacked proper education about communicable diseases such as HIV and TB**.**

In Chapter 2, Makhado and Davhana-Maselesele (2011) argued that the South African Government was doing its best to communicate health-related messages across all

available media platforms to make sure that the message was understood by all citizens, irrespective of race and disability status. Still there are people who lack knowledge about TB.

Makhado and Davhana-Maselesele (2011) continued to highlight that, in South Africa, there were many non-profit organizations NGO's that supported and promoted interventions, such as Soul City and "We Beat TB" campaigns. Countless billboards displayed health safety rules for the prevention of diseases such as HIV and TB and these could be seen on the streets of the state (Makhado and Davhana-Maselesele 2011). Makhado and Davhana-Maselesele, (2011) further highlighted that flyers could be found in government departments, hospitals and clinics, aimed to educate the citizens about the prevention of chronic diseases and how to spot a TB patient.

Of the ten medical doctors interviewed, five believed there was a need for the Department of Health to educate the people of Mokopane about TB. Mokwena (2012) said in most communities, TB and HIV/AIDS patients are being discriminated against and excluded from community activities. Mokwena, 2012 highlighted that these patients are considered as disgraceful and are punished with rejection community members. Qualitative paticipants were of the view that the government should organize workshops for communities from various villages in Mokopane to educate residents about such communicable diseases if they want to reduce the numbers and rate of TB infections. They argued that the Department of Health could alternatively or in addition use social media networks to communicate these health messages. Such a view resonates with Gjengedahl (1994) who highlighted that health care workers needed to be clear when explaining to patients; and they need to help patients to see the importance of completing their full course of treatment

The Department of Health should also use the languages that are spoken in the villages to avoid the problem of a language barrier. People who cannot read should be invited to the workshops (orally) that will educate them in their own languages. According to Singhal, 2003, the Pen-3 model of health beliefs states that culture should not be excluded when planning to reduce TB infections, especially in the African context where the cultural context of different people in different geographical locations allows

people to understand the ways in which people from different ethnic groups are influenced.

The PEN-3 cultural model was designed to theoretically frame the impact of culture on the health behaviour of individuals. A Pen-3 model indicates that, that the level of education can also be influenced by parents, siblings, neighbours or friends. According to Cramm, Finkenflügel, Møller and Nieboer (2010), many rural patients do not believe that TB can be cured. The study conducted by Maputle and Donovan (2013) showed that the youth often indicated that as TB and HIV/AIDS patients, they are being supported by members of their families and, at times, their friends and relatives.

Further findings indicated that, almost all patients who are either HIV positive or infected by TB who seek medical help start from traditional healers first. Cramm et al, (2010) highlighted that greater knowledge about TB can be considered as being a good thing in most communities. Most study participants said the people of Mokopane believe that their ancestors have caused their disease and to be healed, they need to perform certain rituals under the supervision of prophets or traditional healers. This also clearly indicates that there is lack of knowledge about the true nature of TB in the area where the study was conducted.

The PEN 3 model was important for this study because it explored the role family structures played to assist or promote certain health behaviour. Airhihenbuwa (1999) validated this statement by highlighting that the impact of culture should not be excluded when plans are made to reduce TB infections, especially in Africa. Singhal, (2003) supported the statement made by Airihenbuwa and said “exploring the cultural context of different people in different geographical locations allows people to understand the ways in which people from different ethnic groups are shaped”.

This model was also used to investigate those cultural practices that could be dangerous and negatively impact people’s lives. Cultural practices come into play when Mokopane residents first consult traditional healers or prophets before going to medical doctors or health clinics for TB treatment. This means that the Mokopane residents trust traditional healers, pastors or prophets more than health practitioners.

6.3 Findings from Quantitative Data: Validation and Hypothesis Testing

The purpose of the study was to investigate the perceptions of Mokopane residents and their understanding and knowledge of TB. Moreover, the study investigated the perceptions of Mokopane residents regarding the causes of TB, how it is spread and prevented. The study further examined whether people of Mokopane had been properly informed about the existence of TB.

The aim of the study was thus to profile people's perceptions regarding health beliefs and the causes of the spread of TB and its possible prevention in Mokopane area.

The researcher used the PEN 3 Model of health beliefs to formulate the quantitative questionnaire. Participants of the quantitative phase were the 401 villagers.

Hypothesis 1 and Further Conclusions:

Hypothesis 1(0): All Pen 3 Cultural Model variables identified from the qualitative phase have a high level of significance in perceptions surrounding TB in the study area (p>0.05).

Hypothesis 1(A): All PEN 3 Cultural Model variables identified from the qualitative phase do not have a high level of significance in perceptions surrounding TB in the study area (p<0.05).

Hypothesis 1 (0) is the Null Hypothesis while Hypothesis 1(A) is the Alternative Hypothesis for Hypothesis 1. This hypothesis assisted this study to investigate whether all Pen 3 Cultural Model variables identified from the qualitative phase had any significance in perceptions of TB in the study area. The alternative hypothesis was that, all PEN 3 Cultural Model variables identified from the qualitative phase did not have a high level of significance.

When all variables in the questionnaire were analysed, an unacceptably low Cronbach Alpha score was obtained. This was also an indication that not all items were significant contributors to the phenomenon and thus, did not provide answers to Hypothesis 1.

The alternative hypothesis was accepted, which stated that all variables measured did not have a high level of significance in relation to the phenomenon in the study area.

This hypothesis was further confirmed by the results of Pearson correlations (c.f. Section 5.3.2).

What became important was to identify the variables that did significantly contribute to the phenomenon, and the Cronbach Alpha listwise deletion procedure was used in addition to Pearson correlation. A total of nine variables were identified which contributed significantly to the phenomenon, jointly providing a Cronbach Alpha score of 0,741. Only these nine variables were used for inferential analysis (c.f. Section 5.3.2 and 5.3.3).

To obtain the recommended .70 level of Cronbach Alpha reliability, all variables that did not correlate were deleted listwise with SPSS to obtain an acceptable correlation with the best level of reliability. This did not only ensure that only the significant variables were identified as required in hypothesis 1; but also, ensured the reliability of identified significant items. The Cronbach Alpha scored .741 when nine items from data collected were used for analysis. Although the criterion to determine the acceptable level of reliability was something that had not yet been thoroughly resolved, there were several recommendations and the most frequently cited recommendations advise that .70 or above amounts to an acceptable score. Only the nine variables identified were included. In Figure 5.6 the Cultural Identity of the study participants proved to be insightful. It showed that, 73.2% of participants understand the way TB was transmitted. It indicated that 26.3% of the participants did not believe that an infected person had been bewitched, while 26.3% agreed that they knew how TB was transmitted from one person to another. 2.5% of the participants were not sure whether TB could be transmitted by witchcraft. This shows that 2.5% of participants in the study area still lack knowledge about TB.

One of the three primary domains of the PEN 3 cultural model (Cultural identity) highlighted the intervention points of entry that influenced people to believe that TB could be transmitted by witchcraft. This means that the PEN 3 Model could help to explore the way family structures play an important role to assist or promote health behaviour. The statement proves that extended family friends or even neighbours might influence health decisions.

Only 26.3% of the study participants agreed that they knew how TB was transmitted from one person to another. This means that the remaining percentage of study participants were unsure or did not know how TB was transmitted. This was only one variable and the correlation could not be tested or compared alone, so there was no correlation or significant value.

The graph further indicated that 23.8% of study participants strongly did not believe that a person could catch TB from being bewitched, while only 15.9% did not know how TB was transmitted from one person to another. This means that there were 15.9% of participants who lacked knowledge of TB. The statement was also confirmed and complemented by the 2.5% who were not sure whether a person could be bewitched and catch TB, and this percentage could easily be influenced by people who believe that it was possible. Hypothesis 1 was rejected because this study discovered that not all variables had a significant effect on the phenomenon under investigation. Therefore, the alternative hypothesis appeared to be the one that was true and accepted. The nine identified items were tested for normality and found to be mostly non-normal, which led to the decision that these nine identified variables should be compared for correlation using the Pearson Product Moment Correlation. Only 2.5% of study participants were not sure whether a person could be bewitched and catch TB, while 73.2% did not believe that TB can be transmitted by witchcraft.

The article in the South African Government Report (2015) indicated that a person with active TB could quickly spread TB, and that one infected person could infect 10-15 people annually, while 70.7% of study participants did not agree that people with TB should be isolated from other community members.

From the nine identified items that were tested for normality cultural identity variables did not correlate and as such, they were deleted during Pearson Product Moment Correlation listwise deletion.

The Cultural Identity element of the model indicated that most people did not want to be isolated from their family members because there was a high number of percentages of participants who did not agree that people who were infected by TB should be isolated.

Also, 43.4% of the participants said that there was no harm in staying with a member of the family with TB. However, 31% were not sure whether this was advisable.
The model's cultural identity indicated that family members and neighbours of infected people, did not fear TB. This also indicated that culture plays a role in the spread of TB, because culturally, a sick person would traditionally live with family members for support and help. The infected person would be advised by family as to what treatment they needed.

Table 5.6 demonstrated that 4.7% of study participants were not sure whether to stay with infected family members or isolate those family members who have TB In contrast, 31.3% of study participants believed that a person with TB should not visit neighbours because they might spread the disease, while 7.7% strongly agreed that a person with TB should not visit neighbours because they might spread TB. This indicated that people who are living with TB were being discriminated against by community members.

Health practitioners who engage with community members about TB should be able to speak languages spoken by those community members. Otherwise, if the community members do not understand the language that the health practitioners use, they might continue to consult the traditional healers who speak their language. This was supported by a large correlation between Nurturers variable where the questions were whether health practitioners who engaged with community members about TB should speak their languages, and Existential Behaviours where the question was: whether study participants believe that medication from traditional healers could cure TB.

The two variables have a high correlation coefficiency of .139.

Those who were afraid to consult medical health clinics or professional medical doctors because of language barriers were prepared to seek help from a prayer, pastor, priest or prophet, as a cure for TB. Correlation coefficiency between the two variables was at .123. This means that people who did not believe in traditional healers tended to use prayers, holy tea and holy water, because they were afraid of a language barrier if they consulted medical professionals. In this case, the p. value of variables were all below .05.

Makhado and Davhana-Maselesele (2011) continue to argue that flyers can be found in government departments, hospitals and clinics which aim to educate citizens about the prevention of chronic diseases.

The research indicated that some of the participants were illiterate. Of the 401 participants, only 30 of them attained a tertiary qualification and this showed that if these messages are written in English only, then most people will not even attempt to read. More than 100 study participants cannot read what is written in their own language. Those who cannot read, should be afforded the opportunity to be educated by nurses who work in the health clinics in their villages. There are many ways that a person can be taught about communicable diseases such as TB. Several community radio stations could be used to disseminate information and educate the people. Community members could also be invited to the community hall where a stage play about TB could be watched to educate people who have had little formal education.

Hypothesis 2 and Further Conclusions:

Hypothesis 2(0): An independent variable was identified from the variables that had a high level of impact on perceptions of TB in the study area (p>0.05).

Hypothesis 2(A): An independent variable was not identified from the variables that had a high impact on perceptions of TB in the study area (p<0.05).

Hypothesis 2 was used to examine Pearson product-moment correlations coefficients between questions found suitable for analysis in the Relational Expectation 5 and Existential Behaviours 1-4. As indicated in Table 5.8, there was a .107 correlation coeffiency between the relationship and the question whether participants believed that it was possible to inherit TB from an infected forefather, and whether they believed that home remedies could help cure TB or not. A perception existed that holy tea and holy water and herbs from a traditional healer could accelerate the cure of TB. This might have been influenced by the education received from the forefathers because there was also a correlation coefficiency at .166 between the two variables.

Some of the participants who did not believe in medications from traditional healers preferred to use holy water or rely on prayer to cure TB. The correlation between what the forefathers had passed on at .158 further indicated that most participants people in Mokopane area trusted their traditional ways. Culture plays a considerable role in the area because most participants still believe in traditions.

Relationships and Expectations and Existential Behaviour variables indicate that there is a significant positive relationship between all the variables as displayed in Table 5.8. All variable's p. values were below .05 as displayed in the table. Therefore, the Pen-3 model assisted to identify proper relationships for these variables.

This further shows that culture and religion play a significant role and influence a person's health decisions. There is a relationship between an independent variable and all dependent variables. If their extended family members take medication or herbs

from traditional healers, and were not cured, then an unborn child could be at risk of being infected by the mother who might have TB.

Whilst the Pearsons correlations showed a high degree of correlation between different selected variables, dependent variables with associated independent variables were identified with four possible models. None of the regression models proved to be significant.

Based on this above-mentioned statement, the alternative hypothesis appeared to be true for hypothesis 2. Since the Pearsons' correlations were significant, but only between sets of variables and clearly not in a regression model, this is indicative that the relationships between individual variables should be studied independently using other statistical models, such as social factor analysis or even cluster analysis.

Hypothesis 3 and Further Conclusions:

Hypothesis 3(0): There was a correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions surrounding TB-related behaviour (p>0.05).

Hypothesis 3(A): There was no correlation between the identified dependent variable and other variables in the study in the determination of factors that influence perceptions surrounding TB-related behaviour (p<0.05).

It was evident from hypothesis 2 that the alternative hypothesis was true for hypothesis 3. Since the alternative hypotheses were true in all 3 hypotheses, the discussion of the model should make use of identified significant variables for discussion individually and not combine them in statistical models.

When the construct was used, it was found that 63.3% of study participants believed that traditional healers could cure TB, and this question had a p value of .034 with a Pearson correlation of .106*. Similarly, 4.7% believed that pastors could cure TB with prayer. The question of whether a traditional healer could cure TB scored the p value of .034 which was less than .05 with a Pearson correlation of .106*, while the question of

whether a pastor can cure TB with a prayer was at a p value of .001 and Pearson correlation of .158**.

This study showed that in the study area there is a very high percentage of villagers believed that cultural traditions would cure TB and sought these cures when they were infected. In contrast, research has shown that scientific, medical treatment cures TB. People still stick to their shared values, norms, and codes that collectively shape their beliefs, attitudes, and behaviour through their contact in and within their settings as has been indicated by (Airhihenbuwa, 1999). 14.9% strongly believe that, a traditional healer can cure TB while 77.4% of study participants do not believe that pastors can cure TB through prayer.

Even though Banerjee et al (2000) argue that most African traditional healers believe they can cure TB, Dutta (2007) highlighted that, African herbs need to be tested in laboratories to find out whether African medications can in fact heal diseases, such as TB or not.

According to Figure 5.9, 59.3% of participants consult traditional healers first before health clinics. In this case, the Pearson correlation is at .993** and the p value is at .000 ($p>0.05$). This means that the correlation is significant. This validate the Pen-3 model which stated that culture plays a very important role in a person's health decisions There was 2% who agreed that language impedes people from consulting health clinics, while another 2% was not sure whether the language barrier prevented people from attending a health clinic. 91.1% of study participants do not believe that lack of knowledge about TB was a result of a language barrier between health practitioners and community members. This further emphasises that culture has an impact in how a person behaves.

According to Maputle and Donovan (2012), most health practitioners especially in and around Mokopane come from Vhembe and speak tshiVenda and xiTsonga. Mokwena (2012) further indicated that in Mokopane people speak Sepedi which is another contributing factor that might lead to a communication barrier. Therefore, the language

barrier is a contributing factor that dissuades people from consulting health clinics and influences them to consult their churches or traditional healer.

There was a correlation between the question of whether people of Mokopane consult traditional healers before health clinics and whether language impedes people from consulting health clinics. The findings have indicated that some participants did not consult at health clinics because of possible language barrier. Language barriers were a contributing factor to why some community members did not consult health clinics. Figure 5.7 indicated that, out of 401 study participants, only 30 of them had a tertiary qualification.

Figure 5.7 indicated that 72% of participants did not believe that poor people were at risk of being infected by TB because of where they lived or the conditions in those areas. These variables were at the p value of .000 which was less than .005 ($p>0.05$). 86.8% of participants believe that wealthy people receive proper TB treatment. This might be because people who have more money are able to afford medical aid but the South African government provides free TB treatment for all. If that TB treatment could be taken following proper procedures, then those people might have been healed. People need to consult health professionals early and, complete the entire course of treatment However, 28% of study participants strongly disagree that poor people were mostly those who were seen to be at risk of TB. This might be because the standard of living and times have changed. The Cultural Empowerment of the PEN-3 Model of Health Beliefs indicates that there is high correlation between Existential Behaviours 3 and Existential Behaviours 4. This means that, the question of whether the poor people were at risk of being infected by TB and whether wealthy people received betterTB treatment than the poor people correlates well. The two variables correlate at the significance of p value of .000 and Pearson correlation was at .993**. This was the highest correlation because of the two asterisks that were at the end of the number .993 (**) and indicated that the Existential Behaviours variable was the most significant variable that was applicable to this model because it correlated with almost all variables. Existential Behaviours element was the most applicable variable in this study because it has appeared to correlate with almost all variables. The results have proved that most of the participants in this study think that people with money have access to

the best treatment, which might or might not be true. The lifestyle of poor people who are staying in townships also contributes to an increased chance of TB infection.

Table 5.10 summarises the correlations between Existential Behaviours variables under the Cultural Empowerment. These variables further address objectives outlined in Chapter 3 of this study. The perceptions that study participants have regarding, showed that culture plays a role in the thinking and the decision-making of these participants, it confirms that most study participants think that medication from traditional healers can cure TB. Existential Behaviours1 correlates with Existential Behaviours 2 at the coefficiency of .997. It further correlates with Existential Behaviours 3 at the coefficiency of .923. These two statements further confirm that culture plays a considerable role to shape the thinking and the behaviour of the people in the study area.

Existential Behaviours 4 confirms that religion and beliefs also come into play and contribute to the way the study participants behave or respond to a situation because it correlates with Existential Behaviours 1 at the coefficiency of .911. When some of the participants suspect, they are infected, they consult a pastor or a prophet first to help cure the disease with a prayer, holy water or holy tea. Some even use holy oil. The relationship between Existential Behaviours variables is at the p.value of .000 at all variables. This was a clear indication that there was a strong relationship between all these variables. Dutta (2007) highlighted that, in the past ten years, available evidence focusing on the role that culture plays on health has increased. Culture in this context refers to shared values, norms, and codes that collectively shape a group's beliefs, attitudes, and behaviour through their contact in and within their settings (Airhihenbuwa,1999). Exploring the cultural context of different people in different geographical locations allows people to understand the ways in which people from different ethnic groups behave towards certain things such as chronic diseases like TB. This includes the way they interact with each other and the messages that they communicate among each other (Singhal, 2003). Therefore, the PEN-3 model was important to explore the way family structures play a vital part in assisting or promoting positive health behaviour.

Even though the PEN-3 Model argues that that culture plays a very big role in determining a person's health decision, out of all four independent variables there was no significant relationship between the independent predictors and the dependent variable Furthermore, Hypothesis 3 was rejected because out of all four independent variables there was no significant relationship between the independent predictors and the dependent variable. There was no correlation between the identified dependent variable and other variables in the study in determination of factors that influence perception surrounding TB related behaviour ($p<0.05$). The Null hypothesis was rejected, and the Alternative has proved to be true because, there was no significant relationship between the independent predictors and the dependent variable.

Furthermore, in Table 5.12 of Regression of Relationships and Expectations as a dependent variable on Existential Behaviours as an independent variable, the model summary table indicates that the R-square of .039 is significantly greater than (Zero) 0 because the P value under the Sig label in the Anova table is less than .05. Since the p-value is less than .05, the predictors can account for the significant amount of variance in the dependent variable. In other words, the overall regression model was significant.

The independent variable which is at the p-value of .027 is a significant predictor of the dependent variables because its p-value is less than .05. This means that, participants believe that since they believe that TB can be genetically transmitted, holy tea or holy water from church or herbs from a traditional healer can increase the speed of their TB cure. The Pen-3 model has assisted the researcher to find the proper relationships for these variables. Therefore, culture and religion in this case play a significant role in influencing a person's health decisions.

From the overall study, it can be witnessed that 63.3% of study participants believe that traditional healers can cure TB. Furthermore, 59.3% of study participants consult traditional healers first before consulting at health clinics or medical doctors when they are sick while 4.7% strongly agree that they consult traditional healers before going to health clinics.4.7% believes that pastors can cure TB through a prayer.

Some participants felt language barriers and resultant miscommunication discouraged them from consulting healthcare professions. Some participants believe that when a person has TB, it is some curse from their ancestors while other participants think that they have been bewitched. Therefore, a prophet, a pastor or a traditional healer would be the solution to this curse. This also clearly indicates that there is lack of knowledge about TB in the area where the study was conducted. 6.5% of participants who are still not sure whether professional health practitioners can cure TB. Instead, they do not believe in scientifically tested medications, they either rely on traditional cures. Results from this study indicated that, 31% of study participants are not sure whether to stay with a person who has been infected by TB in the same house or not. This is a clear indication that Mokopane residents still need to be educated about TB because most of them don't even have proper formal education as they only attended primary and secondary level. Traditional levels of education are not relevant to TB education.

6.4 Research Recommendations

It is therefore recommended that the Department of Health, church leaders, traditional leaders and the communities of both villages work together to educate each other about TB. Workshops and seminars need to be conducted weekly or at least twice per month. These workshops should be conducted in the languages that everyone will understand and at a convenient time when everyone can attend, including those who work during the day. They can either be conducted during weekends or afterhours. It is also important for the Department of Health to train traditional healers and church leaders to enable them to educate the people who consult them. It is also recommended that the medical doctors who practice in Mokopane area and those who are working for government hospitals learn the languages that are spoken by Mokopane residents. The demographics reflect that only few people in Mokopane can speak or understand English. Mokopane residents who can understand English could educate their family members about the importance of consulting professional health practices when they suspect they have TB. It is further recommended that hospitals and health clinics use information from this study to inform residents about the importance of health clinics or hospitals when they have TB. Although most people know that TB exists, most of them do not know how to prevent infection. It is, therefore,

recommended that residents of Mokopane attend workshops on these matters to solve the problem of rising TB cases. The researcher suggests that, people such as traditional healers, nurses, pastors and prophets should be involved as study participants in further research.

6.5 Link between previous studies and findings

The PEN-3 model of health beliefs states that culture should not be excluded when planning to reduce TB infections, especially in the African context where the cultural context of different people in different geographical locations allows people to understand the ways in which people from different ethnic groups are influenced (Singhal, 2003). The PEN-3 cultural model was designed to theoretically frame the impact of culture on the health behaviour of individuals hence it was used by the researcher to theoretically frame this study.

In most instances, the findings from this study concurred with those of previous research. In only a few instances an increase of knowledge about TB by community members was found to be needed. This is caused by high illiteracy level and the lack of proper hygiene in the study area. 90.6% of the participants believed that most people in Sandsloot and Tshamahansi still lack knowledge of TB. This could be a contributing factor in the increase of TB infections in Limpopo. According to StatsSA (2014), as indicated in Chapter 2. Only 2.7% of the participants disagreed that a lack of knowledge could be the contributing factor to an increasing number of TB cases in the Mokopane area.

Evidence from the research findings illustrates that even though there is no scientific research about herbs from traditional healers healing diseases like TB, most people in the study area still believe that herbs from traditional healers can cure TB. 63.3% of study participants believe that traditional healers can cure TB. Furthermore, 59.3% of study participants consult traditional healers first before consulting at health clinics or medical doctors when they are ill while 4.7% strongly agree that they consult traditional healers before going to health clinics.4.7% believes that pastors can cure TB through

a prayer. As illustrated by Airhihenbuwa's Pen-3 Model, cultural context shapes health beliefs, practices and family systems play a critical role in enabling or nurturing positive health behaviors and health outcomes. Singhai (2003) believed cultural beliefs were vital for effective and sustainable public health involvement.

To understand methods used by residents in the Mokopane area and to prevent the spread of TB, the study found that some participants believe that when a person has TB, it is some curse from their ancestors while other participants think that they have been bewitched. Therefore, a prophet or a pastor or a traditional healer would be the solution to this curse. This also clearly indicates that there is lack of knowledge about TB in the area where the study was conducted. 6.5% of participants were still not sure whether professional health practitioners can cure TB. According to Mokwena (2012), in most communities, TB and HIV/AIDS patients are being discriminated against and excluded from community activities. Mokwena (2012) has indicated in chapter 2 that these TB patients are considered as disgraceful and are punished with rejection by community members, including their family members sometimes. This has been proved to be true because 4.7% of study participants are not sure whether to stay with infected family members or isolate them until they are fully cured while 31.3% of study participants believed that a person with TB should not visit neighbours because they might spread the disease. 7.7% of study participants strongly agreed that a person with TB should not visit neighbours. Therefore, it is evident that there are still people who still need to be taught about TB and other related communicable diseases. Herbs from traditional healers should be tested whether they can cure TB. Moreover, holy tea and a prayer from pastors and prophets must also be tested whether they can cure TB when used alone without taking any medication.

In one of his articles, Airhihenbuwa (1999) mentioned that, in order to explore the influence of culture on individual health, it is important for researchers to understand the influence that culture has in health decisions of most people. This study shown that, culture plays a considerable role in influencing people's health decisions. This is proved in the instances such as findings from the qualitative data where Respondent 4 said: "*We grew up using the African herbs to heal our diseases and here we are,*

alive and healthy, nothing wrong has happened to us. We are where we are today because of traditional healers". This is also a clear indication that family members, extended family members and neighborhood have a big influence on every individual. Their influence may be positive or negative. The surroundings of where a person grew up plays a very important role in a person's life. As indicated by Airhihenbuwa (1999) in chapter 2, the PEN-3 Cultural Model contextualizes the role of culture in shaping of and actions towards health and illness.

Tables, Patterns and Results for Multiple Linear Regression shows high level of significat correlation. This can be witnessed on Table 5.7 which indicates a strong correlation between Extended Family 3 and Existential Behaviours 1, 2 and 3. This implies that, there is a correlation between study participants who believe that TB can be genetically transmitted and the perception of those who say medication from traditional healers can cure TB; those who say the use of alternative medicines and home remedies can help cure TB and those who believe that holy tea and water from church or herbs from a traditional healer can fasten the process of curing TB. Furthermore, there was a strong correlation between Nurturers and Existential Behaviours 1 and 2. This implies that the question about whether health practitioners who engage with community members about TB should be able to speak the local languages of a specific area has a strong correlation with the question of whether medication from traditional healers can cure TB and the one which ask whether the use of home remedies and alternative medicines can help cure TB.

The Cultural Empowerment dimension helped to expose information that the extended families believe that holy water or herbs from a traditional healer can also be used to speed up the cure of TB and they transfer this information to younger generations. This proves that the Cultural Identity Domain of the PEN-3 Model is valid. This was proved by the results from the area where data was collected. According to PEN-3 cultural model, the Cultural Identity Domain highlights the intervention points of entry and these may occur at the level of person such as parents or even healthcare worker, extended family members such as grandmothers or neighbourhoods such as communiies where a person stay.

In Table 5.10, Existential Behaviours element is the most significant variable that is applicable to this model because it correlates with almost all the variables as a dependent or independent variable after Cronbach Alpha listwise deletion procedure has been applied. The Null hypothesis has been accepted because there was a correlation between the identified dependent variable. Here the Existential behavior of Cultural Empowerment domain has played a very important role in addressing the problems associated with TB. As indicated by Airhihenbuwa (1995), PEN-3 Cultural Model offers an organizing frame to centralize culture when defining health problems and framing their solutions. The PEN-3 Cultural Model has assisted to achieve these results. This further shows that culture and religion play a significant role and influence a person's health decisions. There is a relationship between an independent variable and all dependent variables. If their extended family members take medication or herbs from traditional healers, and were not cured, then an unborn child could be at risk of being infected by the mother who might have TB.

As indicated in Table 5.8, there was a .107 correlation coeffiency between the relationship and the question whether participants believed that it was possible to inherit TB from an infected forefather, and whether they believed that home remedies could help cure TB. A perception existed that holy tea and holy water and herbs from a traditional healer could accelerate the cure of TB. This might have been influenced by the education received from the forefathers because there was also a correlation coefficiency at .166 between the two variables. As indicated by the PEN-3 Cultural Model, the high correlation of this hypothesis further indicates that data from the study area shows that people still believe that holy tea and herbs can cure TB. Studies such as an article by Gjengedahl (1994) argued that there should be clear, two-way communication between health care workers and their patients. Healthcare workers must educate their patients and people in the communities where they work.

Hypothesis 3 of this study showed that in the study area there was a very high percentage of villagers who believed that cultural traditions would cure TB and sought these cures when they were infected. In contrast, research has shown that, so far, only

scientific, medical treatment cures TB. People still stick to their shared values, norms, and codes that collectively shape their beliefs, attitudes, and behaviour through their contact in and within their settings as has been indicated by (Airhihenbuwa, 1999). 14.9% strongly believe that, a traditional healer can cure TB while 77.4% of study participants do not believe that pastors can cure TB through prayer. Even though Banerjee et al (2000) argue that most African traditional healers believe they can cure TB, Dutta (2007) highlighted that, African herbs need to be tested in laboratories to find out whether African medications can cure TB.

6.6 Limitations of the Study

This study used both qualitative and quantitative research methods, which are advantageous as they broaden the study and make it more in-depth when compared to a single approach. The researcher handled the qualitative, while assistance was sought with the quantitative part of the study. The use of both research methods and the analysis of both sets of data was time consuming.

6.7 Further Research

In the qualitative phase, 63.3% of study participants believe that traditional healers can cure TB. Furthermore, 59.3% of study participants consult traditional healers first before consulting health clinics or medical doctors. 4.7% strongly agree that they consult traditional healers before going to health clinics and a further 4.7% believe that pastors can cure TB by prayer. This indicate that there is a lack of knowledge about TB in the two villages where the study was conducted. Further research could be conducted to investigate whether people infected with TB are healed by traditional healers, pastors or prophets, holy water, oil or prayer alone, could be examined.

6.8 Final Reflections

This study may help the Department of Health to understand the causes of continued, increased numbers of TB cases in rural areas, not only in Mokopane area but also in other parts of the country. The study may also inform and educate people in other villages, including those in Mokopane area, and encourage them to consult relevant medical professionals, health clinics or hospitals when they are ill, because some diseases can be cured when they are detected at an early stage. The researcher has learned a lot about TB and the perceptions of people about the disease. This will assist the researcher to also educate other people about TB where possible and to also advise people to seek professional help when they are not feeling well or when they suspect that they might be infected with TB.

To sum up it is important to mention that, communicable diseases such as TB, if discovered at early stages can be cured if proper procedures and treatment are followed. Therefore, as soon as people suspect that they might be infected, they should be tested at the clinics or medical doctors' practices. However, it is the duty of all citizens of this country to make sure that they keep informed about diseases from information that is available to them from the government. The traditional leaders should also allow health care workers to conduct health related workshops in their areas and giver permission for use of community halls etc. Traditional healers, pastors, prophets and villagers should attend these workshops to educate themselves for the benefit of their own lives and the lives of their community members.

The aim of the study was to profile people's perceptions towards health beliefs and the causes that have led to an increase in the spread of TB in the Mokopane area. The objective of the study was met, since recommendations have been supplied, by the researcher that may help the responsible stakeholders (government and members of the community) to find solutions to the TB problem.

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Appendix A: Qualitative questions to research informants

To obtain results relevant to the study, the researcher asked the following questions:

- According to your understanding, do you think people from villages around Mokopane understand the way TB is bio-medically transmitted?

- Do you think that they know how to prevent it?

- Do you think people in this area believe that TB exists and what makes you believe in the answer that you are about to provide?

- According to your understanding do you think most people residing in the Mokopane area know how to avoid catching TB? Please elaborate.

- Since you started practising in this area, do you think the government is doing enough to educate Mokopane residents about TB and other diseases? Elaborate.

- Do you normally educate your patients about diseases when they have diseases such as TB or do you just give prescriptions without explaining the causes of the disease and how to prevent it?

- Have you ever come across a billboard or any piece of written material with information about TB within the area of Mokopane?

- Have you ever visited any Hospital or Clinic in the Mokopane area and found printed information that educates visitors about TB?

- If yes, was it in the language that you think they will understand?

- Based on your experiences in this area, what are comments that you have heard about people with TB from this community or from your patients?

- Have you heard about anyone who is sick, perhaps coughing and taking treatment from traditional herbalists or traditional healers?

- What do you think might have led some of the patients to take treatments from traditional healers?

- Do you sometimes get traditional healers who have TB and seek treatment from you?

- Do you sometimes refer your patients to traditional healers for help with TB and other diseases?

- Is it advisable for a person with TB to receive treatment from both a professional health care practitioner and a traditional healer simultaneously and what are the possible outcomes from that kind of treatment?

Appendix B: Quantitative questions to research informants

QUESTIONS TO RESEARCH INFORMANTS

Section A: Demographics

Age: 16-25 ☐ 26-35 35+ ☐ ☐

Ethnicity: African ☐ White ☐ Indian ☐ Coloured ☐ Other ☐

Gender: Male ☐ ☐ Female

Level of education: Primary School ☐ ☐ Secondary School ☐ Grade 12 ☐ Tertiary

Level of ☐ Income: R00-R50Kpa ☐ R60K-R100Kpa ☐ R110-200Kpa ☐ R300-1Mpa

Section B: Likert scale questionnaire Section 1 – Perceptions regarding Causes, the Increase in the Rate of Spread of TB

No.	Name	Abbreviation
1	Strongly Disagree	SD
2	Disagree	D
3	Neutral	N
4	Agree	A
5	Strongly Agree	SA

Please indicate to what extent you agree with the following statements by circling the appropriate number.

1.1 Cultural Identity (helps to define the targeted participants)

1.1.1 Persons:

		SD	D	N	A	SA
1	I understand the way TB is medically transmitted	1	2	3	4	5
2	I do not believe that a person can be bewitched and catch TB	1	2	3	4	5
3	If I catch TB, I can receive treatment from a professional health practitioner and be cured from TB	1	2	3	4	5
4	TB can be transmitted through contaminated food	1	2	3	4	5
5	Evil spirits cannot attack a person in the form of TB	1	2	3	4	5
6	Anyone can catch TB if they reside in a dusty and unclean environment	1	2	3	4	5
7	The only tested treatment that can heal a person with TB can be received from a medical doctor/clinic	1	2	3	4	5

1.1.2 Extended Family:

		SD	D	N	A	SA
1	If I suspect that one of my family members has TB, I should advise them to go for a TB test at a local clinic or medical doctor	1	2	3	4	5
2	If one member of my family has TB, we stay with that person under one roof. If they are taking treatment, they will not infect other members	1	2	3	4	5
3	TB can be genetically transmitted	1	2	3	4	5
4	If one member of my family has TB, they must be isolated from others while they take treatment to avoid	1	2	3	4	5
	infecting others until they are healed					

5	Ancestors can send TB into a person's respiratory system if that person does not act in the way the ancestors wants them to act	1	2	3	4	5
6	It is possible for a new-born baby to be born with TB	1	2	3	4	5
7	If another member of the family and I are TB taking treatment from the same clinic, then, if I finish my medication for the treatment, I can use some of his/her medication	1	2	3	4	5

1.1.3 Neighbourhood:

		SD	**D**	**N**	**A**	**SA**
1	It is not the duty of the chief/induna to determine whether the person with TB should be isolated or not	1	2	3	4	5
2	If a member of the family has TB, It should be a family's secret and never be shared with other community members	1	2	3	4	5
3	It is the duty of all community members in this area to ensure that those with TB get TB treatment and support	1	2	3	4	5
4	A person with TB has the right to receive treatment in privacy without telling other family members	1	2	3	4	5
5	The Municipality and the Department of Health should make sure that medications for TB are supplied and are always available at local clinics	1	2	3	4	5
6	It is the duty of the Department of Health and the local municipality to ensure that community members in this area receive workshops regarding the prevention of TB and how to cure TB	1	2	3	4	5
7	A person with TB should not visit neighbours because he/she will infect them with TB	1	2	3	4	5

Section 2 – Indigenous and Relative Measures in order to prevent/cure TB

2.1 Relationships and Expectations 2.1.1 Perceptions

		SD	D	N	A	SA
1	If I catch TB, I can receive treatment from a traditional healer who can successfully heal me from the disease	1	2	3	4	5
2	Treatment of TB from a hospital or clinic will have the same effect as treatment from a traditional healer	1	2	3	4	5
3	It is acceptable to receive treatment from traditional healers and medical doctors simultaneously	1	2	3	4	5
4	A person living with TB should not shake hands with others as a form of greeting	1	2	3	4	5
5	I can catch TB because one of my forefathers died from it	1	2	3	4	5
6	A person can be healed from TB after the pastor has prayed for him/her	1	2	3	4	5
7	Holy water from pastors, prophets or priests can cure TB	1	2	3	4	5

2.1.2 Enablers

		SD	D	N	A	SA
1	The only way to reduce the rising number of TB infections in this area is through TB testing and those with TB must start to take proper TB treatment from health clinics	1	2	3	4	5
2	Traditional healers should also be trained about how to cure TB	1	2	3	4	5
3	Medical practitioners should start to work with traditional healers to help reduce TB infections	1	2	3	4	5

4	Holy water cannot heal TB, people should get treatment from health clinics if they want to be cured	1	2	3	4	5
5	Treatment from a traditional healer cannot heal TB	1	2	3	4	5
6	Community members should frequently visit health clinics for TB testing and other diseases	1	2	3	4	5
7	Indunas, Chiefs and Kings should allow health practitioners to visit community members with TB if they want to reduce a rising number of TB infections	1	2	3	4	5

2.1.3 Nurturers

		SD	D	N	A	SA
1	People who come to provide health training should use Sepedi (in Ga-Mabusela) and Xitsonga (in Tshamahansi). (languages that are spoken in those areas)	1	2	3	4	5
2	Not all community members understand English	1	2	3	4	5
3	Medical practitioners are always in a hurry and do not spend adequate time addressing patient needs	1	2	3	4	5
4	Most people in this community have a fear of going for TB testing	1	2	3	4	5
5	Most people in this area who are sick with any disease start at the traditional healer before they go to health clinics or medical doctors for a consultation	1	2	3	4	5
6	Most community members do not trust medication from health clinics more than medication from traditional healers	1	2	3	4	5
7	Most people are afraid of consulting at health clinics or medical doctors because of language barriers	1	2	3	4	5

Section 3 – Knowledge of TB and Communication about TB

3.1 Cultural Empowerment

3.1.1 Positive Behaviours

		SD	D	N	A	SA
1	People with TB also wants to live and spend most of their time with their families; they should not be isolated from others	1	2	3	4	5
2	Churches are valuable places in this community and should be used as support to educate people about TB	1	2	3	4	5

3	Every community member should go for regular health	1	2	3	4	5
	check-ups					
4	People should not travel long distances to receive TB treatment	1	2	3	4	5
5	It is the duty of both the government and community members to ensure that the rising number of TB infections is put under control	1	2	3	4	5
6	Traditional healers should work with medical health practitioners to heal diseases	1	2	3	4	5
7	A healthy community is the one which receives frequent education regarding different kinds of diseases	1	2	3	4	5

3.1.2 Existential Behaviours

		SD	**D**	**N**	**A**	**SA**
1	Medication from traditional healers can cure TB	1	2	3	4	5
2	The use of alternative medicines and home remedies can help cure TB	1	2	3	4	5
3	Holy tea and water from church or herbs from a traditional healer can accelerate the process of curing TB	1	2	3	4	5
4	A prayer from a pastor or a priest or a prophet can cure TB	1	2	3	4	5
5	Use of herbs can bring negative results and can prevent a patient from receiving proper treatment	1	2	3	4	5
6	A person with TB should only use treatment from a medical doctor or from a health clinic	1	2	3	4	5
7	TB can be transmitted from shaking of hands and from a deep kiss	1	2	3	4	5

3.1.3 Negative Behaviours

		S	**D**	**N**	**A**	**S**
		D				**A**
1	Most people get infected by TB is because of a lack of knowledge	1	2	3	4	5
2	Most people only go to see health practitioners or medical doctors when they feel the disease is out of control	1	2	3	4	5
3	People who do not have money (poor) are the ones who are at risk of being infected by diseases such as TB	1	2	3	4	5
4	A person needs to have a lot of money in order to receive proper TB treatment	1	2	3	4	5
5	Most community members don’t know where to go to receive proper care for TB	1	2	3	4	5
6	Most community members trust traditional healers more than medical doctors and nurses	1	2	3	4	5
7	A Language barrier is the driver for community members not to consult at health clinics and with medical doctors	1	2	3	4	5

Appendix C: Consent Form

Faculty of Humanities, School of Languages and communication Studies

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September 2017

RESEARCH MASTERS FORM: KEY ROLE-PLAYERS ON COMMUNICATION OF HEALTH BELIEFS AND THE SPREAD OF TB AT MOKOPANE AREA.

I, ... (name), declare that I give consent to the interview. I have read and understood the terms and conditions as described in the information sheet to interviewees in the category key role-players on communication of health beliefs and the spread of Tuberculosis (TB) at Mokopane General Hospital and trust that information disclosed will be kept private and confidential.

I do understand that I am entitled to have a Language translator present and request/do not (underline) request the presence of such a translator. I furthermore understand that I am under no obligation to answer any or all of the questions posed and am participating in the interview of my own free will. I am also aware that the information in this study will be published and I will not be identified in any way and that my information will remain confidential.

I give consent to the following terms:

1. I have read and understood the terms and conditions of this study

2. I understand the risks and procedures of this study

3. I agree that information in the discussion will be recorded

4. I am aware that I should retain a copy of this Consent Form for future reference

Signature……Date……..

Appendix D: Ethical Clearance

University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 2212, Fax: (015) 268 2306, Email:noko.monene@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE CLEARANCE CERTIFICATE

MEETING:	04 July 2017
PROJECT NUMBER:	TREC/108/2017: PG
PROJECT:	
Title:	Perceptions of health beliefs and the spread of Tuberculosis (TB) in the Mokopane Area, Mogalakwena Municipality
Researcher:	Mr LP Mashishi
Supervisor:	Dr I Saunderson
Co-Supervisor:	N/A
School:	Languages and Communication
Degree:	Masters in Communication Studies

PROF TAB MASHEGO
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: **REC-0310111-031**

Note:
i) **Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.**
ii) **The budget for the research will be considered separately from the protocol.**
PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

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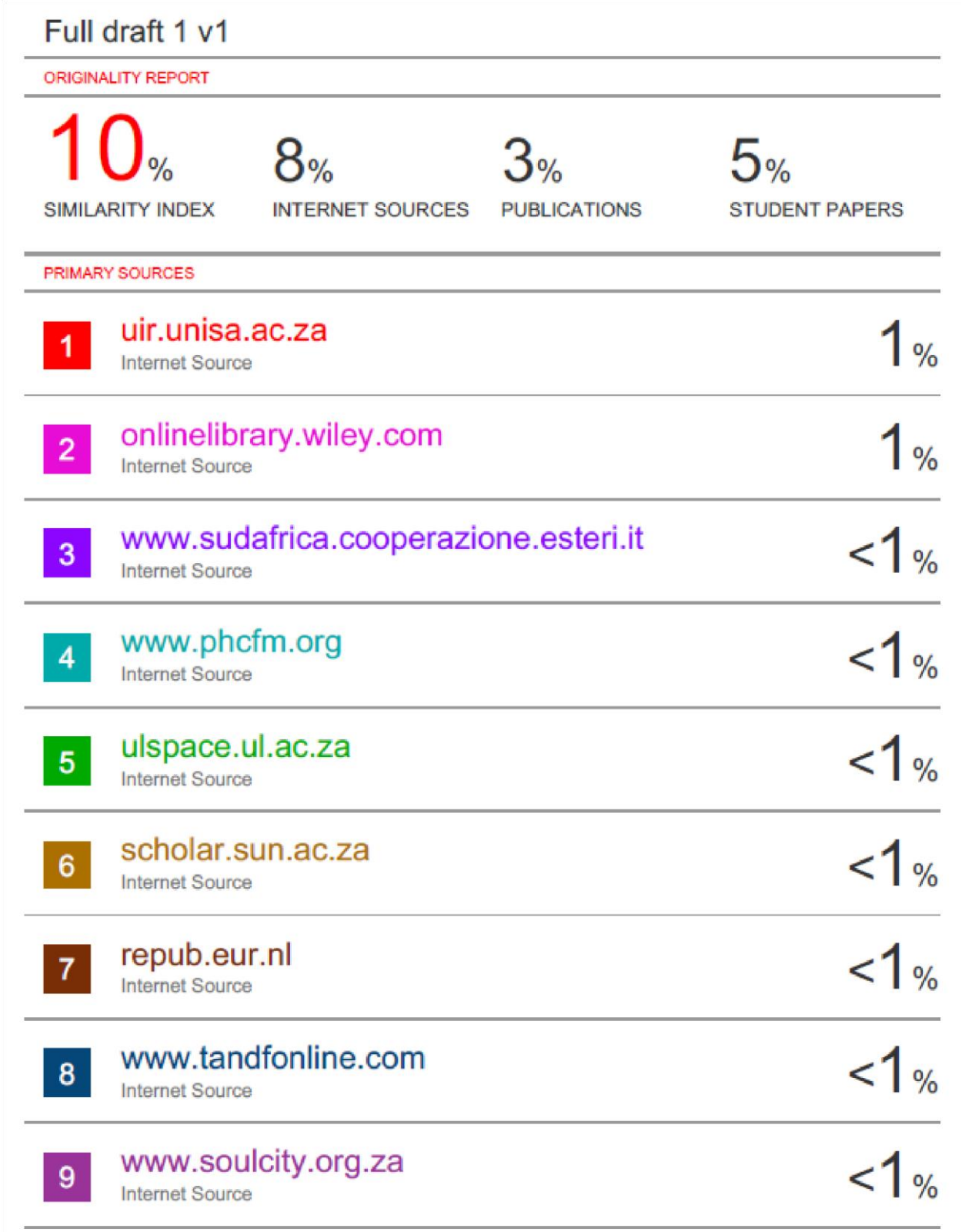
Appendix E: Turnitin Report



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Appendix F: Editor's Letter of Reference

Editing Certificate

Student: LP Mashishi

Topic: Perceptions of Health Beliefs and the Spread of Tuberculosis (TB) in the Mokopane Area, Mogalakwena Municipality.

This thesis was edited to correct and improve the grammar, syntax, expression, logic and general standard of writing.

December 2020

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Appendix G: Summaries from participants

Respondent 1

According to Respondent 1 (who has been practising in Mokopane area for the past 30 years) most people from the villages of Mokopane understand the way TB is biomedically transmitted, but they do not know how to prevent themselves from being infected by TB. He said that the people of Mokopane area believe that TB exists because they are infected with TB when someone starts coughing. The respondent continued to say that the government is doing its best to educate all South African citizens, but it is not enough.

He stipulated that it is not only the duty of government to educate citizens, but also employers and everyone who has knowledge about TB and other diseases such as HIV. "*Clinics and hospitals should go out to the people to educate them about these diseases*," he said. He said that he educates all his patients about the diseases that they have and what the causes of those diseases might be before he treats them.

Respondent 1 further explained that he usually comes across posters and flyers that inform people about TB and other diseases, such as cancers and HIV, in the Mokopane area and those materials were written in Sepedi, IsiZulu and in English:

> *"I have never seen any poster or flyer written in Xitsonga and this area is for people from all cultures. They should write in all eleven official languages because it is a mining area and there are many people who don't speak or understand the languages that are spoken in this area such as Xhosa speakers"*

Respondent 1 highlighted that 80 percent of his patients, especially those with TB and HIV, start at traditional healers before they go to see him. He said that he is always seen as the last option when traditional healers have failed to cure the disease. He believes that culture is the driver of this perception and also the belief of that person or his/her families. He further said that others believe that a prayer and what is known as holy water can heal TB and HIV.

"*Others starts at church before they come to me, I am always seen as the last option when their method of healing has failed*," he said.

He further explained that most TB patients come to consult when the TB has advanced to the final stage and there are already a lot of complications involved. Respondent 1 said he gets a lot of traditional healers who have TB and are seeking help from him. He doesn't refer his patients to traditional healers because their medicines and herbs are not tested.

He also said, "The cause of the rise of TB in this area is driven by many factors. Those factors include; the rising number of HIV infections in people who are not aware and who have never been tested before, poor diagnoses from hospitals, the level of education in the rural areas of Mokopane, poverty, work and the environment in which these people are staying.

Respondent 2

Respondent 2 said that he did not believe that residents of Mokopane understand the way TB is bio-medically transmitted. He added that the social standing of the people is what determines their beliefs. According to him, the more rural an area is, the more likely one likely find people who still lack information about these diseases.

"*Only educated people understand this kind of disease*," he said.

He also explained that since he started practising in the Mokopane area, he hasn't seen any billboard or poster about TB in the Mokopane area. However, he

has seen pamphlets about TB at Mokopane hospital and they were written in Sesotho and English. When asked about educating his patients about every disease before treating them, he said that he only explains to patients who are open to listening to what he is telling them. He further explained that there are some residents in the Mokopane area that cannot even construct a sentence in English, and he doesn't even waste his time and energy on them. Those that do not understand English he just gives prescriptions. However, approximately 60 percent of his patients understand English, so he explains to them before he prescribes their medication. He said that a lot of patients seek help from traditional healers first before coming to the western type of medicine. He further said, "*The more rural the setting the people come from, the more they will go to traditional healers for help*".

Respondent 2 said he had never seen or helped a traditional healer before. In fact, since he started practising at Mokopane, there had never been a single traditional healer who came to consult at his practice. He added that the reason why most people take treatment from traditional healers is peer pressure, fathers and mothers of these patients' beliefs, or maybe the beliefs of those patients brought about by their upbringing. He said it is not advisable for a person to take treatment from both traditional healers and professional medical doctors at the same time because he doesn't know what herbs the traditional healer gives to these patients, and he doesn't even know the size of dosage that they give to patients.

Respondent 3

Respondent 3 said that she believes that 90 percent of Mokopane residents know what TB is and they also understand the way TB is transmitted, especially the youth and some educated adults. She further explained that there are advertisements about TB and HIV campaigns on televisions and radio stations. Those who have access to either television or radio will obviously know what TB is because those advertisements clearly explain what TB is, and how to prevent

infecting oneself or others. "*They know how to prevent TB, but it is difficult for them to prevent themselves from catching TB*," she said.

She said public transport was one of the risky areas in which most people could be infected. She further emphasised that people get TB from public clinics or hospitals when they visit for minor illnesses such as influenza, and they find themselves next to a TB patient most of whom do not cover their mouths when coughing. It is due to this that this disease infects most people.

Respondent 3 said there is a very small percentage of people who do not believe that TB exists because people have different beliefs. She is of the opinion that the government is doing enough to educate the citizens of this country as a whole because there are TB awareness campaigns. She believes that the awareness campaigns of TB on radio stations and television channels are paid for by the government:

> *"I always make sure that I educate my patients about any disease that they have and also those who are staying with the patient."*

The room in which the interview was conducted had a poster about TB and at the reception area of her surgery they had pamphlets about TB which were written in English, Sesotho and isiZulu.

"*As black people, when we start seeing things that are not usual, we get surprised then we either go to the prophets or traditional healers to seek help*," she said. She said 90 percent of her patients start somewhere else before they come to see her for a consultation. She said when they don't improve, that is when they go to her to seek help. "*It is our tradition*," she explained. She further said some people will start with the medical doctor and, if they are not satisfied with the answers that they get here, then they proceed to the traditional healers.

"*I have a lot of patients who are traditional healers who consult from me when they are not feeling well,*" she said.

She further explained that it is not advisable for patients to take treatments from both professional medical doctors and from traditional doctors but they, as medical doctors, cannot stop their patients from drinking herbs from traditional healers because it is their belief. "*We can only advise them*," she explained. She said it is dangerous to use both treatments at the same time because the traditional herbs are not tested. Western doctors also do not know what herbs will do in the patient's body when they drink them. "*Sometimes you may find that the herbs are more powerful than TB itself*," she concluded.

Respondent 4

Respondent 4 said that most patients from Mokopane understand what TB is and most of them even ask for some advice about TB. He added that some of those who had been coughing for some time come to him for consultation. He said that he always makes sure that he educates his patients about whatever disease they have before prescribing their medication. "*I am sure that if a person knows what is happening in their lives, they will take their medication as prescribed because they will want to be healed*," said Respondent 4.

When asked about the contribution of government in educating citizens about TB, he said that he doesn't work for the government but the last time he visited a public hospital in the Mokopane area, he saw some posters about TB and HIV but that was not enough. He continued to say that he has seen billboards about TB around Mokopane but that was a long time ago, and they were written in Sepedi and English. He suggested that the government should also do these advertisements in Afrikaans as well to accommodate Afrikaans speakers. He added that most of the population of Mokopane trust traditional healers more than the western type of medicine. "*Even when they know what the problem might be, they will still go to consult with traditional healers*." Some people will go to consult a traditional healer before they come to see a professional medical practitioner

while some prefer going to see their traditional healers after consulting with professional medical doctors. He said traditional healers will not know if a person has TB or not because they do not have the tools to test patients for TB. *"I sometimes get traditional healers who have TB seeking help from me, not only for TB but also some other diseases as well*," he said. Respondent 4 doesn't refer his patients to traditional healers because according to him, their medicines are not proven.

> *"I can only refer them if it is a psychological thing and traditional beliefs related. I do not know what traditional healers mix together when they make medicines. If it is just herbs, then they will not cause problems in a human's body, but there are those who mix their herbs with some parts of animals and that are (sic) where the problem lies," he said.*

He said that he once had a patient who was very sick because the traditional healer had given her the wrong medication. "*That patient was given crushed parts of an animal and she started having severe kidney failure because of that*," he explained. He added that the patient was lucky to have noticed this early. He said if that patient had waited longer, she might have died. This respondent concluded by saying that the number of HIV positive patients is increasing in Mokopane, hence TB is also rising. HIV infections contribute a lot to the increasing number of TB patients. There are a lot of people who refuse to be tested and who are busy spreading this disease because they do not know their statuses. Again, there is a smaller percentage of people who are staying with TB patients in a smaller area or house. This also contributes to the increasing number of TB patients.

Respondent 5

Respondent 5 said that the government conducts a lot of health-related programmes. He said that in such programmes, professional medical doctors or health practitioners meet up with community members and advise them about practising good health and how to conduct themselves when they have TB. He also mentioned that even on national television and radio stations, there are advertisements about various awareness campaigns. "*If ever there are people who don't know about TB, then it means that the government is not doing enough*," he explained. He added that public hospitals have a lot of printed materials about all sorts of diseases and they even have pictures for demonstration.

Respondent 5 believes that pictures alone, without text, can be used to tell a story and that is what the government is doing. It also educates those who are deaf. "*Government does a lot of education around these diseases and we too are also doing our level best to educate these communities*," he said. Respondent 5 has his own practice and he is also working at Lebowakgomo Public Hospital. He said that if a person has tested positive with TB or HIV disease, that person will be referred to a public hospital. Thereafter, the hospital will refer the patient to the clinic closest to that person for the purpose of receiving free treatment. This is purely because the treatment of these diseases is expensive. However, if that person can afford the treatment, the private practice will help them.

He added that, since he started this practice, he hasn't heard anyone who did not believe that TB exists. "*Generally, people know how to avoid catching TB but in other instances people find themselves in the situations that increase the risk of being infected*," he explained. He said that the setup of houses in the townships, the mode of public transport that people use on a daily basis also contribute to the rise of TB in the Mokopane area. "*If people are in the same bus or a taxi, it is easy to catch such diseases when you are seated next to someone who is coughing non-stop*," he further explained. He said the constitution of Cuba forces

people with TB to wear masks and cover their mouths but in South Africa and other countries, this is not done. "*You will never know who has TB and who does not have, therefore, this is a very dangerous place to live*," he explained.

He emphasised that the government is doing enough to educate the citizens of this country about all kind of diseases. In terms of printed material, such as posters and banners, there are a lot that have been distributed in the Mokopane area. "*We also had TB flyers in this practice, and they were distributed to the people who were coming to consult here. At most clinics, if not all, there are posters about all sorts of diseases that is why I am saying the government is doing enough*," he explained. He said there were about 5 000 pamphlets.

Respondent 5 said that the English pamphlets and posters are dominating other languages and according to him, the government should use the languages that are used in Mokopane.

> *"I believe in South Africa, all languages are equal and, therefore, an equal number of printed materials should be distributed, there shouldn't be a language which is superior to other languages. All the different language speakers have equal rights."*

He added that in Africa traditional healers form a huge percentage of the healthcare network in such a way that the community starts to consult traditional healers before they go to the western type of medical doctors. He said that there is room for improvement in terms of treatment by traditional healers.

> *"Traditional herbs can be produced and be measured to produce better and healthier medicines. We grew up using the African herbs to heal our diseases and here we are, alive and healthy, nothing*

wrong has happened to us. We are where we are today because of traditional doctors. There should be a development of research done in the field of traditional herbs so that it can be improved and our traditional healers educated."

Respondent 5 said that there is a need for the government to work hand-in-hand with traditional herbalists and traditional healers. "*We are Africans and we always believed in them,*" he explained. He said his practice has received a lot of traditional healers who also seek information and sometimes treatment from him. He added that he works hand-in-hand with traditional healers to make sure that there is an improvement in the health of the Mokopane area. "*Almost all my patients start at traditional healers before they come to me, but this is a very sensitive issue because sometimes the traditional healers give these patients unmeasured quantities of herbs which, at times, results in the worst side effects. We need to educate our traditional healers about measurements or quantities to be given to patients*," he explained.

He said that traditional healers should not allow their patients to take treatment from them and professional healthcare practitioners because that might be over-dosage. The side effects will then not be good at all. "*Also, if a patient gets healed from using both treatments then we will not know whether it is their treatment or the traditional healer's treatment*," he advised. He further advised that people take treatment from either the traditional healers or from professional medical practitioners. He said that Mokopane is not the only place with a problem with the rise of TB; South Africa in general has a problem with the increasing number of TB infections. "*We still have a long way to go in terms of the improvement of the public health care system because even the way our townships are, the space between houses is not enough*," he concluded.

Respondent 6

Respondent 6, who is a General practitioner at Doc-on-Call in Mokopane and Mahwelereng practices, said that most people in the Mokopane area understand the way TB is bio-medically transmitted and he said he thinks that they even know how to avoid contracting TB.

He said that since he opened his practice in Mokopane, he had been made aware that the government is trying as much as they possible can to ensure that all people within the borders of this country are educated about all the diseases. "*I have seen billboards, posters and flyers almost everywhere in the country and they are in various languages, including the languages that are dominant in the Mokopane area including Sepedi and Xitsonga*. *Most people are afraid that if the public learns that they have TB, they will be labelled, discriminated against or even expelled from the villages where they stay. That is why most people are even afraid to come to test for HIV and TB,"* he said.

He further explained that most people, if not all who come to consult with him, would have started somewhere else. "*Africans, in general, love their culture and, unfortunately, we, as professional medical doctors, get to see them when the situation is worsening. Some of them who have TB come here when the condition has complicated*," he explained. He said that patients come to consult when the traditional doctors have failed.

> *"I am not saying the traditional healers are unable to heal these diseases but, in most cases, we receive patients who started there whose conditions are worse. What leads these people to consult with traditional healers is their culture, they love and respect their culture. Some people go to churches to get healing holy water which they believe will heal*

them from their diseases. There are basically two groups, some goes to churches or prophets while the other group consults the traditional healers.
There are people who believe that 'holy water' can heal TB."

He said that sometimes he gets traditional herbalists or traditional healers who are sick, not only from TB but all sorts of diseases. He further added that most of them are very understanding when coming to healing these diseases, but he cannot recommend any patient to the traditional healer because it is against the healthcare practitioner's code of conduct and is unethical. "*I do not advise people to get treatment from both professional doctor and traditional healer because, in the end, even if they are healed or cured, they will never know what has worked for them.*

Mixing all kinds of herbs can also be very dangerous to a person's body, it can really put that person at risk. Generally, anyone can get treatment from anywhere as long as they believe that it will work for them. We cannot choose for them," he concluded.

Respondent 7

Respondent 7 said that he thought most people understood what TB is, but he did not think that they knew how to prevent it. "*I think various campaigns can help and so far, I haven't seen any sort of campaign around Mokopane*," he explained. Respondent 7 believes the government is not doing its level best to educate the residents of Mokopane. He believes the only people who are well-informed about these communicable diseases are those who have formal qualifications. "*Those who are illiterate know nothing about these diseases,*" he said. He also said that since starting to practise, he has educated his patients about all sorts of diseases before he gives them medication. "*It doesn't help giving people medicines if they*

do not even know how it is going to help them and what to do to avoid the continuous spread of that disease," he said.

Sometimes, he said that further, he gets patients who do not even understand English, but he tries very hard to explain what TB is and how to prevent it. "*The same applies to these posters and flyers; people don't understand them because they cannot even read. Nurses and those who are in public hospitals should go to the people to explain in the languages that these people will understand*," he argued. He said he sometimes gets HIV positive traditional healers who seek help from him.

> *"Almost all the patients that come here who are HIV positive or who are infected by TB start at the traditional healers because that is where they believe a cure is. They believe that their ancestors have caused those diseases, and to get healed, they need to perform certain rituals that will be ordered by either the prophet or a traditional healer."*

He said that they only go to professional practices when the situation has worsened. "*People follow the footsteps of their forefathers, the traditional way of doing things. I have never helped a traditional healer in my life*," he said. Respondent 7 further said that he will never refer a patient to traditional healers because their medicines are not tested and something that has never been tested can never be trusted. He added that some traditional healers even use dirty pots in which to cook these herbs and that can be harmful to someone's health. "*Obviously, I will not recommend anyone to get treated by both a traditional healer and a medical doctor because that can be the end of a patient's life*," he concluded.

Respondent 8

Respondent 8 said that there is a large percentage of people who do not understand what TB is and these people obviously do not even know how to prevent it "*We should make the population TB conscious; we cannot only teach the patients. Especially the members of their families deserve to be educated about such diseases. There are a lot of people in these communities or villages who have TB and HIV who do not know about it because they haven't been tested,*" he explained. He said that their families are in danger because they are at risk of infecting one another. Respondent 8 said that he doesn't think the people residing in Mokopane know how to prevent themselves from infecting others with TB or even to prevent themselves from catching TB.

> *"There are medical practitioners, sisters and nurses in the clinics within these villages who are very good in these things. They should go out to teach our people about the importance of testing for all sorts of diseases. Only a few people who go to these clinics get this information but not all clinics educate the community members."*

As medical doctors, they refer people who have tested positive to the public clinics to receive counselling and treatment from the clinics and hospitals near them because that will make things easier for them. But, on the other hand, they also do educate their patients about these diseases. He said that he hadn't recently come across a billboard, poster or any pamphlet about TB in the Mokopane area.

> *"All the people who come to see me start with traditional healers and I can't tell them to go away to seek further treatment because they only come to see us when their situation is worse. It is a very*

big problem here in Mokopane and some other parts of Limpopo where I have practices."

He said that people are taking orders and treatment from traditional healers because their parents and their forefathers told them to do so, and others just saw their parents doing it and they think it is the way of life. "*I have never helped a traditional doctor who is sick and needs help from me*." He doesn't refer his patients to traditional healers, and he said it is not advisable for the patients to take medicine from both traditional healers and medical doctors because the traditional healer's medicines or herbs have not been tested. "*We need to use double blind testing to prove whether these herbs are working or not*," he concluded.

Respondent 9

Respondent 9 said that most people in the Mokopane area understand the way TB is medically transmitted because she used to hear many people from the villages of Mokopane talking about it. "*They know how to prevent it but sometimes people are just careless. They can even do some things knowing very well that they are dangerous and have bad consequences. Some people believe that TB exist, and some do not believe that it exists but those who don't believe are a very small percentage and mostly they are old and in denial. I used to get those kinds of patients,*" she explained.

She said that the government is not doing enough to educate the communities, especially those in remote areas. According to her, the government should take the health practitioners to the field so that they can educate the people in rural areas. "*The government should increase their awareness campaigns and also take these campaigns to the people verbally not on television and radio stations only*," she explained. She said that she always educates her patients before they leave her consulting room because it is dangerous to just give a person medication without explaining to them what the causes might be and how the medication is going to help them.

"The people in this area do not understand TB very well, some people believe if they are sick from any disease, then they are being bewitched and also, they associate TB with AIDS. If a person starts losing weight, the public tends to think that the person is HIV positive, which is the stigma attached to TB patients."

"*Some go to church while other people prefer traditional healers for healing.*" She said that she did not refer her patients to churches or traditional healers for further clarity on their conditions, people just go there on their own. She concluded by saying that it is very dangerous to simultaneously receive treatment from different places because that will make things even more complicated. "*People should just take one treatment at a time and it should be the one that they trust most*," she concluded.

Respondent 10

Respondent 10 said that when he first started working in the Mokopane area, he was surprised to see such a huge number of TB patients. That was when he realised that there is a problem with the people of this area. According to his observation, "*the residents of Mokopane lack proper education around HIV and TB because most people are "nyaope drug" addicts and they use needles to drug themselves, especially the youth of the area.*" He further said that some of the TB cases are a result of HIV/AIDS.

"It is easy for a person with HIV to catch TB, especially those who are not taking treatment. Some do not even know their HIV statuses. Most people in rural areas associate TB with HIV; if a person is HIV positive, people assume that the person has AIDS."

He said that most people who stay in large families in small houses are also at risk of being infected if one of them has TB. "*Poverty also contributes towards the rise of TB in the Mokopane area,*" he said. He said the Department of Education and the Department of Health contribute a lot because they go to primary and high schools to educate the young ones who should be taking this information to their parents; who did not get an opportunity receive this information.

Respondent 10 added that most people do not know how they got infected by TB and that is where the problem lies. He said he thinks the people of Mokopane know what TB is and they know that it does exist.

> *"In most cases, men are the carriers of this disease because most of them refuse to take treatment. Women do take their treatment because they have a lower tolerance and they always consult when they notice that there is something that they don't understand."*

He further highlighted that the government is doing enough but people should not rely on the government alone. "*A lot has been done in terms of television campaigns about TB. But we should not pin this on the government. It is important for every patient to know about the illness that they have, patients should know the causes of their disease, they should know the treatment that they are taking, and they should also know how to avoid infecting others*," he said.

He said that billboards don't give much information and sometimes people don't even see them. He added that people who have a thorough knowledge about these diseases should go to educate the uneducated. "*There should be days when we, as professional healthcare practitioners, go out to the people at gatherings such as churches, cultural heritage events and even at the places where they drink beer. Members of the community who have knowledge about health-related matters should also inform those who are not informed,*" he said.

Respondent 10 said that almost all hospitals have posters with information about TB in English and some have posters in Sepedi or the languages that are spoken in the community where the hospital is based. "*There are lot of people who come to get treatment when they feel very sick and, when the situation is better, they stop taking the treatment thinking that they are cured, and the disease is gone. They will only come back when the illness has advanced to a complicated stage. We teach every patient, but some do not take this education very seriously. Verbal communication is the key. I prefer going to the people to teach rather than giving them flyers because some people cannot even read,*" he explained. He pointed out that Mokopane has three main languages. These languages are Sepedi, Tsonga and Ndebele. "*There should be nurses who can speak these languages who must go out to the people to educate them about how to take care of themselves and live a healthy lifestyle. There should also be posters in all the three languages spoken in this area.*

TB is not as life-threatening as other diseases because it can be cured unlike sugar diabetes and cancer. People should not be afraid to test because it is for their own good," he explained. He said that, since starting to work in Mokopane four years ago, he had seen the people of this area go to the traditional healers before going to the professional medical doctors. "*They only come to us when the cases are more complicated".*

But nowadays most traditional healers are getting this education and the government has started to work with traditional healers. Workshops are being conducted and traditional healers are attending in large numbers. Some traditional healers who are educated about these health issues are registered with the Department of Health to offer proper care to patients. These doctors, when they see that the patients need the medical doctor's attention, refer them to the medical doctors and even to hospitals. As medical doctors, we don't have the power to choose where the patients should consult, and even if you tell them not to go, they will still go there, he explained.

He stated that culture and beliefs are what drive the decisions of residents of Mokopane to have too much trust in the traditional healers. He said so far, he

has never helped a patient who is a traditional healer who needed help from him but most of them understand what TB is and what the causes of TB are.

> *"According to the Medical Board and the Medical Professional Council, I cannot refer any patient to the traditional healer for help. It is regarded as being unethical. Everything must be tested before given to patients. I am not saying the herbs from the traditional healers are not working or cannot heal anyone, but they first need to be tested within the scope of practice. I am accountable for anything I give to my patients. I am accountable because I know what I am giving them, and I also know what it will do in their bodies after consumption. Every disease needs the right dose and, if a patient cannot take more, then too much of anything in the body will cause harm to the body, so it is not advisable for anyone to take treatment from both the traditional healer and the medical doctor simultaneously."*