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Faculty of Health Sciences
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DEVELOPMENT OF HEALTH PROMOTION INTERVENTION FOR FAMILIES HAVING MEMBER(S) DIAGNOSED WITH TUBERCULOSIS IN THE NORTH WEST PROVINCE

By

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A Thesis submitted in accordance with the requirements for the Degree Philosophiae Doctor

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Date: 12 May 2023

DECLARATION

I, K.J. SEBOTHOMA, student number 21263150, hereby declare that:

1. This thesis, "***Development of health promotion interventions for families having member(s) diagnosed with TB in the North West Province,***" is submitted in accordance with the requirements for the PhD in Nursing Science at the University of Pretoria.
2. I understand plagiarism and am aware of the University's policy in this regard.
3. Therefore, I declare that this thesis is my own original work. Where other people's work has been used (either from a printed source, Internet or any other source), this has been appropriately acknowledged and referenced in accordance with departmental requirements.
4. I have not used work previously produced by another student or any other person as my own.

I have not allowed, and will not allow anyone, to copy my work to pass it off as their own.

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_____

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Name

Dr N. Mshunqane

12 May 2023

ETHICS STATEMENT

The author, **SEBOTHOMA K.J.,** whose name appears on the title page of this dissertation, has obtained, for the research described in this work, the applicable research ethics approval.

The author declares that she has observed the ethical standards required in terms of the University of Pretoria's Code of Ethics for researchers and the Policy guidelines for responsible research.

Ethics Number: 480/2020

DEDICATION

I dedicate this research to my wife, Candice, who believed in and supported me throughout the study. My late daughter Michelle who left this world untimely before witnessing me reach my destiny.

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ABSTRACT

Tuberculosis remains a contagious disease and a major global public health burden. It can be cured. However, treatment compliance is a major challenge for the prevention and control of this fatal disease. Interventions to prevent and promote adherence to Tuberculosis treatment regimens need to involve families as they play a crucial role in the care of patients. The overall aim of the study was to develop Tuberculosis health promotion interventions for families having a member(s) diagnosed with Tuberculosis in the Northwest province of South Africa. The objectives of the study were to explore and describe the experiences of the families having a member(s) diagnosed with Tuberculosis in the North West province and to explore and describe the needs of the community health nurses regarding health promotion interventions for families having a member(s) diagnosed with Tuberculosis in the North West province.

The study followed a constructivist approach to answer the research question. The study was conducted in two phases: In phase 1**,** a qualitative, descriptive phenomenology was conducted as a philosophical base and design. The researcher used face-to-face individual semi-structured interviews to collect data. The findings of Phase 1 formed the basis of Phase 2.

In Phase 2, the health promotion interventions for families having member(s) diagnosed with Tuberculosis in the Northwest province were developed and validated. The Delphi technique was used over four rounds to validate the developed health promotion interventions.

In phase 1, ten (10) families having member(s) diagnosed with Tuberculosis and twelve (12) community health nurses working in the clinics and community health centres of Ngaka Modiri Molema District were purposefully selected to participate in the study. The researcher used semi-structured individual interviews to collect the data. Data analysis was done using Colaizi's (1978) method. All principles of trustworthiness by Guba and Lincoln (2005) were considered. Additionally, an independent co-coder was involved in finalising the themes.

In Phase 2, eighteen (18) expert health professionals took part in the study through the Delphi technique and data collection was done with the use of questionnaire through emails. Data collection and analysis for this phase was done concurrently throughout the rounds, and in the fourth-round rating was used to analyse. Six (6) Tuberculosis health promotion interventions were developed and validated for families having member(s) diagnosed with Tuberculosis in the North West province.

KEYWORDS: families, health promotion, health promotion program, intervention, tuberculosis

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LIST OF ACRONYMS/ABBREVIATIONS

AGREE II	Appraisal of Guidelines for Research & Evaluation II
ART	Antiretroviral
CDC	Centres for Disease Control
CHC	Community Healthcare Centres
CHN	Community Health Nurses
CINAHL	Cumulative Index of Nursing and Allied Health literature
CRESIPT	Community Randomised Evaluation of a Socioeconomic Intervention to Prevent TB
DOTS	Directly Observed Treatment Strategy
GDP	Gross Domestic Product
GUV	Germicidal Ultraviolet
HAART	Highly Active antiretroviral Therapy
HCWs	Healthcare workers
HIV	Human Immunodeficiency Virus
HBM	Health Belief Model
IPC	Infection Prevention and Control
MDR TB	Multi-drug Resistant Tuberculosis
MTB/RIF	Mycobacterium Tuberculosis/Rifampicin
NGO	Non-Governmental Organisations
NSP	National Strategic Plan
NWDoH	North West Department of Health
RNTCP	Revised National TB Control Programme
RR-TB	Rifampicin Resistant tuberculosis
SAT	Self-administered therapy
SDG	Sustainable Development Goals
STIs	Sexually transmitted Infections
TB	Tuberculosis
TPB	Theory of Planned behaviour
TST	Tuberculin skin test
VHS	Village Health Volunteers
WHO	World Health Organization

CHAPTER 1
ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Globally, Tuberculosis (TB) remains a public health burden (Gilpin et al., 2018:1; Mugomeri et al., 2018:18). It is estimated that 54 million people were infected over a period of 17 years from 2000-2017 (WHO, 2018:2). In 2017, 10.0 million people developed TB, resulting in 1.3 million deaths (WHO, 2018:1). According to Ramaliba, Tshitangano, Akinsola and Thendele (2017:182), every two minutes, 36 people are infected with TB resulting in six deaths. However, the number of deaths can be averted with the correct diagnosis and proper management.

Although this is the case, some countries realise a decrease in morbidity and mortality rates (MacNeil, Glaziou, Sismanidis, Maloney & Floyd, 2019:263). According to Sosa, Njie, Lobato, Morris, Buchta et al. (2019:439), a decline is evident in the United States of America (USA). In 2017, a total of 9,903 new cases were provisionally reported at a rate of 2.8 cases per 100,000 persons, which is a decrease from the 2016 case count and the lowest rate and number of cases on record since the reporting started in 1953 (Stewart, Tsang, Pratt, Price & Langer, 2018317; Sosa et al., 2019:439). However, the same cannot be said for countries in Sub-Saharan Africa, as the HIV epidemic has raised TB incidence and mortality rates. In 2016, 86 percent of all HIV-related TB deaths occurred in the region, which bears the burden of both TB and HIV (Makhado et al., 2018:17; Zarova, Chiwaridzo, Tadyanemhandu, Machado & Dambi, 2018:1). Patients with co-infections are more likely to die from TB, which is easily curable in people without HIV (Mahtab & Coetzee, 2017:428). Due to other HIV-related diseases, individuals co-infected with TB have a higher chance of treatment failure and recurrence (Mugomeri, Bekere, Maibvise & Tarirai, 2018:18). As a result, for these patients TB may be perceived as an incurable disease thus threatening TB programmes.

The gap in finding and managing TB infection persists (WHO, 2018:2). Several low and middle-income countries experience late diagnosis and management of TB, leading to the unsuccessful management of patients (Li, Ehiri, Hu, Zhang, Wang, Zhang & Cao, 2014:1). South Africa (SA) and neighbouring countries such as Zimbabwe and Lesotho share similar challenges in managing TB. Zimbabwe is among the 30 high-burden, TB, HIV and multi-drug-resistant tuberculosis (MDR

TB) countries in the world (Takarinda, Sandy, Masuka, Hazangwe, Choto, Mutasa-Apollo, Nkomo, Sibanda, Mugurungi, Harries & Siziba, 2017:1). It has been established that the first two months of TB treatment has a high mortality rate, with risk factors of recurring TB and HIV- infection, regardless of the increased uptake of anti-retroviral therapy (Takarinda et al., 2017:1). The (ibid) concludes that those with HIV presenting with lower CD4 count are more likely to die during anti-TB treatment, particularly in the intensive phase. Diagnosis delays can also be associated with disease progression and poor treatment outcomes. Lesotho was proclaimed to have the second-highest incidence rate of TB globally, with cases increasing from 400 per 100,000 in 2006, to 724 cases in 2017 (Partners in Health, 2018). Mugomeri et al. (2018:18) state that the prevalence has persisted to above 400 cases per 100,000 population since 2006. The laboratory diagnosis of TB is one of the major challenges as the use of GeneXpert MTB/RIF technique remains below twenty percent (20%), and late diagnosis of TB remains a significant cause of treatment failure and death, as well as an increased transmission of the disease (Mugomeri et al., 2018:18). Of this, 73% were co-infected indicating that HIV further accelerates TB infections. Furthermore, Partners in Health assert that Lesotho shares similar epidemiology of TB with SA because of its geographical location and shared economic opportunities, as people easily migrate between the two countries. The Intensified case finding, Isoniazid preventive therapy and Infection control (three I's) programme launched between 2013 and 2015 in Lesotho yielded no success in improving treatment outcomes (Mugomeri et al., 2018:18).

In SA, TB remains a health and social concern despite free and widely available effective prevention and treatment programmes. The control of the disease remains a frustrating task, thus leading to increased morbidity and mortality rates of TB coupled with treatment resistant-TB (Venter, 2018:52). SA has a significant problem with drug-resistant TB, including MDR TB. In 2015, 20 000 people were reported to have been diagnosed with rifampicin-resistant-TB (Cox, Mashabela, Nicol, Vanleeuw, Dickson-Hall, Kielmann et al., 2017:158). It is also noted that SA provides the second-line TB treatment for the third-largest number of rifampicin-resistant TB globally. Unfortunately, a significant gap remains between the number of cases reported as diagnosed and those who commence with second-line treatment. According to Cox et al. (2017:158), there is a delay in starting the treatment in different provinces of SA. In the North West Province, TB is a leading cause of death at 9%, notwithstanding the implementation of the Directly Observed Treatment Strategy (DOTS) (NWDoH, 2022:7). The WHO introduced DOTS in 1991. The strategy is cost-effective in preventing TB infections and reducing deaths (Naidoo & Mwaba, 2010:1324). DOTS implies that patients take treatment under the supervision of a friend,

relative, health worker, community member or employer to ensure that medication is taken as prescribed. In addition to supervision of medication, healthcare providers offer health education regarding the causes, signs and symptoms and mode of transmission. DOTS also emphasise the benefits of a well-balanced diet. Although these activities are implemented to prevent and treat TB, people are still dying of TB in the North West Province. According to the NWDoH (2019), 17 771 people were diagnosed with TB in the province in 2016. The (ibid) indicates that the number was slightly reduced to 16 502 in 2017 and 13 409 in 2018, TB death rate was 1 758 in 2016 and 1 676 in 2017, which is still less than the target of less than five percent (5%). The above statistics show that TB prevalence is decreasing. However, the incidences are still too high. Thus, it can be assumed that the DOTS programme is not effective. A study conducted by Serapelwane, Davhana-Maselesele and Masilo (2016:8) reveals that DOTS is ineffective due to a lack of communication between the nurses and the patients. Poor health education and communication lead to patients receiving the medication without sufficient information on its use. The poorly managed DOTS strategy causes a decrease in TB cure rates and frequent re-admissions.

Family knowledge about the prevention of TB is essential to establish actions to prevent and cope with pulmonary tuberculosis disease (Yermi et al., 2018). The (ibid) indicates that knowledge about prevention and management would improve the interest and attitudes of patients. According to Kristinawati et al. (2019), the treatment of TB involves both physical care and psychosocial management. The care provided by the family can be in the form of motivating patients to take medication and good nutrition and discouraging negative thoughts about the disease (Kristinawati et al., 2019).

1.2 PROBLEM STATEMENT

TB is the leading cause of death in SA at 8.4% of all natural deaths in 2015 (National Strategic Plan (NSP), 2017:7). SA is among the top six nations with the highest TB incidence due to the considerable number of people living with HIV (Makhado, March, Setlhabi & Madiba, 2018:17). The TB infection in the country remains high irrespective of the Highly Active Antiretroviral Therapy (HAART) (Cole, Miller, Ebrahim, Dreyden, Simpson & Manie, 2016:2). A considerable number of people living with HIV are directly proportional to the enlarged number of TB, combined with drug-resistant TB (Makhado et al., 2018:17). HIV escalates TB incidences, and in some African countries, 70% of people living with TB also have HIV co-infection (Yoko, Tumbo, Mills & Kabongo, 2017:80). As such, in most African countries, TB/HIV integration services are in place. The goal is to reduce TB mortality by 50% among people living with HIV (Makhado et al., 2018:20).

Therefore, it is crucial to improve the coordination and collaboration of TB and HIV healthcare services to make the most of the impact (Yoko et al., 2017:80).

According to the NSP (2022:xii), SA has adopted its fourth National Strategic Plan (NSP) to monitor HIV, TB and STIs infections. The first goal of the plan is to accelerate prevention to decrease new infections of HIV, TB and STIs. The objective is to reduce TB incidences by 30%, from 834/100,000 population in 2015 to less than 534/100,000 in 2022 (NSP, 2022). The (ibid) indicates that this can be realised through increased preventive therapy uptake and promotion of TB infection control. The second goal is the reduction of mortality and morbidity by providing HIV, TB and STIs treatment, as well as care and adherence support for all. The objective of this goal is to implement the 90-90-90 strategy for TB. Finding 90% of all TB cases, placing them on appropriate treatment, and successfully treating 90% of drug-susceptible tuberculosis and 75% of those with drug-resistant tuberculosis (NSP, 2022). Therefore, it is advisable for nurses working with families having member(s) diagnosed with TB to observe these goals.

Patients and their family members from impoverished backgrounds usually misinterpret TB and its strategies. These misunderstandings lead to major delays in diagnosing patients in conjunction with negative social stigma and poor compliance with the recommended treatments. These aspects cause barriers to effective diagnoses and treatment (Wilson, Ramos, Castillo, Castellanos & Escalante, 2016:14). Health promotion and illness prevention programmes must be enhanced to lessen the problem (Evans et al., 2018:S28). The programmes should focus specifically on patients and their families. According to the NSP (2022:5), one of the critical aspects is to modify prevention packages and differentiate care for patients. A people-centred approach must be utilised to foster a decline in discrimination and stigma. One-on-one meetings with patients and their families are vital to have a clearer, more detailed understanding of TB as a way of mitigating stigma and discrimination (Wilson et al., 2016:15). As family and community misinformation about TB lead to the social isolation of patients and this poses barriers towards efficient public health intervention (Wilson et al., 2016:15).

In response to the challenges of managing TB effectively in the North West Province, the researcher explored and described the experiences of families having a member diagnosed with TB and explored and described the needs of the community nurses regarding TB health promotion programmes. The identified experiences of families with member(s) diagnosed with TB and the needs of the community health nurses regarding TB health promotion guided the

development of health promotion interventions to enhance the TB health promotion programmes in the North West Province.

1.3 SIGNIFICANCE OF THE STUDY

The aim of the study was to develop health promotion interventions for families having a member(s) diagnosed with TB in the North West Province to reduce the rate of TB. The findings may assist the government in closing the gap related to the negative impact of health promotion programmes on TB. In addition, policy changes will be promoted. Clients and their families will be assisted in making informed decisions about their health status. The planned change will be applied among individuals in varied settings and at any stage. The community and the family will learn how to take care of their health, understand and promote healthy behaviour and take responsibility for supporting and caring for members with TB.

1.4 RESEARCH AIM, QUESTION AND OBJECTIVES

1.4.1 Aim of the Study

The aim of the study was to develop health promotion interventions for families with member(s) diagnosed with TB in the North West province.

1.4.2 Research Question

- What health promotion interventions should be developed for families having a member(s) diagnosed with TB in the North West province?

1.4.2.1 Phase 1: Empirical

- Explore and describe the experiences of families with members diagnosed with TB in the North West Province.
- Explore and describe the needs of community health nurses regarding health promotion interventions for families with members diagnosed with TB in the North West Province.

1.4.2.2 Phase 2

To develop health promotion interventions for families with member(s) diagnosed with TB in the North West province.

1.5 DEFINITION OF KEY CONCEPTS

1.5.1 Health Promotion Programmes

A health promotion programme is a proactive way of empowering the lives of individuals and the community to make healthy choices (Mthombeni & Peu, 2013:7). For this study, health promotion interventions are interventions that assist the community with health promotion and TB prevention.

1.5.2 Health Promotion

Health promotion is a process of empowering people to increase control over and improve their health (Li, Ehiri, Hu, Zhang, Wang, Zhang & Cao, 2014:2). In this study, health promotion means individual and group empowerment with the relevant knowledge about TB so that they develop the motivation and understanding to change their behaviour regarding TB prevention and control.

1.5.3 Tuberculosis

Tuberculosis is an infectious disease caused by the bacterium Mycobacterium Tuberculosis. An airborne route (Marieb & Hoehn, 2016:867) transmits it. In this study, tuberculosis means any lung or extrapulmonary disease caused by Mycobacterium.

1.5.4 Families

A socially recognised and accepted network of people living together and united by the ties of marriage, blood or adoption (Bezuidenhout, 2008:3). In this study, family members are people living in the same home with someone diagnosed with TB.

1.5.6 Disease

The disease is defined as an abnormal condition that negatively affects the structure or function of an organ or system of the human being (Rana & Upton, 2009:8). In this study, the disease refers to pulmonary tuberculosis or extrapulmonary tuberculosis or a TB infection.

1.5.7 Intervention

An intervention is an action aimed at promoting positive health behaviour of an individual and families to motivate the demand for and adoption of preventive and promotive health practices (Juma, Reid, Roy, Vorkoper, Temu, Levitt, Naomi, Oladepo, Zakus & Yonga, 2018:3). In this study, intervention is any set of techniques, methods, strategies or processes orchestrated to change the behaviour of people or the environment to prevent and control TB.

1.6 PARADIGMATIC APPROACH

A paradigm is defined as a view of the world, a set of values, beliefs and assumptions held by researchers regarding nature and how to conduct a study (Polit & Beck, 2018:6). Whilst worldview is defined as a basic set of beliefs that guide action (Creswell & Creswell, 2018:5). The researcher followed a constructivist paradigm. Constructivists are flexible and focus on understanding the human experience through the collection and analysis of qualitative data (Polit & Beck, 2018:9). In this study, this paradigm assisted the researcher in making a prudent decision to choose the method of collecting data, scrutinising and interpreting them.

1.7 PHILOSOPHICAL ASSUMPTIONS OF THE STUDY

The researcher adopted phenomenology as a philosophical framework and as a design. Phenomenology is a design of inquiry in which the researcher describes individuals' lived experiences and perspectives about a phenomenon through direct interaction between the researcher and the participants (Creswell & Creswell, 2018:13). This study used phenomenology, developed by the German philosopher Edmund Husserl (1859–1938). According to Polit & Beck (2017:54,465,470), phenomenology as a research approach is used by psychological researchers to assist in the investigation of human experience and behaviour. Furthermore, phenomenologists investigate subjective phenomena in the belief that critical truths about reality are grounded in people's lived experiences. Phenomenological knowledge reforms understanding and leads to more thoughtful action (Polit & Beck, 2017:10).

The constructivist paradigm has its roots in philosophy and human sciences (Polit & Beck, 2017:471). It acknowledges the existence of many socially constructed, subjectively based realities that consist of stories or meanings grounded in natural settings (Polit & Beck, 2017:10). The constructivist paradigm is centred on how human beings make sense of their subjective reality and attach meaning to it. It does not subscribe to the existence of social and physical reality 'out there' separate from the individual. It emphasises the relationship between socially engendered concept formations and language and maintains that understanding human experience is as important as focusing on explanation, prediction and control (Creswell & Creswell, 2018:13). The constructivist paradigm assumes that knowledge is maximised when the distance between the researcher and those under study is minimised (Polit & Beck, 2017:10). The ontological, epistemological and methodological assumptions guide the constructivist paradigm as discussed below:

1.7.1 Ontological Assumption

Ontology involves the philosophy of reality, ‘how one sees reality'. It is believed that since each of us 'experiences life' from our point of view, therefore; each of us experiences a different reality (Polit & Beck, 2017:10). As a result, the phenomenon of 'multiple realities' exists (Polit & Beck, 2017:10). ‘The lived – world’ is a central theme of phenomenology that manifests as a structural whole that is socially shared and yet apprehended by individuals through their perspectives (Polit & Beck, 2018:187). Furthermore, language pervades the meanings of our surroundings and forms part of what makes the lived – world more of a collective place than the product of individual isolated subjectivity. The researcher takes into consideration how a phenomenon is spontaneously lived in the life – world (Polit & Beck, 2018:187).

In this study, the researcher sought to develop a health promotion intervention for families having member(s) diagnosed with tuberculosis in the North West province. Semi-structured in-depth individual phenomenological interviews were conducted with families having member(s) diagnosed with TB to gain in-depth and detailed descriptions of their life-world experiences. The researcher had to set aside their values and experiences. Through an empathetic understanding of the participant's meaning of life – the world allows multiple realities of the people experiencing a phenomenon (Polit & Beck, 2017:11). With a constructivist paradigm and ontology, the researcher believed that reality is multiple and personal.

1.7.2 Epistemological Assumption

Epistemology is the theory of knowledge concerned with what counts as valid knowledge (Halloway & Wheeler, 2010:21). Epistemology is from the Greek word episteme, meaning understanding, knowledge or science. It is concerned with procedural understanding, or how we come to know things (Bowling, 2009:20). According to Polit and Beck (2017:10), an epistemology of descriptive phenomenology focuses on revealing the meaning of the perceptions of lived experiences rather than arguing a point or developing a theory. The researchers, as a phenomenologist, construct texts or narratives about the world of participants, categorise, analyse and interpret all the information contained in the narratives before coming to any conclusions about the meaning and significance embedded in the participants' personal experiences. The connection between the researcher and the participants is inter-reliant, as the researcher depended on the study participants to impart their personal information.

The method adopted for obtaining the evidence was a qualitative inductive process. Therefore, participants were treated as autonomous people sharing information willingly and giving honest responses to the questions during interviews.

1.7.3 Methodological assumption

Methodological assumptions refer to how researchers obtain knowledge (Polit & Beck, 2017:10). In this study, a descriptive phenomenological inquiry was used, focusing on the description and the understanding of the phenomena as experienced by individuals (Polit & Beck, 2018:187). The researcher sought complex and rich descriptions of a phenomenon as perceived and lived by the participants (Polit & Beck, 2017:10). Researchers using a descriptive phenomenological approach have evidence of any 'reductions' or 'bracketing' attempted (Polit & Beck, 2017:10). This study utilised semi-structured in-depth individual phenomenological interviews to explore and describe the experiences of families having member(s) diagnosed with TB in the North West province. During the process, the researcher set aside initial thoughts, conceptions or judgments and was open to the descriptions provided by the participants (Polit & Beck, 2017:471).

1.8 CONTEXT

The researcher conducted the study in the Ngaka Modiri Molema District of the North West province of SA. The district is one of four in the North West province. It has five (5) sub-districts: Mafikeng, Ratlou, Ramotshere Moiloa, Ditsobotla and Tswaing. For triangulation, the researcher conducted the study at clinics and health care centres from the sub-districts. The researcher arranged with the facility managers for a private room to conduct interviews.

1.9 RESEARCH DESIGN AND METHOD

1.9.1 Research design

The researcher used descriptive phenomenology as a philosophical base and as a design. The qualitative, descriptive phenomenological research design was utilised on the basis that it describes a specific phenomenon or things as they appear. The focus was on the experiences of families having a member(s) diagnosed with TB in the North West province. The researcher chose descriptive phenomenology to enter the participants' life world.

According to Grey, Grove and Sutherland (2017:46), qualitative design is a systematic, subjective approach to describing life experiences to understand and give meaning. This study explored the quality of experiences of families having a member(s) diagnosed with TB. The aim of using

descriptive phenomenology was to describe the actual conscious experiences as lived by participants. This enabled the researcher to discover the meaning of complicated lived experiences (Polit & Beck, 2018:187). Descriptive phenomenology includes the following four steps: bracketing, intuiting, analysing and describing (Polit & Beck, 2018:187).

- ***Bracketing***

Bracketing refers to how researchers set aside their preconceptions, such as values, emotions, assumptions and theories (Polit & Beck, 2018:187). This is done to reveal the participants' lived experiences and increase rigour. In this study, bracketing was made by writing memos during data collection and data analysis (Polit & Beck, 2018:187).

- ***Intuiting***

Intuiting refers to the researcher submerging in descriptions by those who have experienced the phenomenon being studied (Polit & Beck, 2018:188). Intuiting is the researcher's ability to understand the participants' lived experiences without mental reasoning or questioning (Polit & Beck, 2018:188). The researcher is open to the participants' narratives without contaminating them with personal experiences.

- ***Analysing***

Analysing refers to pulling out relevant statements, arranging them into units and searching for and understanding important meanings (Polit & Beck, 2018:188). In this study, the researcher extracted statements from the analysed data to form themes and sub-themes.

- ***Describing***

Describing refers to the researcher comprehending the phenomenon as it is explained (Polit & Beck, 2018:188). This approach best suited the topic under study as the researcher investigated the human life experiences of families having member(s) diagnosed with TB.

1.9.2 Research Methods

1.9.2.1 Phase 1: Empirical

- ***Population and sampling***

The target population for this study was families with member(s) diagnosed with TB and community health nurses (CHNs). The researcher selected the community health nurses purposively as they provide TB care to patients at the clinics and health care centres. The family members were also beneficial in answering the research questions because they stayed with

member(s) diagnosed with TB; therefore, they assisted with a rich understanding of TB. In this descriptive phenomenological study, the researcher selected participants through a non-probability, purposive sampling method to obtain rich and in-depth data. Two population groups were used, namely family members and community health nurses. The researcher selected ten (10) families and twelve (12) community health nurses. The following inclusion criteria guided the selection of CHNs: more than one year of experience in practice. The inclusion criteria for families were that the family member had to be eighteen (18) years and older and had a family member suffering from TB for more than five months.

1.9.2.2 Data collection

The researcher collected data through in-depth semi-structured individual interviews with families and CHNs using an interview guide. Audio recording, observation and the documentation of field notes supported data collection.

- ***Recruitment of study participants***

After receiving permission from the Ethics Committee of the University of Pretoria, the North West Department of Health and District leaders of the North West healthcare facilities, the researcher visited the community clinics and healthcare centres providing TB management in the five sub-districts of Ngaka Modiri Molema District.

- ***Patient families' recruitment***

The researcher held meetings with the facility managers, who introduced the researcher to the community health nurses providing TB management. The CHNs informed the patients' families, who accompanied them to pick up medicines, about the study and asked if they were willing to hear more about it. If they expressed willingness, the researcher explained the study in more detail, and if they were willing to participate, the researcher made an appointment at the site and the date and time of the interview. The participants were comfortable with the interview date, time and site. On the day of the interviews, the researcher handed out the participants the information leaflet and informed consent forms, and after signing, the interview commenced.

- ***Community health nurses' recruitment***

The researcher held meetings with the facility managers, who introduced the researcher to the community health nurses providing TB management. The researcher informed the community health nurses about the study in detail. If they expressed willingness to participate in the study, the date and site in the healthcare facility were arranged for the interview. The date, time and

place agreed upon were convenient for the community health nurses. On the agreed date, the information leaflet and consent form were handed to the study participants, and after signing, the interview commenced.

1.9.2.3 Pilot study

The researcher conducted a pilot study before the actual data collection process. Grey, Grove and Sutherland (2017:46;54) describe a pilot study as a mini-study performed with the same research population and setting. A pilot study can help to detect problems likely to occur and allow the researcher to figure out plans to lessen or avoid those (Grey, Grove & Sutherland, 2017:54). In this study, the researcher conducted a pilot study with two community health nurses and two family members. The four (4) participants followed the process of informed consent and confidentiality. Participants in the pilot study were not part of the main study. The questions were pretested with the participants to identify pitfalls so that they could be refined. On the day of data collection, the researcher prepared the venue, the participants were greeted, anxiety alleviated, and the introduction of study participants followed.

The researcher posed the following questions:

The family members

- What are the experiences of families having member(s) diagnosed with TB in the North West province?

The community nurses

- What are the needs of community health nurses regarding health promotion intervention for families having members diagnosed with TB in the North West province?

The researcher followed these questions with probing questions. The researcher used multiple communication skills such as probing, listening, rephrasing and clearing up (Grey, Grove & Sutherland, 2017:260-261). Data was collected for 30 minutes to an hour until saturation was achieved and was recorded for accuracy. Polit and Beck (2018:55) allude that saturation occurs when no different information can be collected from the participants. Field notes (descriptive for objective descriptions and reflective notes for the researcher's personal experiences, reflections, and progress) were documented (Polit & Beck, 2017:521-522). At the end of the interviews, all the participants were thanked. Lastly, follow-up interviews for clarity were scheduled.

1.9.2.4 Data analysis

The Collaizi (1978), as cited by Polit and Beck (2017:540) data analysis method, was followed. The researcher read all printed protocols repeatedly to grasp their essential meanings and pulled out relevant statements. The researcher also expressed important statements and classified formulated meanings into themes and sub-themes. The results were incorporated into a complete description of the phenomenon. The researcher developed a comprehensive description into statements to identify its fundamental structure and returned it to the participants to confirm the results (Polit & Beck, 2017:540; Polit & Beck, 2018:284).

1.10 PHASE 2: DEVELOPMENT OF HEALTH PROMOTION INTERVENTIONS FOR FAMILIES HAVING MEMBER(S) DIAGNOSED WITH TB IN THE NORTH WEST PROVINCE

During phase 2, health promotion interventions for families having a member(s) diagnosed with TB in the Northwest province were drafted, leading to a preliminary version. The process of drafting and refinement was based on the empirical data collected during phase I, supported by appropriate and sufficient sources. Relevant and appropriate constructs, statements and phrases were identified from the observed data and existing literature to formulate and draft the preliminary health promotion interventions. The literature search was conducted to confirm if the correct statements and constructs were used. The formulation of preliminary health promotional interventions was guided by principles such as simplicity, applicability, clarity, validity, relevance, comprehensiveness, effectiveness and acceptability (Agree Collaboration, 2013; Thompson & Dowding, 2002).

1.10.1 Research Design

The researcher adopted the Delphi technique. The Delphi method is generally used for collecting data from respondents within their field of expertise (Hsu & Sandford, 2007:1). The term ‘Delphi’ comes from the ancient Oracle of Delphi who was regarded as a source of guidance for answering critical questions regarding the lives of Greeks and the Romans to give them direction (Massaroli et al., 2017:1). The Delphi method was invented in 1950 to draft and develop correct agreement from a group of specialists (Okoli & Pawloski, 2004:16). All knowledgeable opinions are assembled through a series of iterative questionnaires, to come to a collective consensus. The Delphi method is a practical and structured method of obtaining ideas on a given question from a range of experts and is usually used to gain consensus among a group of experts or informed respondents that constitute the Delphi panel (Slade, Dionne, Underwood & Buchbinder, 2015).

It is a way of obtaining a mutual view from a panel of experts about issues where there is little or no evidence and where opinion is crucial (Skulmonski, Hartman & Krahn, 2007:12). It involves group decision-making by experts as group judgements carry more strength. It is also a repetitive process used to collect and instil the judgements of experts with a series of questionnaires intermixed with feedback (Skulmonski et al., 2007:2). The health promotion intervention in the form of questionnaires was developed based on problems, solutions or predictions. Each questionnaire was developed based on the results of the preceding questionnaire (ibid). This study used four rounds to collect opinions, views, suggestions and confirmation as data. Expert participants were requested to respond to the preliminary health promotion intervention during each round (Polit & Beck, 2017:267).

1.10.2 Population and Sampling Experts' Panel

The population for the study were healthcare experts involved in TB and comprised of policymakers and researchers. The experts consisted of academics, doctors and nurses involved in TB treatment and management. The experts were purposefully selected based on their appropriate knowledge, competency and experience. The panel was formed and contacted to participate in the discussion through emails. A critical point was the size of the group, as the bigger group offers greater trustworthiness of the results, and on the contrary, the larger group can delay the breakdown of data. There are no rigid rules to sample size; however, representation was determined by the qualities of the expert panel rather than its numbers (Shakila & Charles, 2005:120). In this study, there were eighteen (18) experts. It was challenging to locate participants through purposive sampling; thus, snowball sampling was used by asking experts to identify possible participants (O'Dwyer & Bernauer, 2014; Streubert-Speziale & Carpenter, 2011).

1.10.3 Data Collection and Analysis

In this study, data collection and analysis were done concurrently. The researcher collected data using the drafted health promotion interventions, which were put in the format of a questionnaire with open-ended questions in the first three rounds. In the fourth round, the data collected was quantitatively analysed using rating scales to collate comprehensive judgements. And the questionnaire comprised instructions on how the participants should answer.

The principles that guided the researcher and the expert panel included simplicity, applicability, clarity, validity, relevance, comprehensiveness, effectiveness and acceptability (Agree Collaboration, 2013; Thompson & Dowding, 2002). The panel was requested and invited to complete the questionnaire within two weeks. They were asked to read the document/s thoroughly

and provide their valuable views, opinions, suggestions and confirmation on the questionnaire. Feedback from the first bulk of questionnaires was congregated, consolidated, amended and refined. The refined results of this round assisted in improving the questionnaire. The questionnaire of the second round was refined and completed. The third round followed the same process of compiling, consolidating, amending and refining the comments, and at this stage, the process yielded no new information. As a result, the final health promotion intervention was quantitatively collected and analysed.

1.10.4 Validity of health promotion interventions

Validity is defined as the trustworthiness of a research study or the extent to which the instrument can measure what it is supposed to (Burns & Grove, 2017:221,375). To ensure the validity of the health promotional materials, the questionnaire was pretested to identify pitfalls. This was ensured by the right choice of an expert panel, data collection procedures, and identification of justifiable consensus levels.

Literature was consulted to search for the validity of the health promotional interventions. Credibility was ensured by assessing the health promotion intervention's meaning, strengths and limitations. Dependability was ensured by providing a thick description of the research design and method to allow an audit of the research process and findings. Conformability was ensured by establishing that the health promotion intervention represents the information provided by participants. Transferability was ensured by providing enough information on the health promotion intervention so that others could evaluate their applicability to other settings.

1.10.5 Sharing of Information on the Promotional Materials

The materials will be shared through social media such as Facebook, Twitter, Instagram, promotional emails and YouTube.

1.10.6 Renewal of Health Promotion Materials

The materials will be renewed and updated every three to five years should there be some new developments and information. This will depend on the policy of the institutions using the materials.

1.11 ETHICAL CONSIDERATIONS

A proposal was submitted to the ethical committee of the Faculty of Health Sciences, the University of Pretoria for clearance. Permission to conduct the study was obtained from the North

West Provincial Department of Health and the management of the healthcare facilities in the Ngaka Modiri Molema District. The Belmont Report identified three core ethical principles on which to practise research involving human subjects: beneficence, respect for human dignity and justice (Polit & Beck, 2018:79).

1.11.1 Beneficence

This principle incorporated the right to freedom from harm and discomfort as well as the right to protection from exploitation. The researcher reduced the risks and increased the benefits for the participants. Harm was avoided irrespective of the benefits that may be experienced by the participants (Polit & Beck, 2018:79).

- ***The right to freedom from harm and discomfort***

The researcher ensured the study participants were protected from physical, financial and emotional exploitation. TB is subjected to stigma; thus, the researcher was more sensitive during the interviews of the family members to avoid emotional harm. The researcher also used the debriefing technique to allow participants the opportunity to ask questions during the interviews. The participants were referred to a social worker when showing emotional suffering.

- ***The right to protection from exploitation***

The researcher ensured this right by not using the information of the study participants against them. The bond between the researcher and the study participants was not abused.

1.11.2 Respect for Human Dignity

It incorporated the right to autonomy and adequate information (Polit & Beck, 2018:80). This principle includes the right to self-determination and full disclosure.

- ***The right to self-determination***

The principle incorporates the right to stop participation in the study at any time and to volunteer the involvement without any force. The study participants were not forced to engage and were not promised any money to participate. The researcher provided the participants with all the information about the study for them to decide whether to take part or not.

- ***The right to full disclosure***

This principle means that participants have the right to be well-informed about the study. This principle was ensured by discussing the purpose of the study with the study participants and the

risks and benefits involved. The participants were asked to consent after being informed about the purpose, the nature, the process and the activities of the study.

1.11.3 Justice

Justice incorporates the right to fair distribution, treating participants equally and the right to privacy (Polit & Beck, 2018:81). The principle includes the right to fair treatment and confidentiality.

- ***The right to fair treatment***

This means that the selection of study participants should be based on the requirements of the study and not their powerlessness (Polit & Beck, 2018:81). All the participants were treated equally; no special favours were given to any participant. This principle was ensured by not discriminating against the study participants based on age, colour, gender, sexual orientation and disabilities. The selection of the study participants was made with equity and fairness.

- ***The right to privacy***

It means that the privacy of the study participants should not be violated. This principle was ensured by using pseudonyms and the safekeeping of audio recordings used for interviews under lock and key. No one, except the researcher and the independent coder, had access to the collected data.

1.12 ORGANISATION OF THE STUDY

CHAPTER 1: Orientation to the Study
CHAPTER 2: Literature Review
CHAPTER 3: Research Design and Methodology
CHAPTER 4: Presentation of Results
CHAPTER 5: Discussion of results and confirmation with literature
CHAPTER 6: Development of health promotion intervention for Families having member(s) diagnosed with TB in the North West province
CHAPTER 7: Summary of the findings and description of the health promotion interventions with related recommendations, contributions to the body of knowledge, limitations, and final summary.

1.13 SUMMARY

The study aimed to develop health promotion interventions for families having a member(s) diagnosed with TB in the North West province. This chapter clarified the purpose, aims and objectives, research question and significance of the study. Key concepts related to the study were defined. It also described the research paradigm, ontology and epistemology as the philosophical assumptions relevant to the study. The chapter also outlined that the study was conducted in two phases. Phase 1 was the empirical study, and phase 2 used the Delphi technique to draft the health promotion interventions. Ethical considerations related to the study were adhered to, and the organisation of the study was also indicated. The next chapter elaborates on and details the literature reviewed to broaden the researcher's understanding of the phenomenon from various viewpoints that supported this study.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

A literature review is a written summary of current evidence about a research problem, and its purpose is to discover what is done and needs to be done about the research problem (Polit & Beck, 2018:107). Burns and Grove (2017:120) define a literature review as a systematic and written presentation of what has been published by other researchers about the topic. Brink, van der Walt and van Rensburg (2018:57), in support, noted that literature review is a process of searching, reading, broadening the researcher's understanding of the particular topic and synthesising conclusions about the published research. Phenomenologists usually do a literature search at the beginning of the study to broaden the researcher's understanding of the phenomenon from various viewpoints (Polit & Beck, 2017:87). Therefore, a literature search is vital to put the study into perspective and to gain evidence to support the findings. Furthermore, a literature review assists in seeing what was done by other researchers and what worked and what did not work.

To conceive the topic satisfactorily, the researcher must undertake a literature search about findings from previous researchers, identify gaps, avoiding unintended duplication and fruitless approaches to contribute adequately to the recent evidence (Polit & Beck, 2017:88). Therefore, it is necessary to follow a particular methodology to unpack needed information. The aim of this literature review is to explore relevant literature using peer-reviewed journals related to the significance and development of health promotion intervention for families having member(s) diagnosed with tuberculosis in the North West Province.

2.2 SCOPE OF LITERATURE SEARCH

The scope of the literature review covered all the relevant literature referring to the development of Health Promotion Intervention for families having member(s) diagnosed with tuberculosis.

2.3 METHODOLOGY OF THE LITERATURE SEARCH

The methodology will be discussed under the following headings: search strategy for peer-reviewed journals, the inclusion and exclusion criteria and data extraction.

2.3.1 Search Strategy for Peer-Reviewed Journals

Literature searches were launched on databases MEDLINE and PubMed. These databases are utilised because they are the largest abstract and citation databases for peer-reviewed literature. They provide superior support for the literature research process in academia and give researchers a global view.

Literature searches utilised six robust electronic databases: Cumulative Index of Nursing and Allied Health Literature (CINAHL), Clinical Key, Google Scholar, UP Space, Medline and PubMed. The following search terms were identified: health, tuberculosis, healthcare, prevention, families, health promotion, disease prevention, health promotion programme, health intervention, community, community nurse and TB prevention and control, guidelines and policies on management and prevention of TB.

The search results were broad and were narrowed with the use of more specific search topics. The reference lists from retrieved studies were manually searched. The reviewed literature comprised research conducted globally, in sub-Saharan Africa and South Africa, from 2017. The search was extended to cover the period from 2015 because the search from 2017 yielded minimal information. More than 290 articles, 50 published theses and 100 mixed-method studies were reviewed. One hundred fifty (150) titles were identified, and one hundred and forty (140) abstracts were examined. Forty (40) abstracts were further analysed to verify if they addressed the research question.

2.3.2 Inclusion and Exclusion Criteria

- Published in English
- Published between 2015 and 2021
- To discuss health promotion intervention for families having member(s) diagnosed with tuberculosis
- Duplicates of records (articles from two databases) and irrelevant records were excluded.
- Articles not written in the English language were excluded.

2.3.3 Data Extraction

Data was extracted from the library by hand searches and librarian assistance. Electronic data searches were also utilised by entering keywords and expressions. References of relevant articles to be reviewed were searched until a point of saturation. Articles were screened for the title, abstracts, and full text. Data was extracted from primary sources containing research studies and statistical reports (Brink et al., 2018:61). Primary sources are defined as original works written by researchers (Brink et al., 2018:61; Burns & Grove, 2017:31; Polit & Beck, 2018:121). However, secondary sources were also used (Brink et al., 2018:61; Burns & Grove, 2017:31; Polit & Beck, 2018:121). Data that identify factors that promote health interventions for TB were extracted and recorded from each article and journal in a notebook (Polit & Beck, 2017:98). Data was then coded according to the type of intervention used to promote TB, type of measure used, year, country, methods, conceptual framework and study outcome.

2.4 DISCUSSION OF FINDINGS FROM LITERATURE REVIEW

The discussion covered the following headings: global TB statistics, African stats on TB, South African TB stats, health, health promotion and health education, health promotion versus health education, health promotion models and health promotion interventions.

2.4.1 Global Statistics of TB

TB is a global epidemic and the infectious disease killer, with an estimated 10 million new cases and 1.3 million deaths in 2017 (Nglazi, Bekker, Wood & Kaplan, 2015:2; Hanrahan et al., 2019:3). In 2015, TB was the leading cause of HIV/AIDS-related deaths globally with an estimated 0.4 million HIV-related mortalities (Lawn et al., 2017:2). TB is preventable and curable, thus early diagnosis and successful treatment are crucial to decrease the mortality rate, the spread of TB, drug resistance, relapse and treatment failure (Izudi, Semakula, Sennono, Tamwesigire & Bajunirwe, 2019:1).

The End TB strategy aims to end the global TB epidemic by 2035 in line with the Sustainable Development Goals (SDGs) targets which WHO Western Pacific Region implemented in 2015 (Rahevar et al., 2018:735). Universal Health Coverage (UHC), defined as a status in which all people receive quality health services without financial hardship, is inseparable from the End TB Strategy (Rahevar et al., 2018:736). People need universal TB care and prevention access without excluding the most disadvantaged and marginalised (Rahevar et al., 2018:735). Families should not face catastrophic financial hardship related to TB (Rahevar et al., 2018:736). The End

TB Strategy aims to decrease TB incidence by 90%, related deaths by 95%, and catastrophic costs by 100% by 2035, which embraces a breakthrough for 2030 as reflected in SDG 3, which aims for an 80% decrease in TB incidence (Carter et al., 2018:e514). South Africa's National Strategic Plan (NSP 2017- 2022) for HIV, TB and Sexually Transmitted Infections (STIs) aims to reduce TB incidence by at least 30% (from 450,000 to 315,000) by the year 2022 (Adu, Spiegel & Yassi, 2021:2). Furthermore, the NSP contains eight goals with specific objectives and interventions to realise the goals (Adu et al., 2021:7). The third goal of the NSP is to reach all the key and vulnerable populations with customised and targeted interventions. These are people living with HIV, household contacts, healthcare workers, inmates, pregnant women, children under five (5), miners and people living in informal settlements (NSP 2017 - 2022). Five critical enablers need to be strengthened to accomplish the goals and objectives of the NSP (Adu et al., 2021:7; NSP 2017 - 2022). In a cross-cut, the enablers include addressing social and behavioural change, communication to increase awareness, building solid social systems (families and communities) to reduce the spread, integrating HIV, STI and TB interventions and services, strengthening procurement and supply and ensuring adequate workforce (NSP 2017- 2022; Adu et al., 2021:7).

WHO recommends that ≥90% of contacts of new patients with TB should be investigated for TB to achieve the global targets of decreasing TB incidence and mortality by 90% by 2035 (Hanrahan et al., 2019:3). TB patients and their families persist to experience financial hardship related to contracting the TB disease (Oh et al., 2019:2). These patients with TB and their families experience an average cost amounting to half of their household's annual income in low- and middle-income countries due to TB (Oh et al., 2019:2). There is still a challenge of sustainable financing for TB care in many countries like Africa (Rahevar et al., 2018:735**).** Therefore, financial intervention may be considered in the formulation of health promotion intervention for TB to control TB to relieve the patients and their families of the financial burden related to TB.

2.4.2 African Stats on TB

The most considerable burden of TB disease is carried by Sub-Saharan Africa (SSA) (Izudi et al., 2019:2). Sixteen of the 30 high TB burden countries are in SSA, with 52% universal health coverage and social protection (Izudi et al., 2019:2). There is a variation in treatment success rate, with Uganda (39%), Nigeria (57,7%), Zimbabwe (70%), South Africa (80% and 82.2%) and Ethiopia with 86, 8% and 90,1% (Izudi et al., 2019:2). It is estimated that in Africa 48% of patients with MDR TB are diagnosed, treated and cured or complete their therapy (Meressa et al., 2015:1181). Furthermore, no African country has realised the WHO target for treatment success

of ≥ 75% (Meressa et al., 2015:1181). Therefore, health promotion interventions to improve TB care and management are needed to reduce the statistics.

With a population of 92 million, Ethiopia has an estimated 21,000 new MDR TB cases per year, among the highest (Meressa et al., 2015:1182). In addition, Ethiopia adopted the DOT strategy in 1992 and has reached 100% geographic coverage however, it is still among the highest countries with TB globally (Tadesse, 2016:2). The country has an annual prevalence and incidence of 200 and 207 per 100,000 people (Tadesse, 2016:2). Cardoso et al. (2017:306), cited that Brazil and Ethiopia are among the 22 countries with the highest burden of TB. The two countries have different epidemiological TB profiles and cultural backgrounds, however, they both have challenges of non-compliance to treatment leading to poor TB control (Cardoso et al., 2017:312).

Tola et al. (2017: 448) attest that non-adherence to TB treatment in Ethiopia ranges from 10% to 21%. These authors further indicate that there are factors that contribute to non-adherence, and these include drug side effects, long waiting time of more than one hour, long distance to healthcare facilities and forgetfulness (Nezenega, Perimal-Lewis & Maeder, 2020:2). Datiko, Jerene and Suarez (2020:2) state that Ethiopia has a high TB, TB/HIV, multidrug-resistant TB burden and stigma. It is shocking about the statistics of TB in Ethiopia. This situation is not different from other countries in Africa, including SA. As such, the researcher realised that it is necessary to develop health promotion interventions for families with member(s) diagnosed with TB in order to prevent more infections and mortality.

According to Datiko et al. (2020:2), nearly 30% of estimated cases of TB are missed by the National Tuberculosis Programs in Ethiopia. Another major TB control problem contributing to the high TB is treatment delay (Seid & Metaferia, 2018:2). The authors further indicate that the median patients delay among pulmonary tuberculosis ranges from 20 to 30 days, and the health system's delay ranges from 33.5 to 42 days (Seid & Metaferia, 2018:2). Factors cited to the cause of treatment delay are negative sputum smear, living in rural settings, private practitioners, initial visit to traditional doctors and lack of TB knowledge (Seid & Metaferia, 2018:2). Therefore, interventions to promote health, address the barriers to positive TB outcome and slow the spread are needed.

In Uganda, annual estimation of 136 new smear-positive cases of TB occurs per 100,000 population, and TB incidence in all forms is estimated at 330 cases/100,000 people (Karamagi, Sensalire, Muhire, Kisamba, Byabagambi, Ragimzai, Mugabe**,** George, Calnan, Seyoum &

Birabwa, 2018:2; Hassard, Ronald & Angella, 2017:2). The country is ranked 16th among the high TB burden countries (Hassard et al., 2017:2). The high TB burden is attributed to the high prevalence of HIV/AIDS whereby 60% of TB patients are co-infected (Hassard et al., 2017:2). The number of notified cases is 235/100,000 and the expected number is 253/100,000 (Karamagi et al., 2018:2). The TB control programs are negatively affected by armed conflicts which leads to patient access to TB health services interruptions (Karamagi et al., 2018:2). Since the scale up of DOTS strategy in 2005, the treatment success rate among smear positive patients has increased from 47% in 2011 to 55% in 2014 (Hassard et al., 2017:2). Slum communities accounts for 60% of the city population (Hassard et al., 2017:2). Therefore, health promotion interventions to address the socio-economic determinants of TB such as overcrowding and poor housing are needed.

Nigeria is among the 30 high-burden countries with TB, TB/HIV and DR-TB (Onyedum, Alobu & Ukwaja, 2017:2; Ogbo, Ogeleka, Olusanya, Ifeggwu, Awosemo, Eastwood & Page, 2018:2; Oga-Omenka, Bada, Agbaje, Dakum, Menzies & Zarowsky, 2020:2; Ukwaja, Alobu, Mustapha, Onazi & Oshi, 2017:112). The WHO estimated that the incidence of TB is 322 per 100,000, with only 15% of the TB burden notified in 2015 (Onyedum et al., 2017:2). In 2017, about 75% of the estimated 418 000 incident cases of TB in Nigeria were not notified nor diagnosed (Ogbuabor & Onwujekwe, 2019:2). In 2018, Nigeria reported the lowest global TB case detection of 15% (Oga-Omenka et al., 2020:2). In support, Olukolade et al. (2017:66) cited that the annual TB case notifications of all forms in Nigeria are non-existent.

In Nigeria, out of 87,211 TB cases, 14,846 HIV-positive were registered for treatment and care in 2015 (Bissalah, Rampal, Lye Sidik, Ibrahim, Illiyasu & Onyilo, 2018:2). Abdullah et al. (2020:1), cited that an estimated 1.4% (1.98 million) of Nigeria's total population (198 million) are living with HIV, making it second to SA. Nigeria's incidence rate is not declining (Ahmad, Montañola-Sales, Prats, Musa, Lopez & Casanovas-Garcia, 2018:2). TB control is threatened by the rising high TB incidence among patients with HIV (Bissalah et al., 2018:2). Over 80% of TB cases are undetected and many people die of TB (Ahmed et al., 2018:2). The high burden of TB is attributed to lack of knowledge amongst people living with HIV leading to high spread and delay in health seeking (Bissalah et al., 2018:2). Therefore, interventions to address barriers to TB control are necessary for Nigeria.

TB remains a health problem and the major cause of mortality and morbidity in Tanzania (Lyakurwa, Lyimo, Mulder, Pelzer, Koppelaar & Heus, 2021:1). The country is among the 30

countries with the highest TB burdens according to WHO rankings (Said, Hella, Mhalu, Chyryankubi, Masika, Maroa, Mhimbira, Kapalata & Fenner, 2017:2). In Tanzania, the incidence and prevalence of TB are not adequately determined due to poor screening (Mbugi et al., 2017:19). However, an incidence rate of 164 per 100,000 persons annually and a prevalence of 0,4% is estimated (Mbugi et al., 2017:19). TB case detection relies on passive case detection when patients present at the healthcare establishment leading to longer diagnostic delays (Said et al., 2017(2). The prevalence of multi-drug resistant TB was estimated at 1.0% among new TB patients and 4.1% among retreatment patients in 2017 (Lyakurwa et al., 2021:1). In 2016 and 2017, only 6% and 10% of the estimated MDR-TB patients were registered on treatment, emphasising the large treatment gap for DR-TB patients (Lyakurwa et al., 2021:1). Reports indicate that TB in humans is caused by Mycobacterium bovis (zoonotic TB) in northern parts of the country, however, the study conducted by Mbugi et al. (2017) did not find any association. Therefore, active case finding and contact tracing should be included in health promotion interventions in Tanzania.

2.5 SOUTH AFRICAN STATISTICS ON TB

SA remains one of the global top six high HIV and TB-burdened countries (Tadokera, Bekker, Kreiswirth, Mathema & Middelkoop, 2020:2). The burden of TB disease in the country is caused by continuing spread, with incidence rates of over 781/1,000,000 population, and 60% co-infected with HIV (Tadokera et al., 2020:2; Engelbrecht et al., 2016:1). Furthermore, the dual burden of HIV and TB in SA is a major health risk to healthcare workers (Engelbrecht et al., 2016:2). Healthcare workers are three times more likely to contract TB than the general population, as the TB spread occurs before the correct diagnosis can be made (Engelbrecht et al., 2016:2). An estimation of 81% of TB cases among healthcare workers occur in their work environment (Engelbrecht et al., 2016:2).

TB is the leading cause of death in SA, with many social and health concerns (Tomita et al., 2019:388). Patients with TB are stigmatised by partners, peers, families, community and colleagues at work (Tomita et al., 2019:388). The TB stigma delays health seeking behaviour, commencement of treatment, and treatment adherence resulting in multidrug-resistant tuberculosis (MDR-TB) and death (Tomita et al., 2019:388). MDR-TB impends global TB control and represents seven percent (7%) in SA (Loveday et al., 2018:2). MDR-TB results in prolonged hospitalisation and expensive treatment, which was approximated at 65% of the budget in 2014 (Loveday et al., 2018:2). Ndjeka et al. (2020:1073) cited that the country is grappling with

rifampicin-resistant tuberculosis (RR-TB), with 130,005 patients diagnosed in 2019. The fundamental policy objective of the Universal Health Coverage post-2015 Global Strategy for Tuberculosis is social protection against the cost of illness (Foster et al., 2015:42**).** Therefore, to improve disease control and prevention, it is crucial to address the economic burden related to TB to reduce the financial impact on vulnerable patients and their families. Interventions are needed to promote TB health that addresses and controls the spread to reduce the burden in SA**.**

2.6 HEALTH

Health is determined by behaviour in many ways, such as smoking, drinking and exercise (Golinowska, Groot, Baji & Pavlova, 2016:345). Health behaviours are all actions a person takes that affect health, disease, disability or mortality (Rubinelli & Diviani, 2020:2395). Health is an old concept defined by WHO in 1948 as a state of complete physical, mental and social well-being and not simply the absence of disease or injury (Berman, Snyder & Frandsen, 2016:288; Grabowski, Aagaard-Hansen, Willaing & Jensen, 2017:2; Bautista-Valerezo et al., 2020:2). This definition was criticised for being unclear, broad and elucidate as it could not be measured (Schramme & Edwards, 2017:34). In 1984, a new notion was developed. Health was no longer viewed as a state. Still, in dynamic terms of resiliency or a resource of living (Schramme & Edwards, 2017:34). The revised definition was understood as the extent to which a person or group is able to achieve aspirations and satisfy needs and to change and cope with the environment (Schramme & Edwards, 2017:34). Health is further defined as a fundamental human right, and is influenced by social factors such as structural and environmental factors (Clarke, 2016:126). Therefore, identifying and addressing the socioeconomic factors in the health promotion interventions of TB can slow the spread of TB and save life.

Health is understood as a resource for everyday life and emphasises the social and personal resources, as well as the physical capacities (Schramme & Edwards, 2017:34). During the Ottawa Charter Conference of Health Promotion held in 1986 (Schramme & Edwards, 2017:34), the definition was further extended to contain the spiritual health and understood as a dynamic state of complete physical, mental, social and spiritual well-being and not only the absence of disease or injury. The WHO concept refers to total wellbeing, and the term well-being refers to the whole range of positive feelings or happiness (Schramme & Edwards, 2017:33)**.** Therefore, health is understood in terms of what individuals, their families and the community believe and do that affect their health positively or negatively. Gessert et al. (2015:1) allude that a better understanding of their beliefs is needed to engage and activate rural patients in their own

healthcare. Individuals define health based on their health-related values, beliefs and understanding (Gessert et al., 2015:2). Hence the health promoter needs to clearly understand what the patients and their families think and define their health to engage and support them. Therefore, understanding the attitudes and beliefs of TB patients, their families and the community can assist the researcher in planning and formulating the health promotion intervention for TB.

2.7 HEALTH PROMOTION AND PREVENTION

Health promotion empowers people to increase control over and change their health behaviour (Maijala, Tossavainen & Turunen, 2016:544). Clarke (2016:128) concur that health promotion is a process of endowing people to increase control over the determinants of health, thus improving their health. Whitehead (2018:39) defines health promotion as addressing health's environmental, political, social and economic factors. Peu (2016:306) further adds that health promotion is a comprehensive term covering health education and disease prevention, and its process is outcome based. All the activities designed for good health, such as preventing the spread of TB, informing people about TB, and encouraging healthy lifestyles, are termed health promotion.

Focusing on preventive and promotive health population wellness is important in moving from curative to promotive health (Clarke, 2016). Prevention consists of three levels to restrict the disease's progression: primary, secondary, and tertiary prevention (Berman et al., 2016:274). Primary prevention is concerned with health promotion and disease protection, while secondary prevention deals with the timely identification of health problems and early intervention to relieve the health problem (Berman et al., 2016:274). The (ibid) indicates that tertiary prevention focuses on restoring and rehabilitating individuals to the best level of functioning within the limitations of the disability. Health prevention or health protection differs from health promotion in the sense that it is behaviour motivated by the desire to avoid disease meanwhile, health promotion is behaviour motivated by the desire to increase well-being (Berman et al., 2016:274). Therefore, health education is about the causes, the spread, treatment and prevention. Activities such as home visits, TB campaigns (TB screening), cough etiquette, TB vaccinations and TB days are necessary to make people aware and change their lifestyles. Families should be key in health promotion, as they live with the member(s) diagnosed with TB**.** Therefore, to control and end TB, interventions to promote awareness are needed for families with member(s) diagnosed with TB.

2.8 TB HEALTH EDUCATION AND PRIMARY, SECONDARY AND TERTIARY PREVENTION

Nurses are recognised for providing health education to clients, families and the community as they are the largest professional group daily in close contact with clients (Pueyo-Garrigues, Pardavila-Belio, Whitehead, Esandi, Canga-Armayor, Elosua & Canga-Armayor, 2021:716). In SA, health education is integrated into primary health care, and it is provided by healthcare workers (Kigosi, Heunis, Engelbrecht, Janse van Rensburg & Dingie van Rensburg, 2017:2). It is a vital tool to empower and encourage patients towards TB control (Kigosi et al., 2017:2). Health education is understood as a planned teaching-learning process facilitated by health professionals in different settings to empower people to engage in healthier lifestyles (Pueyo-Garrigues et al., 2020:716).

Whitehead (2018:38) defines health education as an activity of informing people about the nature and the determinants of health/diseases as well as the individual's level of risk related to their health behaviour. Nurses should possess the necessary knowledge and skill in health education, such as techniques, behaviour change theories and educational planning (Pueyo-Garrigues et al., 2021:716). Health education can be provided through face-to-face interaction, health education campaigns, dissemination of educational materials and the media (Kigosi et al., 2017:2). Clarke (2016:135) affirms that health education as an approach to health promotion uses one-on-one counselling and group discussions, and allow exploration of personal values and attitudes. Therefore, health education as a component of health promotion may be used as an educational intervention to create awareness about TB.

Primary prevention of the disease aims to prevent TB from occurring in the community by pursuing healthy individuals to reduce incidences and prevalence (Clarke, 2016:154; Mntlangula, Khuzwayo & Taylor, 2017:53). TB prevention can be done by providing health education about TB vaccination, personal and environmental hygiene, triage and isolation, contacts tracing and good cough etiquette (Clarke, 2016:154). Secondary prevention is applied after TB is confirmed to reduce transmission and prevent complications (Clarke, 2016:155). Therefore, informing confirmed clients about TB and its treatment and encouraging treatment adherence to prevent MDR and cross-infection is important (Clarke, 2016:154). Tertiary prevention involves assisting patients to return to normal or near normal (Clarke, 2016:155). Therefore, the researcher needs to assess and understand the needs of patients and their families, which will assist in drafting the health promotion intervention for families with member(s) diagnosed with TB.

2.9 HEALTH PROMOTION VERSUS HEALTH EDUCATION

Health education and health promotion are complex concepts that are evolving and complement each other (Whitehead, 2018:38). Health education motivates people to change their behaviour by influencing their beliefs, values and attitude towards healthy living (Whitehead, 2018:39). In contrast, health promotion improves health and empowers people to live healthily (Peu, 2016:305). The aim of health education is to enable people to make well-informed voluntary decisions and for health promoters to respect the decisions (Clarke, 2016:136). Health promotion is concerned with change producing actions through various methods and approaches that target modifiable determinants of health related to individuals and economic, social and organisational behaviours (Clarke, 2016:131). Health promotion is concerned with the political and legislative action dictating health strategies and programmes (Whitehead, 2018:39). Health promotion is a broad term embracing health education and disease prevention (Peu, 2016:306). Therefore, understanding the two concepts (health promotion and health education) will assist the researcher when formulating health promotion interventions for TB.

2.10 HEALTH PROMOTION MODELS

Health promotion models are used to understand and explain behaviour that promotes health and is used in the planning and implementation of health promotion and disease prevention intervention programs (Polit & Beck, 2018:126). Therefore, in this study, health promotion models were consulted and viewed to assist the researcher in formulating health promotion interventions for families with member(s) diagnosed with TB. The following health promotion models guided the study:

2.10.1 Theory of Planned Behaviour (TPB)

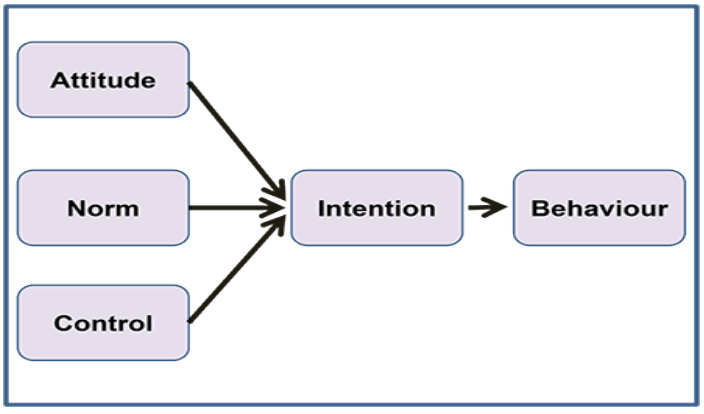


Figure 1: Theory of Planned Behaviour

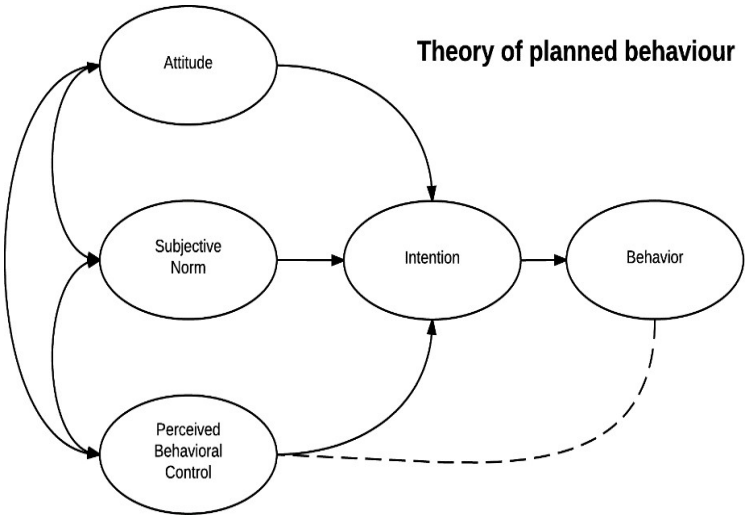


Figure 2: TPB

Adapted from Nguyen (2018)

Nguyen (2018) states that TPB started in 1980 as a Theory of Reasoned Action to predict an individual's intention to engage in the behaviour at a specific time and place. The (ibid) further indicates that it is intended to explain all behaviours over which people can exert self-control. It links beliefs to behaviour. There are three core components, namely attitude, subjective norm and perceived behavioural control (PBC), which shape an individual's behavioural intention (Polit & Beck, 2018:127). TPB postulate three features that determine behaviour as a function of intention, namely attitude, subjective norm and perceived behavioural control (Nguyen, Sendall & Young, 2017:2). The (ibid) further state that each feature that impacts intention, is reinforced by behavioural beliefs (attitude, advantages and disadvantages of execution of the target behaviour), normative beliefs (subjective norm; significant referents approving or disapproving the target behaviour) and control beliefs (obstacles or facilitators to accomplish the target behaviour). Nguyen et al. (2018:2) mentioned six constructs that collectively represent a person's actual control over the behaviour:

1. Attitudes refer to the degree to which a person has a positive or adverse evaluation of the behaviour of interest.
2. Intention refers to motivational factors persuading a given behaviour.
3. Subjective norms refer to the belief that most people support or condemn.
4. Social norms refer to the usual codes of behaviour in a group.

5. Perceived power refers to perceived features that enhance or obstruct behaviour.
6. Perceived behavioural control refers to the person's perception of the comfort or struggle of executing the behaviour.

Nguyen (2018) cited that TPB is applied to studies of the relations among beliefs, attitudes, and behavioural intentions in various fields, such as health services. This study used it to guide TB health promotion, counselling and treatment compliance. The six (6) constructs of TPB contribute to the promotional interventions. The main predictor of the behaviour in this study of the development of health promotional intervention for TB families is intention. The combination of perceived behavioural control decides behavioural intention, the extent to which the families believe that they will find the health intervention difficult or easy. Their attitude towards the behaviour (the belief that the promotional intervention will result in a valued outcome) and subjective norm (the belief that other members of the family/community considered necessary are in favour of the promotional intervention). In applying the theory, the researcher considered the factors that could be utilised for effective interventions to increase the intent, such as knowledge and skills.

2.10.2 Health Belief Models

Health belief models have been developed to determine whether a person will likely engage in disease prevention and health promotion activities (Berman, Snyder & Frandsen, 2016:294). Furthermore, the models can be used to develop programs to assist people with healthy lifestyles and positive attitudes toward preventive measures. Jagdal et al. (2015:230) concur that the health belief model identifies and predicts health behaviour. The model was created from six domains (Tola et al., 2016:3). The (ibid) indicates that the domains are perceived susceptibility, perceived severity, perceived barriers, perceived benefits, cue to action and perceived self-efficacy. Firstly, the model perceives the risk of contracting the health condition of concern (perceived susceptibility), TB in this study (Jagdal et al., 2015:230). The seriousness and the consequence of the complications (MDR, XDR and death) resulting from the condition with all its physical (weight loss), psychological (anxiety and depression), social (stigma) and economic (job loss) dimensions (perceived severity) by getting positive cues in the form of incentives (Jagdal et al., 2015:230). The incentives can be from internal or external environments (cues to action), and action will be taken after believing in the application and suitability.

The health belief model assisted the researcher in developing TB promotion intervention as it explains the circumstances under which people adopt protective behaviour and the reasons. HBM

further states that a person takes health related behaviour depending on the state of mind and the severity of the disease (Berman et al., 2016:294). HBM application to promote TB intervention depends on knowledge and the perception of susceptibility, which provide the drive to act. In developing the health promotion intervention, people should be well informed about the intervention, the benefits, and the dangers of not adhering to the intervention. It is important to note that the concepts and statements borrowed from the theory of Planned Behaviour (TPB) and the Health Belief model may be used together to inform and guide the development of health promotion intervention. The models assisted the researcher in formulating health promotion interventions that might influence behaviour in health promotion and prevention.

2.11 HEALTH PROMOTION INTERVENTIONS

Health promotion intervention is regarded as a process of designing and implementing activities to influence people to engage in behaviours that positively impact health and avoid negative ones (Rubinelli & Diviani, 2020:2395). The following health promotion interventions are discussed: DOT strategy, psychological and educational intervention, stigma intervention, and the involvement of families in health promotion and disease prevention.

- **Dots strategy**

The WHO declared TB a global emergency in 1994 and adopted directly observed therapy short course (DOTS) as its main strategy for TB prevention and control (Cardoso, dos Santos & Kiflie, 2017:306). Furthermore, Cardoso et al. (2017:306) cited that the DOTS treatment protocol consists of five components. These components include political commitment, case detection, standardised treatment, consistent and steady drug supply and monitoring and evaluation. The conventional instruments used to measure national control programs under this strategy focus on the proportion of cases that are cured at the end of treatment (Asare, Asante-Poku, Prah, Borrell, Osei-Wusu, Otchere, Forson, Adjapong, Koram, Gagneux & Yeboah-Manu, 2018:1). The implementation of DOTS program reduced the TB mortality rates but continues to cause diseases that can be preventable (Zare, Asadi, Vahedian Shahroodi & Bahrami-Taghanaki, 2017:8).

Yellappa et al. (2016:1) conducted a qualitative study in India to explore the experiences and consequences of having TB on patients enrolled in DOTS and their caretakers. The study conducted 33 in-depth interviews with patients diagnosed with TB from three groups:

- Group 1 were patients who reached the Revised National TB Control Programme (RNTCP) directly on their own and took DOTS at RNTCP;

- Group2 were patients referred by private practitioners to RNTCP and took DOTS at RNTCP;
- Group 3 were patients diagnosed by RNTCP and took DOTS from private practitioners. The findings of this study revealed that TB and DOTS influenced the patients' lives, their families and carers. The most vulnerable patients experienced difficulties in accessing and completing DOTS, however, their families were the main source of support for their recovery.

Patients taking DOTS from government facilities but living in rural areas had many barriers to adhering to the DOTS strategy (Yellappa et al., 2016:1). The barriers included lack of transport money in cases of long distances to the health facility, inconvenient times, and attitude of the RNTCP staff as compared to patients taking DOTS from private practitioners (Yellappa et al., 2016:1). The study concluded that the development of a mechanism is needed within the RNTCP towards patient centred care to enable carers and patients to cope with TB**,** thus improving adherence to DOTS. The strength of the study was that it provided valuable information about patients' needs and expectations while taking DOTS. The study's limitations were that the healthcare providers' experiences were excluded. Therefore, family involvement is important as they can supervise the TB patients and, in some cases, provide transport money to healthcare facilities and ensure that the patients take treatment as ordered.

Kibuule et al. (2019:441) conducted a study to assess community-based DOTS compared to a facility or clinic-based DOTS in Namibia. The study used annual TB treatment success, cure, completion, and case notification rates between 1996 and 2015 using uninterrupted time series analysis. The study revealed that the mean annual treatment success rate during the pre-intervention period was 58,9%, and during the post-intervention ranged from 69 to 87%. The study concluded that community-based DOTS is more effective than facility-based DOTS in improving TB treatment success rate. Furthermore, the study called for additional measures, such as bacteriologic monitoring among patients at risk of treatment failure, to end TB by 2035. Therefore, health promoters need to do home visits to follow the TB patients and their families to understand their situations at home and offer the necessary support.

Negandhi et al. (2017:1) undertook a rapid assessment to understand the facilitators and barriers to adopting the daily regimen for TB treatment in three Indian states. The study was conducted across six districts of three selected states of Maharashtra, Bihar and Sikkim. In-depth interviews were used among health personnel at several levels to identify their viewpoints on the adoption of daily regimens for TB. The study found that an easily reachable, patient centred and personalised outreach enabled treatment adherence. Furthermore, lack of transport to facility

DOTS, out-of-pocket expenses, and loss of wages for accessing DOTS facilities were major barriers. The main strength of the study is that it developed its protocol through a consultative process by engaging with Central TB Division senior officials. The limitation of the study was that, due to time limits, the perspectives of the private sector were not included.

Khan, Ning, Jinou, Hutchison, Yoong, Lin and Coker (2017:15) undertook a cross sectional study to investigate whether the prolonged delay in diagnosis of infectious, symptomatic positive TB smear cases exists where there is the full implementation of the DOTS strategy. The study was conducted in three stages: delay to the DOTS centre, delay to TB confirmation and treatment. It was found that delay to the DOTS centre was the highest and contributed to delay in treatment initiation. The study concluded that policies should concentrate on reducing delays in accessing health services instead of focusing only on increasing overall case-detection rates. The strength of the study is that it used all smear positive patients treated in the Yunnan province in China. The limitations of the study were that it relied on the onset of patients' symptoms, which may be inaccurate. Therefore, policymakers should ensure that sound policies are in place to shorten the delay in diagnosing and put the patients on TB treatment in time.

Choowong, Tillgren and Söderbäck (2018:458) conducted a qualitative study to explore the experiences of village health volunteers (VHVs) and family members (FMs) as DOT providers in a local Thai community. The study used 25 VHVs and 6 FM involving five focus groups. The study found that the barriers to the practice of DOT were practical problems of counselling and recording. The study concluded that the DOT providers themselves lack training. They needed training according to the DOT guidelines to improve the quality of care, improve TB outcomes, and increase patient autonomy to adhere to treatment. The strengths of the study were that it used multiple researchers (triangulation) throughout the analytical process and ensured high quality reporting. The study had limitations related to translations from Thai into English, as some feelings and wording could not be precise. However, it was concluded that to improve TB health promotion and treatment adherence, DOT supporters need the necessary training and knowledge.

Treatment adherence is challenging, given the difficulty, uncertain tolerability and long duration of treatment regimens presently available for both drug-susceptible and drug-resistant tuberculosis (Alipanah, Jarisberg, Miller, Linh, Falzon, Jaramillo & Nahid, 2018:3). TB non-adherence leads to increased risk of negative results, such as delayed culture conversion with continued spreading in the community, higher health system costs, treatment failure, relapse and

the development of drug resistance (Alipanah et al., 2018:3; Tola et al., 2016:2; Patel, Campbell, Sadatsafavi, Marra, Johnston, Smillie & Lester, 2017:2). Therefore, it is vital to provide adherence interventions to improve outcomes of TB management.

Alipanah et al. (2018:1) conducted a systematic review and meta-analysis of adherence interventions to determine which approaches lead to improved TB outcomes. The study included randomised controlled trials, prospective and retrospective cohort studies with an internal or external control group that evaluated any adherence intervention. DOT offered by different people in different settings, tracers and incentives, and patient and health education were identified as the key to improving adherence. The study found that self-administered therapy (SAT), compared to DOT, has lower rates of treatment success, adherence, sputum smear conversion and higher rates of drug resistance. Lower rates of adherence were found with family DOT when compared to DOT provided by healthcare workers, and community-based DOT was superior to facility-based DOT.

The study conducted by Dobler et al. (2015:657) obtained the same results. Medication monitors improved adherence and treatment success rate, and there was no difference between VOT and DOT. SMS reminders resulted in a higher treatment completion rate and rates of cure and sputum conversion when combined with medication monitors. The study concluded that TB treatment outcomes improved when patient education, healthcare provider education, incentives and enablers, psychological interventions, reminders and tracers, or mobile digital technologies were used. The limitations of the study were the heterogeneity of the included studies and the lack of standardised research methodology on adherence interventions. Therefore, DOTS intervention alone cannot improve TB. Thus, interventions such as family and community involvement, financial support, food incentives and health education are needed to control TB transmission.

Muller et al. (2018:731) performed a systematic review and meta-analysis to determine whether providing directly observed DOTS, financial incentives, food parcels and/or education/counselling improves TB treatment adherence. The study used twenty-two (22) randomised clinical trials. The study used the cure rate as the primary outcome and default rate and mortality as the secondary outcomes. There was a substantial increase in cure rates with DOTS, followed by patient education and counselling (Muller et al., 2018:731). Furthermore, the default rate declined considerably with DOTS, followed by financial incentives, patient education and counselling. There was no significant decrease in mortality rates with these interventions. The study concluded that DOTS and patient education/counselling significantly improved cure rates (Muller et al.,

2018:731). DOTS, patient education/counselling and financial incentives also led to a decrease in the default rate. The study recommended psychological counselling and health education services in the case of routine treatment. The limitations of the study were that most of the studies included might not represent the current situation, as interventions depend on the locations (Muller et al., 2018:731). Furthermore, some studies did not clarify whether DOT was applied throughout the entire course of therapy. However, it was concluded that health promoters or DOT supporters need to provide psychological and social support interventions to patients and their families, health education about TB and financial assistance to improve TB cure and prevention.

Pradipta et al. (2020:1) conducted a study to assess the effectiveness of medication adherence interventions using a systematic review of randomised control trials. The study included both latent tuberculosis infection and active TB patients. The outcomes of interest included adherence rate, completed treatment, treatment default and treatment outcomes. The study identified ten active and four latent TB infections. In active TB patients, DOT by trained community workers, short messaging service combined with education, counselling, monthly TB vouchers, drug box reminders and combinations of those were found to be impactful. In latent TB infection patients, shorter regimens and DOT effectively improved treatment completion. DOT remarkably showed variable effectiveness, emphasising that implementation, population and location may play a part. The limitations of the study were that it used only two databases (Medline/PubMed and Cochrane) with restrictions to English and the search period. Thus, not all intervention studies were covered. The study excluded interventions in more complex or high-risk TB patients, such as those with comorbid human immunodeficiency virus, drug-resistant TB, alcoholism, and illicit drug use. Therefore, to control TB, several intervention strategies such as DOT, food vouchers, health education, counselling and health promotion interventions are needed to improve TB adherence.

Tola et al. (2017:1) conducted a study investigating the effect of psychosocial factors and patients' views on TB treatment non-adherence in Ethiopia. A cross-sectional study was used in Addis Ababa at thirty-one (31) randomly selected healthcare facilities (Tola et al., 2017:1). A structured questionnaire was used to collect data on demographics, knowledge, psychological distress, alcohol use, tobacco smoking and six HBM domains. The study found that non-adherence was high in Ethiopia. The poor adherence could be attributed to 29% of the participants being immigrants who might have left the country. The study concluded that poor adherence to TB treatment was associated with HIV status, economic hardship, alcohol use and psychological distress (Tola et al., 2017:1). Therefore, psychological distress, smoking and alcohol abuse should be addressed to reduce the spread of TB and MDR. The study recommended the

implementation of comprehensive interventions that concentrate on poverty alleviation, emotional counselling and alcohol abuse to improve TB adherence. The limitation of the study was that healthcare workers of the selected study areas at the TB clinic administered the questionnaire. Thus, the healthcare workers, in demonstrating their performance, could have overestimated the adherence level of the patients. The patients, too, might not be honest with their responses to the questionnaires.

Stagg et al. (2020:438) conducted a study aimed to describe how patients take their TB medication and the time-based factors associated with missed doses. The study used a pragmatic, cluster-randomised trial of electronic reminders to improve treatment adherence among pulmonary TB patients in China. Adherence to each dose was documented by the medication monitor box and included both suboptimal dosing implementation and discontinuation among patients with pulmonary TB. The treatment was the standard six (6)-month course (180 days). The study found that treatment adherence deteriorated over the course of treatment, especially in the continuation phase (Stagg et al., 2020:438). Therefore, measures to enhance treatment interventions, such as treatment supervision, patient counselling and incentives, should be provided early on to improve treatment adherence. The study concluded that digital tools could improve treatment adherence and recommended that the National TB Program take non-adherence to treatment seriously as it is under recognised. The limitation of the study was that opening the medication box does not guarantee that the drug was taken.

Kaplan et al. (2016:1185) conducted a study aimed to evaluate anti-tuberculosis treatment outcomes and the rate of antiretroviral therapy (ART) initiation using weekly community-based adherence support compared to daily directly observed therapy. The study was a retrospective analysis comparing two cohorts treated for tuberculosis in 70 TB clinics during six (6)-month periods before and after the introduction of a new adherence model comprising treatment literacy sessions during two (2) weeks of DOT, followed by weekly home visits by community care workers. The pre-intervention cohort included 11,896 patients with TB, and the post-intervention cohort was 11,314. It was found that there was no difference in pre-intervention and post-intervention anti-TB success rates. The study concluded that weekly community-based adherence support was a feasible alternative to daily DOT, with no deterioration in anti-TB treatment outcomes and increased ART initiation. The limitations were the lack of a comparative self-administered therapy arm**.** Interventions to promote TB should include community-based DOT so that the health promoters can do home visits. These health promoters can provide proper

health education to patients and their families, nutrition and prevention, such as ventilation and cough etiquette to control TB.

- **Psychological and educational intervention**

Psychological distress is a phenomenon which is commonly experienced by people in different conditions and is defined as a mental state where the emotional pain is associated with depression and anxiety (Peddireddy, 2016:2). Depression affects almost half the people on TB treatment and is associated with increased TB spread, morbidity, drug resistance and death (Sweetland, Kritski, Oquendo, Sublette, Pala, Silva, Karpati, Silva, Moraes, Silva & Wainberg, 2017:852).

Tola et al. (2016:1) conducted a study to evaluate the impact of psychological counselling and educational intervention on TB treatment adherence based on the Health Belief Model (HBM) using a cluster randomised trial in Addis Ababa with a structured questionnaire to both intervention and control group at baseline and endpoint of the study. The study found that at enrolment, the level of non-adherence was almost the same between the two groups. Still, after the intervention, the level of non-adherence decreased in the intervention group and increased in the control group. The educational interventions and psychological counselling made a huge difference between the intervention and control groups regarding non-adherence. Furthermore, the study recommended incorporating health education services and psychological counselling into the standard DOTS strategy as part of the TB treatment strategy. The limitation of the study was that transferred outpatients were not traced.

A study was conducted in Nepal aimed at developing an intervention to improve the psychosocial well-being of patients found that there is a negative impact of MDR treatment on mental health, especially for those with poor social and financial support (Khanal, Elsey, King, Baral, Bhatta, & Newell, 2017). The study emphasised the lack of information on MDR-TB, treatment and drug side-effects to patients and their carers, leading to patients' anxiety. Furthermore, social and family support was a key factor in psychological well-being.

Jadgal et al. (2015:1) conducted a study to determine the impact of health education based on the health belief model in promoting the behaviour of smear-positive pulmonary TB among patients in Chabahar City, Iran. The study used 80 smear positive pulmonary TB patients who were referred to health centres, and questionnaires were used to collect data based on the health belief model. The results revealed an increase in cognitive skills from 6.10 to 6.88, behavioural

skills increased from 2.08 to 2.88, perceived severity increased from 11.08 to 12.19, perceived benefits increased from 11.48 to 12.23, and mean perceived barrier decreased from m17.52 to 16.68. The study concluded that implementing educational programs could increase TB patients' knowledge and behaviour. The limitation of the study was a high rate of illiteracy which suggested the development and application of training films based on the Health Belief Model to patients.

Potter (2020:43) conducted a study to evaluate the impact of an educational intervention to improve TB infection control among healthcare providers in a military treatment facility in Florida, the United States of America (USA). A four (4)-hour intervention was conducted with two aims for evaluation: 1) start a TB infection control educational intervention containing a pre/post-test with a minimum of 15 staff members who completed the intervention. 2) 50% of the participants increased their scores from the pre to post-test by 50%. The results showed an increase in the staff knowledge. Nineteen (19) participants completed 100% of the training and 53% increased pre to post-test scores by 10% (Potter, 2020). The project indicated that an educational intervention could be implemented effectively (Potter, 2020). Limitations of the study included the small size of the participant pool and the intervention was executed at a single site, which limited generalising to other populations.

Akande (2020:2) conducted a quasi-experimental study involving 100 nurses in the intervention and comparison groups. Using a multi-method educational intervention, the study aimed to improve the TB infection control related knowledge and practices among nurses in Ibadan, South-West Nigeria, in two secondary health establishments. A baseline data collection was conducted, followed by training in the intervention group. Six (6) months later, data collection was conducted in the comparison group and training was provided. The endpoint data collection was done after a year. The study found a significant improvement in both groups after the intervention. The study concluded that the post-intervention progress effectively improved TB infection control among the nurses. Furthermore, the study emphasised the importance of continuously training nurses and healthcare workers as part of professional development to improve TB infection control in healthcare facilities. The limitation of the study was that it used self-administered questionnaires, which tend to be exaggerated by respondents, and direct observation of the practices was not carried out due to time and cost constraints.

- **Economic intervention**

TB is related to being poor increases the danger of contracting TB. Socio-economic status and access to healthcare institutions affect tuberculosis incidence (Mahara, Yang, Chen, Wang & Guo, 2018:1). In 2019, the WHO developed a Multisectoral Accountability Framework to fast track the progress of ending TB by 2035, urging the governments to address a wide range of socio-economic determinants through collaborations and partnership (Satyanarayana, Thekkur, Kumar, Lin, Dlodlo, Khogali, Zachariah & Harries, 2020:4).

Mahara et al. (2018:1) investigated the relationship between TB incidences and Beijing's socioeconomic or healthcare facility predictors. A retrospective spatial regression analysis was used based on new sputum smear-positive pulmonary TB cases in Beijing districts. The study found that TB incidences mainly occurred in urban and densely populated neighbourhoods. Furthermore, the study confirmed that the number of hospital beds, district-level GDP, per capita GDP, permanent resident population, population density and migrant population may impact TB incidences. The limitations included the under-reporting of the infectious disease, and the study did not include other factors related to pulmonary tuberculosis incidences due to unavailability of the information at the district level.

Carter et al. (2018:514) conducted a study to produce an estimate of the impact of attaining Sustainable Development Goal (SDG) one (1) on tuberculosis incidence in 2035. SDG1 aims to end poverty in all its forms and expand social protection coverage by 2030. The study developed a conceptual framework linking key indicators of SDG1 progress to tuberculosis incidences through well described risk factor pathways. It populated it with data from the SDG data repository and the WHO tuberculosis database of 192 countries. The study found that ending extreme poverty will decrease the global incidences of tuberculosis by 33.4% by 2035, and expanding social protection coverage will result in a decline of incidences by 76.1% by 2035; both pathways will result in a reduction of 84.3%. The study concluded that full achievement of SDG1 could significantly influence the global burden of tuberculosis. Furthermore, the study proposed that cross-sectoral approaches that promote poverty reduction and social protection expansion should be crucial complements to health interventions to accelerate the end of TB. The study has data-centric limitations as not all countries collect routine prevalence estimates for social protection coverage or extreme poverty.

Ukwaja et al. (2017:564) conducted a prospective, non-randomised study in a secondary care hospital in Nigeria. The study aimed to investigate the feasibility of providing financial incentives

to TB patients under routine conditions and to determine their impact on TB treatment outcomes. A total of 294 patients respectively 173 and 121 in the control and intervention period of three (3) months were registered in the study. There was no difference in patients' demographic or clinical characteristics. The study used all registered patients receiving first line TB treatment. The intervention aimed to mitigate the direct costs of TB treatment-seeking, comprising direct medical and non-medical expenses such as food, transportation and accommodation experienced during diagnosis and treatment and to improve adherence. Patients eligible for the intervention received monthly cash incentives for six (6) months. The study found that the patients enrolled during the control period had lower treatment success rates than those who received the intervention due to higher loss to follow up rates in the control group. The study concluded that financial incentives effectively improve treatment success and reduce follow-up loss among poor patients in rural Nigeria. Furthermore, the study suggested using cash incentives to enhance TB management in under-resourced populations. The limitations of the study are that it used a small sample, and the findings were based on data from TB registers thus, information about patients' socio-economic status was unavailable.

Richterman et al. (2018:471) conducted a systematic review and meta-analysis to assess cash transfer interventions for improving treatment outcomes for active pulmonary tuberculosis in low- and middle-income countries. The study found that patients in low-and middle-income countries receiving cash during treatment for active tuberculosis are more likely to have a favourable clinical outcome. Wingfield et al. (2015:1) also designed, implemented and refined a novel TB-specific socioeconomic intervention that included cash transfer. The study aimed to support TB prevention and cure in resource-constrained slums in Lima, Peru. A Community Randomised Evaluation of a Socioeconomic Intervention to Prevent TB (CRESIPT) project was conducted. The study used a mixed methods approach during formative activities. The study recruited 135 randomly selected patients and 647 household contacts from 32 poor communities over seven (7) months. The project was perceived as patient-centred and empowering. The limitation of the study included participant confidence being worn through cash transfer delay and hidden account charges as well as stigma. Therefore, interventions to promote TB for families should address the socioeconomic status of patients and their families.

- **Stigma intervention**

Stigma is a Greek word for a mark that was cut or burned into the skin, it identified people such as lawbreakers, enslaved people or conspirators, and they were to be avoided (Rau, Wouters,

Engelbrecht, Masquillier, Uebel, Kigosi, Sommerland & Janse van Rensburg, 2018:2). Stigma is a social process characterised by labelling, stereotyping, separation, leading to status loss and discrimination (Nyblade, Stockton, Giger, Bond, Ekstrand, Mc Lean, Mitchell, Nelson, Sapag, Siraprapasiri, Turan & Wouters, 2019:1). The stigma experienced by people with TB leads to delay in seeking treatment and non-adherence to TB treatment (Sommerland, Wouters, Mitchell, Ngicho, Redwood, Masquillier, van Hoorn, van den Hof & Rie, 2017:S81). Therefore, to end TB, interventions to reduce stigma are needed. Stigma is a social contributing factor of health because it is shaped by community norms, interpersonal norms, interpersonal relations, and health institutions' culture (Datiko, Jerene & Suarez, 2020:1).

Stigma is the main barrier to accessing healthcare and the ability to manage illness and complete treatment (Craig, Daftary, Engel, O'Driscoll & Ioannaki, 2017:91). Furthermore, the social relationships of people with TB are often adversely affected by community members and caregivers, who may be unwilling to socialise (Sommerland et al., 2017:S81). Therefore, health education interventions to increase TB knowledge about the cause, spread and care needed to reduce stigma. Negative labels are linked to TB with concepts such as immorality, poverty, fragility, hedonism, effeminacy and self-destruction (Sommerland et al., 2017:S81). The stigma attached to tuberculosis contributes to the limited effectiveness of the current TB control approaches (Tadesse, 2016:1).

Sommerland et al. (2017:81) conducted a systematic literature review to assess the effectiveness of interventions to reduce stigma among TB patients, healthcare workers (HCWs), caregivers and the general community. The study found quality assessment to be poor. The authors noted that TB knowledge was influential in changing the attitude of patients, their families and the public, thus reducing the stigma. Furthermore, it found home visits and support groups to effectively reduce stigma. It was concluded that there is a lack of information about the interventions that reduce stigma. The limitation of the study was the lack of interventions evaluated using a scientific approach (Sommerland et al., 2017:84). The study recommended that future research should use a comprehensive evaluation design. It was also established that educating the patients, their families and the community is important to improve their knowledge and attitudes, as this could reduce stigma.

Datiko et al. (2020:1) conducted a study to describe the magnitude of stigma related to TB in communities and the general population of Ethiopia. The authors used a mixed methods survey utilising a multistage cluster sampling technique. The study identified thirty-two (32) districts and

eight (8) sub-cities, from which 40 health centres. Twenty-one TB patients and 21 family members from each health centre and 11 households from each community in the catchment enrolled. A total of 3463 participants (844 patients with TB, 836 from their families and 1783 from the general population) enrolled in the study. The study found that a third of Ethiopians have high scores for TB-related stigma, which were linked to educational status, poverty and lack of awareness. The strength of the study was that it was the first national survey in Ethiopia to use different population groups. The study recommended that the National TB programs should also include factors affecting the community healthcare workers (Datiko et al., 2019:12). The limitation of the study is that it did not use two pastoralist regions, thus cannot be extended to other facilities (Datiko et al., 2019:12). The patients, their families and the community at significant need to be educated about the causes, the spread, prevention and care of to mitigate the stigma attached to TB. Therefore, interventions to promote TB should address TB-related stigma to slow the spread of TB.

Tadesse (2016:1) conducted a study in Addis Ababa, Ethiopia, to explore the causes and effects of stigma against TB patients. An institution-based qualitative study was conducted with ten (10) in-depth interviews, and six (6) key-informant interviews were carried out among TB patients and healthcare workers. The study discovered fear of infection and unsuitable health education messages by media to be the leading causes of stigma as TB was broadcasted as a fearful infectious disease. The study concluded that community awareness, patient counselling and sound media messages are needed to reduce the stigma. Furthermore, the study emphasised financial support to ease the financial burden and empower the healthcare workers to respect the patients and their families and to be culturally thoughtful. The study was limited to people who were already receiving treatment for TB. The voices of people not accessing any form of medical care were absent. Their inclusion might have provided a better understanding of the most side-lined and vulnerable people**.**

2.12 THE INVOLVEMENT OF FAMILIES IN HEALTH PROMOTION AND DISEASE PREVENTION

Social support is the emotional feeling where an individual is cared for, loved and respected by family members, neighbours, friends, co-workers and health providers around him/her with the provision of compassionate support (Aun & Mohd, 2016:4). Garcia-Huidobro and Mendenhall. (2015:2), cite that patients with good family support develop healthier lifestyles and self-management. Furthermore, the effectiveness of family interventions in preventing and treating diseases is superior to standard care (Garcia-Huidobro & Mendenhall, 2015:3; Rubinelli & Diviani,

2020:2396). In support, Andri and Djannatun (2020:1210) cite that families supporting TB patients assist in terms of daily activities, medication supervision, moral support and encouragement. Therefore, family involvement in health promotion and prevention of TB is crucial to improve the lifestyles of patients and the community. Policymakers should also include families in TB health programs. Interventions to promote TB should involve families, friends and the community.

2.13 HEALTH PROMOTION PROGRAMME AS A HEALTH INTERVENTION ACTIVITY

The TB programme needs to have a policy and technical guidance for healthcare workers providing TB promotion and care (Bridgen, Nhung, Skrahina, Ndjeka, Falzon & Zignol, 2019:2). The authors indicate that updating the national policies or guidelines according to recent TB diagnosis, care and prevention have a vital influence on patients, health system and the community to ensure quality care (Brigden et al., 2019:2). The healthcare facilities need to do TB screening, prompt diagnosis, follow-up testing to provide an effective treatment to reduce the spread and drug resistance (McLaren, Sharp, Zhou, Wasserman & Nanoo, 2017:172). Therefore, effective interventions such as contact tracing, home visits and infection control in healthcare facilities are the key to reducing the spread of TB, MDR and deaths.

The healthcare promoters should not only issue treatment to TB patients but should also ensure drug supervision support, avail treatment according to the needs of patients, remind them to take treatment as ordered and monitor their side effects (Andri and Djannatun, 2020:1213). Furthermore, Andri and Djannatun (2020:1213) cite that most treatment supporters ignore providing counselling to families with TB sufferers**.** Therefore, health promoters need to involve families of TB patients in their care so they can supervise them at home. Broader interventions focusing on families instead of individuals may be helpful in health promotion and disease prevention as most families receive health services at primary care (Garcia-Huidobro & Mendenhall, 2015:1). The family is the place for improving healthy lifestyles and behaviours and bringing health changes. This approach to preventing TB can improve people's health (Garcia-Huidobro & Mendenhall, 2015:5).

All healthcare workers are expected to provide counselling to patients they are in contact with within the health system for any condition they present with, such as STI, HIV and TB (Mntlangula et al., 2017:53). However, health promotion interventions rely on adequately trained staff and resources (Mntlangula et al., 2017:53). Therefore, training of healthcare workers and availability of resources are essential to provide health promotion interventions.

2.14 POLICIES ON CONTROL AND PREVENTION OF TB

The first TB infection prevention and control (IPC) guidelines were promulgated by the WHO in 1999 (van der Westhuizen, Nathavitharana, Pillay, Schoeman & Ehrlich, 2019:2). The authors further attest that TB prevention and control are understood as a combination of actions planned to reduce the risk of TB spread among populations (van der Westhuizen et al., 2019:2).

Policies on the control and prevention of TB act as a guide to assist management and the staff in reducing the spread of TB in healthcare establishments and other high-risk areas (WHO, 2019: update guideline 3). Furthermore, the policy covers a three-level ladder that includes administrative control, environmental control and respiratory protection, which form the basis of infection prevention and control and needs. The components are essential in the infection prevention and control strategy and comprise specific measures to reduce the transmission of TB (WHO, 2019:3). Therefore, to facilitate the best practice, education and training of healthcare providers, monitoring of processes, procedures and outcomes and the provision of feedback is essential (WHO, 2019:10).

- **Administrative controls**

Recommendation 1: Triage to be done on people with TB signs and symptoms or with TB disease to reduce transmission to health workers (including community health workers), persons attending healthcare facilities or other persons in settings with a high risk of transmission (WHO, 2019: update 12).

Recommendation 2: Respiratory separation/isolation of people with suspected or confirmed infectious TB to reduce the TB spread to healthcare workers or other persons attending healthcare facilities.

Recommendation 3: Early commencement of effective TB treatment of people with TB disease is recommended to reduce the spread to health workers, persons attending healthcare facilities or other persons in settings with a high risk of transmission.

Recommendation 4: Respiratory hygiene in people with suspected or confirmed TB to reduce the spread to healthcare workers, persons attending healthcare facilities or other persons in settings with a high risk of transmission (including cough etiquette) (WHO, 2019:update 12).

- **Environmental control**

Recommendation 5: Upper-room germicidal ultraviolet (GUV) systems are recommended to lessen TB spread to healthcare workers, persons attending healthcare facilities or other persons in settings with a high risk of transmission.

Recommendation 6: Ventilation systems are recommended to reduce TB transmission to healthcare workers, persons attending healthcare facilities or other persons in settings with a high risk of transmission (WHO, 2019:update 12).

- **Respiratory protection**

Recommendation 7: Particulate respirators, within the framework of a respiratory protection programme, are recommended to reduce TB spread to healthcare workers, persons attending healthcare facilities or other persons in settings with a high risk of transmission. The guideline recommends all the staff members and people attending TB healthcare facilities be provided with single-use respirators (N95 or FFP2) to maximise respiratory protection against TB (Islam, Chughtai & Seale, 2020:1058; WHO, 2019:update 9). The guideline further recommends respiratory hygiene, such as cough etiquette and cloth masks, to prevent the spread of TB (Islam et al., 2020:1058). Therefore, communities should be encouraged to practice hygiene as it is now seen in preventing COVID-19.

2.15 SUMMARY

The literature review highlighted that many interventions are necessary to promote TB and should be used in combination. DOT administered by family members and healthcare workers improves TB adherence and outcome. Furthermore, community-based is more effective than facility-based DOT in enhancing the treatment success rate. The healthcare promoters visit patients and their families in their homes and clearly understand their situation, and transport costs are avoided. Healthcare providers should provide counselling and health education to patients and their families to decrease TB non-adherence, and should be used in combination with the DOT strategy. DOT providers also need training to administer quality care. Addressing TB's social and economic factors is crucial to realise the End TB Strategy.

TB and depression frequently co-occur, leading to poor self-care, delay in seeking medical care, non-adherence, drug resistance and a high death rate. Therefore, family support is needed to supervise and motivate patients to adhere to TB treatment. Support groups and home visits

effectively decrease internalised (self) and anticipated (perceived) stigma. No method is considered the gold standard or standard definition of good adherence.

Stigma was found to impact patients negatively. Programme reduction interventions such as providing patients and their families with health education, community awareness and empowering healthcare promoters with training are essential. TB non-adherence is influenced by factors such as distance to healthcare facilities, lack of transport and money, lack of knowledge, psychological distress, stigma, long treatment duration and side effects, and loss of income. Therefore, addressing these factors will assist the researcher in drafting health promotion interventions for families with member(s) diagnosed with TB.

The lack of suitable information on the disease, treatment and drug side-effects and their carers results in patients' anxiety. It is also very important to provide continuous training for nurses and healthcare workers as part of professional development to improve TB infection control in healthcare facilities.

Cross-sectoral approaches that promote poverty reduction and social protection expansion are needed to accelerate progress towards the End of TB targets. TB treatment outcomes improve when patient education, healthcare provider education, incentives and enablers, psychological interventions, reminders and tracers, or mobile digital technologies are used. However, no studies focus on the promotional interventions for families with member(s) diagnosed with TB globally, in Africa. Chapter 3 details the methodologies employed for the two phases of the study.

CHAPTER 3

PARADIGM PERSPECTIVE AND RESEARCH METHODOLOGY OF THE STUDY

3.1 INTRODUCTION

In Chapter 2, the literature reviewed was discussed and justified**.** This chapter entails the paradigm perspective and research methodology used in this study to develop health promotion interventions for families with member(s) diagnosed with TB in the North West Province.

3.2 PARADIGM PERSPECTIVE

The paradigmatic perspective is discussed in relation to phenomenology within a constructivist paradigm, followed by the historical overview of phenomenology and the specific philosophical assumptions of phenomenology.

3.2.1 Phenomenology within the Constructivist Paradigm

Phenomenological knowledge reveals meaningful reality and ways of understanding that are more thoughtful (Polit & Beck, 2017:187). The constructivist paradigm assumes that reality is created by individuals participating in it and cannot be a fixed entity (Polit & Beck, 2017:11; Polit & Beck, 2018:7). Furthermore, reality exists in each setting, and many creations are possible with various interpretations (Polit & Beck, 2017:11). Constructivists concentrate on understanding the human experience as it is lived, through the collection and analysis of qualitative data that are narrative and subjective (Polit & Beck, 2017:9).

In this study, the researcher collected personal information from the participants in their homes (families) and places of work (community health nurses), which means in their real-life situations. The researcher collected rich, in-depth information through unstructured interviews to understand the TB health promotion interventions as it is lived. Through conversing with the participants, the researcher gained entrance into the participants' world and had access to their lived experiences. Constructivists concentrate on the dynamic, holistic, and individual human aspects of human life and try to grasp those aspects in totality (Polit & Beck, 2017:12). Constructivists emphasise the intrinsic complexity of humans as they form and construct their experiences and knowledge (Polit & Beck, 2018:8). Therefore, the constructivist paradigm assisted the researcher in gaining a fuller understanding of TB health promotion interventions, with real-life first-hand experiences from the

family members and community health nurses. The information gathered assisted in the drafting of health promotion interventions for families having member(s) diagnosed with TB in the North West province. The ontological, epistemological and methodological assumptions which guided the study are discussed below.

- **Ontology assumptions**

Ontology is a philosophical assumption referring to “how one sees reality’’ (Polit & Beck, 2017:10). It is believed that each person is unique and experiences reality from their point of view. Ontology is a patterned set of assumptions about reality (Brink et al., 2018:19). Corry et al. (2019:3) state that ontology concerns the nature of realities. Hothersall (2018:862) adds that ontology is the theory of being and the nature of reality itself, therefore, any knowledge that we have about reality is what is explored via the processes of enquiry. Ontological issues are general assumptions created to perceive society's real nature to understand the world's real nature (Zukauskas et al., 2018:124). The researcher believed that the study participants, in sharing their personal stories in their naturalistic context, would help to gain an in-depth understanding of the phenomenon understudy.

In this study, the researcher assumed relativist ontology as multiple realities in terms of family member(s) experiences and the needs of community health nurses (Polit & Beck, 2017:10). ‘’The lived world’’ is a central theme of phenomenology that reveals itself as a highly organised whole that is socially shared. ‘’The lived world’’ is understood by people through their own perspectives since the world is not the same for everyone (Qutoshi, 2018:215). The life-world of families and community health nurses formed the ontological foundation for a fuller understanding of their lived experiences. Therefore, the life world of the participants was taken in relation to their experiences.

- **Epistemology assumptions**

Epistemological issues relate to what can be known about the nature of reality (Corry et al., 2019:3). Epistemology refers to the general parameters and assumptions exploring the real nature of the world (Zukauskas et al., 2018:124). Furthermore, epistemology embraces the physical and personal worlds and forms of truth (Hothersall, 2018:862).

The researcher attained epistemology by interacting with the study participants, making in-depth conversations through unstructured phenomenological interviews, and listening attentively to thick descriptions of their lived experiences about TB health promotion interventions (Polit & Beck, 2018:187). Furthermore, the researcher’s personal beliefs, knowledge and theories were

temporarily put in brackets to have a new focus and true understanding of the inner world of the research participants (Churchill, 2018:221). The researcher also separated himself from the world and his physical being to avoid bias in understanding the phenomenon (Neubauer, Witkop & Varpio, 2019:92).

The epistemology of descriptive phenomenology focuses on the participants' life world to understand their lived experiences (Sundler, Lindberg, Nilsson & Palmer, 2019:734). Descriptive phenomenology describes and reveals the fundamental structures or essence of a phenomenon being studied (Morrow, Rodriquez & King, 2015:643). Descriptive phenomenology captures an experience in its primal origin or nature without explanation, interpretation or theorisation (van Manen, 2017:775).

In this study, the researcher did face-to-face, in-depth individual semi-structured interviews with the study participants to explore and describe information that assisted in developing TB health promotion interventions. The researcher bracketed his data with prior knowledge and experience, believing that historical context could influence the meaning. Bracketing ensured the validity of interpretations of findings as well as objectivity. The researcher further focused on describing the first-hand experience faithfully, concentrating on unveiling the hidden experience in its purest form without any addition or contamination from the researcher.

- **Methodological assumption**

Methodology refers to different techniques used to explore different situations in research (Zukauskas et al., 2018:124). The methodology is a set of procedures and rules based on research (Polit & Beck, 2018:408). The researcher followed a descriptive phenomenological inquiry as it focuses on describing and understanding the phenomenon experienced by individuals who have lived through them**.** Phenomenological approaches effectively describe data rather than explain personal knowledge, beliefs, and values (Qutoshi, 2018:219). The collection of data and meaning-making occur concurrently. Semi-structured interviews were conducted with one question followed by probing questions. The researcher used many data collection methods, such as probing, observation and writing field notes. The researcher asked the families to share their experiences since their family member(s) was diagnosed with TB as the main question. The question was followed by probing questions to understand TB health promotion interventions better. The researcher also asked the community health nurses about their experiences regarding TB health promotion interventions as the main question, followed by probing questions. The

researcher observed the participants' behaviour, listened to them and recorded information during the interviews.

The researcher utilised the families with member(s) diagnosed with TB in the North West Province as they are staying with the patients and the community health nurses who are providing TB care to the patients. The researcher considered them to be crucial for the development of the study, and their participation contributed to the conceptual design of the study. The researcher conducted rich, in-depth phenomenological interviews on the participants' experiences and gained a good insight into their experiences. These experiences assisted the researcher in drafting and developing health promotion interventions for the families with member(s) diagnosed with TB.

A constructivist believes that reality is mentally created and different social realities can create multiple social realities (Polit & Beck, 2018:7). Therefore, there is no absolute truth about a particular viewpoint, other people, groups or cultures can have different views. Furthermore, people can differ in their viewpoints, but there are some resemblances in their experiences. Social realities lead to the inference that knowledge is relative regarding time, space, body and context, and the research should be natural. Constructivists deem reality as subjective and not fixed (Polit & Beck, 2018:7). Therefore, reality can change between and within individuals, groups, and society. In this study, different social realities were created through language and interaction between the researcher and the participants. In adopting the constructivist approach, the researcher could give meaning to the experience and have insight into the study participants' human experience.

This study used a descriptive phenomenological approach to get to the core of TB health promotion interventions through participants' consciousness. Compared to positivist research, descriptive phenomenology is seen as a human science. The researcher encouraged participants to describe their lived worlds to explore their experiences. Descriptive phenomenology focuses on the essential structures or essences of the phenomenon as they appear to consciousness. It assisted the researcher in being open to the presented lived experiences. The participants described their everyday life experiences, revealing the essence of their reality, and to have a better understanding, the researcher suspended his viewpoints.

In this study, the researcher collected data through observation, field notes and recording participants during the interviews. Interviews were chosen as the main data collection method to explore the phenomenon under study. The participants were active in expressing their realities, and to obtain rich data, the researcher encouraged them to talk freely**.**

3.3 HISTORICAL OVERVIEW OF PHENOMENOLOGY

Phenomenology is a philosophy and a research method (Grey, Grove & Sutherland, 2017:65; Qutoshi, 2018:215). Phenomenology is an approach used to understand people's everyday life experiences called "lived experiences" (Brink et al., 2018:105; Polit & Beck, 2018:187). It examines human experience through descriptions provided by the people involved (Brink et al., 2018:104). Phenomenological approaches are more effective in describing than explaining personal realities (Qutoshi, 2018:219). The two main schools of thought are descriptive phenomenology and interpretive phenomenology (Polit & Beck, 2018:187). Descriptive phenomenology was utilised in this study. Phenomenology is used in a wide range of qualitative research (van Manen, 2017:1). It differs from other qualitative research methods because it tries to understand the essence of phenomena from participants' lived experiences (Eddies-Hirsch, 2015:251). It studies a phenomenon's nature and meaning (Jackson, Vaughan & Brown, 2018:1; Sundler et al., 2019:734). In this study, phenomenology assisted the researcher in concentrating on multiple truths about TB health promotion intervention. Furthermore, phenomenology guided the researcher to identify the data collection method that yielded a thick description of TB health promotion interventions for families with member(s) diagnosed with TB.

Martin Heidegger (1962), as quoted in van Manen (2017:775), define phenomenology as allowing that flaring up to be seen from itself in the manner that it flares up from itself. Phenomenon originates from the Greek words "phainein", meaning to bring to light and "phainesthai", meaning to appear, and thus a phenomenon represents anything arising to human consciousness (Matua, 2015:30; Christensen, Welch & Barr, 2017:113). Phenomenology originated from the views of Brentano (1838-1917), Husserl's teacher. Brentano intended to differentiate between mental and physical phenomena (Crane, 2009:31, Christensen, Welch & Barr, 2017:114). Franz Brentano developed scientific psychology, which investigates mental phenomena to challenge natural science (Christensen et al., 2017:114). Brentano described intentionality targeting as a mental phenomenon that appears to the person only from within. Husserl expanded the intentionality as an inner and outer perception to distinguish between the self and external objects (Christensen et al., 2017:115; Moran, 2018:77; Nikolic, 2016:847).

Edmund Husserl (1859-1938) advocated for bracketing an object before the experience relating to it could be observed (De Klerk, 2015:86). In contrast, Martin Heidegger (1889-1976) was against the view and believed that objects should not be separated from their environments (De Klerk, 2015:86; Nunez & Yoshimi, 2017:176; Neubauer et al., 2019:94). Heidegger maintained that experience occurs in the world, and descriptive philosophy was not adequate to interpret the comprehensive knowledge, thus he founded Hermeneutic phenomenology.

Descriptive phenomenology, as initially described by Husserl in the first edition of the Logical Investigations (Husserl,1970), has its origins in the views of Brentano. In the modern sense, phenomenology was intended to be a philosophical method. The method was later adopted by almost all subsequent phenomenological philosophers (Tilley & Long, 2014:233). In this study, the researcher adopted descriptive phenomenology to explore, analyse and describe the experiences of families with member(s) diagnosed with TB and explore and describe the needs of community health nurses regarding health promotion programmes in the North West province. The researcher explored what it feels like to have a member(s) diagnosed with TB in the family and wanted to understand the phenomenological meaning of that human experience. Furthermore, the researcher explored the experience and needs of community health nurses regarding health promotion programmes to grasp the essence of the phenomenon under investigation.

Merleau-Ponty, as quoted in van Manen (2017:3), cites that phenomenology tries to reveal and describe the interior meaning of lived experiences systematically. Phenomenology examines human experience through descriptions provided by the people involved (Brink et al., 2018:104; Matua & Van Der Wal, 2015:22). In this study, the researcher explored and described the experiences of families with member(s) diagnosed with TB in the North West province. Furthermore, the researcher explored and described the needs of community health nurses regarding health promotion programmes to have a clearer understanding of their experience caring for TB patients.

The key features of the phenomenological approach are rich, detailed descriptions of a phenomenon, phenomenological reduction, imaginative variation and essences (Eddies-Hirsch, 2015:252). In describing the phenomenon, researchers should describe the first-hand experience and how it was presented to them by the participants who lived it. The researcher should capture the information without adding or subtracting something that could obscure the meaning.

3.3.1 Phenomenological reduction/bracketing

Phenomenological reduction refers to getting all the information and necessities about the world out of the brackets of new data (Bogdanova, 2019:3). Phenomenological reduction is classified under eidetic and transcendental. Eidetic reduction places the real world and knowledge into the brackets so that the transition from the natural location of the knowing subject to the transcendental subject can happen (Bogdanova, 2019:3). Therefore, an eidetic reduction is concerned with unveiling the core or the essence of the phenomenon. During transcendental reduction, purification of consciousness occurs and thoughts and stereotypes about consciousness are also put in brackets (Bogdanova, 2019:3). Phenomenological reduction is used to uncover the essentials embedded in the words of the study participants by suspending the natural attitudes so that the words can speak for themselves (Moran, 2018:83). Thus, the researcher's foreknowledge, experiences, beliefs and assumptions are put out of action temporarily (bracketing). The phenomenological reduction helped the researcher to have an open mind and disregard personal pre-knowledge, beliefs and values. The phenomenological reduction can be accomplished by cleansing the mind so that the essence of the phenomenon can shine through (Christensen et al., 2017:117). In this study, the researcher applied a phenomenological reduction to clear the mind of all the pre-existing understandings, views and stereotypes to accept new information presented by participants.

3.3.2 Imaginative reduction

Imaginative reduction refers to the researcher taking different viewpoints of the phenomenon to grasp the essence of the participants' experiences (Eddies-Hirsch, 2015:252). The imaginative variation follows the phenomenological reduction process, which assisted the researcher in discovering the essential structures from the descriptions presented by participants. In this study, the researcher probed the meaning units repeatedly to zoom in on changeless meanings to achieve imaginative variation. The essence refers to the invariant structures or essential structures of regions of the phenomenon under study (Eddies-Hirsch, 2015:258). In this study, the researcher returned to the individual textural descriptions of each participant, searching for common themes. The researcher then created composite textural descriptions of individuals to get a complete representation of the whole. Themes or the meaning units supported the essence. In nursing, phenomenology is used to explore and describe people's everyday lives (Matua, 2015: 31). Phenomenology is both a philosophy and a research method (Grey, Grove & Sutherland, 2017:65; Qutoshi, 2018:215**).** In this study, phenomenology was used as a methodology that enabled the researcher to unveil the essence resulting in a more profound understanding of the

phenomenon under study, and as a philosophy to assist the researcher in focusing on the phenomenon of human consciousness.

3.3.3 Essences

The term essence originates from the Greek “ousia”, which means the essential inner structure of a thing, the true being (van Manen, 2017:3). Husserl cited that the essences of a phenomenon represent the true nature of that phenomenon (Neubauer et al., 2019:930). Six (6) themes or essences emerged from the family member participants in this study. These essences or themes for families were the family members' experiences when their members started to suffer from TB, their experiences in caring for the TB sufferer, their experiences with the health care service, social support experiences, the challenging experiences and their experiences concerning TB health literacy. Furthermore, four themes as essences emerged from the community health nurses. The themes included the roles played by the CHNs in the TB health promotion program, positive experiences of CHNs in the TB health promotion program, challenges faced by CHNs in the TB health promotion program, and CHNs' needs in the TB health promotion program. Therefore, TB health promotion programs need to be aware of the challenges and the needs of the health promoters for them to be addressed (Peu, 2016:22).

3.3.3 Philosophical Assumptions of Descriptive Phenomenology

The researcher adopted descriptive phenomenology as a philosophical framework when conducting the study. Phenomenology is best understood as a radical philosophy that emphasises the attempt to establish the truth and describe the phenomenon in a way that appears to the experiencer's consciousness (Lin, 2013:469). Phenomenology is interested in the activities of consciousness and the objects that present themselves to consciousness (Giorgi, 2009:9).

According to Giorgi (2009:9), consciousness is the medium between a person and the world. People can know the things of the world through consciousness by making the medium of the mind and the senses (Balasubramanian, 2010:11). Consciousness is the light that can reveal objects of the world surrounding it, however, is not intentional (Balasubramanian, 2015:11). Therefore, it becomes intentional through the assistance of the mind. Human consciousness and the world, according to Husserl, cannot be studied in separation (Eddies-Hirsch, 2015:252).

3.3.4 phenomenology as a research methodology

Phenomenology is a qualitative research approach exclusively positioned to support the investigation of learning from the experiences of other people (Neubauer et al., 2019:91). To understand phenomenology, the researcher needs to develop an appreciation of the philosophies that underpin it and the theories of the meaning of human experience (Neubauer et al., 2019:91). Phenomenological research endeavours to apprehend the people's perspectives, perceptions and understanding of a particular phenomenon (Pathak, 2017:1719). It is based on a paradigm of subjectivity and personal insight, giving more significance to individual experience and interpretation (Pathak, 2017:1719). A phenomenon such as health promotion intervention can be studied by describing the needs of community health nurses and the experiences of families with member(s) diagnosed with TB. Researchers need to understand the fundamental principles and methodological keywords to enable the application of the phenomenological approach. These keywords are consciousness, experience, phenomenon and intentionality (Norlyk & Harder, 2010; Giorgi, 2006, 2008).

3.3.4.1 Consciousness

Consciousness is the access people have to the world as we experience it (van Manen, 2017:2). People are connected to the world by being conscious (Vagle, Brooke & Hofsess, 2016:336). Becker (2019:3) stated that consciousness investigates itself, and no measuring tools or standards are required. Therefore, the researcher watched consciousness examine itself without interfering. The researcher bracketed the natural world for consciousness to investigate itself.

3.3.4.2 Experience

Experience refers to opinion, desire, wakefulness of the body, thought, embodied action and emotions (Sekgobela, 2018:31). In support, Rodriquez and Smith (2018:96) refer to experience as thought, perception, recollection, imagination and emotions. The (ibid) further indicates that each encompasses intentionality when people focus on a particular event. Ngulube and Ngulube (2017:128) maintain that experiences are what people do and suffer, strive for, believe in, endure, desire and enjoy, see and act. Zulu (2019:6) indicate that experience is regular contact with observational events or facts.

In this study, experience refers to the life-world of families with member(s) diagnosed with TB. The meaning of having a member(s) diagnosed with TB needs to be understood. The experiences of community health nurses working with TB patients at health centres. The participants shared the meaning of their experiences with the researcher. The researcher saw the participants'

experiences manifest as self-givenness or phenomenality (Moran, 2018:79). Thus, the researcher grasped the entire given experience clearly with the fitting vividness.

3.3.3.4 Phenomenon

A phenomenon refers to an event that appears in human experience (Compaan, 2015:58). The lived experience is not a phenomenon until it is brought under the range of the researcher's contemplation or before the presence of consciousness (Churchill, 2018:217). A phenomenon is presented in consciousness and is also situated in the context of everyday life (Vagle et al., 2016:336). It is further defined as an intentional act of consciousness, and it obtains its phenomenological flesh through intuition experienced within the borders of space and time (Compaan, 2015:60-63). Lin (2013:470) add that a phenomenon could be an emotion, an entity such as a program, an organisation or a culture, and phenomena are the reality of the world we experience**.** In this study, the researcher suspended (bracketed) his pre-knowledge, assumptions and personal beliefs regarding the phenomenon under study initially, the researcher wrote down his knowledge regarding the phenomenon under study. During face-to-face interviews and data analysis, the researcher consulted the identified concerns to check whether his views were consistent with those of the study participants. The researcher thus ensured that he understood everything precisely as provided by the study participants.

3.3.3.5 Intentionality

Intentionality originates from the Latin word intendo, which means to aim. However, in the phenomenological context, refers to the ability of consciousness to be (Krueger, 2018:1). Intentionality is understood to describe the meaningful relationship between people and the world and their relation to each other (Vagle et al., 2016:336). The meanings that connect people to the world around them (Vagle et al., 2016:336). Intentionality is further defined as the directedness of everyday life experience (Costiness, Borghardt & Wittmann, 2021:6; Sundler, Lindberg et al., 2019:734; Gutland, 2018:9). In this study, the researcher focused on the essential meaning of the experiences of the families with member(s) diagnosed with TB regarding health promotion intervention, the experiences and the needs of the community health nurses regarding TB health promotion interventions.

3.4 RESEARCH SETTING/CONTEXT

The study was conducted in Ngaka Modiri Molema District, one of the four Districts in the North West Province. It lies in the middle of the province next to the Botswana border. It has five Sub-

Districts, namely Mafikeng, Ratlou, Ramotshere Moiloa, Ditsobotla and Tswaing. The region is 28 114km², and the population is 934 859. The people depend on tourism, mining and agriculture for income (Stats SA, 2016:587). The district has 75 clinics, 16 community health centres, five district hospitals and one regional hospital. There are 2272 community workers, 469 nursing assistants, 212 enrolled nurses, 1116 professional nurses, 191 medical practitioners and 65 pharmacists. The services that are provided are as follows: primary health care, reproductive health, labour, TB clinic, child health, antenatal care, mental health care, eye clinic and dental care (Stats SA 2016). The study was conducted in the clinics and community health care centres from each of the five Sub-districts for triangulation.

Figure 3: Ngaka Modiri Molema District and Sub-Districts

The study was conducted in two phases:

Phase 1: The empirical phase of the study explored the experiences of families with members diagnosed with TB and the needs of community health nurses regarding health promotion interventions for families having members diagnosed with TB in the North West Province.

Phase 2: Development of health promotion interventions for families having member(s) diagnosed with TB in the North West Province.

3.4.1 Research design

A qualitative, descriptive phenomenological design was followed in Phase 1.

3.4.1.1 Qualitative design

According to Brink et al. (2018:104), a qualitative methodology is used when little is known about a phenomenon. The qualitative research approach is a broad range of research designs and methods used to study a phenomenon (Brink et al., 2018:104). Qualitative research attempts to thoroughly understand life as it unfolds in a natural setting without influencing it (Brink et al., 2018:103). Qualitative research aims to study people's views and experiences, resulting in a complex holistic image of the phenomenon (Brink et al., 2018:104). In this study, descriptive phenomenology was used as a philosophical base and as a design.

3.4.1.2 Descriptive phenomenology

Descriptive phenomenology proclaims the cautious description of normal conscious experience of everyday life (Polit & Beck, 2018:187). The researcher followed descriptive phenomenological research to explore the participants' lived experiences (families having member(s) diagnosed with TB in the North West province) and the needs of community health nurses regarding health promotion intervention for families with members diagnosed with TB in the North West province. The reason for selecting descriptive phenomenology was to examine and understand participants' lived experiences. Descriptive phenomenology encompasses the following four steps: bracketing, intuiting, analysing and describing.

- **Bracketing**

Bracketing is identifying and setting aside personal beliefs, values, feelings and theories about the phenomenon that may err the research process (Polit & Beck, 2018:188; Grey, Grove & Sutherland, 2017:275). The researcher kept a reflexive journal to bracket own beliefs. During data analysis, the researcher suspended his personal experiences and theoretical assumptions related to this phenomenon in this study. This suspension of the natural attitude process (epoche) enabled the phenomenological reduction and illumination of essential structures. Furthermore, the researcher practised reflective meditation, allowing preconceptions to enter and leave consciousness freely. The researcher achieved this by labelling pre-knowledge, assumptions and experiences about the phenomenon and reviewing them until s/he was ready to accept new information.

- **Intuiting**

Intuition refers to the researcher being open to the meaning credited to the phenomenon by those who experienced it (Polit & Beck, 2018:188). The researcher maintained an open mind during data collection by restricting personal judgement. An open mind is required when searching the participants' life worlds and the phenomenon. In this study, the researcher was sensitive to the participants' experiences and identified personal beliefs and assumptions that could limit openness. Furthermore, the researcher listened attentively and deeply reflected on commonalities among participants. The intuitive process led to a sense whereby the researcher felt like he lived the experience of the study participants. The researcher refrained from premature foreclosing of own personal guesses about emerging concepts.

- **Analysing**

Analysing refers to extracting important statements, classifying and making sense of vital meanings (Polit & Beck, 2018:188). In this study, statements from the collected data were read thoroughly, and important statements were extracted to establish the essence of the phenomenon, the meaning of each statement was created and arranged into clusters to represent the central themes.

- **Describing**

Describing refers to the researcher's understanding and defining of the phenomenon (Polit & Beck, 2018:188). In this study, the detailed description was achieved when the researcher gave detailed descriptions and interpretations of the phenomenon and the findings, as well as understanding the lived world of participants using a bracketing strategy to ensure data collection and data analysis validity. Therefore, rich, detailed descriptions of the phenomenon and data analysis assisted in making the study transferable to the research community.

3.4.1.3 Context of the study

The researcher preferred a phatic understanding of the events, actions and processes in the concrete, natural settings in which they happen (Babbie & Mourton, 2007:272). The aim of contextual research is to enable the researcher to understand the factors that may influence the study's outcomes in a particular setting (Zulu, 2019:9). The study took place in the townships and the villages of Ngaka Modiri Molema district of North West province of SA. The participants live and work in the context of unemployment, poverty and lack of resources. Furthermore, the context is rural, with long distances to the healthcare institutions. The contextual design provided the

researcher with a better understanding of the experiences of the family members and the community health nurses in their daily lives.

3.4.2 Phase 1: Research methods

In this section, the study methods included population, sampling, data collection and data analysis.

3.4.2.1 Study population

A population refers to all the people or objects with mutual, important features (Polit & Beck, 2018:51). Brink et al. (2018:116) define a population as the whole group of individuals or objects the researcher is interested in and meets the criteria for the study.

The population for this study was the families with member(s) diagnosed with TB and community health nurses providing TB health services in Ngaka Modiri Molema District of the North West Province. Ten (10) family participants and twelve (12) community health nurses were participants in the study.

Table 3.1: Characteristics of family participants

Participant Number	Age	Family Composite	Employment	House or Environment
Family 1	55	Extended family	Unemployed	Village
Family 2	64	Extended family	Pensioner	Village
Family 4	31	Nuclear family	Unemployed	Township
Family 5	83	Extended family	Pensioner	Township
Family 6	47	Extended family	Unemployed	Village
Family 7	40	Extended family	Unemployed	Village
Family 8	35	Extended family	Hair dresser	Village
Family 9	45	Extended family	Unemployed	Village
Family 10	56	Nuclear family	Self employed	Village

Table 3. 2: Characteristics of community health nurse participants

Participant number	Age	Gender	Language	Employment Duration
CHN 1	40	Female	isiZulu	10 years
CHN 2	35	Female	Setswana	12 years
CHN 3	55	Female	Setswana	25 years
CHN 4	48	Female	Setswana	24 years
CHN 5	45	Female	Setswana	20 years
CHN 6	58	Female	Setswana	35 years
CHN 7	32	Female	Setswana	2 years
CHN 8	59	Female	Setswana	30 years
CHN 9	26	Male	Afrikaans	1 year and 3 months
CHN 10	28	Female	Tshivenda	1 year and 6 months
CHN 11	56	Female	Setswana	30 years
CHN 12	58	Female	Setswana	32 years

3.4.2.2 Sampling

Sampling involves the selection of a subset to represent the population (Polit & Beck, 2018:162). Polit and Beck (2017:250) define sampling as choosing cases to represent the whole population and to allow deductions about the population. A sample is defined as a subset of a larger set selected by the researcher for the study (Brink et al., 2018:117; Polit & Beck, 2017:56). Polit and Beck (2018:162) in support of the authors define a sample as a fraction of population elements the researcher is working within a study.

This study used purposive sampling to obtain rich in-depth information about interventions for families with member(s) diagnosed with TB. Purposive sampling utilises the researcher's knowledge about the population in selecting the study (Polit & Beck, 2017:254). The researcher purposively selected a clinic and a community healthcare centre (CHC) in each of the five Sub-districts of Ngaka Modiri Molema. Two community healthcare nurses providing TB care services were selected in each of the five sub-districts. Two families with member(s) diagnosed with TB

were also selected in each of the five sub-districts of Ngaka Modiri Molema. The operational managers of the CHC and the clinics assisted the researcher in identifying the family members. The sample size depended on the interview data and the supervisor's request to add more participants from the initial sample.

- **Inclusion criteria**

The inclusion criteria refer to the criteria that specify the population characteristics for the study (Polit & Beck, 2017:250). The selected community health nurses (CHNs) were professional nurses who provided TB services for more than a year in the clinics and community health centres and had vast experience in TB programmes. The family participants had to be above eighteen years old and stay with member(s) diagnosed with TB for over five months.

- **Exclusion criteria**

Community health nurses have been providing TB services for less than a year. Family members less than eighteen years staying with member(s) diagnosed with TB**.**

a) Access and recruitment of participants, information sessions and pilot study

- **Families' access and recruitment**

The researcher held meetings with the facility managers, who introduced the researcher to the community health nurses providing TB management. The community health nurses informed the patients' families, who accompanied them to pick up medicines, about the study and asked them if they were willing to hear more about it. If they expressed willingness, the researcher explained the study in more detail, and if they were willing to participate, an appointment was made about the site and the date and time of the interview. The participants were comfortable with the date, time and site of the interview. Families participants preferred to be interviewed in their homes. Covid-19 protocols were observed, including social distancing and the wearing of masks.

- **Community health nurses' access and recruitment**

The researcher held meetings with the facility managers, who introduced the researcher to the community health nurses providing TB management. The researcher informed the community health nurses about the study, and if they expressed willingness to participate in the study, a date and site in the healthcare facility were arranged for the interview. The date, time and site were convenient for the community health nurses.

- **Information session with participants before interviews**

Before the interviews, the researcher greeted the participants and explained the objectives of the study. The researcher obtained informed written consent from the participants and then asked brief socio-demographic questions to relieve anxiety and build trust. The researcher asked the participants about health promotion activities and used face-to-face interviews to enter the participants' lived world.

- **Pilot study**

A pilot study is a small-scale study conducted before the main study on a restricted number of participants to identify potential flaws in the instrument and avoid them in the main study (Brink et al., 2018:161; Polit & Beck, 2017:57). Burns and Grove (2017:46; 54) describe a pilot study as a mini study performed with the same research population, setting and plans for data collection and analysis. The interview guide was tried and tested with two (2) community health nurses and two (2) family members in preparation for the main study. No changes were made to the interview guide.

3.4.2.3 Data Collection Methods

Phenomenologists mostly use in-depth interviews and diaries sometimes (Polit & Beck, 2018:203). There is no set of questions to be asked in a particular order and phrased in a specified method in qualitative research (Polit & Beck, 2018:203). For this study, semi-structured individual interviews were used to collect data for both groups of participants. One main research question was asked, followed by probing questions. The researcher encouraged the participants to talk freely (Polit & Beck, 2018:204). The researcher listened attentively and made follow-up questions. The interviews were recorded for transcription, and field notes were taken to record the information and clearly understand the data (Polit & Beck, 2018:204).

Semi- structured interviews lie between the structured and unstructured interviews (Brink et al., 2018:144). In semi-structured interviews, the researcher makes a written topic guide with a set of written questions (Polit & Beck, 2017:510). The researcher conducted semi-structured interviews with twelve (12) community healthcare nurses and ten (10) family members with member(s) diagnosed with TB. It is argued that semi-structured interviews are not appropriate for conducting a descriptive phenomenological study as the use of predetermined questions is against Husserl's central idea of epoch (O'Halloran et al., 2016:6). The unstructured interviews were conducted conversationally, however with a purpose and yielded in-depth data regarding TB health promotion intervention (Brink et al., 2018:143).

- **Families of member(s) diagnosed with TB**

On the day of the interview, the participants were handed the information leaflet and informed consent form, and after signing, the interviews started. The families with member(s) diagnosed with TB were asked to share their experiences regarding TB health promotion intervention as the main question. The interview guide (see Annexure B1) guided the unstructured interviews with families having member(s) diagnosed with TB. Probing follow-up questions were provided. The interviews lasted half an hour to an hour with each study participant.

Audio recordings were done with the permission of the study participants and were informed by the interview guide. Field notes were taken during interviews, and the researcher observed nonverbal communication. The researcher further used different communication strategies, such as paraphrasing and clarification of important points. The researcher listened attentively to the participants, and follow-up questions were asked for further clarification. The researcher further observed the participants for emotional distress for urgent referral for professional help. The researcher also maintained an open-mind attitude to set aside own beliefs and values to prevent prejudging. Data saturation was achieved after ten interviews. Data saturation occurs when information becomes repetitive and redundant (Grey, Grove & Sutherland, 2017:254; Polit & Beck, 2017:60).

- **Community health nurses' participants**

On the agreed date, the information leaflet and consent form were handed to the study participants, and after signing, the interview commenced. All the interviews were conducted at their various healthcare workplaces, clinics or community healthcare centres (CHC). Social distancing was kept, as well as the wearing of masks.

The community health nurses were asked to share their experiences working with TB regarding health promotion intervention as the main question. Probing follow-up questions were provided. Audio recordings were done with the permission of the study participants, which were informed by the interview guide. Field notes were taken during interviews, and the researcher observed nonverbal communication. The researcher further used different communication strategies, such as paraphrasing and clarification of important points. Data saturation was achieved after 12 interviews. Data was collected for half an hour to one hour. Data was also collected until saturation was reached. At the end of the process, all participants were thanked.

- **Research venue, rapport and trust**

All the families preferred to be interviewed in their homes, where they felt comfortable and free. The social distancing of two metres and the wearing of masks were kept. There was no distraction of noise, and privacy was ensured by excluding other family members from the interviews**.** Community healthcare nurses were interviewed at the clinics and the community health centres where they worked. The researcher greeted the participants and introduced the nature and the type of the research. A brief explanation of the research question was provided to clear misunderstandings. The participants were given a chance to introduce themselves and ask questions before the interviews commenced.

- **Time frame**

The interviews took half an hour to an hour. They continued to the point where there was no new information from the participants (Polit & Beck, 2018:418).

- **Debriefing session**

At the end of the interviews, the researcher asked participants if they needed any counselling support.

3.4.2.4 Data analysis methods

Creswell and Creswell (2018:192) cite that data analysis in qualitative research involves dividing and sorting out the data and putting it back together like peeling the layers of an onion. Grey, Grove and Sutherland (2017:269) state that data analysis includes the coding and thought process behind allocating meaning to the data. The purpose of data analysis is to make sense of the collected data (Creswell & Creswell, 2018:192).

Giorgi's four steps of descriptive phenomenological data analysis method were followed, see below:

- **Reading to search for a sense of the whole**

In this study, the researcher began the eidetic reduction process by reading each interview transcript for a long time to understand the associated meaning as experienced by the study participants rather than himself or the research topic. The researcher read the transcripts several times to make sense of the whole. The researcher was physically and mentally immersed in the study when reading the transcripts, which led to an open mind about what the data was presenting. Furthermore, the researcher suspended his prior knowledge, assumptions, and theories about the phenomenon so that what was given in the data was what was said about it.

The researcher was further sensitive to the phenomenon under investigation and listened carefully to the participants' voices in the transcripts. The researcher then looked for the study participants' intentionality to make sense of the whole experience. The researcher avoided questioning the data as it was a foundation for the next step (Marich & Towell, 2015:348; Giorgi & Giorgi, 2003:254). In this study, the researcher suspended (bracketed) his beliefs, prior knowledge and assumptions for new ideas to present themselves uninfluenced.

- **Re-reading the description and demarcating spontaneous shifts in meaning**

After reading the descriptions several times and having a sense of the whole, the researcher divided the different units expressing self-contained meaning. The units were divided into key expressions, features, attitudes and beliefs. This was achieved through reading word-by-word, line-by-line, paragraph-by-paragraph and then reading the whole document to make open coding. The demarcation of the descriptions into meaning units enabled the researcher to analyse them effortlessly (Marich & Towell, 2015:348; Giorgi & Giorgi, 2003:254).

- **Generation and determination of natural meaning units**

The researcher stated each meaning dominating each meaning unit and examined each meaning unit in relation to the study. The researcher put the research question next to the meaning unit and accompanying first transformation to the study topic to make a relation. The meaning of each unit was rewritten into a more natural language from the original language. The researcher applied imaginative variation to accomplish concrete expressions of the study participants and invariable meaning of the phenomenon under study. The researcher started to follow the substantial experience of the study participants and reflected on various possibilities of the meaning. Through imagination and different aspects of experience, the researcher purposefully changed the proposed transformation and stretched it until it did not describe the naïve subjective description (Marich & Towell, 2015:348; Giorgi & Giorgi, 2003:254).

- **Synthesising the reflections and insights into a consistent statement**

Initially, the researcher synthesised the meaning units of each description to make specific descriptive statements. Finally, the researcher synthesised and combined the insight about the transformed meaning units and made a final description consistent with the study (Marich & Towell, 2015:348; Giorgi & Giorgi, 2003:254). The researcher used imaginative variation to examine the transformed meaning units and distinguish those that were the same. The researcher identified common essential components of the phenomenon through significant events in the participants' narratives and interactions between them.

3.5 RIGOR/TRUSTWORTHINESS

The researcher adopted credibility, reflexivity, transferability, dependability, bracketing and confirmability, which are viewed as the gold standard to achieve trustworthiness as outlined by Lincoln and Guba (1985), as cited in Polit and Beck (2018:295).

- **Credibility**

Credibility refers to the truth of the collected data and their findings (Polit & Beck, 2018:295). In this study, credibility was achieved by prolonged engagement with the study participants (30 minutes to an hour), member checking and triangulation. Community healthcare nurses and family members were interviewed for triangulation. Data was collected from the clinics and the community health centres from five different sub-districts for triangulation. In this study, the researcher took nothing for granted, as credibility refers to the meaningfulness of the research and its findings. The phenomenological principles were adhered to. The analysis and the findings were well presented to the readers. The findings were transparent. The researcher explained the methodology in detail, and descriptions of meanings were clarified.

- **Reflexivity**

Reflexivity encompasses the mindfulness that the researcher, as a different person, brings to the inquiry, a distinctive experience, a set of ideals, and a professional individuality that can disturb the research course (Polit & Beck, 2017:298). Reflexivity is associated with a reflective attitude and was ensured through introspection to avoid attachment of personal meaning or prejudices to participants' experiences (bracketing) by maintaining a reflexive journal (Polit & Beck, 2018:298). The researcher kept a reflective attitude toward the whole research process by questioning his prior understanding of data and themes. The researcher compared the original data with the derived text of themes.

- **Transferability**

Transferability involves the degree to which qualitative findings of the study can be used in other settings or groups (Polit & Beck, 2018:296). Transferability is understood as the usefulness and relevance of the research findings (Sundler et al., 2019:737). Transferability was ensured by providing adequate descriptive data so readers could transfer it to their settings (Polit & Beck, 2018:296). The researcher ensured that the findings were clear and understandable and added new knowledge to the research community.

- **Dependability**

Dependability refers to the strength or consistency over a period and over situations (Polit & Beck, 2018:295). Dependability was achieved through cautious documentation, triangulation of the data methods such as in-depth interviews with family members and nurses, observation and documentation, and the development of an audit trail (Polit & Beck, 2018:296).

- **Bracketing**

Refers to the researcher temporarily setting aside personal preconceptions such as the researcher's values, emotions and assumptions. This is done to reveal the participants' lived experiences and increase rigour. This study ensured bracketing by writing memos during data collection and analysis (Polit & Beck, 2018:187). The researcher avoided his personal feelings, prior knowledge, beliefs, and assumptions to influence the study and assessed his impact constantly for bias (Neubauer et al., 2019:92).

- **Confirmability**

Confirmability refers to impartiality, the agreement between two or more independent people about the data's truthfulness, relevance or implication (Polit & Beck, 2018:296). In this study, the researcher ensured neutrality by giving the independent coder the transcribed data and made a comparison for objectivity.

3.5.1 Phase 2: Development of health promotion intervention for families having member(s) diagnosed with TB in the North West Province

3.5.1.1 Introduction

Phase 2 entailed drafting health promotion interventions the empirical data from Phase 1. Health promotion interventions for families having member(s) diagnosed with TB were drafted and formulated based on the collected empirical data. Relevant statements, constructs and ideas were selected from the empirical data to formulate health promotion interventions. A literature search of relevant and various sources was consulted to develop health promotion interventions for families with member(s) diagnosed with TB in the North West Province. The research methods included population, sampling, data collection and data analysis, and the validation of health promotion intervention.

3.5.1.2 Phase 2: Research method

The researcher used the Delphi technique. The TB health promotion in the form of questionnaires was developed. Each questionnaire was developed based on the results of the preceding

questionnaire. Four rounds were used to collect opinions, views, suggestions and data confirmation through emails. Experts participants were requested to respond to the preliminary health promotion intervention during each round.

3.5.1.3 Population and sampling of experts' panel

The experts were purposefully selected based on their appropriate knowledge, competency and experience. The experts consisted of academics, government officials and non-government officials, doctors and nurses involved with TB management.

3.5.1.4 Sampling

In this study, eighteen (18) heterogeneous experts were used in the panel. The experts who were selected purposefully were further requested to identify other possible participants (snowball sampling) to overcome the difficulty of purposive sampling, such as a representative sample (Polit & Beck, 2017:254).

3.5.1.5 Data Collection and Data Analysis

Data collection and analysis were concurrently conducted. The researcher collected data using a drafted health promotion intervention put on the format of a questionnaire with open-ended questions from the first to the third round. The fourth-round data was quantitatively analysed to collate comprehensive judgements. The questionnaire comprised instructions on how the participants should answer. The following principles guided the researcher and the expert panel, simplicity, applicability, clarity, validity, relevance, comprehensiveness, effectiveness and acceptability (Agree Collaboration, 2013; Thompson & Dowding, 2002). The panel was requested and invited to complete the questionnaire within three days. They were further requested to read the document thoroughly to provide their valuable views, opinions, suggestions, and confirmations on the questionnaire.

3.5.1.6 Round 1

The first bulk of questionnaires were drafted by the researcher informed by the findings of Phase 1. The questionnaires were drafted and phrased so that they concentrated on the research question. The questionnaire comprised open-ended questions and was emailed to the panellists. The questionnaire comprised instructions on how the participants should answer. Feedback from the first bulk of questionnaires was congregated, consolidated, amended and refined. The refined results of this round assisted in improving the questionnaire for the second round.

3.5.1.7 Round 2

The refined questionnaire was completed and distributed to all the participants through emails, and participants were asked to complete it without discussing it with others. The timeline to complete the questionnaire was three days. The second round was conducted, leading to the third round following the same process of compiling, consolidating, amending and refining the comments.

3.5.1.8 Round 3

The refined questionnaire in the second round informed the third round. Compiling, consolidating, amending and refining the comments ended in the third round when no new information was coming forth.

3.5.1.9 Round 4

In this round, feedback was given to the group of experts who participated in Round 3. The researcher requested that the experts confirm their ratings. The fourth-round data was quantitatively analysed to collate comprehensive judgements. The consensus for agreement or disagreement was defined as equal to or more than seventy-five percent on a statement. Once consensus was reached and the statements were ranked from the most to the least important, collated, analysed and interpreted (see Chapter 7).

3.6 SUMMARY

The chapter presented and discussed the paradigmatic perspective and methodology utilised in the study. The rationale for using the qualitative design with a descriptive phenomenological approach in the Ngaka Modiri Molema district of the North West province was provided. The settings in which the study was conducted and the population were described in detail. The inclusion criteria were specified. Unstructured individual interviews were conducted in participants' natural settings. The study participants agreed freely to participate and signed the informed consent forms. The collected data were transcribed verbatim, and Giorgi's four steps of descriptive phenomenological data analysis method were followed. Data trustworthiness issues were discussed and clarified in detail. Phase 2 research method, population and sampling was addressed.

CHAPTER 4

PRESENTATION OF FINDINGS

4.1 INTRODUCTION

Chapter 3 discussed the paradigm perspective and research methodology of the study. This chapter presents the findings of data collected from participants. The aim of this study is to develop health promotion intervention for families having member(s) diagnosed with TB in the North West province. The objectives of the study are:

- To explore and describe experiences of families with members diagnosed with TB in the North West province and,
- To explore and describe the needs of community health nurses regarding health promotion intervention regarding families having member(s) diagnosed with TB in the North West province.

The study design used in this study was a qualitative paradigm following exploratory and descriptive phenomenology. The design assisted the researcher in exploring and describing the experiences of families with members diagnosed with TB in the North West province as well as in exploring and describing the needs of community health nurses regarding health promotion intervention regarding families having member(s) diagnosed with TB in the North West province. The population comprises ten (10) families with members diagnosed with TB from the Ngaka Modiri Molema district in the North West province. Two (2) family participants with member(s) diagnosed with TB from each sub-district. The district consists of five (5) Sub-districts, namely Mafikeng, Ditsobotla, Ramotshere Moiloa, Ratlou and Tswaing. The community health nurses were twelve (12), with eleven (11) females and one (1) male. Four (4) clinics and three (3) community health centres were used. A purposive sampling method was used to select participants.

Data was collected using individual face-to-face, unstructured in-depth interviews with families with member(s) diagnosed with TB and from community health nurses working in clinics and community health centres. Data was analysed using Giorgi's four steps of descriptive phenomenology. The results of phase 1 assisted the researcher in drafting and developing health

promotion interventions for families having member(s) diagnosed with TB in the North West province.

4.2 EMPIRICAL PRESENTATION OF FINDINGS

The findings are displayed in Tables 4.1 and 4.2 as essential meanings and constituents. Rich explanations of the essential meanings and constituents are provided and enhanced with verbatim quotes for the validity of the findings.

Table 4.1: Essential meanings and constituents from family participants having member(s) diagnosed with PTB individual interviews

ESSENTIAL MEANING	CONSTITUENTS
4.1.1 Essence 1: Family members experiences regarding the development of TB	• Family members' experiences of TB symptoms before diagnosis
	• Family members' experiences regarding TB diagnosis
4.1.2 Essence 2: Family members caregiving experiences	• Family members' physical care and support of the client
	• Family members' experiences of personal TB protection
	• Family members' experiences of TB treatment adherence
4..1.3 Essence 3: Family members healthcare service experiences	• Family members' experiences of CHNs diagnostic and follow-up services
4.1.4 Essence 4: Family members social support experiences	• Family members' experiences of community support
	• Family members' experiences of external family support
4.1.5 Essence 5: Family members challenging experiences	• Family members' financial challenges
	• Family members' healthcare access challenges
4.1.6 Essence 6: Family member's TB health literacy experiences	• Family members' experiences of CHNs' ineffective health education
	• Family members' experiences of sources of TB information

Table 4.1 above narrates six essential meanings and their constituents to give the deeper meaning of each essence as described by family participants having member(s) diagnosed with PTB individual interviews.

4.3 RESULTS ON FAMILY PARTICIPANTS HAVING MEMBER(S) DIAGNOSED WITH TB

4.3.1 Essence 1: Family members' experiences regarding the development of TB

The family is the most important social foundation and institution that can provide care and facilitate recovery when members contract TB. The family unit can further support and influence health seeking behaviours of members, which can assist in TB disease prevention and promotion. Family support can therefore improve TB treatment compliance as the sick member can gain confidence and feel valued. In this study, the essences (themes) are described and followed by the descriptions of their constituents (categories) of the essences. In essence, participants experienced family members developing TB. Participants witnessed the TB symptoms and experienced getting a TB diagnosis. Family members' experiences regarding the development of TB emerged as the first essence. They were subdivided into two constituents family members' experiences of TB symptoms before diagnosis and family members' experiences regarding TB diagnosis.

- **Constituent 1: Family members' experiences of TB symptoms before diagnosis**

Individuals, families and the community need to know the signs and symptoms of TB. This can lead to early diagnosis of TB, early commencement of treatment and prevent the spread of TB. Family members described TB signs and symptoms such as cough, poor appetite, weight loss, vomiting after eating and swelling even before TB diagnosis. The participants noted that symptoms before TB diagnosis affect the wellbeing of the ill member physically. Some participants recognised the TB symptoms which lead to early diagnosis and decreased TB transmissions, and family members' responses are highlighted as follows:

"*I realised she was having TB when she was coughing nonstop, day and night and had a poor appetite. I then decided to buy something tasty as she was not interested in porridge. I hired a car to take her to the clinic*. She was taken to the clinic after coughing for a week. *Truly speaking, she contracted TB for the third time if I am not wrong*" ***(FM04).***

“They started to lose weight, not eating and coughing. We decided to take them to the clinic” ***(FM 07).***

"When he started to be sick, he started by losing weight, not interested to eat, feeling hot during the night, coughing a lot but only phlegm. He was also having difficulty breathing... I decided to take him to the doctor" ***(FM10).***

"He started by coughing bloody sputum, not eating well, sweating a lot during the night and struggling to breathe at times” ***(FM4).***

"He started with a persistent cough for two weeks, some chills, fatigue, losing weight and chest pain when coughing” ***(FM08).***

“I was worried as I saw my husband became swollen and I did not understand what was wrong. I then asked him if we could go to the clinic to find out what the problem was” ***(FM02).***

“He started by coughing, vomiting after eating, he was vomiting everything he was eating. We did not understand what was wrong with him” ***(FM09).***

Some participants did not understand the symptoms of TB which can lead to a delay in seeking medical help. A delay in TB diagnosis leads to an increase in the spread of TB among family members and the community. Therefore, the participants indicated that good knowledge of the symptoms could lead to early medical help, early diagnosis and commencement of treatment.

- **Constituent 2: Family members' experiences regarding TB diagnosis**

TB treatment and prevention start with the confirmed TB diagnosis. To initiate the patient on TB treatment, the correct diagnosis should be made. The participants experienced their families undergoing the process of sputum collection, awaiting the results and initiated on TB treatment when the results were positive. These were confirmed as follows**:**

“When she came back she said they took the sputum. After that she went again to fetch the results and she said they confirmed TB. After the results were positive, she came with TB medication” ***(FM04).***

Other participants reflected that:
"We have a child with TB who went to the clinic and came with TB disease after some tests. We accepted the disease" ***(FM02).***

"They helped them by examining them. They were given sputum bottles. They came back home and returned the bottles after putting in the sputum and waited for the results. Then after that, they were called to the clinic as they said the results were back. They were told that they had TB and they were given treatment for TB" ***(FM07).***

"They asked for the sputum and later, he was called and told he had TB and was then put on TB treatment" ***(FM09).***

Therefore, early diagnosis of TB is crucial to decrease complications associated with the disease and the spread thereof. The participants indicated that families should be able to recognise the signs and symptoms of TB to ensure they seek medical assistance early. Furthermore, processes of detecting TB should be followed as per the guidelines of the healthcare facility. Participants noted that clients were given the sputum bottles to go home with and the bottles were collected after a certain period.

4.3.2 Essence 2: Family members' caregiving experiences

Family plays an important role in TB care as patients need support and strength as TB treatment is provided over a long time. Family care and support can further improve patient adherence to treatment and make the patient feel better. Family care and support can be offered in terms of financial support, accompanying the patient to fetch treatment, mental support and assistance with daily activities. In this study, family members' caregiving experiences emerged as the second essence. They were divided into three constituents: family members' physical care and support of the client, family members' experiences of personal TB protection and family members' experiences of TB treatment adherence.

- **Constituent 1: Family members' physical care and support of the client**

Physical care and support by the family are important to improve the treatment of TB. The support and care can be provided in the form of motivating the patients and encouraging them to avoid negative thoughts, reminding the patients to take their treatment and supervising them when taking medication. Participants described their experiences of assisting family members with food preparation, administration and supervision of treatment adherence, personal and environmental hygiene, as well as spiritual support. The responses of the participants in this regard included:

"When I wake up in the morning, I open the windows. I give him food and his medication. I then prepare water for him to bathe and take him out of the room as he cannot walk. I support him with the arm and put him in the sitting room…" ***(FM01).***

"*We wash his clothes, we cook the right food for him and make sure that he eats on time and takes his medication"* ***(FM02).***

"I assist my husband by ensuring that he is taking his medication on time and that he is eating well. I also discourage him from smoking as he is a smoker. I further encourage him to go to the clinic to fetch his medication" ***(FM03).***

"I was always praying for her. My support for her was through prayer, and I was really praying…" ***(FM04).***

"We cook vegetables for him to eat. The old lady buys what he asks for to eat. We supervise him when taking his medication and encourage him to take his medication... When her old age pension money is finished, she borrows from the neighbours for him to be able to go to the clinic" ***(FM05).***

In this study, most participants described their caring role as assisting with personal hygiene, food preparation and supervision with medication. These they deem as helpful as patients are weak and cannot cope on their own. Participants' attend to environmental and personal hygiene as well as nutritional needs is important to ensure the speedy recovery of the patients. Furthermore, supervision of medication ensured that patients complied with their TB treatment regimen.

The participants emphasised that TB treatment is taken over a long period, and patients become tired thus words of encouragement are important. The participants further noted that families reminded patients to take their medications on time and ensured that they take medications regularly and do not discontinue treatment even when feeling better and/or experiencing side effects. The participants further alluded that forgetfulness may contribute to patients missing their treatment thus families reminding them is crucial to prevent non-adherence.

- **Constituent 2: Family members' experiences of personal TB protection**

The participants alluded that they are aware that TB can spread to other family members, particularly children. The participants further noted that other family members must know how to protect themselves from contracting the disease. Furthermore, participants attested that good cough etiquette and the wearing of masks are important to reduce the spread of TB. Most participants in this study described a knowledge deficit concerning personal TB protection. These utterances confirmed that:

"*They said the other kids are not under five, so I just thought that the kids could not be infected. We did not protect ourselves, and it went well just fine. I just gave her food and washed her clothes and there were no problems. We do not protect ourselves"* ***(FM08, FM04).***

Some participants thought they protected themselves from being infected with TB and said:

"We protect ourselves by wearing masks. He is eating his food and is not sharing with the kids or leaving his food to be eaten by the kids. He has his cutlery and does not share it with anybody" ***(FM07, FM01).*** *"*

He sleeps alone in a separate room. We open the windows for fresh air during the day. We make sure that he spends some time outdoors. He covers his nose and mouth with a tissue when sneezing, coughing or laughing. He covers the tissues with plastic and throws them in a dustbin. We even cough in our elbows when we are not having the tissue and wash our hands with water and soap. He does not cough in his hands at all" ***(FM02).***

- **Constituent 3: Family members' experiences of TB treatment adherence**

Taking medication for the prescribed time is important to prevent drug resistance and to recover from TB. The participants described their roles of ensuring that their family members take medication accordingly by reminding them, supervising them and preparing food for them before taking medication. The following quotes confirmed the findings:

"*When I wake up in the morning, I give him food, give him his medication and talk to him to make sure that he swallowed the treatment. I also provide him with words of encouragement to take the pills regularly for six months even when he feels better"* ***(FM01).***

"You know boys are tricky. However, we are trying. We make sure that he eats well and takes his medication on time" ***(FM02).***

We supervise him when taking his treatment and encourage him to take his medication after meals. He needs to finish his treatment as instructed so that he can return to his normal life" ***(FM05).***

"I assist my husband by ensuring that he is taking his medication. I ensure that he is taking his medication on time and that he is eating well. I encourage him to go to the clinic for medication" ***(FM03).***

"In the morning, I wake up and make porridge for him. After that, I give him his treatment" ***(FM08).***

"We encourage him to take his treatment, but because they are big, he wants to vomit them; thus, we break them for him and ask him to take them with a lot of water" ***(FM09).***

Therefore, the family can play a crucial role in influencing the patient to adhere to treatment by supporting them with food preparation and reminding and supervising them to ensure they take their medication. Furthermore, the family becomes a source of motivation and encouragement to the patients.

4.3.3 Essence 3: Family members' health care service experiences

The family plays an important role as a treatment supporter. They take care of their members who are sick by comforting and motivating them. The family understands their members due to close contact with them and can notice their health needs. Family members' healthcare service experiences emerged as the third essence. It had one constituent: family members' experiences of CHN diagnostic and follow-up services.

Constituent 1: Family members' experiences of CHN diagnostic and follow-up services

The participants described their experiences with CHNs who examined the patients, collected the sputum and requested them to wait for the results before commencing TB treatment. The patients were called to the clinic/CHC and provided with TB treatment only when the results were positive.

"They asked for the sputum and later was called and told that he had TB and then was put on treatment" ***(FM09).***

“He was asked to cough up the sputum. The sputum was sent to the laboratory for examination. An X-ray was also taken. The nurse asked for a list of the people he was in contact with. He was then given treatment after the results came back and were told to come to the clinic every month for check-ups and some pills” ***(FM07).***

Some participants further described their experiences of CHNs not availing themselves to check on the patients. The following quotes support the findings:

*“It is my first time to see a health personnel …today (*referring to the researcher*)”* ***FM10.***

The CHNs should ensure that TB health information is accessible to the people. The families and the community should be well informed about TB to prevent the myths and stigma. The CHNs should do home visits to check the environment where the patients stay to ensure their health needs are met.

4.3.4 Essence 4: Family members' social support experiences

The family and the community can influence the health status of TB patients. TB needs a team effort to control it. The family needs the support of the healthcare workers and the community in caring for their members diagnosed with TB. At times the community stigmatises families who care for patients with TB. Community health nurses should provide support through health education, medication, side effects and nutrition. TB campaigns can be valuable in providing health education to the community and members at risk.

- **Constituent 1: Family members' experiences of community support**

The community can take TB positively or negatively, thus resulting in positive or negative support. Community support can reduce the stigma while negative perceptions lead to delays in seeking medical help, depression and isolation. Most of the participants described their experiences of social support from the community as positive. The support was in the form of encouragement to take the patients to the clinic, encouragement to adhere to treatment and motivation to patients.

"They know about his condition, and they do support us. They were the ones who encouraged me to take him to the clinic when he was coughing so that he could be helped. They took it well and I informed them that he got help from the clinic. So, they did not take it negatively, they accepted us. They informed me to encourage him to take his medication as he should” ***(FM01).***

The neighbours are fine, although you know people can just pretend as if they are okay. Sometimes people can say something aside and when they see you they make as if they are fine. They did not show any reaction" ***(FM02).***

"They encourage her to take treatment as she should" ***(FM06).***

"They do support us, especially our neighbour this side…she really supports her, and she motivates her to swallow her pills regularly until the period is completed as recommended. She also motivated her by indicating that she is not the first and last one to have TB" ***(FM04).***

Some families were reluctant or feared disclosing TB to community members as they feared being rejected. The following quote confirms the finding:

"*We never informed anyone. We just told close relatives like siblings and our parents"* **(FM03).**

No, we did not inform other family members, we only informed my sister and her children. They always visit us, and the others need to be made aware. If you tell people about TB, they change it to Aids. We do not want people to spread false rumours about us" ***(FM 04).***

Therefore, the community has an important role to play in supporting families with members suffering from TB as illustrated by this constituent in the prevention and promotion of TB. Emotional support and words of encouragement by the community are important to prevent and control TB.

- **Constituent 2: Family members' experiences of external family support**

Some participants described a need for proper family support from external families due to distance, work constraints and lack of means to keep in contact.

"The other family members are staying far away, and they do not have telephones. I am the only one taking care of him. They did come to pay him a visit, however, they are held up at work" ***(FM01).***

Some families reported positive family support by family members. The following quote confirms the finding:

“They accepted it well that their brother was sick and there was no problem. They were scared of him at first, however, calmed down as time went by. They know that he is going to be cured” ***(FM02).***

One participant revealed that she did not inform anybody except close relatives like siblings and parents. This may be attributed to the fear of being stigmatised. The finding is confirmed by the following quote:

“We never informed anyone. We just told close relatives like siblings and our parents. We did not see a reason to inform them, we can cope on our own” ***(FM03).***

Therefore, social support is important to improve the treatment success rate as TB patients need moral support, assistance with their daily activities and to be a comfort when they are physically and emotionally weak. Furthermore, by interacting with the patient the family have a better understanding and can protect the patient from depression and low self-esteem.

4.3.5 Essence 5: Family members’ challenging experiences

TB comes with many burdens to families. The patients need to eat a proper diet to recover well. Furthermore, these participants must go for check-ups at the health facilities to collect medication and monitor their weights and blood pressure. They indicated that patients could not continue to work while suffering from TB. The families should also work and care for their members diagnosed with TB. Family members' challenging experiences emerged as the fifth essence. It was divided into two constituents: family members' financial challenges and family members' healthcare access challenges.

- **Constituent 1: Family members' financial challenges**

The participants described their experiences of financial hardship and lack of access to social grants as challenges they face as patients cannot work while suffering from TB. Other participants expressed that the grants are not enough to take care of their needs. The responses of the participants in this regard are as follows:

"He just received his first grant recently. There is no relief yet as he just obtained it recently and there was a huge gap and I don't see any difference yet. I will see as time goes by, how to re-arrange things” ***(FM01).***

“*When she goes to the clinic to fetch treatment, I hire transport for her. In this house, it's my husband and me who are getting old age pension… She went to fetch the forms (patient), and*

she was told that they no longer provide a social grant for TB as it is curable. On my social grant, there are two kids I adopted …with our grants… Food is expensive, and electricity is worse. My husband has a chronic disease, and every month we must send a child to fetch treatment for him at the hospital. It is money" ***(FM05).***

*"The challenges are there, we do get social grants for the kids, but they are not enough. I have three kids going to school, and their dad is not working. The grant is not enough at all. There is always a shortage of food" (****FM08).***

- **Constituent 2: Family members' healthcare access challenges**

Participants described their experiences with transport. Most of the participants could not afford public transport as they were unemployed, thus, accessing healthcare facilities is a problem. The following quotes support the findings:

The challenge I have with TB is that I am staying alone with him. I am the only one taking care of him. I have three kids. I am the one fetching treatment for him from the clinic. I do not have the income to get transport to take him to the clinic. At times they want me to take him to the clinic to check his blood pressure and weight. I do have a transport challenge. I do not have an income, as I do not work and depend on the children's grants" ***(FM01).***

"We do have a problem with the transport as we receive the social grant on the third of the month, and his appointment will be in the middle of the month. And by then the money is finished. Thus we struggle" ***(FM03).***

We do have a transport challenge as he is weak and is no longer working. He lost his income, and he was the breadwinner" ***(FM05).***

"I am eighty-three years old, and I use crutches to walk. I am also a patient. I must also hire transport for her to the clinic for TB check-ups. My husband also has a chronic disease, and every month we send a child to fetch treatment for him with transport. I have a back problem too, and I also fetch my treatment from a different hospital. On top of that, I fetch treatment for hypertension from the clinic. Every month we spend money to fetch treatments and for her to do check-ups for TB" ***(FM04).***

"We request assistance with the money so that she can keep her appointments. At times there is no food, we have to go and ask my grandmother so that she can get something to eat. We don't have money, no income and nobody is working" ***(FM06).***

In this study, most participants were struggling financially due to unemployment. The main source of income for their survival are children and old age pension grants. Therefore, it was difficult to adhere to a proper diet and visit the health facilities for check-ups.

4.3.6 Essence 6: Family member's TB health literacy experiences

TB health literacy plays a crucial role in the attainment of knowledge and skills needed by families to enable them to obtain, understand and apply TB health information. This will assist families in promoting and preventing the spread of TB. Family members need to have information regarding the signs and symptoms of TB. This should be done to increase their TB knowledge. Family members' TB health literacy experiences arose as a final essence with two constituents: Family members' experiences of CHNs' ineffective health education and family members' experiences of sources of TB information.

- **Constituent 1: Family members' experiences of CHNs' ineffective health education**

Participants described their experiences of community health nurses' failure to inform them about TB. Most participants expressed that the community health nurses supply them with treatment without any information. The following quotes confirm the findings:

*"They did not come to inform us about TB. He was just given treatment****." (FM04).***

"*They only give us treatment. "They did not explain to me. I thought it was still meningitis. He (my son) also did not mention that he was having TB"* ***(FM09).***

The nurses are always busy. They do not have time for one-on-one talk. They just want to push the queue and finish their work" ***(FM07, FM10).***

- **Constituent 2: Family members' experiences of sources of TB information**

Most participants described their experiences of not being informed by CHNs concerning TB causes, signs and symptoms, treatment and side-effects of treatment and how to prevent the spread of TB. One participant however had direct experience with TB by knowing someone who suffered from TB.

"*I know about TB as my aunt had it and she passed on. So, I know about TB from home"* ***(FM01).***

They did not inform us about TB. He was just given treatment for TB. They only give us treatment" ***(FM04, FM09).***

I gathered information about TB as I was on TB treatment before and through talking with people and some relatives about TB. I also heard about TB from the radio as I do not have a TV set" ***(FM03).***

In this study, most participants showed low TB health literacy. The participants further described their experiences of CHNs' lack of commitment to educating the patients and their families about TB.

Table 4:2: Essential meanings and constituents derived from Community health nurses' interviews

ESSENTIAL MEANINGS	CONSTITUENTS
4.2.1 Essence 1: CHNs' roles in TB health promotion Programme.	• TB screening, treatment initiation, follow up and referral
	• Family contacts tracing
	• Health education to clients and families
	• Adherence counselling to clients and families
	• Referral of clients for medical/ psychological/ adherence follow up
	• Referral of families with social problems
4.2.2 Essence 2: CHNs' positive experiences of TB health promotion programme	• Positive experiences of the TB health promotion programme
	• Stakeholder support
4.2.3 Essence 3: CHNs' challenges with TB health promotion programme	• Clients' non-adherence related to social grant challenges
	• Clients' non-adherence related to access challenges
	• Clients' non-adherence related to different factors
	• Clients'/families' uncooperative conduct

	• CHNs' inadequate human and other resources support
	• CHNs' inadequate stakeholders' support
4.2.4 Essence 4: CHNs' needs in TB health promotion Programme	• CHNs-related needs
	• CHNs' personal TB protection needs
	• Client/families-related needs
	• Client/families' TB awareness and educational needs

4.4 RESULTS OF COMMUNITY HEALTH NURSES' INTERVIEWS

4.4.1 ESSENCE 1: CHNs' roles in the TB health promotion programme

Community health nurses in TB play a crucial role in the prevention and promotion of TB programmes. As they work hand in hand with the community, they need to reach out to those who are beyond reach. They need to provide the necessary information to the patients, their families and the community at large. This can enable early health seeking behaviour and prevent non-adherence to treatment. They have the responsibility to identify the health needs of clients/patients, families and the community.

The community health nurses' roles in TB health promotion programmes emerged as the first essence. They were backed up by constituents of TB screening, family contacts tracing, health education to clients and families, referral of clients for medical/psychological, adherence follow up as well as referrals for families with social problems.

- **Constituent 1: TB screening, treatment initiation, follow up and referral**

Five participants described their roles in TB prevention and promotion of commencing every patient entering the health facility with TB screening. If a patient has signs and symptoms of TB, the sputum is collected and wait for the results. When the results are positive for TB, that is when TB treatment is initiated. After two months (intensive phase) of treatment, another sputum is taken to check the effect of the treatment, and if negative they continue with the second phase of TB treatment. This is highlighted in the following extracts:

"Mm… firstly every client whether sick or coming for a social worker or psychologist, we screen them for TB. All of them. As long as she or he enters the yard in the facility. We screen them for TB, and if they sign any sign of TB, we do the test. Firstly, we test with sputum as a gene expert.

Then we wait for results, but the results take only 24 hours. We collect sputum today then we send the sputum to the laboratory, and then the following day the results come. Then we ask the patient to come back. We also take their contact numbers. When the sputum arrives, we phone the patient. If we don't trace the patient, we ask the community health workers (CHW) to go and find the patient. And then if the sputum is negative, the gene expert is negative, and …s/he has symptoms of TB, we send that client to the doctor. Then the doctor writes an X-Ray form then we send that patient for X-Ray. Then s/he will be coming to the clinic, and we then start with treatment. But if that patient is very sick, we refer her or him to the hospital for the initial phase and the continuation phase. *For the first two months, we use Rifafour, then for the second month, for the eight … Mhm-mm, for eight weeks neh? Then we collect the sputum. If the sputum is positive, we extend the treatment by a month. Then at the end of that month, we collect again, and then if negative, we continue with the continuation phase"* ***(CHN11).***

"We start with screening patients, and if the patient has the signs and symptoms of TB, we collect the sputum. We wait for the results and if they are positive we initiate treatment. We put the patient on the first phase of TB treatment, which is Rifafour according to body weight. The treatment is taken for two months. After two months another sputum is taken to check whether to continue with phase one or not, or phase two. We give treatment monthly to check on the patient, things like body weight. Then after four months, we check the sputum again before discharging the patients on treatment. If we see the patient is not well we refer to the doctor so that the doctor can decide how to assist the patient besides TB treatment" ***(CHN07, CHN06).***

"We open a file, and then they write the numbers and the next of kin, the numbers of the next of kin. And then after that, if we see they didn't come for treatment, for the follow-up treatment, then we call them personally. If we can't find them, we call the next of kin. If the next of kin is also not answering the phone and then we do house visits" ***(CHN09).***

"Normally we do screen every patient entering our services, and then if any patient with signs of TB we do screening by taking sputum for Gene Expert. And then, normally our results come fast because we have twenty-four or forty-eight hours. It's twenty-four because we collect today, and we receive the results tomorrow. And then immediately, if someone is positive, we call the patient. As with every patient, we do take their telephone numbers. And then will call the patient for treatment. Then if the patient doesn't respond, we send one of our …CHWs. And then, immediately, s/he comes into the clinic, and we start with counselling. After that, we start the patient immediately on… Yeah on treatment. And then, we collect sputum on the spot for AFB.

And then after initiating the patient on TB treatment. Uh, we will also counsel the patient on HIV as they are related to conditions. And then, we do an HIV test, and if positive, we will also counsel the patient as these are team diseases. And then, we will ask the patient to uh call, or we will ask him to call the contacts. So immediately, we screen the family members and then we also counsel them. We normally see patients bi-weekly. We have to see whether s/he is taking treatment correctly. And then see any problems s/he is having so we can continue counselling and support" ***(CHN12).***

One participant further mentioned the importance of initiating and making a follow-up on a patient until discharge without sharing him/her with other community health nurses. It means that once you start a patient on TB treatment, s/he must not be seen by other health providers as it is easier to monitor the progress. Therefore, every community health nurse should have his/her patients. The following statement attests to that:

"Yeah like, let's say I would like for us to monitor this patient, this TB patient. Let's say I have my patient, I'm the one who initiated the treatment of a patient. I should make a follow-up until the patient finishes his treatment" ***(CHN10).***

One participant however indicated that some community health nurses are not honest with TB screening as they use fraudulent screening methods. This may lead to underreporting of new TB cases or missing people with TB. The following statement supporting that was indicated thus:

"*Another problem is that there is the poor screening of TB, leading to undiagnosed TB. In consultation rooms, there is a primary care tick register. Some nurses just tick …"* ***(CHN02).***

One participant described how they struggled to trace clients who tested positive due to communication breakdowns. It becomes difficult to commence treatment leading to the spread of the infection. The following extract emphasises that:
"… there are so many challenges regarding this TB health promotion programme because …uhm, you might find that patients will come with symptoms and we give them the sputum bottle. They do that, we do the test, and when the results come back when we try to follow up or to call them, their numbers are off, and we don't know where to find them" ***(CHN10).***

Therefore, healthcare providers should screen and test more patients for TB daily to promote and control. Patients are screened and tested for TB and commence treatment when results are

positive. Furthermore, healthcare providers should adhere to national guidelines and policies to make a TB diagnosis and commence treatment. TB treatment protocols should be followed for the provision of quality care.

- **Constituent 2: Family contacts tracing**

It is critical to prevent new infections of TB to control TB and to achieve the End TB Strategy targets intended for 2030 and 3035. This can be achieved through health interventions such as tracing household contacts such as children under the age of five years, the clinical risk groups, and those living with people with confirmed TB. Three participants indicated their roles in TB prevention as follows:

"*Let me say after diagnosing a patient, we encourage the patient to bring a family member to be checked so that if there is someone with TB must be treated, and under five are given prophylaxis treatment"* ***(CHN06).***

"If there are minors (children under five years) at home Mantoux test is done. If positive they are put on treatment, and even if negative they are put on prophylaxis for protection so that they cannot end up being positive. We encourage the family to be checked as they have a patient with TB" ***(CHN07).***

"We ask them for the family members and people they are staying with under 5, and we give them the prophylaxes. And then, for the rest, if they are having symptoms, we take their sputum and send them to the lab to see if someone from the family also has TB" ***(CHN 10).***

The above findings highlighted that to prevent TB, the participants traced the families and children of members diagnosed with TB. They test the contacts for TB. They conducted the Mantoux test for children under five and gave them prophylaxis to protect them against contracting TB disease.

- **Constituent 3: Health education to clients and families**

The clients/patients, their families and the community should be actively involved in the promotion and control of TB. This can be achieved by empowering them with the correct knowledge, skill and positive attitudes toward TB. Community health nurses should be committed to providing quality health education to manage TB successfully and for the patients to adhere to treatment. Participants described their commitment to health education and the following extracts attest to that.

"*We give the families health education about TB, what it is, what to expect, signs and symptoms, TB prophylaxis, precautionary measures and nutrition. Health education is very important"* ***(CHN01, CHN06).***

"…I counsel them and explain all the side effects of TB treatment. I do encourage the patients to take treatment as prescribed to improve. When I see them improving it brings joy in my heart" ***(CHN02).***

"We involve the patient's family to monitor the patient, and we educate them about the risk of the patient if not taking the treatment. We also teach them about hygiene and how to protect smaller children at home, especially those under five as they are the most vulnerable to getting TB" ***(CHN03).***

"The families when they are here is the time to liaise with them and assist them. We ask them, like, we start with health education" ***(CHN05).***

"Normally we would just tell them they should start opening windows because if it is a closed area… Uhm… also uhm… with uh…the diet plan… We will tell them that they should eat a lot of fruit. And also, fibre rich foods because some of them do have diarrhoea. Yes, also tell them to drink a lot of water. And stop with the alcohol because it's also not going to help with the medication" ***(CHN09).***

"Yes, we do the same thing to the family like a patient. We tell them about the lifestyle they should like if a person has TB, they should not neglect their patient just because s/he has a TB because TB is not a chronic condition. It can be cured, so we give them health education like lifestyle, personal hygiene and uhm… ***(CHN10).***

Other participants described the failure to provide health education due to a lack of human resources and time. This is highlighted by the following:

"*We provide them with health education only if they come with the patient. We do not do follow-ups or home visits. Our main problem here is a shortage of staff. We do not have a TB focal nurse. We take care of all conditions. We are only two professional nurses for the whole clinic…"* ***(CHN04).***

"Mine is just to give patient treatment, I can refer the patient to the social worker if they have social problems. … nurses just to give treatment" ***(CHN08).***

Therefore, clients/patients/ families and the community should be given the correct and adequate information about TB. This can lead to early health seeking behaviour. Patients can be diagnosed early and be commenced with TB treatment. Furthermore, patients can be supported by their families and the community with no fear or stigma. This can result in the prevention and control of TB leading to the end of the TB epidemic and meeting the SDG deadline of 2030.

- **Constituent 4: Adherence to counselling to clients and families**

Community health nurses should encourage the clients and families to adhere to the prescribed treatment to control the spread of the disease. They must inform the clients/patients and their families that TB is curable. Furthermore, the patients should abide by the prescribed regime and ensure that they complete their treatment. Participants described their role of counselling and the dangers of defaulting on treatment and said:

"We counsel them, we tell them TB can be cured as long as you follow the treatment instructions. Taking treatment every day at the same time, and they don't have to default because if they default, they end up getting MDR" ***(CHN10).***

*We counsel the family and ask them to support the patient, and health education is given for TB prevention" (****CHN11).***

"The high TB defaulter rate, I would say is due to the way TB is managed here. The thing is once you get a new TB patient when you initiate treatment you have to link the patient to the community health worker (CHW). You have to check the address and the CHW working in that area and inform her to monitor the patient. However, at times it is not done like that" ***(CHN02).***

Therefore, counselling the clients and their families can influence the patients to complete their treatment without defaulting. This can improve the cure rate and reduce the spread of the disease. Furthermore, reduce drug resistant TB and hospital admissions and associated costs.

- **Constituent 5: Referral of clients for medical/ psychological/ adherence follow up**

Community healthcare nurse has the responsibility to identify health needs and refer clients/patients to the relevant health providers. Participants in this study described how they referred clients to social workers and psychologists for medical help and further management.

"*Besides providing TB treatment and health education to the patients, we refer them to a social worker if they are not working. So, the social worker arranges for food parcels and social grants*

depending on the condition. We refer depressed patients to a psychologist to help them emotionally. We have a multi-disciplinary team comprising physiotherapists/occupational therapists… **" *(CHN02).***

"Furthermore, you engage the same client with the PHC re-engineering team or community health workers for supervision. However, if still difficult with the community health workers, you engage the PHC re-engineering team to go and assist the poor community health workers" ***(CHN05).***

"*Most of the patients come from very poor families, so we engage with the dietician for a supply of porridge with every visit*" ***(CHN06).***

"If we see the patient is not well we refer to the doctor so that the doctor can decide how to assist. We do refer the patient to the dietician to order porridge for the patient. If the patient has problems at home, we refer them to a social worker. The social worker can intervene and see how the patient can be assisted at home" ***(CHN07).***

Therefore, identifying health needs and referring clients to the relevant health providers is crucial in the promotion and prevention of TB. Clients need emotional support to improve their morale, a proper diet to improve their immunity when taking treatment and social support to assist with their social problems. Furthermore, participants alluded to the need for a medical doctor for clients having other medical ailments besides TB.

- **Constituent 6: Referral of families with social problems**

TB as a disease of poverty and has a negative economic impact on families. Most of the families are unemployed and the others rely solely on social grants or children's grants. Participants in this study described how the families and communities are struggling financially and there is need to check their social background when assisting them in the promotion and prevention of TB. The following statements reflect that:

I think people with TB and their family backgrounds should be checked. Initially, they were given grants, so those from poor family backgrounds should be assisted with grants when they are on TB treatment, and those in need of food parcels should also be assisted" ***(CHN08).***

"…** but unfortunately, we are working with a community that is poverty stricken. They are not working most of them, and are relying on social grants that take a long time before being approved**" (CHN05).

"*If the patient is having problems at home, we refer them to the social worker. The social worker can intervene and see how the patient can be assisted" **(CHN07).***

Therefore, it is important for families having members diagnosed with TB to be supported. Medication alone cannot cure and control TB. The social factors need to be addressed to prevent TB.

4.4.2 ESSENCE 2: CHNs' positive experiences of the TB health promotion programme

Community health nurses' positive experiences of the TB health promotion programme emerged as the second essence. They were backed up by constituents of positive experiences of the health promotion programme and stakeholders' support.

- **Constituent 1: Positive experiences of the TB health promotion programme**

One participant described the great feeling of seeing the patients improve. Furthermore, others indicated that some patients are very cooperative and compliant, leading to the completion of treatment and control of TB. The following excerpts emphasised that:

*When I see them improving it brings joy to my heart. At least I did something special for the patient**" (CHN02).***

*"Uhm, uh what I can say is that TB can be cured because I was also a patient once. But then I'm fine. Yes. As long as you take treatment" **(CHN10).***

*Most of them finish their treatment. A little bit default, their reason being that they do not get the social grants. There is no food, there is no money for transport to come for treatment. But most of them comply. We refer them to the social workers..." **(CHN12).***

*"The patients I saw all finished their treatment. There wasn't one that I worked with that defaulted" **(CHN09).***

"Regarding the TB health programme, I have worked for a very long time with TB, and most of the patients are co-operative, most of whom we refer to their clinics. We make their referral letter to their nearest facilities after investigations are done and diagnosed with TB" ***(CHN06).***

Therefore, patients need to adhere to treatment. This can improve the cure rate and decrease the spread of the disease. Furthermore, it brought joy to some participants to see their patients compliant and complete their medication.

- **Constituent 2: Stakeholder support**

The prevention and promotion of TB need teamwork. Stakeholders need to support one another in the fight against TB. Participants described how the CDC/TB coordinators, community health workers and re-engineering team support them. The participants further alluded that the TB coordinators assist them with TB workshops and monthly meetings and update them with new TB guidelines. The following quotes highlight that:

"We have TB coordinators who support us. They provide us with workshops to ensure we are well updated with the new developments. If there are new TB guidelines, they invite all the staff to attend the workshops. We have monthly meetings with them, and all the staff from different healthcare facilities attend, and we share our experiences and challenges. The TB coordinators address our needs. I had some issues last month, I raised the concerns to them at the meeting and now some of them are resolved" ***(CHN02).***

"The Centers for Disease Control and Prevention (CDC) people come almost every month. They come here to check on us, and if there are new TB trends, they make an appointment and start with us and introduce the new systems" ***(CHN05).***

"We engage the CDC concerning patients who are staying far. They are the ones allocating the community health care workers to check whether the patients are taking treatment, they check their homes, check the general cleanliness of the house and teach them about TB treatment and nutrition" ***(CHN06).***

"*We have communicable disease personnel who are working with us. They are supportive even though at times we feel it is not enough however they do come for visits to monitor the progress of the TB programme and to check if the patients are complying. They communicate and monitor patients who are on MDR treatment"* ***(CHN03).***

“The community health workers take treatment from the clinic and issue them in their homes, and trace defaulters. We also phone defaulters when we check files and find that they defaulted treatment to find out what is the problem” ***(CHN08).***

Our patients mostly lack supervision. However, we do have community health workers, but it is just here and there where they supervise patients. Most patients commence and finish TB treatment without supervision" ***(CHN04).***

The participants' statements highlighted the importance of teamwork and support. To prevent and promote TB, the supervisors should be visible and encourage the participants to carry out their work confidently. Furthermore, the supervisors should acknowledge their challenges and address them.

4.4.3 ESSENCE 3: CHNs' challenges with the TB health promotion programme

Community health nurses' challenges with TB health promotion programmes emerged as the third essence. They were backed up by clients' non-adherence related challenges, clients' non-adherence related to access challenges, clients' non-adherence related to different factors, clients'/families' uncooperative conduct, CHNs' inadequate human and other resources support and CHNs' inadequate stakeholders' support.

- **Constituent 1: Clients' non-adherence related to social grant challenges**

Social grants are provided in South Africa to improve living standards for those who are susceptible to poverty and need social and financial assistance. However, in this study participants described how other patients abused the social security system by defaulting treatment purposefully so that their grant could be extended. Some participants mentioned that other patients find it difficult to obtain the grants. The following statements attest to that:

"…but unfortunately, we are working with a community that is poverty stricken. They are not working most of them and are relying on social grants that take a long time before approval and getting the grant. Of course, they come to clinics and most of them come with ambulances. To go back there is no transport hence most of them don’t adhere to their appointments or come back at all” ***(CHN05).***

"The others default because of the social grants. So, if they take the treatment correctly, the social grants will be stopped when they complete the TB treatment. So, they default intentionally just to continue with the grant" ***(CHN01).***

No, the patients don't get social grants, but usually, the social worker writes the motivation, and even the doctor if the patient is very sick" ***(CHN11).***

Therefore, healthcare providers should educate the clients/patients about the dangers of TB, as by abusing the grant they put their lives, their families and the community at risk. Furthermore, policymakers should make it easy for the people to ensure that these basic rights are realised.

- **Constituent 2: Clients' non-adherence related to access challenges**

Participants cited access to healthcare as a challenge that leads to non-adherence to treatment. For the clients/patients and the community to use the TB services the facility should be accessible to them. Participants mentioned that they have a problem with the high defaulter rate due to a lack of access to health facilities. The following are the quotes from the participants relating to these issues:

"*The problem we are having here is many defaulters. If we ask the patients about their challenges, most of them complain about transport. They say that they do not have transport to come to the clinic to fetch treatment…*" ***(CHN 01, CHN08).***

Others say that they do not have transport to come to the clinic, and others just stay away, maybe it is a lack of information or lack of knowledge about TB, I do not know. The others do not have a reason to default, others tell you that they are staying alone and do not have money to come to the clinic to fetch treatment" ***(CHN07).***

The others stay alone, and nobody assists them when they are very sick. The others give the wrong addresses so that they cannot be traced by the community healthcare worker. Others move around the whole place and thus cannot be tracked. These are the problems we encounter here" ***(CHN01).***

Therefore, healthcare services should be within reach for the clients/patients and the community. This can curb the high defaulter rate and the spread of TB. Furthermore, addressing the transport issues with either transport vouchers or financial assistance can result in controlling TB as anti-TB drugs alone cannot solve the TB pandemic.

- **Constituent 3: Clients' non-adherence related to different factors**

Multiple factors influenced the patients not to adhere to treatment. Some patients have no reasons not to honour their appointments, some were due to a lack of knowledge about TB, and others were not taking their treatment as recommended and hence were still having treatment. Furthermore, some patients defaulted due to staying alone and lack of supervision. These utterances confirmed that:

"Yes, most of them default, and I don't know the reason why. You will ask them, they tell us that they did not come uhm on the date because they are still having treatment. …we count treatment for them according to the days we give them to say, you should come on this date, and if they don't come they will tell us. I was still having a lot of treatment which means that they are not taking treatment" ***(CHN10).***

"…others just stay away, maybe is a lack of information or lack of knowledge about TB, I do not know. The others do not have a reason to default, others tell you that they are staying alone and do not have money to come to the clinic to fetch treatment" ***(CHN08).***

The high TB defaulter rate, I would say contributed to the way TB is managed here. The thing is once you get a new TB patient when you initiate treatment you have to link the patient to the community health worker (CHW). You have to check the address and the CHW working in that area and inform her to monitor the patient. However, at times is not done like that" ***(CHN02).***

To control TB successfully, the issues that influence the patients not to adhere to treatment should be addressed. Patients need to be linked to CHW for supervision. Patients need to be given appropriate information about TB to improve their TB knowledge to decrease the spread of TB and MDR complications.

- **Constituent 4: Clients'/families' uncooperative conduct**

Participants in the health prevention and promotion programmes of TB pointed out that clients/families fail to cooperate with them by ignoring requests such as collecting sputum to be tested, not honouring invitations to the health facilities and giving the wrong information about their families. The following quotations confirm the constituent:

"*The challenges that I have is that uh some of the patients would come and then we would allow them to the sputum. This other time I gave a sputum bottle to this patient, but then I found the sputum bottle in the toilet. So, they do not, some of them do not take the sputum bottle, or maybe*

they forget it and the others you would tell them to come in the morning, and then they won't come. They will maybe come after 3-4 days, and then the doctor isn't here" ***(CHN09).***

The challenge is with contacts, sometimes they refuse to cough the sputum. Yeah, that is the serious challenge that we face. And then, but… we normally don't receive the sputum for all. And then even some of the patients are hiding that they are staying with their families. They will tell you I'm staying alone. And they don't have under-fives until we do home visits. Then will find that s/he is not staying alone" ***(CHN12).***

"*I have more than ten years working with TB, and our patients do not complete treatment, they default. We also have a problem with contacts. They do not want to give sputum or bring the kids to be tested. We cannot accomplish our targets like 85% as our cases keep on increasing"* ***(CHN04).***

The expressions of participants give a picture of the importance of collaboration between the community health nurses and the clients/families. TB health promotion and prevention is a team effort and people should be united and work together towards eradication. Furthermore, community health nurses should educate the clients/families and the community about TB.

- **Constituent 5: CHNs' inadequate human and other resources support**

For community health nurses to render quality TB care, they should have adequate manpower and the necessary resources to carry out the services. In this study, participants mentioned that they struggled with resources such as tuberculin skin test kits and telephones. Participants also mentioned staff shortages. The following statements attest to that:

"*Let me start with the challenges. We are out of TST (Tuberculin skin test). It has been out of stock for over four (4) months now. If there is a TB patient with a family contact and amongst them, there are children under five, we need to do a Mantoux test (PPD). In the absence of TST, it becomes a problem as you have to book the patient to come and see a doctor. The doctor will refer the patient to another facility for Chest X-ray and must bring it back to the doctor. So, the patient is doing ups and downs, and they end up not returning. We do have an X-ray department, but it is not functioning. Another challenge is that there is no TB focal nurse. We work there in turns. No one is willing to work with TB for five days. There was a focal nurse who left. So, there is no quality, as nobody is stationed at the TB department. The person working there is working at other departments and will only go there when getting the chance. So, the patient can come to*

fetch TB treatment and must wait for a long time. At the moment I have six defaulters. In our facility, we have a challenge with telephones. They were not working thus makes difficult to trace the patients" ***(CHN02).***

Our main problem here is a shortage of staff. We do not have a TB focal nurse. We take care of all the conditions. We are only two professional nurses for the whole clinic" ***(CHN04).***

The findings reveal the importance of providing the participants with adequate working resources and adequate human resources to promote and prevent the spread of TB. For participants to perform their work to the best of their ability and with a smile they should be supported with extra hands and working tools.

- **Constituent 6: CHNs' inadequate stakeholders' support TB is a team effort**

Participants received no support from the CDC regarding TB health promotion and prevention. Five participants indicated that the CDC/TB coordinators are only interested in collecting the monthly statistics instead of supporting them. The community health workers are also not committed to carrying out their work. The following quotes emphasised that:

"Uh, the (CDC people) don't support us. There is no support at all. They don't visit us. They only come when they are having burning issues. They will find a problem, and they will visit us to sort out that problem" ***(CHN12).***

We need support from the district leaders. *They must support us, even with transport because most of our clients stay far from the facility. Aai, they just only take their statistics. Most of the time they come for the collection of their statistics, with no support and no teachings"* ***(CHN11).***

The TB coordinators hardly come here except our clinic managers who support us" ***(CHN01).***

The TB coordinators are doing nothing. They are just after statistics. No meetings, nothing" ***(CHN04).***

Our patients mostly lack supervision. However, we do have community health workers, but it is just here and there where they supervise patients. Most patients commence and finish TB treatment without supervision" ***(CHN04).***

Therefore, moral support is important to fight TB. The participants feel lonely with no support from their supervisors. Supervisors need to hold meetings with community health nurses to identify their challenges and try to address them. The participants should feel well cared for to extend the care to the clients/patients and the community**.**

4.4.2 ESSENCE 2: CHNs' needs in the TB health promotion programme

CHNs' needs in TB health promotion programmes emerged as the fourth essence backed up by constituents of CHNs-related needs, CHNs' personal TB protection needs, client/families-related needs, client/families TB awareness and educational needs.

- **Constituent 1: CHNs-related needs**

Community health nurses have some needs that must be met so that their work can be achieved. In this study, participants described the need for a focal nurse who can be responsible for providing TB health care services and to ensure that there is continuity of care as s/he will be overseeing TB care. Furthermore, the need for support by TB coordinators/CDC. The following excerpts explain the constituent:

"Another challenge is that there is no TB focal nurse. We work there in turn (TB department). No one is willing to work with TB for five days. There was a TB focal nurse who left" ***(CHN02).***

"Our main problem is staff shortage. We do not have a TB focal nurse. We take care of all conditions. We are only two (02) professional nurses for the whole clinic. We work seven (07) days a week, and we are off-duty for the following seven days. We start with vital signs and do everything here. If there was a TB focal nurse…" ***(CHN04****).*

"Uh, I don't know what to say but the… our coordinators, they also need supervision. At least routinely. So that they can be reminded that they should also support us" ***(CHN12).***

Therefore, for TB promotion and prevention to be improved, the issues that affect their work negatively need to be addressed. Human resource needs to be improved, and the nurses must be guided and motivated in their day-to-day prevention and promotion of TB. Supervisors need to be visible to identify and attend to the issues affecting community health nurses.

- **Constituent 2: CHNs' personal TB protection needs**

It is important for the community health nurses working with TB to protect themselves from contracting TB as they are exposed to TB. Community health nurses are also at risk of infecting

their families. Participants indicated the importance of protecting themselves and their loved ones by wearing masks, wearing gloves when handling sputum and opening windows for ventilation:

"*For me as a nurse working with TB, I need to protect myself as after working on the TB programme for two years I started developing mild symptoms, mild cough, I just had a cough, and after a week it was serious, I had shortness of breath, but I was OK, I was not losing weight, there was nothing, it was just a cough. I just thought it was a cough but then after taking treatment, I was not getting better, and I decided to have a TB test which came out positive. I had to start taking TB treatment for six months. So, I had exposed my family because I have two kids and two smaller kids at home. After testing positive my first-born daughter also tested positive for TB. So that is the risk we expose ourselves and our families...* For *the staff working on the TB programme, we must protect ourselves from getting TB because not wearing masks and not opening windows contribute to the staff members getting TB. As I already mentioned, it does not affect us only, it affects our families. We need to be extra careful and take precautionary measures so that we do not expose others"* ***(CHN03).***

"We protect ourselves by wearing masks and gloves when we handle the sputum. When we collect the sputum, we make it a point that we wear gloves so that we cannot get infected with TB" ***(CHN06).***

We are, for now, we are wearing masks. And since we are wearing masks, we have less… TB patients. Since we are wearing a mask but as they come, uhm we are staying in a social distancing, and we do screen them. We've got screening rooms on that side. So, they enter there" ***(CHN12).***

Community health nurses need to protect themselves when preventing and promoting TB awareness. They are at high risk of contracting the disease as they are exposed daily. Furthermore, they are not the only ones at risk even their families are exposed to the disease. They must take extra precautionary measures such as wearing masks and opening windows for adequate ventilation.

- **Constituent 3: Client/families-related needs**

TB disease can have a negative economic impact on clients/families who are unemployed or earn less. For TB to be controlled and ended clients/patients and their families need to be supported

financially and with nutritional foods. Furthermore, non-adherence to TB treatment and completion may be associated with financial constraints as follow-ups need transport and TB treatment need good nutrition. Participants indicated the need to assess the patients and their family backgrounds and the need to sustain their nutrition. The following excerpts emphasised that:

"*The most important thing I can say to you is that the family and the community should have a piece of land to make their vegetable gardens so they can grow vegetables. So, if they can be supplied with land in every village, with an adequate supply of water to irrigate their gardens and not buy vegetables"* ***(CHN07).***

"I think people with TB's family backgrounds should be checked. Initially, they were given grants, so those from poor family backgrounds should be assisted with grants when they are on TB treatment so that they can take treatment well, those in need of food parcels should also be assisted" ***(CHN08).***

Therefore, the costs of travel for check-ups during treatment and nutritional support for poor households need to be addressed as patients and their families are faced with financial difficulties. Furthermore, this may lead to patients not adhering to treatment and associated MDR and TB deaths.

- **Constituent 4: Client/families TB awareness and educational needs**

The need for TB awareness and education surfaced as the participants indicated that most people lack knowledge about TB. They are not aware of the dangers of TB. The people need health campaigns in which they should be educated about TB health promotion interventions. Three participants attested that by the following:

*"TB awareness should be done in this area. Because I saw most of the people that come… They, lack knowledge and most of them always come with a cough. So, what they should be taught is that whenever you feel a cough, you should start counting every day how many times you are coughing for how long. So that whenever you know that it's above 14 days and then I should come to the clinic. Now some of them would just come and then, uhm maybe if they have been coughing for more than 14 days, they would come into the clinic and say they've been coughing for three days. Then we give them antibiotics to help with the cough, and then they come again, and then we wonder why they are not uh improving****"*** ***(CHN09).***

"If perhaps we can have TB day or TB Campaigns and raise awareness" ***(CHN06).***

They need information such as TB Campaigns. The families need information so that they can supervise the patients correctly, as other patients just tick the card without taking treatment. I think supervision at home is better" ***(CHN01).***

Clients/patients and the community need information about TB as participants indicated poor knowledge of TB, which may lead to delays in health seeking behaviour and the associated spread of TB disease. TB campaigns and TB days should be conducted and raise awareness to improve knowledge, attitudes and practice as far as TB is concerned. The community needs information about TB to know that TB is curable and should be empowered with factual information to enable them to prevent its severity and dangers.

4.5 DISCUSSION OF FIELD NOTES

Field notes are the records taken during and straightaway following the interviews to keep records of what transpired during the proceedings (Gray, Grove & Sutherland, 2017:257). They are the notes the researcher takes in the field to record the unstructured observations made and their interpretations (Polit & Beck, 2018:404). Polit and Beck (2017:520) further allude that field notes should not merely be the recordings of events that transpired but should provide rich descriptions of what transpired in the research site to give a deeper and richer understanding of human behaviour and social situations. The researcher took field notes in the form of personal notes and observational notes from the families having members diagnosed with TB as participants and the community health nurses during each interview. The participants were informed about the significance of taking field notes to relieve uncertainties. Furthermore, the researcher was permitted to record the interviews and take field notes.

4.5.1 Observational notes

Observation is defined as the gathering of information through seeing, listening, touching and smelling to highlight what is seen (Gray, Grove & Sutherland, 2017:256). Creswell and Creswell (2018:186), further defined observation as the taking of field notes on the conduct and actions of the persons at the site of the research. The researcher witnessed social behaviour in his interaction with the study participants in answering the research question. The researcher conducted unstructured interviews with the study participants. However, he paid attention to the environment and the other individuals in the surroundings. The researcher noticed that adults and

children sat aside and away from the interviews for the families having members diagnosed with TB as a sign of respect to allow the interviews to go as planned. The children stopped playing and kept quiet to prevent disturbing the interviews. The researcher took notes in an unstructured way and followed the interviews using a writing pad. No photographs or videotapes were taken during and after the interviews. The researcher made observations relating to dates, times, settings, actions, behaviours and communication styles as set out as follows:

4.5.1.1 Dates

The researcher encountered no problems with the families having members diagnosed with TB (as participants) on the set dates. However, irrespective of prior arrangements with the community health nurses, it wasn't easy to commence with the interviews. The researcher had to wait for several hours or the whole morning until the afternoon. Most of the participants were busy as they had to attend to their clients/patients, and the majority of the interviews were rescheduled for the afternoons.

4.5.1.2 Time

The participants were keen to commence with the interviews, especially the community health nurses, as they wanted the interviews to be done as soon as possible to carry on with their duties. The researcher ensured that the participants were free and relaxed by giving them a few minutes to settle before commencing with the questions.

4.5.1.3 Setting

The families having members diagnosed with TB as participants were interviewed at their homes as agreed. The community health nurses chose to be interviewed at their place of work. The researcher ensured they did not sit near the window facing direct sunlight. On the day of data collection, the researcher ensured that there were no disturbances, such as noise or interruptions. Furthermore, the participants informed other family members or health personnel about the research proceedings to prevent needless disturbances.

4.5.1.4 Actions, behaviours and communication styles

Most participants talked freely during the interviews. However, few were frightened at the start of the interviews due to the discomfort of being audio recorded. The recording device was taken out of their sight, and the interviews went on smoothly. The participants were happy to ventilate issues affecting them and that the researcher was listening to them. The community health nurses stay

far away in the villages. They felt privileged to be given a chance to share their experiences as they felt isolated from important events most of the time.

4.5.2 Personal notes

Personal notes are the comments about the researcher's feelings on the research site or during the research process (Polit & Beck, 2017: 522; Polit & Beck, 2018:207). During the interviews of families having members diagnosed with TB, most of them showed sad emotions and frustrations by the fact that their patients were not getting social grants leading to transport and food problems. The community health nurses were very emotional when talking about the lack of support by their seniors who were just after the TB statistics.

4.6 SUMMARY

The chapter presented the findings of data collected from the participants. The research questions were answered in line with the findings of the individual interviews. The findings were displayed in Table 4.1 and Table 4.2 in the form of essential meanings and constituents. The essential meanings and constituents were explained and enhanced with verbatim quotes written in italics for validity. Six (6) essential meanings of the experiences of families having member(s) diagnosed with TB were: the essence of family members' experiences regarding the development of TB, the essence of family members' caregiving experiences, the essence of healthcare service experiences, the essence of family members' social support experiences, the essence of family members' challenging experiences, and the essence of family members' TB health literacy experiences were identified from the data. Eighteen (18) constituents were identified to support each essence. Furthermore, four essential meanings of the needs of community health nurses regarding health promotion intervention regarding families having member(s) diagnosed with TB were: the essence of CHNs' roles in TB health promotion programme, the essence of CHNs' positive experiences of TB health promotion programme, essence on CHNs' challenges with TB health promotion programme and the essence on CHNs' needs in TB health promotion programme.

CHAPTER 5

PHASE 1: DISCUSSION OF RESULTS AND LITERATURE SYNTHESIS

5.1 INTRODUCTION

Chapter 4 presented the results of the study and concentrated on the essence of the experiences of the families having member(s) diagnosed with TB and the essence of community health nurses' needs regarding health promotion intervention for families having member(s) diagnosed with TB in the Northwest province. In this chapter, constituents of the identified essences are outlined, and the discussions of the findings are confirmed with the literature.

5.2 DISCUSSION OF THE ESSENCE, CONSTITUENTS WITH LITERATURE CONTROL

The addition of literature in the discussion is conducted in relation to descriptive phenomenology and is done to enhance the results so that the essence and constituents can be understood better. The researcher sought to understand the subjective life experiences of participants. This phenomenological study presents the essential meanings and the many shades of the phenomenon and differences of meanings, general meanings and specific meanings of the phenomenon understudy (Dahlberg & Ekebergh, 2008:4).

The findings of this study described the essence of the lived experiences of families having members diagnosed with TB in the Northwest Province and the essence of the needs of CHNs regarding health promotion intervention regarding families having member(s) diagnosed with TB in the Northwest Province to have a deeper and richer understanding of their experiences and their needs.

5.3 ESSENCES OF FAMILY MEMBERS EXPERIENCES

5.3.1 Essence of family members' experiences regarding the Development of TB

Family support plays a crucial role in the care and progress of TB patients (Rachmawati, Priyintini & Aini, 2020; Kristinawati, Muryadewi & Irianti, 2019; Herdianti et al., 2020). The participants, as a source of social support, indicated that they assisted their family member(s) when they developed signs and symptoms of TB. Furthermore, they advised or took their family members to the clinics for medical help and to ensure proper diagnosis (Mishra, Sharma, Yadav et al., 2021). Therefore, the family played an important role during the physical discomfort caused by TB and

during the diagnosis by being there and providing the necessary care. The essence of the development of TB included the constituent of TB symptoms prior to diagnosis and the process of getting a TB diagnosis.

To prevent transmission, TB-related symptoms need to be screened and tested. In this study, participants provided family support for members suffering from TB. Neighbours and extended family members also offered support to patients diagnosed with TB to alleviate physical discomfort. The participants felt the social support helped them to seek medical help in time as they were accepted and encouraged. They were not isolated or discriminated against. The social support made it easier for participants to go to the clinics for health care assistance. Early consultation with the clinic helps with early diagnosis and early anti -TB commencement (Kweza et al., 2018).

5.3.1.1 Family members' experiences of TB symptoms prior to diagnosis

It was found in this study that TB can cause symptoms such as nocturnal sudoresis, inappetence, weight loss, coughing blood and difficulty in breathing. Family member participants further indicated that families and the community need to be aware of TB signs and symptoms so that they can seek healthcare early and prevent transmission (Vanleeuw, Zembe-Mkalibe, Atkins, 2022).

In this study, participants described signs and symptoms of their family member(s), such as cough, chest pain, fatigue, night sweat, poor appetite, weight loss, vomiting after eating and swelling. These signs and symptoms are confirmed by scholars such as Sharma, Rao, Mishra et al. (2021) and Jung, Zillmer, Cunha and Gonzales (2018).

Some participants were able to relate the signs and symptoms of TB, while others failed to recognise them. The study conducted by Rachmawati, Nilmanat and Hatthakit (2019) found that family members did not notice the signs and symptoms of TB, which can contribute to delays in seeking healthcare. However, other studies by Konda, Melo and Giri (2016) and Pavlovic, Pavlovic, Bulajic et al. (2018) found that some patients develop signs and symptoms that are not suggestive of TB and can be confused with flu or colds (Long, 2015). This can lead to patients being treated with antibiotics for flu instead of TB. Therefore, this can delay the diagnosis and treatment and increase the transmission of TB.

According to Merleau-Ponty (1962:84); Nascimento, Filardi, Abath et al. (2017:2), human beings live through their bodies as embodied subjects experiencing the world and its fundamental structures such as sexuality, time and fellow humans. People relate to the world and understand it through their physical bodies, and as a result, they become aware of the world around them (Merleau-Ponty, 2005:79; Nascimento et al., 2017:2).

5.3.1.2 Family members' experiences regarding TB Diagnosis

In this study, it was found that diagnosis is crucial in preventing other family members and the community from contracting TB. It was also established that it is important to do TB screening for those who were exposed. Furthermore, the participants noted that getting a TB diagnosis can assist patients in commencing treatment on time before becoming critically ill (Sundaram, James Sreynimol et al., 2017).

Participants in this study experienced their family members undergoing the process of sputum collection, awaiting the results, and TB commencing treatment when the results were positive. Abonyi et al. (2017), in support, mentioned that patients and their families feel stressed, anxious and powerless if the diagnosis takes long, and they think that they are not taken seriously. Rakhmawati, Nilmanat and Hatthakit (2019) highlight that early diagnosis cuts the spread of TB. Vanleeuw et al. (2022) add that the delay in diagnosis can be alleviated through TB education and awareness.

It was found in this study that some families did not realise the signs and symptoms of TB, which led to the delay in seeking medical help and the delay in getting a TB diagnosis. Rachmawati et al. (2019) cite that getting a TB diagnosis is the starting point for children's TB prevention. The (ibid) further indicates that the TB burden cannot be detected if a diagnosis is missed. Sundaram, James and Sreynimol et al. (2017) add that the delay in seeking medical help leads to a delay in early diagnosis, commencement of treatment and the spread of the disease. Therefore, the delay in TB diagnosis can put other family members and the community at risk of contracting the disease.

Awoke, Dulo and Wudneh (2019) reveal that delays in seeking medical care associated with inadequate information and financial burdens such as long-distance travel to healthcare facilities can lead to poor healing of TB. The study further found it is unacceptable to delay commencing TB treatment by 60 days, as this can increase the spread of TB. Therefore, CHNs should provide

health education about families and the community to prevent delays in diagnosis (Shatil et al., 2019).

5.3.2 Essence of family members' caregiving experiences

Families provide care to member(s) who suffer from TB as they cannot take care of themselves due to discomfort, and family care practices have been around in most communities for ages (Fana & Sotana, 2019). This essence was divided into three constituents: family members' physical care and support of the client, family members' experiences of personal TB protection, and family members' experiences of TB treatment adherence.

The family is the cornerstone of preventing and controlling TB spread. Families should actively be involved in getting the lives of member(s) diagnosed with TB back on track. Families should assist in making the patients' lives comfortable and meaningful and restore their confidence so that they are able to fight the disease. The family should work together to prevent TB from spreading and infecting other family members. Furthermore, the family should respect and encourage the member(s) diagnosed with TB to continue with treatment to improve the treatment outcomes (Kristinawati et al., 2019; Gyimah & Dako-Gyeke, 2019; Fana & Sotana, 2021; Du et al., 2020).

5.3.2.1 Family members' physical care and support of the client

In this study, families indicated that they assisted their member(s) by preparing food, ensuring personal and environmental hygiene, assisting in doing exercises, reminding and supervising the medicine intake and providing spiritual support. The participants ensured that the patients took their medications on time by reminding and monitoring them. They further made sure that the patients eat food that are rich in nutrients such as proteins and vitamins (vegetables and fruits) to speed up the healing process. They further accompanied the patients to the clinics for check-ups as moral support. Vanleeuw et al. (2022); Sukartini et al. (2019); Herdianti et al. (2020) confirm and highlight that family attention and assistance with daily routines, financial assistance, emotional and moral support and motivation speed up the recovery process.

Some participants in this study mentioned that they supported member(s) financially with their pension funds and pension grants. It was also found that participants borrowed money from neighbours when funds were depleted to ensure that member(s) were able to go for check-ups using either taxis or hire cars for those that were critical. Further, they emotionally supported member(s) by praying so that God could heal them. They also encouraged patients not to lose hope and to adhere to their treatment routines. Kristinawati, Muryadewi and Irianti (2019);

Wardhani et al. (2021) confirm that family provides physical and psychological care for treatment success. Additionally, Olukolade, Hassan, Ogbuji et al. (2017) state that treatment support is likely to be effective where patients have emotional and physical support from their family members. Therefore, the emotional and physical world is crucial in caring for TB patients. Samal (2017) allude that TB patients are confronted with discernment and isolation and are rejected by their families and the community due to TB being related to social stigma.

It was stated clearly in this study that TB can cause a harmful psychosocial impact as patients tend to be hopeless, think about job losses and family relations, and these psychosocial harms can lead to isolation (Wijayanti, Andri & Djannatun, 2019:1210). Psychosocial support by families is important as most TB patients develop depression, which can lead to poor treatment outcomes (Chandra, Rana, Chandra & Arora, 2019). Poor treatment compliance can further be a barrier to curbing transmission, controlling and ending TB. Besides, patient scans develop drug resistance to TB which can be costly to treat as it needs hospitalisation, protracted treatment and second-line drugs. Sukartini, Khoirunisa and Hidayati (2019), in support, say family support can lead to feelings of inner peace for patients. Therefore, for the patients to cope with their illnesses, support from their families is crucial.

According to Merleau-Ponty (2005), human beings act meaningfully when they are in social environments. The (ibid) argues that it is through the body that people understand each other, just as it is through the body that they perceive things. Further, the body is a movement towards the world, and the world is the body's point of support (Merleau-Ponty, 2005). Therefore, people are connected to each other through their bodies (worlds) and, as such, depend on each other in their daily lives (Merleau-Ponty, 2005). Therefore, families need to provide physical and psychosocial support to member(s) diagnosed with TB to improve compliance, make their lives meaningful and adjust to TB treatment and side effects.

5.3.2.2 Family members' experiences of personal TB protection

Most participants in this study described a knowledge deficit regarding personal protection against TB. Researchers attest to this level of education as it is often associated with TB knowledge, most of the participants in this study had a lower level of education. Herdianti et al. (2020) confirm that the role of the family in TB prevention is expected to be high to take safety measures for themselves and their environment. Bedingfield, Lashewicz, Fisher and King-Fisher (2022) state that gaps in TB education and counselling have a negative influence on patients and their families as it is the tool to address misconceptions and reduce the spread. In addition, studies by

Sulistyono et al. (2020); Alberta and Widyastuti (2021) found that personal protection was not practised in Indonesia. The findings were mirrored by Herdianti et al. (2020), that the respondents did not know the cause and transmission of TB and as such, did not separate equipment used by TB patients, such as towels, toiletries and food. Hence, TB knowledge and awareness are crucial to reduce the transmission of TB.

Queiroz et al. (2016) found that families are not included in TB care and suggested that health professionals should provide frequent TB information to patients and their families regarding the causes, transmission, prevention and treatment. Therefore, health education can promote knowledge for patients, their families and the community so that they can be able to protect themselves.

Zahroh, Anggraini and Yusuf et al. (2020), similar to the current study, found that nurses can prevent TB among high-risk family members by carrying therapeutic communication (knowledge prevention) through the King Interaction approach. This theory proposes a collaboration between the nurses and families at high risk of contracting TB. This approach argues that this will help families to change their perception and can yield positive results in members adopting positive actions. Therefore, CHNs should provide therapeutic communication to the families frequently to empower them to prevent the transmission of TB. Furthermore, Rachmawati et al. (2019) add that nurses should provide both health education and counselling to patients and their families.

5.3.2.3 Family members' experiences of TB treatment adherence

The participants in this study emphasised that treatment adherence is important to avoid TB drug resistance or drug failure. In this study, there were few healthcare workers to monitor the patients at home. Thus, the family plays an important role in rendering care to patients so that they do not default on treatment. Most participants described their roles of ensuring that patients take medication accordingly by reminding them, supervising them and preparing food for them before taking medication. Gateri, Nyamongo and Ziraba (2019) found that financial constraints, stigma and lack of adequate family and social support negatively impacted treatment adherence. The study conducted by Ukwaja et al. (2017) found that some patients received family support from their families, while others received no support at all. Furthermore, the findings of this study are not different from Sahile Yared and Kaba (2018); Alberta and Widyastuti (2021); Skiles et al. (2020); Nastiti and Kurniawan (2020), that there is a correlation between TB compliance and family support. Therefore, the family ensured that the patients adhered to treatment by accepting them, motivating them to carry on treatment and monitoring them when taking treatment.

Studies showed that stigma, mental problems, discrimination, alcohol abuse, lack of knowledge about the disease (signs and symptoms), lack of social support and adverse effects of anti-TB medication lead to patients defaulting on treatment. These psychosocial issues need social support from the healthcare providers, family and community in order to improve the treatment outcomes (Thomas, Shanmugam, Malaisamy et al., 2016; Samal, 2022). The clients/families need to be given hope by healthcare providers and the community. They should be given a visit or contacted telephonically to show that they are not alone (Snyman, Venables, Duran et al., 2018). On this account, the clients/families should be empowered with health education about TB and be supported psychosocially.

5.3.3 Essence of family members' health care service experiences

The role of the families in TB care and support is pivotal and starts with the manifestations of signs and symptoms, healthcare seeking and the treatment outcomes (Samal, 2017). This essence was subdivided into family members' experiences of CHNs diagnostic and follow up services. Good interpersonal relationships between clients/families and the CHNs can improve TB care. The clients/families need to be informed about TB and procedures to be followed, such as TB diagnosis and treatment, to make informed decisions about their health. The CHNs should further support the clients/families emotionally in order to come to terms with the diagnosis and adhere to treatment (Vanqa, Hoddinott, Mbenyana et al., 2021; Thomas et al., 2016).

5.3.3.1 Family members' experiences of CHNs diagnostic and follow up services

The participants found that CHNs provide first contact care in the clinics. They are responsible for the prevention and promotion of quality care. The participants further noted that a welcoming environment is fundamental for the success and control of TB. Therefore, CHNs should create strong bonds with the patients, their families, and the community to eradicate TB. This was confirmed by Engel Brecht, Kigosi, Van Rensburg and Van Rensburg (2018). The (ibid) indicates that CHNs need to control and prevent TB by diagnosing TB early and providing patients with treatment on time.

In this study, the participants indicated that diagnostic investigations were not done on time which can lead to an increase in TB transmission. The participants further emphasised that they had to give the sputum and wait for some time at home before being called, diagnosed and commenced treatment. This can put the other family members and the community at risk of contracting TB. However, with follow up services, there was no delay in getting treatment. Sahile, Yared and Kaba (2018) found that waiting time was not the issue in TB diagnosis. Pinheiro, Sá, Palha, Oliveira,

Nogueira and Villa (2017) add that the fundamental tools for TB control are early detection and effective treatment. Additionally, the delay in obtaining a TB diagnosis and commencing with anti-TB drugs can complicate the clinical condition leading to hospitalisation (Pinheiro et al., 2017). This is echoed by Oliveira, Nogueira and Rodrigues et al. (2020), who alluded that a long waiting time for the results may increase the spread of TB and negatively impact TB treatment.

In contrast, the study conducted by Wademan et al. (2021) in SA and Zambia found that most of the participants received timely diagnoses. Therefore, early detection, diagnosis and commencement of TB treatment are the cornerstone in eradicating TB.

5.3.4 Essence of family members' social support experiences

TB is a social disease related to socioeconomic crisis leading to psychosocial distress and suicide (Razvodovsky, 2018). It is important to provide support for the patient and the family members to increase their morale so that they can deal with TB. This essence is comprised of the constituent of family members' experiences of community support and family members' experiences of external family support. Family and community support can play a role in health seeking behaviour as individuals with TB symptomatology can be influenced to seek medical help to relieve the symptoms (Shatil et al., 2019). Family and community knowledge regarding TB can assist with treatment adherence and positive outcomes (Samal, 2022).

5.3.4.1 Family members' experiences of community support

Most of the participants described their experiences of social support from the neighbours and the community in the form of encouragement to take the patients to the clinic when showing signs and start to be sick**.** Furthermore, the families obtained economic support from the neighbours from whom they borrowed money to take the patients to the clinics for care and follow-ups. The neighbours further visited them to give them moral support so that they do not feel isolated, as TB is associated with stigma and prejudices. The results of this study were kept in with Nasution, Ariga and Siregar et al. (2020), who found that family support had positive results with regard to informational, emotional and material rewards. In contrast, Sahile et al. (2018) found that some patients and their families were discriminated against by relatives and the community in Ethiopia. The (ibid) indicates that this can lead to the patient abandoning treatment, being isolated and having poor TB control.

5.3.4.2 Family members' experiences of external family support

Some of the participants in this study described a lack of proper family support from the extended families due to distance, work constraints and lack of means to keep contact**.** Some participants revealed that they did not disclose to extended family members, which can hinder support from those families. This is not keeping in with the study conducted by Chen et al. (2020) in China, who found that family relationship was good, and a high number of patients and their families had family members who attended to their problems daily. This is echoed by Nasution, Ariga, Siregar et al. (2020), in their study conducted in Indonesia, families care a lot about each other and family support is good. The support given to families of TB sufferers can assist in problem solving and attending to the needs of the patient. Therefore, a good family relationship is fundamental for treatment compliance and curbing the spread of TB.

5.3.5 Essence of family members' challenging experiences

TB comes with a lot of challenges for patients and their families, such as economic/financial, emotional, social and mental factors. The challenges need to be addressed to eradicate the epidemic. This essence was subdivided into the constituent of family members' financial and social grant challenges and the constituent of family members' healthcare access challenges.

5.3.5.1 Family members' financial and social grant challenges

In this study, the participants experienced financial challenges due to unemployment. They further indicated that they lived a difficult life as they could not meet their daily personal needs. They further noted that they obtained financial assistance in the form of social grants, but it was not enough to maintain them for the whole month. They mentioned that it was difficult to care for the sick and look for employment.

The findings of this study concur with that of Mohamad and Mohd (2016) in Malaysia, who found that financial problems related to lack of income contributed to inadequate life, needs deficit or financial insecurity. Fana and Sotana (2021) highlight that the challenges faced by families caring for TB patients need to be addressed as they have the potential to affect the completion and adherence to treatment. In addition, Vanleeuw et al. (2022) confirm that only 5% of TB patients receive Disability Grants in SA. Therefore, to control TB, economics is important as TB patients need the basics such as proper nutrition, personal necessities, and transport to go to the clinics. Therefore, the financial (economic) world and social world are important in dealing with TB patients.

5.3.5.2 Family members' health care access challenges

Participants described their experiences of transport challenges related to lack of income due to unemployment and lack of financial assistance such as social grants. Most of the participants could not afford public transport as they were unemployed, thus, accessing healthcare facilities was a problem. This is similar to Yellappa et al. (2016) in a study where patients coming from rural areas struggled to access health services due to long distances and lack of funds. In contrast, Sahile and Kaba (2018) found that physical access to the clinics posed no problems as the health facilities were located close to the residences of the patients and their families. Thus, it was easy to access the clinic without travelling for long distances. In the study, participants affirmed that visits for check-ups did not affect their social lives and work negatively as the clinics were within reach.

Therefore, the clinics should be located next to the people to avoid high transport costs. Furthermore, if the clinics are far from the patients and their families need to wake up early for transportation and come back late. This results in treatment default, multidrug resistance and poor TB control. Besides, people can also manage to go to the clinics and go back to their work or continue with their daily routines at home if the distance is short.

5.3.6 Essence of family member's TB health literacy experiences

The participants mentioned that patients, their families, and the community need to be provided with health information and about TB services to seek early health care when they experience symptoms. This can lead to early detection, diagnosis and treatment. This essence comprised of the constituent of family members' experiences of CHNs' ineffective health education and family members' experiences of sources of TB information.

5.3.6.1 Family members' experiences of CHNs' ineffective health education

Participants described their experiences of community health nurses’ failure to inform them about TB. Most participants expressed that the CHNs supply them with treatment without any information. The findings of this study are supported by Queiroz, Dantas, Lopez et al. (2016), who stated that families are not being considered in the healthcare services. James (2020); Sulistyono, Susanto and Tristiana (2020) concur that families and community members lack knowledge about risk factors and therapy and suggest that research is needed to find ways to inform the community about TB. In addition, Shatil et al. (2019) allude that awareness and knowledge of TB by patients and their families is crucial in TB care seeking pathways. In contrast, the study conducted by

Gyimah and Dako-Gyeke in Ghana (2019); found that participants had good knowledge of TB in terms of risk factors, transmission, symptoms and prevention.

The study conducted by Alotaibi, Yassin, Mushi et al. (2019) in Saudi Arabia reveals that healthcare providers lack knowledge about TB, and are reluctant to work in TB clinics and have unacceptable attitudes towards patients and their families. The authors further recommend frequent education and training to healthcare providers for effective TB control. The provision of comprehensive health education to patients, families and the community were further supported by Szkwarko, Kim, Carter et al. (2022) in a study conducted in Rhodes Island, USA, where it was found that healthcare providers and nurses lacked knowledge and confidence to provide TB services. To prevent, promote and control TB, CHNs need to be knowledgeable and have the skill to manage the disease.

5.3.6.2 Family members' experiences of sources of TB information

Participants reported that CHNs are not informing them regarding the causes, mode of spread, signs and symptoms, prevention, treatment, and side effects. The findings of the study are not keeping in with the study conducted by Yermi et al. (2018), where it was found that the families had good knowledge of TB and highlighted that family knowledge is key in preventing TB. However, the study conducted by (Sagili, Satyanarayana & Chadha, 2016) found that participants with good TB knowledge still had stigma attitudes. The authors concluded that in some instances, TB knowledge is not enough to remove the stigma.

The participants of the current study stated that CHNs need to frequently give TB health education to the patients, their families and the community. Furthermore, they should use platforms such as radio, television and pamphlets to provide information about TB periodically. This can assist the public to be knowledgeable and seek health care in time. Furthermore, it can improve early detection, diagnosis and management of the disease. Though, it is important to provide effective health education and in-service education to empower CHNs (Vanleeuw et al., 2022; Dobler, Batbayar & Wright, 2018).

Dobler et al. (2018) indicated that patients, families, nurses and doctors need to undergo first line TB treatment training to prevent unnecessary abortions on pregnant women. In Mongolia, they were not aware that TB treatment was safe for pregnant women. In view of this, healthcare providers need frequent training about TB to convey adequate information to the patients, families, community and healthcare professionals.

Bedingfield, Lashewicz, Fisher et al. (2022) indicate that sources of TB information can be obtained from diverse means such as online information, face-to-face by healthcare providers, radio, television and pamphlets. CHNs should play a considerable part in ensuring that the misconceptions are mitigated to prevent and control TB.

5.4 ESSENCE OF COMMUNITY HEALTH NURSES' INTERVIEWS

The essences and their constituents of the needs of CHNs regarding health promotion intervention for families having member(s) diagnosed with TB are described. The essences and their constituents are further supported with literature synthesis in sections 5.4.1 to 5.4.4.

5.4.1 Essence of CHNs' roles in the TB health promotion program

CHNs in health promotion programs play a crucial role in the prevention and promotion of TB as they are the backbone of the health service, linking the stakeholders and the community (Mahmud, Rahim, & Zaidi, 2020). The CHNs need to have good attitudes in their interaction with the clients/families and the community in the eradication of TB. They should have the knowledge and skill to communicate with people and to persuade them to change their behaviour.

The essence of community health nurses' roles in TB health promotion programs was subdivided into constituents of TB screening, family contact tracing, health education to clients and families, referral of clients for medical/psychological/ adherence follows up, as well as referrals for families with social challenges.

5.4.1.1 TB screening, treatment initiation, follow up and referral

In order to reduce the burden of TB, WHO recommends intensified case finding by screening all clinic attendees for TB, irrespective of related symptoms (Kweza, Schalkwyk, Abraham et al., 2018; Chihota, Ginindza, McCarthy et al., 2015).

In this study, participants described their roles in screening all the clients for TB on entering a healthcare facility. Those with signs and symptoms of TB were requested to give sputum and were initiated on anti-TB drugs when their results were positive. Patients were counselled about TB and put on an intensive phase of medication (Rifafour according to body weight) for two months, and another sputum was collected to check for the response of treatment and, when responding, put on the second phase for another four months.

In contrast to these findings, Kiyuni, Mohammed and Adeyeye et al. (2016) reveal that no clinic was screening patients for coughing in Ikeja, Nigeria. This can lead to the transmission of TB to healthcare providers and other clinic attendees. Therefore, it is important to screen all clients to prevent and control TB. Further, if screening is not done properly, some clients with TB can be missed and this can increase underreporting and the spread of TB.

After initiating the patients on treatment, they were referred to the community health workers working in their villages to check their environment and give health education about the disease, treatment and nutrition. It is important to monitor patients at home to understand the challenges they face so as to address them on time. Patients and their families need to be supported throughout so that they can adhere to treatment. However, there were patients who were not supported at all, as community health workers failed to visit them until they finished treatment.

Moreover, patients were requested to collect treatment monthly and for body weight monitoring**.** Weight gain is a sign of health improvement and failure to gain weight might be associated with malnutrition and treatment failure. It is important to monitor the progress of the patient and the family to check the effect of treatment. TB treatment comes with a lot of side effects, such as gastritis, psychosis, peripheral neuropathy, depression and hearing loss can affect the patient and the family (Thomas et al., 2016).

5.4.1.2 Family contacts tracing

TB infection prevention and control is a fundamental tool to restrict the spread. The contacts of newly diagnosed TB are at high risk of contracting TB (Martin-Sanchez, Bruequeras, Andres et al., 2019). It is important to trace all the people who are working and or staying in the same household with a member(s) having been diagnosed in order to prevent and reduce the spread of TB. All the people who were exposed should be traced and investigated to end the burden of TB. Havumaki, Cohen, Zhai et al. (2021); Little, Msandiwa, Martinson et al. (2018) cite that screening household members of newly diagnosed TB sufferers is the key to finding previously undiagnosed cases in highly burdened rural locations.

In this study, participants encouraged family members to come forward and be tested for TB. All the people who were in contact with patients were requested to give sputum to be checked. Children under five were given prophylaxis and a tuberculin skin test to check for TB. Therefore, infection prevention and control are important to eradicate the spread. However, it was also

difficult to trace other contacts due to patients giving wrong locations and contact numbers, which could lead to an increase in transmission.

Tesfaye, Lemu, Tareke et al. (2020) reveal low contact tracing in Ethiopia related to barriers such as long waiting times, long distances, workload, contact tracing training and commitment and motivation. Imsanguan, Bupachat, Wanchaitanawong et al. (2020) emphasise that successful contact tracing can be achieved through financial provision for i.e., transport.

5.4.1.3 Health education to clients and families

In this study, some participants revealed that they give health education about the causes, transmission, treatment and unwanted effects of TB treatment. They further informed patients and their families about the correct diet to speed up the healing process and the dangers of not adhering to treatment, such as drug resistance and death. Further, they informed them that TB could be cured and about how to protect themselves by wearing masks, cough etiquette, cleanliness and ventilation. Therefore, health education is good to promote and prevent TB. It also helps the clients and the families to seek health care early for early detection and treatment. It can also mitigate the stigma surrounding TB and improve family and community support.

Some participants, stated that they did not provide health education to the clients/ families due to staff shortages and work overload. This can lead to the spread of the disease as patients and their families do not know how to protect themselves. It can also lead to noncompliance as the clients and their families are neglected. Therefore, the clients/families need to be well informed about TB for the battle to be won (Lwin et al., 2022; Bedingfield et al., 2022; Olukolade et al., 2017).

Ruru, Matasik, Octavian et al. (2018), in a study conducted in Indonesia, reveal a lack of knowledge of TB causes and the mode of spread result of interrupting anti-TB drugs by clients/families. This may be attributed to a lack of health education by TB nurses and can lead to a high defaulter rate and an increase in transmission. Consequently, nurses providing TB services should provide health education to clients/families periodically to increase their knowledge.

5.4.1.4 Adherence counselling of clients and families

The participants of this study echoed that CHNs need to provide counselling to the clients and their families to improve adherence to treatment regimens and prevent resistance to treatment.

They should do counselling frequently about the importance of adhering to treatment and the dangers of interrupting treatment. It should be emphasised that TB is curable and that the patient can go back to normal life if the prescribed treatment is adhered to (Bedingfield et al., 2022, Ayakaka, Ackerman, Ggita et al., 2017).

In this study, participants counselled the patients and their families about TB prevention, transmission, and control. The families were encouraged to support the patients to adhere to treatment and to attend to their personal and environmental hygiene, such as cleanliness and ventilation. Further, they counselled them about the diet to assist in the healing process. Shringarpure, Isaakidis, Sagili et al. (2016) pointed out the need for frequent counselling about TB by healthcare providers in order to improve treatment adherence. In contrast, Ruru et al. (2018) found that the patients/families were not given TB health information which led to treatment noncompliance. Therefore, healthcare providers should counsel the clients/families to encourage them to adhere to treatment. This may lead to the prevention and control of TB.

5.4.1.5 Referral of clients for medical/ psychological/ adherence follow up

The CHNs play an important role in identifying the health needs of patients/families and referring them on time. TB diagnoses affect the patients and their families physically, psychosocially and economically. Therefore, for treatment to be effective, all these factors should be addressed (Cazabon, Alsdurf, Satyanarayana et al., 2017). The participants revealed that they refer the patients and their families to social workers so that they can be assisted with social grants as this can assist with transport and personal basic needs such as buying food. They further referred them to the dietician to be assisted with food parcels. For psychological distress, they were referred to a psychologist to be assisted with coping mechanisms.

Therefore, identifying health needs and referring clients to the relevant health providers is crucial in the promotion and prevention of TB. Clients need emotional support to improve their morale, a proper diet to improve their immunity when taking treatment and social support to assist with social challenges. Furthermore, participants alluded to the need for medical doctors for clients having other medical ailments besides TB (Diefenbach-Elstob, Plummer, Dowi et al., 2017).

5.4.1.6 Referral of families with social problems

As a disease of poverty, TB can impact patients and their families negatively. In this study, most families were residing in the villages and were unemployed and relied solely on social grants or children’s grants. Participants revealed that families were poverty stricken and could not cope

with transport for follow-ups, and the patients could not take medication on an empty stomach. This can lead to noncompliance with treatment and increase transmission. The participants referred the patients/families to the medical doctor and the social worker to be assisted. In this study, there were no patients/families who complained about being stigmatised for TB. However, Widowati (2021), in a study conducted in Indonesia, revealed that 78% of the patients were stigmatised. However, the stigma was not related to age, history of comorbid disease and gender. Considering this, it is crucial for the patients/families to be supported socioeconomically. The socioeconomic dimension needs to be addressed to promote and prevent TB, as medication alone cannot cure and control TB.

Stracker, Hanrahan, Mmolawa et al. (2019) cite that more than a quarter of the rural people in the Limpopo Province of SA are experiencing financial hardship due to TB. In the rural KwaZulu Province of SA, Chimbindi, Bor, Newell et al. (2015) highlight that transport is the most expensive component of TB patients attending the clinic. Considering this, TB patients need financial assistance to adhere to treatment as patients and their families face the costs of attending the clinics.

5.4.2 Essence of CHNs' positive experiences of the TB health promotion program

The essence of community health nurses' positive experiences of the TB health promotion program was backed up by constituents of positive experiences of the health promotion program and stakeholders' support**.** CHNs become motivated when they see patients with TB complete their treatment and recover. The support from other stakeholders, such as the community and the TB managers, makes them feel that they are not alone in the fight against TB. Diefenbach-Elstob et al. (2017) add that witnessing the TB drugs curing the patients give self-confidence and encouragement to the healthcare providers.

5.4.2.1 Positive experiences of the TB health promotion program

In this study, some participants experienced positive feelings of observing their patients responding, adhering to and completing their treatment. This can lead to the reduction and control of TB. A few of the participants revealed treatment noncompliance owing to transport and financial burdens and uncooperative behaviours. Therefore, it is important for patients to adhere to treatment as this can improve the cure rate and decrease the spread. Furthermore, it brought joy to some participants to see their patients compliant and complete their medication without defaulting.

The participants experienced teamwork from their colleagues as a key that kept them motivated and dedicated to providing quality care for TB patients. Nesengani, Downing, Poggenpoel et al (2019) cite that teamwork helps to improve the self-esteem of healthcare providers as they can overcome the challenges of shortage of staff and communication. Watermeyer and Penn (2018); Watermeyer, Penn, Scott et al. (2019) maintain that communication is the glue between clients/families, communities, and healthcare providers to create mutual trust and improve an environment of togetherness in TB care.

5.4.2.2 Stakeholder support

Teamwork is the key to the prevention and promotion of TB. Social networks and support for each other are crucial. In this study, most participants experienced good support from community health workers and the re-engineering team in tracing and supervising clients/families in their homes. This can lead to adherence to treatment and the prevention and control of TB. Some participants alluded that the TB coordinators assist them with TB workshops and monthly meetings, and updates when there are new TB guidelines. However, most of the participants complained about poor support from TB coordinators as they seemed to be focusing on statistics than patient support. Studies conducted in Limpopo by Matakanye et al. (2019); Engelbrecht et al. (2018) indicate the need for management support in terms of training, provision of materials to carry out services effectively, safety needs such as masks and gloves and good infection prevention measures. Participants highlighted the importance of teamwork and social support. They indicated that TB managers should be visible and encourage participants to carry out their work with confidence. Furthermore, TB managers should be able to identify their challenges and address them (Nesengani et al., 2018).

5.4.3 Essence of CHNs' challenges with the TB health promotion program

The participants uttered that the goal of the TB health promotion program is to prevent and control to end TB. The CHNs, in rendering services, are faced with challenges such as treatment noncompliance, lack of resources to carry out their work, staff shortages and work overload and lack of knowledge and skill to manage TB. In this study, this essence comprised of the constituent of clients' non-adherence related to social grant challenges, clients’ non-adherence related challenges and clients’ non-adherence related to access challenges. Also included are clients’ non-adherence related to different factors, clients’/families' uncooperative conduct, CHNs’ inadequate human and other resources support and CHNs' inadequate stakeholders' support.

Non-adherence to treatment contributes to the spread of the disease, treatment failure and drug resistance (Boru et al., 2017). Social grant challenges, access challenges to utilising the TB program by clients/families to cooperate with the health providers and work overload related to insufficient manpower to render the service were found to be obstacles to TB health promotion in this study. Access challenges can be related to stigma, lack of TB knowledge that TB is curable and villages that are far from the health service (Habib, Jamal, Zaidi et al., (2021). Other factors contributing to non-adherence can be the pill burden, improvement in symptoms and treatment adverse effects, financial hardships, depression and alcohol abuse (Gebreweld et al., 2018; Kristinawati et al., 2019; Ukwaja et al., 2017; Boru et al., 2017). Lack of social grants leads to financial burden, food insecurity and transport challenges as most patients are unemployed or have lost their job due to TB (Boru et al., 2017).

5.4.3.1 Clients' non-adherence related to social grant challenges

In SA, social grants are provided to improve the standard of living for those who are susceptible to poverty and need social/financial/assistance. In this study, participants mentioned that other patients abuse social security by defaulting treatment purposefully so that the grant can be extended. Some participants mentioned that other patients find it difficult to obtain the grant. This also results in patients defaulting treatment as they do not have transport to visit the healthcare facilities. Vanleeuw et al. (2022) found a lack of nutritious food to be the major challenge as families are affected by the burden of caring for TB patients and cannot provide the food needed. Therefore, families need food support to eliminate TB. Ukwaja et al. (2017) note the positive experiences of TB patients after receiving financial incentives in Nigeria. However, Vanleeuw et al. (2022) report limited access to social grants in SA as none of the participants profited in their study. The findings of this study concur that only a few participants received social grants, and the majority struggled to receive the social grants that could assist them in buying food and transport costs. Nigam, Sharma, Yadav et al. (2021); Lwin et al. (2019); Boru et al. (2017) reveal that financial burden affects TB treatment adherence. In view of this, National TB programs and policymakers should ensure that social grants are accessed easily.

5.4.3.2 Clients' non-adherence related to access challenges

TB health services should be easily accessible to communities. In rural areas, health services are often far away from the people, and this creates a barrier to seeking medical help. In this study, participants noted a high defaulter rate related to long distances to TB health services. The patients/families struggled to reach the TB health facilities due to a lack of funds and transportation. They had to wake up at dawn and travel long distances. They had to go back home

late. This affected their work and chores. Le Roux, le Roux, Mbewu and Davis (2015) highlight that it is difficult to access healthcare services in SA, especially for people residing in the villages.

Therefore, TB patients should be provided with financial assistance/transport allowances to make follow-ups. This can improve noncompliance with treatment. Chen et al. (2020), in support, cite that healthcare facilities that are far from the patients are costly and lead to noncompliance with treatment. Consequently, patients need transport assistance to adhere to treatment and control TB.

5.4.3.3 Clients' non-adherence related to different factors

In this study, some participants expressed challenges related to the high defaulter rate. The noncompliance was related to a lack of funds for transport, lack of TB knowledge, lack of supervision by families as the patients were staying alone and lack of supervision by community health workers. This can lead to drug resistance, increased transmission and increased TB mortality. Boru et al. (2016) found side-effects of TB drugs, feeling well after initial treatment, inaccessibility of clinics due to long distance, and lack of food security to be barriers to treatment compliance. Chen, Du, Wu et al. (2020) highlighted that family supervision for treatment, client spiritual support, client TB knowledge, good doctor patient relationship and good treatment policy support improve treatment adherence. Therefore, to prevent and control TB successfully, issues influencing patients' adherence to treatment should be addressed.

5.4.3.4 : Clients'/families' uncooperative conduct

The CHNs and the clients/family relationship are fundamental for the eradication of TB. Olukolade et al. (2017) report that the effectiveness of anti-TB drugs starts with a good relationship between clients/families and healthcare providers. The healthcare providers and the clients/families should work as a team to fight TB. Participants expressed the failure of the clients/families to provide sputum for the investigation of TB. Detection, diagnosis and treatment are keys to preventing and controlling TB. However, in this study, clients/families were uncooperative in assisting in the investigation of TB and gave wrong addresses so that they could not be traced. The clients/families further did not bring the children to be checked for TB, which could lead to the spread, and this made it difficult for the CHN to carry out their duties (Olukolade et al., 2017).

The expressions of the participants give a picture of the importance of collaboration between the CHNs and the clients/families. TB health promotion and prevention is a team effort, and people

should be united and work together towards the eradication of TB. Furthermore, CHNs should educate the clients/families and the community about TB to gain their support (Ernawaty, 2019).

5.4.3.5 CHNs' inadequate human and other resources' support

It is important to have adequate manpower and the necessary resources to provide quality TB services to the clients/families. In this study, the participants experienced a shortage of staff and a lack of the necessary resources, such as tuberculin skin test kits and telephones to trace the clients/patients. The shortage of staff resulted in an increased workload and disabled the CHN to perform their duties to the best of their abilities. This can lead to poor attention given to the clients/families in terms of individualised counselling and health education. Shortage can further lead to stress, demotivation and bad attitudes towards patients/families (Shihundla, Lebese, Maputle, 2016; Mboweni & Makhado, 2020; Matakanye, Ramathuba & Tugli, 2019).

The findings reveal the importance of providing participants with adequate working resources and adequate human resources to promote and prevent TB. For the participants to perform their work to the best of their abilities, they should be supported with extra hands and working tools (Engelbrecht et al., 2018; Matakanye et al., 2019). This parallels the results from the study of Tesfaye et al. (2020) that shortages of human resources in clinics are an obstacle that affects TB contact implementation. Furthermore, there was a shortage of material resources like masks, reagents, electricity interruptions and ventilated classes. Therefore, to control TB, staff allocation should be improved to prevent work overload and material resources should be allocated for the smooth running of the TB service (Fadare, Akpor, Ifechukwude et al., 2020; Matakanye et al., 2019).

5.4.3.6 CHNs' inadequate stakeholders' support TB is a team effort

In this study, participants felt that they are not cared for by TB coordinators. They mentioned that their leaders do not visit them to offer words of encouragement and motivation. Furthermore, their problems are not attended to as the TB coordinators are just after statistics only. Matakanye et al. (2019) highlight that nurses need exceptional support from TB management to provide good quality care to patients.

To eradicate TB, the healthcare providers, the clients and the families, the community leaders, the community, and traditional healers and leaders should see it as their business. Traditional and healers' leaders should be knowledgeable about TB as most people consult them first so that they can refer the people to the health service for early detection and diagnosis. Stakeholders

should trust each other and work in harmony. Management should support the people by ensuring that material and human resources are available. Tesfaye et al. (2020) report a lack of supervision and guidance by TB managers in healthcare facilities in Ethiopia.

Moral support and encouragement to TB patients and their families is important. Participants felt lonely with no support from TB managers. TB managers need to hold meetings with CHNs and community leaders to identify and address their challenges. Participants should feel well cared for to extend the care to the clients/patients and the community. Consequently, TB coordinators should hold monthly meetings to address issues in the health services and to maintain unity (Dlwati, Mavundla & Mbengo, 2017).

5.4.4. Essence of CHNs' needs in the TB health promotion programs

To provide quality care in the TB health programme, CHNs need to be well cared for as they are the backbone of the service. This essence was backed up by constituents of CHNs-related needs, CHNs' personal TB protection needs, client/families-related needs, client/families TB awareness and educational needs. To improve the quality of the TB health programs, the TB district managers need to ensure that CHNs are well trained. CHNs should continuously obtain training regarding pathogenesis and treatment to enable them to impart the information to clients, families and the community. The Infection Prevention and Control guidelines should be in place and adhered to protect the staff from contracting the disease. By improving TB health services, CHNs may improve prevention and control (Lisum, Waluyo & Nursasi, 2021; Dlwati et al., 2017). In contrast, Lisboa, Fronteira, Mason et al. (2020) note that irrespective of the availability of personal protective equipment, training and infection control guidelines in Mozambique, the healthcare providers still failed to implement infection control.

5.4.4.1 CHNs-related needs

It is important to meet the needs of the CHNs so that they can provide quality TB care to the clients and their families. In this study, participants raised the issue of staff shortages, the need for a focal nurse, fear of contracting TB and work overload. They further mentioned a lack of support and supervision by TB coordinators. The lack of TB focal nurses negatively impacts TB care as there is no continuity of care which can also lead to the transmission of TB as the nurses are taken daily from other disciplines to assist with TB care. Furthermore, it delays the rendering of TB care as nurses perform their services in other departments first, and it is only when they are done that they attend to TB patients. TB patients arrive early at the clinics but should wait long as there is nobody to attend to them. This can lead to patients defaulting on treatment as they may

feel less valued or mistreated. Matakanye et al. (2019) cite good ventilation, infection and prevention measures and management support needs. These needs can assist CHNs in providing quality TB care. Therefore, for TB promotion and prevention to be improved, the issues that affect their work negatively need to be addressed. Human resource needs to be improved and nurses need to be guided and motivated in their day-to-day operations. Supervisors need to be visible to identify and attend to the issues affecting the CHNs.

5.4.4.2 CHNs' personal TB protection needs

CHNs are the gateway to health services and thus are exposed to TB in their profession daily. They also put their families, neighbours and the community at risk as they can also spread TB. Therefore, it is crucial for them to protect themselves to decrease the spread.

In this study, participants indicated the importance of protecting themselves and their loved ones by wearing masks, wearing gloves when handling sputum and opening windows for ventilation. Therefore, CHNs need to protect themselves and their loved ones against TB. However, in some clinics, participants were reluctant to work with TB patients as they feared contracting the disease. Some participants contracted the disease and transmitted it to their loved ones at home. Kiyunu, Mohammed and Adeyeye (2016) found that TB screening was not done in all the clinics in Lagos, Nigeria. Further, there was no Infection Prevention and Control Plan. This may put the lives of the community health workers in the clinics and the clinic attendees at risk. All clinic attendees should be screened as recommended by WHO. Vigenschow, Edoa, Agegbite et al. (2021) report that infection control measures were not regularly practised in Gabon, and healthcare providers were at high risk of contracting TB.

Maroldi, Felix, Dias et al. (2017) reveal that PHC health professionals lack knowledge regarding infection prevention issues in Brazil. The health professionals lacked awareness in terms of patient and self-protection. Consequentially, in-service education is needed to improve adherence to infection control. In addition, Engelbrecht, Kigozi, Van Rensburg et al. (2017) note poor infection control implementation in SA, which may increase transmission. Zinatsa, Engelbrecht, Janse van Rensburg et al. (2018) accord the results and reveal that infection control training for healthcare providers was needed in the Mangaung metropolitan area of SA. The infection control was provided for TB managers only and the nurses working with the patients were excluded. The infection control policies were also confusing, and operational managers were just reading them for the staff meanwhile, they themselves had no clue. In view of this, TB infection control should be improved to protect healthcare providers and healthcare users.

5.4.4.3 Client/families-related needs

In this study, participants indicated that most of the patients and their families come from poor backgrounds. It is difficult to access healthcare services due to lack of funds and transportation. TB treatment needs good nutrition to speed up the healing process and patients cannot take anti-TB drugs on an empty stomach (Gebreweld, Kifle, Gebremicheal et al., 2018). Therefore, the patients and their families need to be assisted financially so that they can comply with TB treatment. Clients/families need financial assistance so that they can buy food and have funds for travelling to healthcare facilities so that they can adhere to treatment. Children's grants are not adequate to provide for the basic needs of the families. Government should assist with money to mitigate the catastrophic cost of TB. Boru, Shimels and Bilal (2016) maintain that financial issues in adhering to TB treatment in Ethiopia are a major issue.

Despite TB treatment being free, the clients/families still need social support. They need to eat food rich in proteins and vitamins, which are expensive. They cannot walk long distances to the clinics being hungry and weak. TB medication alone is not enough and on this account, their needs should be addressed to prevent and end TB (Gebreweld et al., 2018).

5.4.4.4 Client/families TB awareness and educational needs

In this study, participants mentioned the need for patients, their families, and the community to be educated about the transmission, prevention and treatment. These can assist in early detection and treatment of TB. Then people can seek healthcare early, be diagnosed and be treated. Further, it can lead to the eradication of the stigma surrounding TB and improve the prevention and control of TB (Nofitasari, Nawawi, Yati & Yunam, 2020; Simamora, 2017; Lwin, Apidechkul & Saising, 2022).

To treat TB successfully, health education about TB is needed. The public should be well informed about the disease through frequent use of mediums such as radio and television. Everybody should be actively involved in TB management. Policymakers, health professionals and the public at large should work together to fight the disease. Therefore, clients/families awareness and health education can improve diagnosis and treatment, leading to the prevention of multi-resistant TB. Shatil, Khan, Yunus et al. (2019) note that TB knowledge and awareness, as well as family support, play a crucial role in TB health seeking behaviour in Bangladesh. Queiroz et al. (2016) reveal that the knowledge of family members in Brazil was satisfactory. In contrast, Ruru et al. (2018) noted a lack of TB knowledge by clients/families which leads to increased transmission, treatment failure and high mortality. Mazumdar, Satyanaranyana and Pai (2019) stress that both

the public and private sectors should employ community-based interventions to inform the public about TB and encourage seeking medical care early.

5.5 SUMMARY

This chapter presented the findings of the study, the essences and constituents of the experiences of families having member(s) diagnosed with TB, and the needs of the CHNs regarding health promotion intervention for families having member(s) diagnosed with TB in the Northwest Province. The finds were discussed and confirmed with the literature. Participants complained that patients diagnosed with TB wait for a long period of time in the queue for nurses to assist them, and they also indicated shortages of nurses and equipment.

CHAPTER 6

PHASE 2: DEVELOPMENT, VALIDATION AND DESCRIPTION OF HEALTH PROMOTION INTERVENTIONS FOR FAMILIES HAVING MEMBER(S) DIAGNOSED WITH TUBERCULOSIS

6.1 INTRODUCTION

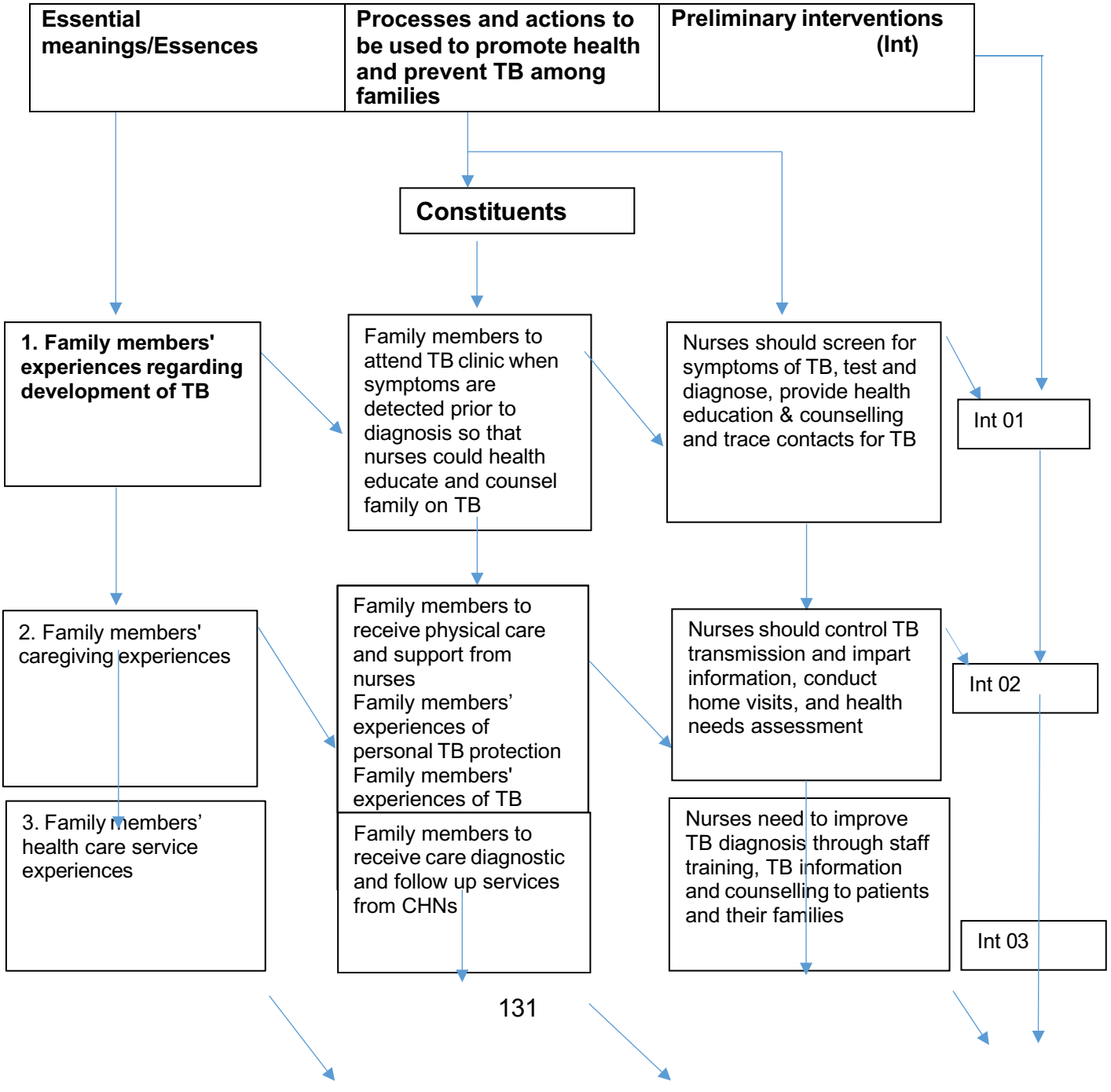
In Chapter 5, the identified essences were reinforced by its constituents, and the discussions of the findings confirming with literature were presented. Chapter 6 covers Phase 2 of the study and the development of health promotion intervention for families having member(s) diagnosed with TB in the Northwest province. The development of the health promotion interventions was informed by the empirical data collected from participants in Phase 1.

The development, validation and description of the Health Promotion interventions for families having member(s) diagnosed with TB were based on the framework of AGREE II (2010) instrument: the drafting of the health promotion intervention was formulated by choosing the relevant statements from the empirical findings in Phase 1 and the researcher applied the relevant principles for the development of the interventions such as applicability, clarity, comprehensiveness, effectiveness, relevance, validity, effectiveness and acceptability (AGREE II, 2017 update; AGREE II, 2003-2013).

The framework also incorporated the Delphi technique, which was used to validate the health promotion interventions by establishing experts' consensus to ensure reliable Health Promotion Interventions. The drafted interventions, with the incorporation of the suggestions made by experts in the Delphi rounds, are outlined in this chapter. Figure 6.1 presents the framework of the integration of empirical findings that guided the development of health promotion interventions.

It is important to draft health promotion interventions as TB is the leading cause of death in SA (Tomita et al., 2019:388). The authors further cite that TB patients are stigmatised by their families, partners, peers and co-workers in their working environments and the community, thus,

the drafted interventions may assist in averting TB stigma. According to Loveday (2019:2), MDR-TB is a barrier to control and the mitigation of TB stigma may assist clients/families and the community to seek healthcare early, start treatment on time, improve adherence and prevent MDR-TB. The literature and the findings of Phase 1 prompted the researcher to draft health promotion interventions for families with member(s) diagnosed with TB**.** Figure 1 below is the framework and stages that guided the development of the interventions (health promotion interventions) from the empirical phase. It assisted the researcher in formulating health promotion interventions for families having member(s) diagnosed with TB.



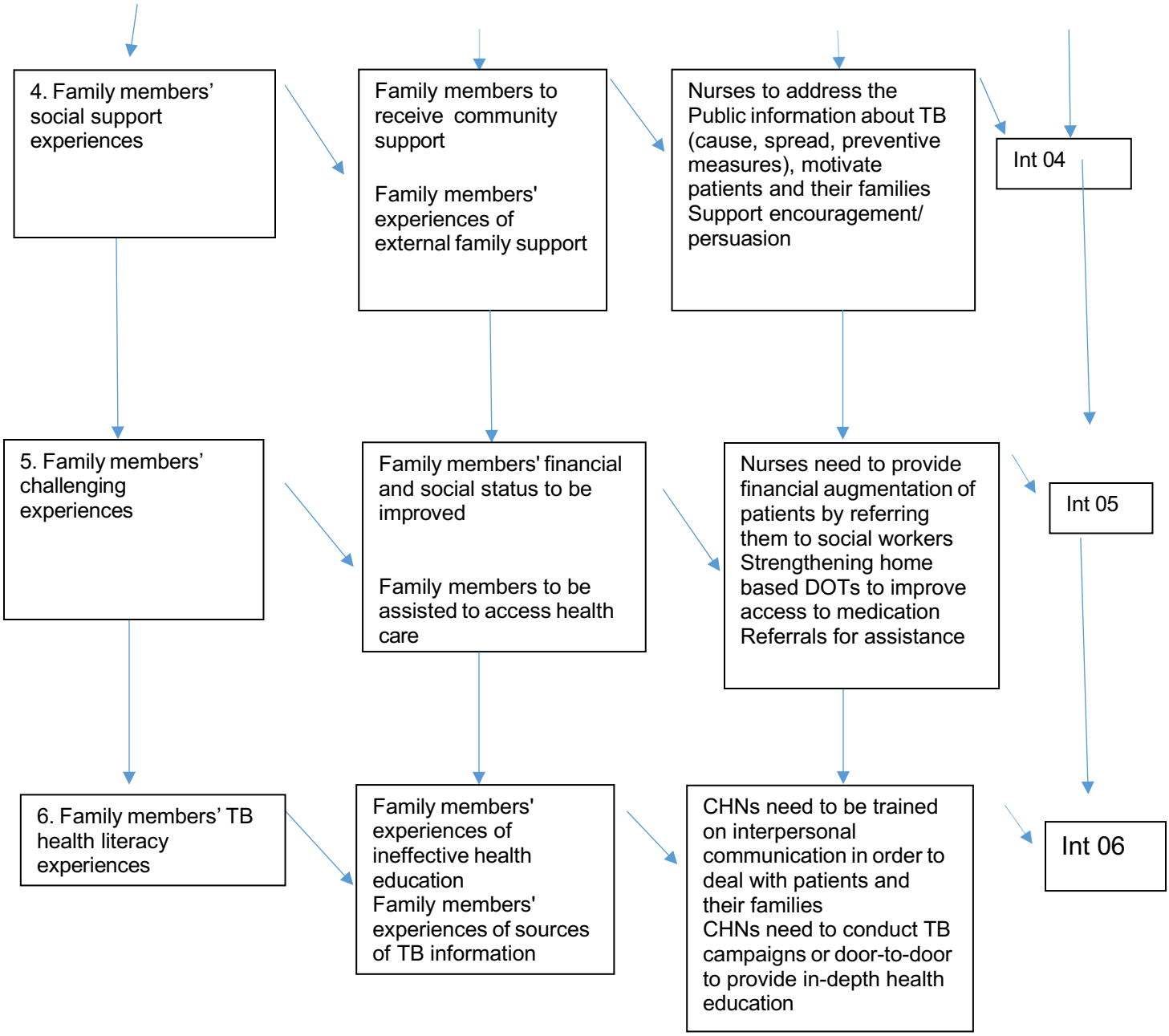


Figure 4: Sebothoma framework guiding formulation and development of preliminary interventions for families having a member(s) diagnosed with TB in the North West Province

The essential meanings and their constituents are derived from the families' experiences with member(s) diagnosed with TB. The relevant literature related to the topic was used to draft the preliminary health promotion interventions for families with member(s) diagnosed with TB. The relevant literature ensured that the appropriate statements and constructs were utilised. The six

essential meanings and their constituents guided the drafting of the health promotion interventions. Six preliminary health promotion interventions emerged from the six essential meanings and their constituents and were supported with literature.

6.2 HEALTH PROMOTION INTERVENTIONS IN COMMUNITY HEALTH CARE NURSING

Community health nurses are responsible for assisting clients/families and the community at large to take care of their health (Hatting, Dreyer & Roos, 2012:61). Health is defined as the combination of science, practical abilities and beliefs for the benefit of health for All (Fleming & Parker, 2007:5). Health is further described in terms of complete physical, mental and social well-being and not just the absence of disease or infirmity (Mthombeni & Peu, 2013:2). In this study, the clients/families and the community are expected to be completely free from TB infections.

Health promotion is the science or art that empowers people to improve their health standards towards positive behavioural change (Li, Ehiri, Hu, Zhang, Wang, Zhang & Cao, 2014:2; Mthombeni & Peu, 2013:2). According to Fleming and Parker (2007), health promotion is a vehicle to attain health for all the people. Therefore, changes in behaviour can be enabled through efforts that increase consciousness and create environments that support healthy living.

Health promotion comprises various approaches and activities which improve health and are interrelated (Seutloali, Napoles & Bam, 2018:2). The authors further cite that advocacy, enabling and mediation are the three broad approaches used in planning and implementation of the programmes intended to promote health (Hatting et al., 2012:62). The five action areas for health promotion in line with health promotion programmes are constructing public policy, reinforcement of the community activities, creating caring environments, personal skill development and reorienting health service institutions (Seutloali et al., 2018:2; Hatting et al., 2012:62).

The National Health Plan emphasises health promotion and disease prevention for primary health care to be successful (Hatting et al., 2012:71). The WHO End TB Strategy promotes and supports an integrated people and patient-centred TB care and prevention aiming at early detection, treatment and prevention of TB ensuring that all the health needs and expectations of the people are realised (Winter, Perehinets, Dara, van den Boom, Bivol & Kluge, 2018:14; Horter, Daftary, Keam et al., 2021; Odone, Roberts, Dara et al., 2018).

The point of departure for promoting health is putting health in the hands of the people so that they can be responsible for their well-being and take care of themselves (Hatting et al., 2012:61). Individuals and the community need to be given clear TB information and health education so that they can participate in the improvement of their own health (WHO, 2008). Therefore, the part of the health service providers is to empower the people with the necessary knowledge, attitude and skill so that they can be able to prevent and increase control over TB in their environments.

According to Mthombeni and Peu (2013:1), health education is a deliberate blend of learning practices intended to influence, assist and strengthen voluntary behaviour conducive to healthy living. The authors further allude that despite health promotion stemming from health education, health promotion goes further than health education as it is concerned with the formation and sustainability of a more reachable and justifiable system for the poor and the people with limited access to health care in a specific community such as rural areas. Golinnoskowska, Groot, Baji and Pavlova (2016:367) add that health promotion is meant for the whole population and can be achieved in different ways, such as education, counselling and financial incentives. Raingruber (2014:2) defines health education as giving information and teaching individuals and communities about improving their health. The author further cites that health promotion includes health education, identifying and lessening health hazards for people and the population, advocacy, empowerment, policy development and preventive health care. The people should be empowered to make informed decisions about their health with the correct knowledge as a supportive function of the health provider (Swanepoel & De Beer, 2016:69).

Furthermore, people should be actively involved in TB promotion and be part of the health promotion intervention. Health promotion activities aim to enable people to make healthier choices about their health in their day-to-day activities. Health behaviours are influenced by the social, economic, cultural, and structural factors experienced by the people in their daily living (Pons-Vigues, Berenguera & Coma-Auli, 2017:2). Therefore, to plan and carry out a good and sustainable health promotion intervention for TB, it is crucial to take note of the concept of health and health promotion by the different partakers in fostering their health. Collin, Wurie, Muzyamba et al. (2019:2) define intervention as any action to prevent further cases of TB infection (active and or latent), which is likely to control the occurrence of TB at the local, regional and national levels. In this study, interventions are sets of techniques, methods, strategies, or processes orchestrated to change the behaviour of people or the environment to prevent and control TB (Bobrovitz, Onakpoya, Roberts et al., 2015:3). Swerissen and Crisp (2004:123), cited that the promotion of health aims to yield intervention effects that can withstand over a long period. The

researcher developed health promotion interventions to assist the clients/families and the community with health promotion and TB prevention. The need for health promotion intervention stems from the findings of Phase 1. The comments and the new evidence from Phase 1 prompted the researcher to develop interventions to enhance the promotion and prevention of TB. The interventions were developed to be shared by individuals, families and communities.

6.3 GUIDING PRINCIPLES FOR THE DEVELOPMENT OF HEALTH PROMOTION INTERVENTIONS FOR FAMILIES HAVING MEMBERS DIAGNOSED WITH TB

The researcher used the domains and items from the AGREE II 2009 (2013 & 2017 updated versions) instrument to guide the drafting of the health promotion intervention for the families with member(s) diagnosed with TB. The domains and their items are: the scope and purpose domain comprised of items one to three and is related to the overall aim of the intervention, the health questions and the target populations. The stakeholder domain consists of items four to six and concerns how the stakeholders developed the interventions. The rigour development domain comprises items seven to fourteen and is related to the processes used to collect and create the evidence. The clarity domain consists of items fifteen to seventeen related to the language, structure and intervention format. The applicability domain consists of items eighteen to twenty-one and is related to the facilitators and possible obstacles to implementing the intervention. The editorial independence domain comprises items twenty-two and twenty-three related to the formulation of the recommendations.

Table 6.1 Explanation and specification of adjusted and modified guiding principles according to Agree II, 2009 (Update 2013 & 2017)

Item	Content	Domain
1	A specific description of the total objective (s) of the intervention	Scope and purpose (Concerned with the overall aim of the interventions health questions and target populations)
2	The intervention(s) specific description of the health question(s) is/are covered	
3	The population (patients, public, etc.) to whom the interventions is intended to apply is precisely defined	
4	The interventions development group contains individuals selected from significant professional groups	Stakeholder involvement (the

5	The views and preferences of the target populations have been sought	extent to which the intervention was developed by the stakeholder)
6	The intended users of the interventions are well-defined	
7	Methods were used scientifically to search for evidence	Rigour development (The process used to gather and synthesise the evidence)
8	Criteria for choosing confirmation are undoubtedly defined	
9	The strengths and the limits of the body of evidence are vividly described	
10	The methods for formulating the recommendations are clearly described	
11	The health benefits, side-effects, and dangers have been considered in formulating recommendations	
12	There is an explicit link between the recommendations and the supporting evidence	
13	The interventions have been externally studied by experts before publication	
14	A procedure for updating the interventions is provided	
15	The recommendations are detailed and unequivocal	Clarity of presentation (the language, structure and intervention format)
16	The different choices for management of the condition or health issue are clearly presented	
17	Key recommendations are easily recognisable	
18	The intervention designates facilitators and barriers to its presentation	Applicability (the likely barriers and facilitators)
19	The intervention provides advice and/or tools on how the recommendations can be placed into practice	
20	The possible resource repercussions of applying the recommendations have been reflected	
21	21. The interventions grants monitoring and /or auditing criteria	
22	22. The opinions of the funding body have not swayed the content of the guideline	Editorial independence (concerned with the
23	Opposing interests of guideline development group members have been recorded and talked	

		formulation of recommendations)

The above table outlines the AGREE II principles followed when developing the health promotion material for families with member(s) diagnosed with PTB. All domains of AGREE II were aligned with the objective/s of Phase 2.

6.4 THE PROCESS OF DEVELOPING AND VALIDATING HEALTH PROMOTION INTERVENTIONS FOR FAMILIES HAVING MEMBER(S) DIAGNOSED WITH TB IN THE NORTH WEST PROVINCE

In the findings of the empirical phase (Phase 1) and the available literature, it was important to develop health promotion interventions to support families of members diagnosed with TB at Ngaka Modiri Molema**.** Health Promotion Interventions are planning and executing actions to influence people to change their behaviours towards healthy living (Rubinelli & Diviani, 2020:2395). In this study, the researcher aimed to develop health promotion interventions for families with member(s) diagnosed with TB in the Northwest province to empower positive behavioural changes while staying with patients diagnosed with TB. Furthermore, the researcher aimed to improve their quality of life by reducing their suffering and stigma related to TB by improving their environmental and psychosocial well-being.

The key to the nursing practice is health promotion which is concerned with the promotion of health to people as individuals, families and the community (Rainburger, 2014:1). The author further alludes that health promotion includes health education and health promotion concerned with socioeconomic and environmental factors of health as well as participatory involvement. There are several health promotion interventions to prevent and promote TB. To improve and control TB, a package of interventions is required based on the needs and values of the people and across different settings, as specific populations are more likely to gain from certain types of interventions (Alipanah et al., 2018:24). The authors further highlight that for the interventions to be effective, they need to be assessed carefully as every intervention has its advantages and limitations such as costs and privacy issues. Munawaroh, Kurniawati, Purwaningsih et al. (2022:504) highlight that health promotion interventions need effective, appropriate and relevant communication plans to be fruitful.

Awareness interventions and educational interventions can be provided via technology such as smartphones/SMS to increase TB knowledge, improve treatment adherence, act as treatment

reminders and share information (Yah, Tambo et al., 2017:61). Interventions such as community DOTS can lower loss to follow-ups as treatment is delivered at home as compared to facility DOT provided at the health facilities by primary healthcare nurses (Alipanah et al., 2018). The development and validation of the health promotion interventions were deliberated according to:

- the guiding characteristics in the intervention development and validation process; and
- the adapted methodology for intervention development and validation for primary health care services to improve the health care of members of families diagnosed with TB.

- **The guiding characteristics in the intervention development and validation process**

The researcher used characteristics that guided the formulation of the health promotion interventions, and the experts were requested to answer the Delphi questionnaire according to the characteristics. These included validity, reliability, applicability, clarity, relevance, comprehensiveness, effectiveness, flexibility, acceptability, documentation and scheduled review (Agree Collaboration, 2010). The characteristics are described in Table 6.2 below.

Table 6.2 Characteristics that Guided the Formulation of Health Promotion Interventions

CHARACTERISTICS	CLARIFICATIONS
Applicability	Applicability concerns the obstacles that impede the facilitators from implementing health promotion interventions. In this study, the target users of the interventions are the healthcare providers promoting and preventing TB in the community. The interventions should enhance health promotion and TB prevention for families with member(s) diagnosed with TB. Thus, the intervention should meet its research needs**,** be easy to apply and improve TB control (Sekgobela, 2018:99; Rasweswe, 2020:214; Henderson, Jablokow, Daly et al., 2019:4).
Comprehensiveness	This attribute relates to the extent to which the interventions cover and comprehend the current issue. The health interventions in the current study sought to understand the experiences of the families having member(s) with TB and how to promote and prevent TB amongst the families (Henderson et al., 2019:4).

Validity	Validation sought to achieve the research needs of the study (Brink, Walt & van Rensburg, 2018). In the current study, validity comprised of the literature review confirmation, the clinical judgements and knowledge of the experts' panel through the Delphi method and the findings from the empirical phase**.** Furthermore, the intervention would give the families and the community the needed support to promote and prevent TB thus achieving the desired results.
Reliability	Reliability relates to the consistency of achieving the same results when a tool is used repeatedly and by different researchers (Brink et al., 2018:110). In the current study reliability seeks to ensure that the health promotion interventions are applied in the same way by the healthcare providers in the promotion and prevention of TB for families having member(s) with TB. Furthermore, the interventions would be used consistently by a wide variety of health care providers from different cultural and geographical backgrounds. Thus, uniformity would be maintained in the application of the intervention.
Relevance	Relevance seeks to observe whether the intervention is suitable to meet the goals of the study or reflect the issue on hand (Trettene, Fontes, Razera & Gomide, 2016:4445). In this study the interventions were suitable to enhance the promotion and prevention of TB for the families having member(s) having TB as indicated by the findings of the empirical data and the agreement of a panel of experts from the Delphi technique.
Clarity	Clarity seeks to ensure that the quality of the intervention is clear and simple to implement and without any confusion. Henderson et al. (2019:4) defined clarity as the degree to which the intervention is communicated clearly in terms of grammar and word usage. In this study the researcher used simple and clear language in writing the interventions in order to be understood by the users (Hlongwane, 2018:48).

Effectiveness	Effectiveness relates to the ability of the intervention to yield the anticipated results. In the current study the researcher utilised ideas from the TB experts, the findings of Phase1 and related literature to ensure quality so that the intervention can have an impact and is relevant to the study (Hlongwane, 2018; Tretttene et al., 2016:4444).
Acceptability	It refers to lawful, moral, and cultural aspect of an intervention (Muller, 2009:254; Muller & Petra, 2016:431). Henderson et al., (2019:4) understood acceptability as the degree to which the intervention is socially, legally, and politically accepted. In this study the researcher ensured that the interventions provide high quality care to the families with TB members by involving a panel of experts more than five years of experience in TB management and control. The researcher further ensured that the intervention adhere to the ethical-legal and is culturally sensitive to the stakeholders.
Flexibility	It refers to the ability of the interventions to be adapted or changed to meet the health needs of the study. In this study, the intervention was adapted to suit different health care settings and cultures of different communities (Hlongwane, 2018:100).
Documentation	It refers to a record of the health promotion interventions as a proof or evidence. In this study, documentation of the intervention complied with the principle of accuracy, completeness, legal and ethical requirements (DoH, 2011:40; Muller & Petra, 2016:332). Furthermore, all the steps of the development of the intervention were clearly documented.
Review and updating of the health promotion interventions	According to Vernooij et al. (2014:1) an updating process comprises of three components: identification of new evidence, assessment of the need to update the intervention and the formulation of new or modified recommendations. In this study, the health promotion interventions contained statements about their

	reviewal and will be updated within three to five years as suggested by most authors (Vernooij et al., 2014:1).

This table shows the characteristics with clarification of their means as they were considered during the formulation of the health promotion interventions for families having member(s) diagnosed with TB.

6.5 THE PROCESS OF FORMULATING, DEVELOPING AND REFINING HEALTH PROMOTION INTERVENTIONS FOR FAMILIES HAVING MEMBER(S) DIAGNOSED WITH TB IN THE NORTH WEST PROVINCE

6.5.1 Research design

A research design is defined as all the decisions taken to plan the research by the researcher (de Vos, Strydom, Fouche & Delport, 2016:307). According to Swamy, Patel and Patel et al. (2017:2), research design assists the researcher in selecting the participants to be used in the study, decides the purpose determines the type of analysis to interpret the findings and its selection and condition the study is carried out. Polit and Beck (2018:138) defined a research design as strategies spelling out how the researchers should undertake the study and address their research questions. The plan should specify how the researcher will conduct the research and what observations should be made (de Vos et al., 2016:143). In this study, the Delphi technique was used to collect the judgements of TB experts in group decision-making in developing the health promotion intervention for families having members diagnosed with TB.

The Delphi technique is a group decision method employing the personal views of a panel of experts based on their expertise (Sakishima, Kizawa, Kato et al., 2018:747). The method can objectively collect knowledge from different multi-professional experts across the globe while restricting bias or influence by one expert (Lyu, Zheng, Wang et al., 2020:1312). The gathered information from the panellists is controlled through the study by the researcher (Paul, 2008:10). This consensus method offers the panellists the opportunity to provide their views anonymously between the rounds. The anonymous collection of information averts peer pressure, dominance by rank and edginess related to teamwork (Paul, 2008:10). the method aims to develop expert-founded decision centred on the fact that group decision-making is better than a decision made by a lone expert, thus emphasising the power of collective knowledge (Niederberger & Spranger, 2020:1).

The method converts the opinions of experts to form agreement amongst the panellists through a series of iterative processes controlled with feedback reports (Viljoen, Millar, Manning & Busch, 2020:2). Delphi method can be used to develop health interventions or guidelines in the Faculty of Health Sciences (Donohoe, Stellefson & Tennant, 2012:39). A Likert type questions, in the quantitative method are used to collect data using strongly agree, agree, disagree, and strongly disagree (Viljoen et al., 2020:2). The Delphi method is the best method for gathering knowledge from multiple experts with a personal stake in the formation (Paul, 2008:12).

The Delphi technique was used in this study to select the items of the health promotion intervention. The researcher adopted the Delphi to gather judgements from a group of experts who are TB healthcare professionals to employ group decisions (Polit & Beck, 2018:401). The Delphi was chosen as it allows the participants to think in greater depth and to gather data between the rounds (Skulmoski et al., 2007:2; Massaroli et al., 2017:3 & Fletcher and Marchildon, 2014:3).

6.6 POPULATION AND SAMPLING

The population for this study comprised academics, medical doctors and nurses involved with TB management, government officials and Non-Governmental Organizations. The experts were purposefully selected based on their appropriate experience, knowledge and competency. The panel were formed and contacted to participate in the discussion through emails and telephone. Twenty-five experts were contacted to participate in the study as the larger group offered greater trustworthiness of the results (Massaroli et al., 2017:5). In purposive sampling, it was challenging to locate participants; therefore, snowball sampling was used to overcome this difficulty, by asking other experts to identify possible participants (Polit & Beck, 2017:252; 254).

Table 6.3 below shows the demographic characteristics of all experts participating in this phase

NO	Position	Professional qualification	Involvement in TB	Experience in the field of TB health care/Research in TB/ Policy and intervention development
1	TB coordinator	B-tech degree in Nursing Management	-TB statistics and management - Conduct in-service training for staff	15years

			- Link to patients diagnosed in a hospital to local facilities	
2	TB coordinator	Nursing Diploma	TB statistics and management - Conduct in-service training for staff	10yrs
3	TB nurse	Nursing Diploma	Managing TB programme	7yrs
4	TB coordinator	Advanced University Diploma in Health Science Bachelor of Arts	TB statistics and management - Conduct in-service training for staff - Involvement of loss to follow-ups - Improving TB treatment outcomes	5yrs
5	TB coordinator	Nursing Diploma	TB statistics and management - Conduct in-service training to staff	10yrs
6	TB focal nurse	Nursing Diploma	TB care	5yrs
7	Nurse manager	Nursing Diploma	Overall supervision& management of the TB programme	10yrs
8	TB focal nurse	Nursing diploma, Nursing education and management degree	- Comprehensive screening of all clients entering the facility for any signs of TB - Collection of sputum, registration, tracing and notification of suspects and confirmed cases	5yrs
9	TB focal nurse	Diploma in nursing	Screening and treatment of TB. Health education	14yrs
10	TB focal nurse	Nursing Diploma	Patients screening, health promotion and TB management	17yrs
11	Nurse manager	Degree in nursing management and education	Management of TB program and overall supervision	19yrs
12	Prof nurse	Nursing Diploma	TB health promotion and care	5yrs
13	Medical doctor	Bachelor of medicine and surgery	TB treatment and management	15yrs
14	Lecturer	PhD	Researcher	18yrs
15	Communicable disease coordinator	Nursing Diploma	TB statistics and management	

			- Conduct in-service training to staff	
16	Medical doctor	Bachelor of medicine and surgery	TB treatment and management	10yrs
17	Nurse educator	Masters in Nursing	Researcher	12yrs
18	Communicable disease coordinator	Degree in nursing education and management	TB statistics and management - Conduct in-service training to staff	14yrs

Table 6.3 shows that 18 experts participated in the Delphi, there were 2 medical doctors and 16 nurses. Their length of work service ranged from 5 - 18 years.

6.6 DATA COLLECTION AND ANALYSIS

The findings of Phase 1 (empirical data) informed the drafting of the health promotion interventions. The researcher used a Likert-type questionnaire to impartially collect data from the TB experts. Three rounds of Delphi were used to reach an agreement amongst the experts.

- **Delphi technique as a tool for data collection**

A four-point Likert scale questionnaire was utilised to collect data using strongly agree, agree, disagree and strongly disagree. The experts were requested to rate the quality of the health promotion interventions according to validity, reliability, clarity, applicability, applicability, acceptability and effectiveness criteria.

Pilot study

The researcher conducted a pilot study with two experts before the commencement of the main data collection to identify some errors (Brink, van der Walt & van Rensburg, 2018:45). Adjustments were made to the data collection instrument by adding two criteria to it. However, the participants understood the tool well.

Data collection

Multiple professional experts across the provinces were recruited face-to-face, telephonically and through emails. The researcher emailed the consent forms to those willing to participate in the study as they provided their emails. The two participants who took part in the pilot study were never engaged in the main study.

Round 1

Data collection

Most experts were willing to take part in the study. However, they failed to submit the consent forms and the questionnaires during the first round despite being reminded several times. Eighteen out of twenty-five participants responded during the first Round. Participants were requested to return the questionnaire within seven working days. However, most returned their responses within a week due to work commitments. Participants were given structured questionnaires with preliminary health promotion interventions for TB and were expected to rate according to “Strongly disagree, disagree, agree and strongly agree” on a 4-point Likert scale. Furthermore, they were requested to rate according to validity, reliability, clarity, applicability, acceptability and effectiveness criteria. Participants provided their inputs and suggestions to the researcher.

Data analysis

The researcher analysed the comments and consolidated and refined the preliminary health promotion interventions for the second Round. The researcher further calculated the mean score for each preliminary health promotion intervention. Scores of 1 and two (“Strongly disagree and disagree”) were re-formulated according to the comments and suggestions of the participants.

Round 2

Data collection

The researcher thanked all the participants for their input and gave them feedback on the first Round. During this round, participants were sent the adjusted questionnaire according to their information and suggestions from the first Round. The participants were requested to submit the questionnaires again within seven working days. There was a further delay of two weeks in returning the questionnaires due to work commitments.

Data analysis

In Round 2, the researcher rated, refined and consolidated the received questionnaires from the participants. The participants made a few comments. The researcher thanked the participants and gave them feedback.

Round 3

Data collection

The researcher emailed the questionnaires to the participants and informed them that it was the last round, and they were requested to return their responses within three days. In this round, most participants took their time to return the responses, as only two participants complied with the agreed time. A month passed before receiving all the questionnaires regardless of reminding them.

Data analysis

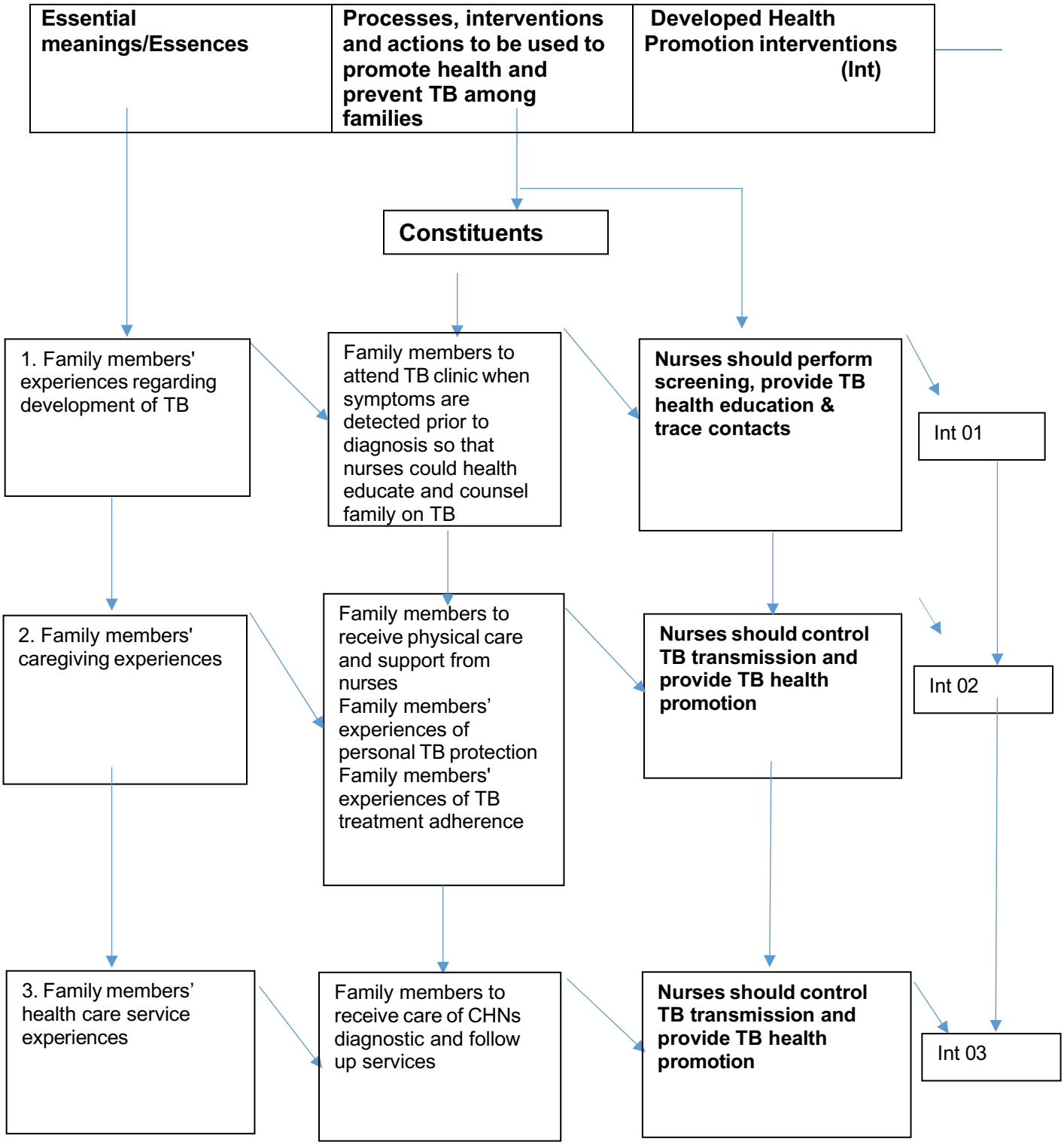
This was the final Round of the Delphi technique, as the participants made no comments or suggestions. The participants agreed with the preliminary health promotion interventions and the criteria for rating them on the Likert scale. The participants reached a consensus as the items were rated agree (3) and strongly agree (4). The researcher thanked all the participants for contributing to the study and gave them feedback.

Round 4

The fourth round analysed the data quantitatively to collate comprehensive judgements of the suggestions of the group experts. The statements were ranked from the most to the least important and were then collated, analysed and interpreted**.** A percentage above 75% was agreed to be satisfactory.

6.7 DEVELOPED AND REFINED HEALTH PROMOTION INTERVENTIONS

The researcher aimed to develop and validate health promotion interventions for families having member(s) diagnosed with TB in the North West province to support their environmental and mental well-being. The researcher adopted three rounds of the Delphi technique to develop the health promotion interventions with the assistance of TB experts who participated in Phase 2 of this study. The experts gave comments and suggestions while formulating the health promotion interventions until agreement was achieved anonymously. Figure 2 below is the framework of the TB health promotion interventions used by the researcher to develop the TB health promotion interventions.


Essential meanings/Essences
Processes, interventions and actions to be used to promote health and prevent TB among families
Developed Health Promotion interventions (Int)
Constituents
1. Family members' experiences regarding development of TB
Family members to attend TB clinic when symptoms are detected prior to diagnosis so that nurses could health educate and counsel family on TB
Nurses should perform screening, provide TB health education & trace contacts
Int 01
2. Family members' caregiving experiences
Family members to receive physical care and support from nurses
Family members' experiences of personal TB protection
Family members' experiences of TB treatment adherence
Nurses should control TB transmission and provide TB health promotion
Int 02
3. Family members' health care service experiences
Family members to receive care of CHNs diagnostic and follow up services
Nurses should control TB transmission and provide TB health promotion
Int 03

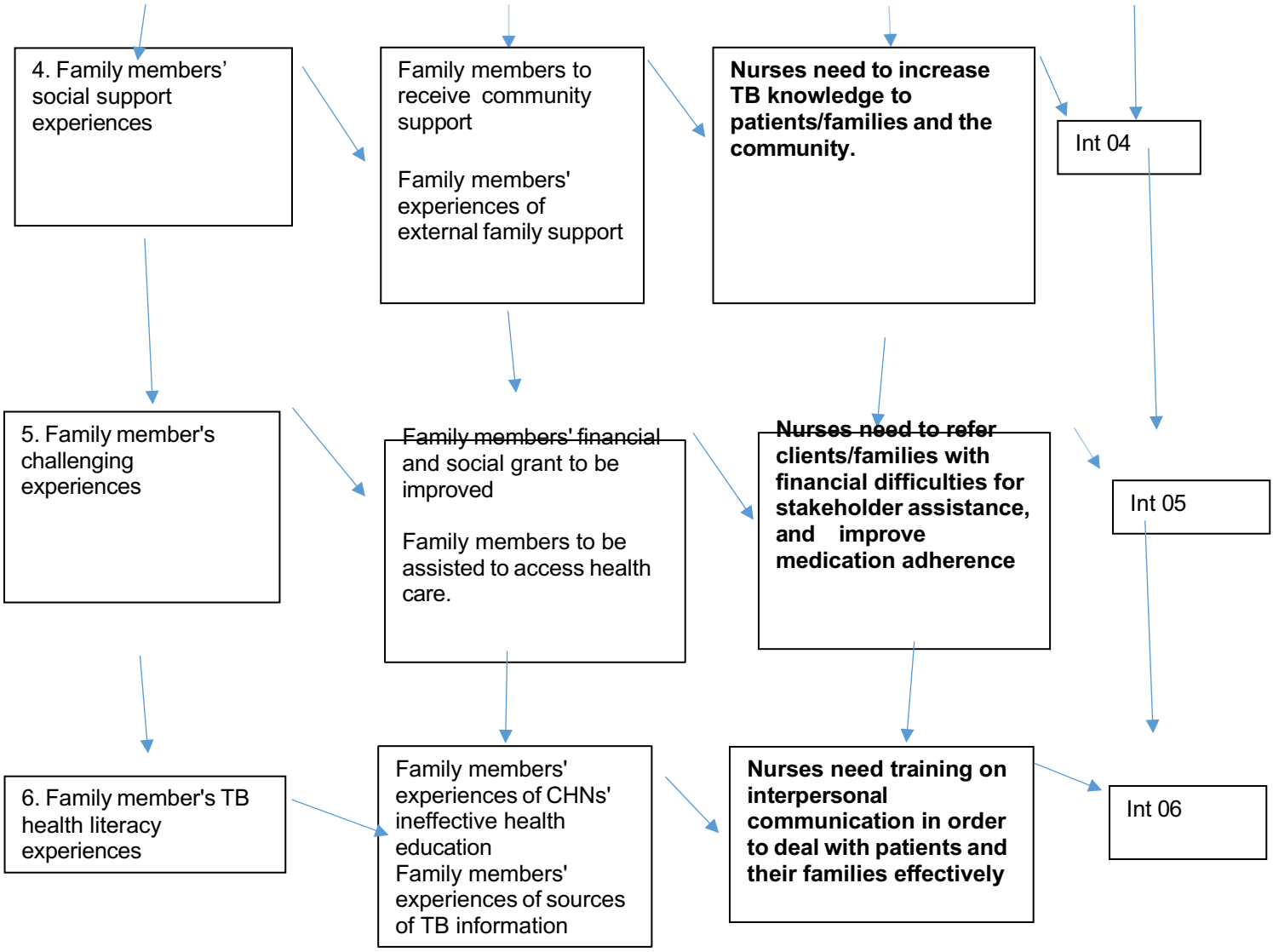


Figure 5: Sebothoma final TB health promotion interventions for families having member(s) diagnosed with TB in the North West province

6.8.1 Aims of the Health Promotion Interventions

- Improve the environmental and psychosocial well-being of families having member(s) diagnosed with TB
- Promote healthy living to families staying with people diagnosed with TB
- Offer guidance to healthcare providers in the treatment and management of TB
- Support the Department of Health with the improvement of TB amongst families staying with TB sufferers
- Improve adherence to TB treatment and TB treatment success rate
- Strengthen the health system and social support.

6.8.2 Scope of the Health Promotion Intervention

Target users of the health promotion intervention are healthcare providers dealing with TB (Community Health Nurses including Primary health care nurses).

6.8.3 Description of the Health Promotion Interventions

The researcher developed six (6) TB health promotion interventions which are presented below according to their rationale and sub-interventions/activities.

Intervention 1: Nurses should perform screening, provide TB health education and trace contacts

Rationale

It is important to identify and put people with TB infections on treatment timeously to curb the spread of TB and prevent complications and reduce the morbidity and mortality rate (Kweza, van Schalkwyk, Abram et al., 2018:264). TB can be controlled only if all the people presenting to the healthcare facilities can be screened, irrespective of the reasons for their consultations for early detection. This can lead to early treatment resulting in the control of the disease. Therefore, it is beneficial to treat TB in its early stage to prevent complications and the spread of the disease.

Community healthcare nurses should provide the community with TB health education so that when they experience the signs and symptoms, they can seek medical help. This can reduce the spread as individuals can be tested, diagnosed early and put on treatment. Good knowledge about TB and its symptoms influences early health seeking behaviour (Dewi, Barclay, Passey & Wilson, 2016:12; Shatil et al., 2019:307). Therefore, poor knowledge can delay TB diagnosis and treatment.

Sub-interventions:

- Nurses should check all clients entering the health services for TB through screening
- Nurses to provide isoniazid preventive therapy to the exposed family
- Nurses should track household contacts who have contact with an infected person
- TB Managers should monitor and supervise health facilities regularly on contact tracing to improve commitment
- Nurses should provide health education to TB patients/families about the need to investigate contacts
- Nurses should collect the sputum for TB testing of symptomatic individuals
- Nurses should raise asymptomatic TB among healthcare providers, families and the general public
- Nurses should scale up rapid diagnostic techniques such as GeneXpert MTB/RIF
- Nurses should be trained to do enhanced TB screening and TB testing to avoid missing TB patients
- TB Managers should provide nurses with continuous training and refresher courses on TB screening and testing
- Nurses should mentor and offer health education to the family/community continues to improve TB knowledge and awareness.

Intervention 2: Nurses should control TB transmission and provide TB health promotion interventions

Rationale

The execution of infection prevention and control measures is important to curb the spread of TB in healthcare facilities and patients'/families' homes (Engelbrecht et al., 2018:1). Nurses should ensure that infection control policies and guidelines always adhere to prevent transmission. Nurses should provide health education to patients/families and the community about TB infection control.

Health promotion enables people to take charge of their health and improve their health and quality of life (Maijala, Tossavainen & Turunen, 2016:454). Social and environmental interventions are vital to improve and sustain the health and quality of people's lives. Families and the community need a better understanding of TB to engage in TB health promotive actions.

Sub-interventions:

- Nurses should separate coughing and non-coughing patients in healthcare settings.
- Nurses should provide coughing patients with masks
- Nurses should promote health to families through health checks, health education and follow-up care of TB patients
- Nurses should provide primary prevention through counselling on the environment, lifestyle and nutrition
- TB Managers should observe treatment by increasing the number of community health workers and strengthening their role in TB monitoring
- Nurses should support families with patients as possible as they can with the necessary information and TB care.
- Nurses should increase TB knowledge with posters designed by community leaders using the local languages
- Nurses should encourage families and the community to open windows, clean their houses and plant vegetable gardens to promote good health
- Nurses should encourage the families and the community to talk freely about TB and bring family members to the health facilities when they develop the signs of TB
- The health facility to have a written infection control policy
- The infection control policy to be executed and be monitored
- The patients/families that are coughing should be provided with face masks on entering the health facilities
- Nurses are to wear protective clothing
- Facilities to have good ventilation

  Nurse managers should ensure that protective resources are always in stock.

Intervention 3: Nurses should control TB transmission and provide TB health promotion

Rationale

TB officers need to be up to date with screening and diagnosis in order to control and eliminate TB. Counselling patients and their families should address the healthcare issues of patients, such as financial, nutritional, physical and treatment challenges. Counselling should ensure that the needs of patients/families are met. The patients/families should be actively involved in TB care, and their decision should be respected. The causes of TB, the mode of spread, the treatment

regime and side effects should be addressed to reduce the defaulter rate and improve treatment outcomes. Poor knowledge of TB signs and symptoms can lead to delayed TB diagnosis and the spread of the disease (Rachmawati et al., 2019:443).

Sub-interventions:

- Nurses should conduct TB campaigns for the families/community to convey TB information
- Nurses should use media channels to improve TB knowledge and awareness among families and the public

  Nurses need to share TB information with patients and their families through counselling.

Intervention 4: Nurses need to increase TB knowledge to patients/families and the community

Rationale

The families and the community need to be provided with adequate and precise TB information to change their mindset. Rachwati et al. (2019:168) cite that the family of sufferers and the community often get the wrong idea about the disease resulting in discrimination between the patient and the family. Raising public TB awareness is important for people to engage in health improving activities. Community health nurses and health workers need to support the families and the community by empowering them with TB knowledge and care. The families and the community need to know that TB is curable and is spread by infected individuals. Furthermore, the family and the community need to be informed that TB services are available free of charge, and it is important to access the services in time in order to control the spread of the disease. TB health education is an important tool to prevent TB (Bissallah et al., 2018:10). The community and families affected by TB should be actively involved in TB care through education. Mansoureh, Farahani and Mohammadi (2013:113) allude that health education plays a crucial role in the reduction of anxiety and stress, participation in health improving activities, inspiration and health fulfilment.

Sub-interventions:

- Nurses to provide health education and counsel TB patients and their families with each visit
- Nurses assess the educational needs of TB families in the health facilities and their homes

- Nurses should use health education to prevent and promote TB on an ongoing basis to the families and the community
- Nurses should be well trained to conduct TB health education.

Intervention 5: Nurses need to refer clients/families with financial difficulties for stakeholder assistance and improve medication adherence

Rationale

Poverty and financial difficulties may lead to poor adherence to treatment (Biswas et al., 2010:9). Patients with financial difficulties find it difficult to comply with TB treatment on an empty stomach and follow a healthy diet to fight the disease and prevent transmission. Transport fares to attend health facilities for check-ups and medication collection, financial support is needed. In this study, most patients and their families were poverty stricken and financial assistance was needed to comply with TB treatment. Poor adherence to treatment may lead to multi drug resistance and the increase of TB infection.

Sub interventions

- Nurses should encourage families with financial difficulties to bring social grants forms
- Nurses should engage with social workers for food parcels provision
- Nurses should provide struggling families with food supplements
- Nurses should utilise community health workers to deliver medication to their homes
- Nurses should use TB mobile to assist working patients/families with check-ups or treatment reviews.

Intervention 6: Nurses need training on interpersonal communication in order to deal with patients and families effectively

Rationale

Communication is the best tool for patients and their families to accept TB. (Rachwati et al., 2019:169). Nurses need to communicate with TB patients and their families in a friendly manner and show concern to ease their pain. Good communication can lead the patients/families to be open to discussing their concerns/difficulties. The families should feel valued and cared for to enable them to adjust. Nurses should listen attentively to the patients/family, use their language and allow them to make decisions. A good attitude with sympathy and empathy can increase nurse patient relationships and trust.

Sub interventions:

- Nurses should make time for the patient/family and answer their concerns in a polite manner
- Nurses should offer simple to understand TB information to the patient/family and the community to increase their knowledge and prevent TB
- Nurses should meet with the family and the community to increase TB case detection.

6.9 DEVELOPMENT AND VALIDATION OF TB HEALTH PROMOTION INTERVENTIONS

In Phase 2, the researcher employed the Delphi technique to develop TB health promotion interventions, in which multi-professional experts were purposefully selected. The experts had over five years of experience dealing with TB and research. The participants were anonymous to each other and from different locations to avoid biases. The participants were eighteen (18) in number to offer better credibility. The participants were chosen based on their capability, experience and interest in the study. The researcher was open to the participants and gave feedback throughout the whole process. The empirical findings informed the development of the TB health promotion interventions of Phase 1 of the study. Furthermore, the TB health promotion interventions would be submitted to the provincial Department of Health dealing with TB for approval before implementation.

6.10 HEALTH PROMOTION REVIEWS AND UPDATES

The researcher recommends that TB health promotion interventions be implemented in the healthcare facilities. They should be reviewed and updated after 3-5 years.

6.11 SUMMARY

The researcher developed TB health promotion interventions for families having member(s) diagnosed with TB. A three-stage process of the Delphi technique was employed to achieve consensus with the assistance of TB experts (multi-professional team). Six TB health promotion interventions were developed with the assistance of Delphi experts. Furthermore, the researcher presented the guiding characteristics in developing and validating TB health promotion interventions.

CHAPTER 7

SUMMARY OF THE FINDINGS AND DESCRIPTION OF THE HEALTH PROMOTION INTERVENTION WITH RELATED RECOMMENDATIONS, CONTRIBUTION TO THE BODY OF KNOWLEDGE, LIMITATION AND FINAL SUMMARY

7.1 INTRODUCTION

Chapter 6 was dedicated to developing health promotion interventions for families with member(s) diagnosed with TB in the Northwest Province for Phase 2.

The aim of the study was to develop health promotion interventions for families having member(s) diagnosed with TB in the Northwest Province. Chapter 1 presented the burden of TB worldwide, the background, problem statement and significance of the study, and the research aim, question and objectives. Key concepts related to the study were elucidated in the chapter. Furthermore, the chapter displayed the paradigmatic perspective, the philosophical traditions of the study, the setting and the methodology employed to answer the research question.

Chapter 2 presented the literature reviewed in which several TB health promotion interventions were conveyed to prevent and promote TB. In Chapter 3, an exhaustive explanation of the methodology was exhibited, where the researcher utilised descriptive phenomenology. The findings of data collected from interviews are presented in Chapter 4. The findings were displayed in the form of essential meanings and constituents. In Chapter 5, the identified essences strengthened with their constituents were confirmed with literature. Chapter 6 was devoted to developing and validating the guidelines centred on the principles of AGREE II (2010, 2003-2013 & 2017 update), together with the Delphi technique.

This chapter presents the summary of the findings and description of the health promotion interventions with related recommendations, contribution to the body of knowledge, limitations, and summary.

7.2 PHASE 1

The study was conducted in two phases. In Phase 1, the objectives were:

- Explore and describe experiences of families having member(s) diagnosed with TB in the Northwest Province.
- Explore and describe the needs of community health nurses regarding health promotion interventions for families having member(s) diagnosed with TB in the Northwest Province.

7.2.1 Summary of the Findings of Phase 1

Phase 1 delineated the findings of this study regarding the essences of:

a) Family members' experiences regarding the development of TB, family members' caregiving experiences, family members' health care service experiences, family members' social support experiences, family members' challenging experiences and family members' TB health literacy experiences.
b) CHNs' roles in TB health promotion program, CHNs' positive experiences of TB health promotion program, CHNs' challenges with TB health promotion program and CHNs' needs in TB health promotion program.

Furthermore, the identified essences were strengthened with their constituents.

7.2.1.1 Themes (essences) from the family members' participants' experiences

- **The essence of family members' experiences regarding the development of TB**

In this study, the family experienced their family member(s) developing TB. The family member(s) developed signs and symptoms such as night sweats, inappetence, weight loss and cough. However, the families were unable to relate that to TB. To prevent and control TB, families and communities must have good knowledge to foster early detection and treatment of TB. Furthermore, TB diagnosis should be made in time to make a follow-up of the people exposed to the disease.

- **The essence of family members 'caregiving experiences**

TB patients need the necessary support from their family members to adhere to treatment. In this study, the families assisted their member(s) with physical care, environmental hygiene, food preparation and emotional support. It was further noted that families had no idea of how to protect themselves against the disease. Personal protection is important to prevent the spread of TB. The families played an important role in ensuring that TB patients adhere to treatment by reminding them to take their treatment, encouraging them to be positive and preparing food for them.

- **The essence of family members' health care experiences**

The healthcare service should provide an atmosphere that inspires people to use TB services. As the face of the healthcare service, community health nurses should ensure that the patients and their families are treated with respect and dignity. They should be well informed about the procedure for making a TB diagnosis. In this study, there was a long delay in making the diagnosis and commencing the patients on treatment. This could increase the spread of the disease and make TB uncontrollable.

- **The essence of family members' social support experiences**

The family and the community can positively impact protracted TB treatment adherence. Community health nurses need to provide health education to families and the community to prevent misconceptions about TB. In this study, the families experienced enormous support from their neighbours and the community, which was extended to TB patients. Team effort and social support are good for successfully managing TB.

- **The essence of family members' challenging experiences**

In this study, most families experienced challenges due to TB. Living with the disease led to experiences of anguish, pain and suffering. Both the families and patients suffered financial difficulties, social grant challenges and health access challenges. The majority of patients were taking TB treatment on an empty stomach, and honouring follow-up appointments was difficult due to the lack of transport fares. Furthermore, social grants were insufficient to cater for families, and the majority of patients were not getting social grants and were unemployed.

- **The essence of family member's TB health literacy experiences**

TB health literacy is needed for families and the community to understand and apply TB health. Community health nurses need to provide TB health education periodically. In this study, family members experienced a lack of TB resources and ineffective health education. It was reported that community health nurses only provide TB treatment without explaining the disease and what to expect when taking the treatment.

7.2.1.1 Themes (essences) from the Community Health Nurses' Experiences

The summary of the essences and their constituents of the experiences of CHNs' are as thus:

- **CHNs' Roles in the TB health promotion program**

Community health nurses are the face of the TB health service and play an important role in the prevention and promotion. In this study, CHNs' highlighted that their role was to screen each person entering the health service. They collect the sputum when a person has signs and symptoms of TB and commence treatment immediately when the sputum results are positive. The contacts of the patient were traced. Mantoux test was done for the under five and given prophylaxis treatment if they were positive. Furthermore, they mentioned the importance of tracing family contacts to prevent new infections. Most participants mentioned being actively involved in TB health promotion and prevention by educating patients, families and the community. However, a few mentioned that they provide TB treatment without counselling and giving health education. The participants further cited the importance of counselling clients and their families to improve treatment adherence. TB counselling assists families to support their patients so that they can complete their treatment. The participants further identified the health needs of the clients/families and referred them to the relevant health professionals for assistance.

- **CHNs' positive experiences of the TB health promotion program**

CHNs in this study had positive experiences with the TB health promotion program. Participants felt fulfilled to see patients improving and completing their TB treatment. They indicated that most of the patients were cooperative and adhered to TB treatment. The participants experienced a lack of support from their supervisors (TB coordinators). They mentioned that their supervisors are just after statistics instead of assisting them. However, a few had good support from TB coordinators.

- **CHNs' Challenges with the TB health promotion program**

In this study, CHNs experienced non-adherence to treatment related to social grants as some patients defaulted on treatment purposefully to extend their social grants. Non-adherence was also due to access challenges. Most patients/families were unemployed and had no money to use public transport for follow-ups because the health services were far from their residences. It was also attributed to clients giving wrong addresses so they could not be traced. Some patients were staying alone and had no supervision. It was also mentioned that some patients had no reason to default on treatment. Some clients/families were difficult as they ignored requests to bring sputum to be checked. CHNs also complained about a lack of resources and working materials to carry the TB services such as TST. Participants further mentioned a lack of TB

coordinators' support. The participants felt not cared for by their supervisors as they hardly visit the centres.

- **CHNs' Needs in the TB health promotion program**

The needs of the CHNs should be met to enable them to carry out their work successfully. In this study, there was a shortage of focal nurses to care for TB patients at some clinics. Focal nurses would ensure that TB patients are well cared for. There was also a need for more human resources at some clinics. To improve the quality of TB prevention and promotion, manpower should be increased so that CHNs can have time for their patients. The participants mentioned the need for TB campaigns to increase TB knowledge among clients/families and the communities in general.

7.2.2 Summary of Findings of Phase 2

In phase 2, the objective was:

To develop health promotion intervention for families having member(s) diagnosed with TB in the Northwest province.

This study achieved the objectives of the study as the health promotion interventions for families having member(s) diagnosed with TB were developed by the researcher.

7.3 DESCRIPTION OF THE HEALTH PROMOTION INTERVENTION

The development of the health promotion interventions, as outlined in Chapter 6, was informed by the findings of Phase 1, the literature and the experts' inputs. The researcher was further directed by the guiding attributes presented by AGREE II (2010, 2003-2013 & 2017 update) instrument. A panel of experts using the Delphi method ensured the trustworthiness of the health promotion interventions.

7.4 VALIDATION OF THE HEALTH PROMOTION INTERVENTION

Chapter 6 explained the development and validation of the health promotion interventions, which were directed by the guiding characteristics for guideline development, reporting and evaluation as presented in AGREE II (2010, 2003-2013 & 2017 update) instrument and literature. The researcher created a checklist directed by the guiding characteristics from AGREE II. The participants with experience in TB health care, research in TB, policy and intervention development assisted with the validation process. The researcher emailed the checklist to the

participants for rating, and their input was captured. The table below shows the rating used by the researcher to prioritise health promotion interventions.

Table 7.1: Health promotion intervention rating in Delphi round 4 (18 panellists)

CHECK LIST	Validity				Reliability				Clarity				Applicability				Acceptability				Effectiveness			
Rating scale	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Intervention 1	0	0	0	18	0	0	2	16	0	0	1	17	0	0	0	18	0	0	0	18	0	0	1	17
Intervention 2	0	1	1	16	0	0	1	17	0	0	2	16	0	0	1	17	0	0	3	15	0	0	0	18
Intervention 3	0	0	0	18	0	0	0	18	0	0	1	17	0	0	0	18	0	0	2	16	0	0	0	18
Intervention 4	0	0	0	18	0	0	1	17	0	0	0	18	0	0	0	18	0	0	0	18	0	0	0	18
Intervention 5	0	0	1	17	0	0	0	18	0	0	0	18	0	0	2	16	0	0	1	16	0	0	2	16
Intervention 6	0	0	3	15	0	0	2	16	0	0	1	17	0	0	0	18	0	0	0	18	0	0	0	18
TOTAL SCORE	0	1	5	102	0	0	6	102	0	0	5	103	0	0	3	105	0	0	6	102	0	0	3	102

7.5 DESCRIPTION OF THE FINAL HEALTH PROMOTION INTERVENTION

The researcher developed six (6) health promotion interventions with the assistance of the inputs made by the experts using the rounds of the Delphi method. A final summary of the health promotion interventions follows:

7.5.1 Name of health promotion interventions

Development of health promotion intervention for families having member(s) diagnosed with TB in the Northwest province.

7.5.2 Overall aim of health promotion interventions

The aim of the health promotion interventions was to reduce the rate of TB infection and to empower the families having member(s) diagnosed with TB in the Northwest province to live healthy.

7.5.3 The scope of health promotion intervention

The development of the health promotion interventions was meant for the community health nurses as the target users and the families having member(s) diagnosed with TB as the recipients of health support.

7.5.4 Development of health promotion intervention

The researcher works in a nursing education institution in the Northwest province. Through the interaction of the researcher, TB patients and their families in the clinical facilities and the villages, the need to support and empower the families having member(s) diagnosed with TB.

7.5.5 Methodology

The researcher employed qualitative, descriptive phenomenology to explore and describe the experiences of the families having member(s) diagnosed with TB and the needs of the community health nurses in the Northwest province for Phase 1. In Phase 2, the researcher used the Delphi technique to develop the health promotion interventions for the families having member(s) diagnosed with TB with the assistance of the inputs made by the panel of experts.

7.5.6 Health promotion development group

Chapter 6 outlined the method used to select the panel of experts for developing and validating the health promotion interventions and their descriptive information on their professional and academic experience.

7.5.7 Validation of health promotion intervention

The principles of validity, reliability, clarity and applicability guided the development of health promotion interventions. Four rounds of the Delphi technique were used to reach a consensus by the experts to ensure the health promotion interventions were valid and trustworthy.

7.5.8 Review and updating of health promotion interventions

The researcher recommended that the health promotion interventions be reviewed and updated every three to five years after implementation and testing in the TB health services.

7.6 STRENGTH OF THE STUDY

In Phase 1 of the study, the researcher employed qualitative, descriptive phenomenology in which the study participants could describe their daily experiences, assisted in revealing meanings embedded in their human experience. The constructivist paradigm assisted the study as the participants could share their subjective experiences with the researcher in a natural setting. The family members described their daily experiences living with a family member(s) suffering from TB, and the CHNs described their experience of dealing with TB in their various practice areas. The information gathered from the study participants in Phase 1 and relevant literature informed the drafting of the preliminary guidelines. In Phase 2, the TB health promotion interventions were developed with the inputs and suggestions of healthcare specialists, a multidisciplinary team with advanced knowledge and expertise in TB and policy development.

7.7 RECOMMENDATIONS

The study explored and described the experiences of families having member(s) diagnosed with TB in the Northwest province as well as the needs of community health nurses with regard to TB health promotion programs. The findings provided knowledge to empower families and the community to live healthily. The experts provided inputs with regard to recommendations and health promotion interventions to empower the families and the community in the Northwest province. Furthermore, recommendations were directed towards service delivery, research, nursing education and training and nursing management.

7.7.1 Service delivery

In this study, it was revealed that families staying with TB patients lack knowledge with specific reference to signs and symptoms, personal protection and TB information. A lack of TB knowledge may lead to a negative impact on the program. Furthermore, the families took care of their TB members, as a result, they suffered financial pain as they struggled to provide food, personal necessities and transport fares. Therefore, the researcher recommends the following:

- Community health nurses must provide TB counselling and health education to patients and their family members with each visit.
- CHNs must use platforms such as radio and television, campaigns and pamphlets periodically to improve TB knowledge in the community.
- TB managers should provide training to CHNs to provide quality health education to the families and the community.

- The community health nurses should involve the families actively in TB decision making and treatment.
- Community health nurses must refer patients and their families to the relevant stakeholders for financial assistance.

7.7.2 Nursing research

In this study, health promotion interventions were developed for families staying with TB patients to empower them. It is recommended that future research focus on the implementation and efficacy of health promotion interventions. It is further recommended that future research be done on a larger sample and multiple provinces.

7.7.3 Nursing education and training

Based on the findings of this study, a family-centred approach to managing TB should be taught to students to empower them as the family plays an integral part in managing TB. Nursing students should be actively involved in TB education during TB campaigns in schools so their school peers can spread the TB messages to their families at home. Nurse educators should ensure that student nurses are well equipped with recent TB information to transfer effective TB health education with the correct information to patients/families after training.

7.7.4 Nursing Management

TB prevention and promotion depend on the role played by community health nurses. They should be able to prevent and control TB by providing effective health education. In this study, most community health nurses complained about a lack of support for communicable disease coordinators and shortages of personnel and materials to carry out TB services. Therefore, it is important for nursing management to take care of the community health nurses' training needs, provide adequate work equipment, increase manpower to provide quality care and ensure that their services are appreciated. Furthermore, it is recommended that nursing management always be visible, convey meetings to solve problems and lift the morale CHNs.

7.7.5 Recommendations for further studies

- Future research to evaluate the implementation of the TB health promotion interventions
- Future research to study the effectiveness of TB health promotion interventions.

7.8 LIMITATION OF THE STUDY

The study was conducted in Ngaka Modiri Molema District, Northwest Province. Thus, the findings of this study cannot be extended to other settings. The researcher drove long distances to collect data from the study participants in Phase 1, which was costly. A more extensive study involving most of the other provinces will require an extensive budget. The researcher invited all experts across the globe, but only Northwest Province and Gauteng Province participated in the study. Thus, the researcher could not obtain different opinions and inputs regarding TB health promotion interventions across the globe as intended.

The community health nurses who took part in this study were on-duty and participating in the research during their lunch breaks. Thus, they were in a hurry to finish the interviews and go carry on with their routines due to shortages and their busy schedules.

7.9 UNIQUE CONTRIBUTION TO OF THE STUDY

The findings of this study highlighted that family centred approach is important as the families are taking care of TB patients at home. To eradicate TB, families should be empowered with health education and knowledge and be comforted to take charge of their own health and their loved ones. The TB health promotion interventions will assist the community healthcare nurses in improving healthcare for TB patients and their families.

7.10 SUMMARY OF THE RESEARCH STUDY

The study explored the experiences of families having member(s) diagnosed with TB in the Northwest province. Furthermore, the needs of community health nurses providing TB healthcare were explored. The families described their experiences living with TB patients and their daily challenges. Six essential meanings (essences) and their constituents were discussed by the families. The community health nurses also described their experiences dealing with the TB program and their challenges in rendering the TB service. Four essences and their constituents were discussed.

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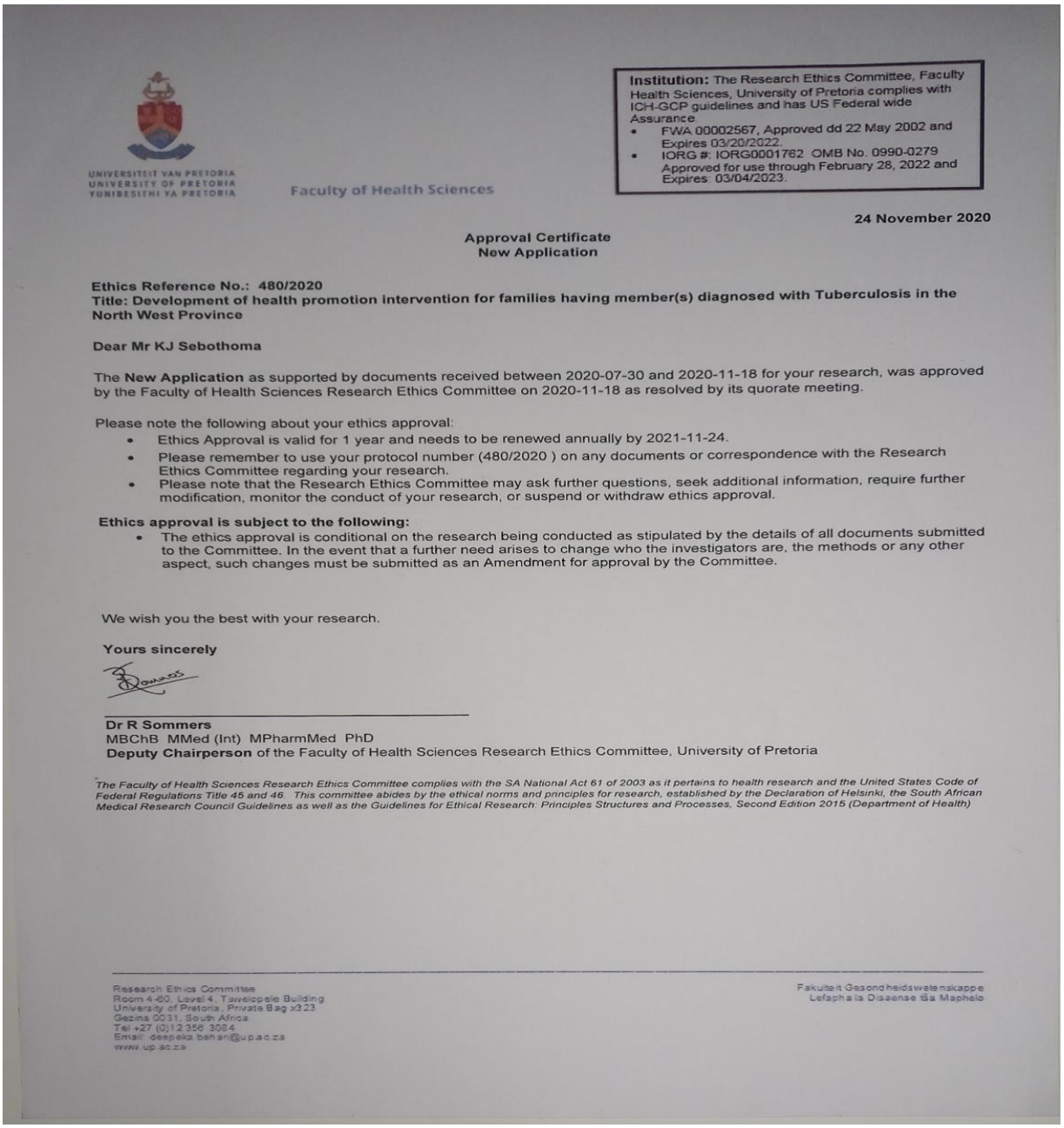
ANNEXURES

APPROVAL CERTIFICATES

First ethical approval certificate



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences

Institution: The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.
- FWA 00002567, Approved dd 22 May 2002 and Expires 03/20/2022.
- IORG #: IORG0001762 OMB No. 0990-0279 Approved for use through February 28, 2022 and Expires: 03/04/2023.

24 November 2020

Approval Certificate
New Application

Ethics Reference No.: 480/2020
Title: Development of health promotion intervention for families having member(s) diagnosed with Tuberculosis in the North West Province

Dear Mr KJ Sebothoma

The **New Application** as supported by documents received between 2020-07-30 and 2020-11-18 for your research, was approved by the Faculty of Health Sciences Research Ethics Committee on 2020-11-18 as resolved by its quorate meeting.

Please note the following about your ethics approval:
- Ethics Approval is valid for 1 year and needs to be renewed annually by 2021-11-24.
- Please remember to use your protocol number (480/2020) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, monitor the conduct of your research, or suspend or withdraw ethics approval.

Ethics approval is subject to the following:
- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

Yours sincerely

Dr R Sommers
MBChB MMed (Int) MPharmMed PhD
Deputy Chairperson of the Faculty of Health Sciences Research Ethics Committee, University of Pretoria

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes, Second Edition 2015 (Department of Health)

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Fakulteit Gesondheidswetenskappe
Lefapha la Disaense tša Maphelo

UNIVERSITEIT VAN PRETORIA
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Faculty of Health Sciences

Institution: The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.

- FWA 00002567, Approved dd 18 March 2022 and Expires 18 March 2027.
- IORG #: IORG0001762 OMB No. 0990-0278 Approved for use through August 31, 2023.

Faculty of Health Sciences **Research Ethics Committee**

15 September 2022

Approval Certificate
Annual Renewal

Dear Mr KJ Sebothoma,

Ethics Reference No.: 480/2020 – Line 2
Title: Development of health promotion intervention for families having member(s) diagnosed with Tuberculosis in the North West Province

The **Annual Renewal** as supported by documents received between 2022-08-15 and 2022-09-14 for your research, was approved by the Faculty of Health Sciences Research Ethics Committee on 2022-09-14 as resolved by its quorate meeting.

Please note the following about your ethics approval:

- Renewal of ethics approval is valid for 1 year, subsequent annual renewal will become due on 2023-09-15.
- Please remember to use your protocol number (480/2020) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, monitor the conduct of your research, or suspend or withdraw ethics approval.

Ethics approval is subject to the following:

- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

Yours sincerely

On behalf of the FHS REC, Dr R Sommers
MBChB, MMed (Int), MPharmMed, PhD
Deputy Chairperson *of the Faculty of Health Sciences Research Ethics Committee, University of Pretoria*

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes, Second Edition 2015 (Department of Health)

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Lefapha la Disaense tša Maphelo

Second ethical approval certificate

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences

Institution: The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.

- FWA 00002567, Approved dd 18 March 2022 and Expires 18 March 2027.
- IORG #: IORG0001762 OMB No. 0990-0278 Approved for use through August 31, 2023.

Faculty of Health Sciences **Research Ethics Committee**

15 September 2022

Approval Certificate
Annual Renewal

Dear Mr KJ Sebothoma,

Ethics Reference No.: 480/2020 – Line 2
Title: Development of health promotion intervention for families having member(s) diagnosed with Tuberculosis in the North West Province

The **Annual Renewal** as supported by documents received between 2022-08-15 and 2022-09-14 for your research, was approved by the Faculty of Health Sciences Research Ethics Committee on 2022-09-14 as resolved by its quorate meeting.

Please note the following about your ethics approval:

- Renewal of ethics approval is valid for 1 year, subsequent annual renewal will become due on 2023-09-15.
- Please remember to use your protocol number (480/2020) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, monitor the conduct of your research, or suspend or withdraw ethics approval.

Ethics approval is subject to the following:

- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

Yours sincerely

On behalf of the FHS REC, Dr R Sommers
MBChB, MMed (Int), MPharmMed, PhD
Deputy Chairperson *of the Faculty of Health Sciences Research Ethics Committee, University of Pretoria*

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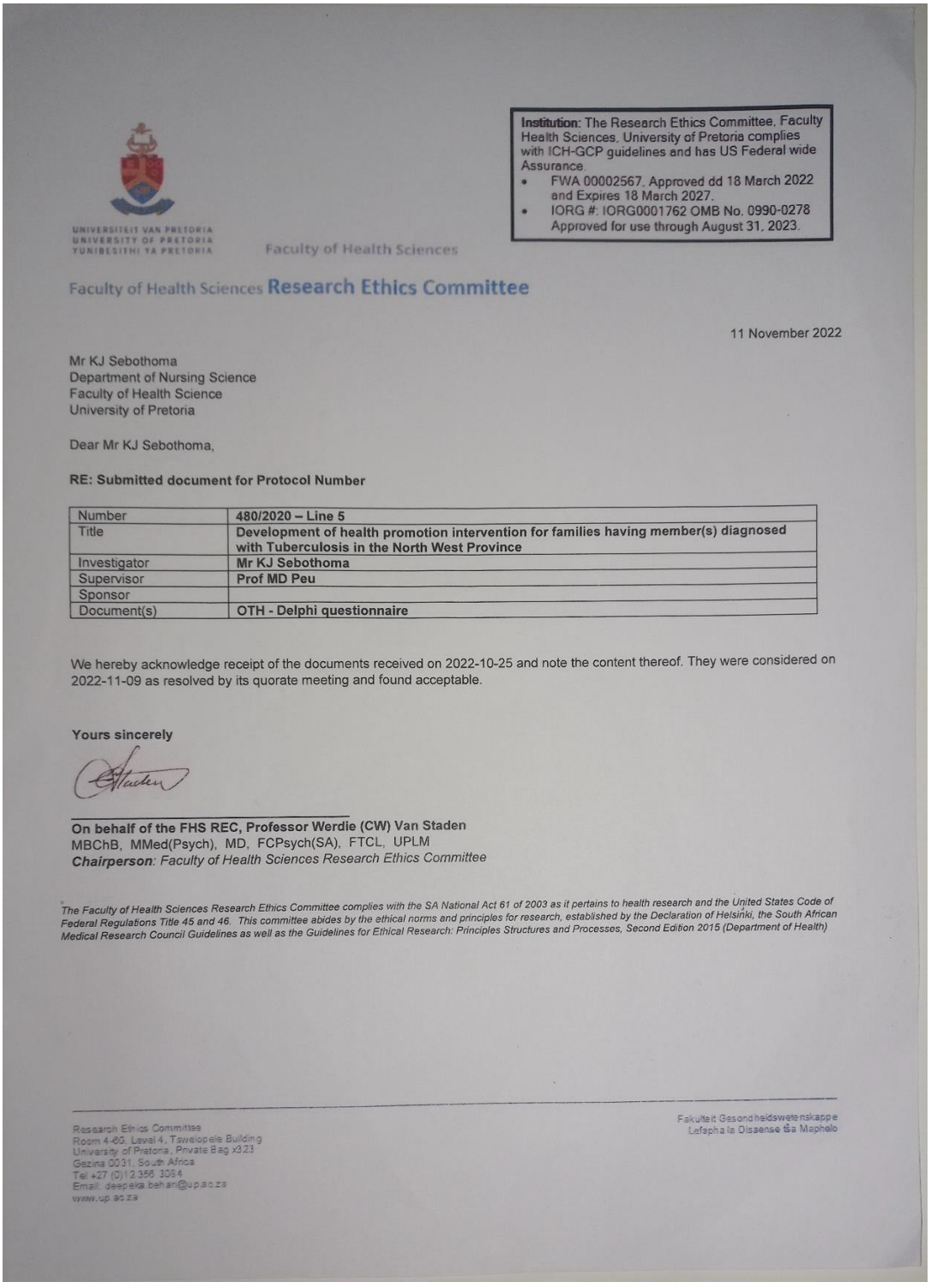
Delphi questionnaire approval



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Faculty of Health Sciences

Institution: The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.

- FWA 00002567. Approved dd 18 March 2022 and Expires 18 March 2027.
- IORG #: IORG0001762 OMB No. 0990-0278 Approved for use through August 31, 2023.

Faculty of Health Sciences **Research Ethics Committee**

11 November 2022

Mr KJ Sebothoma
Department of Nursing Science
Faculty of Health Science
University of Pretoria

Dear Mr KJ Sebothoma,

RE: Submitted document for Protocol Number

Number	**480/2020 – Line 5**
Title	**Development of health promotion intervention for families having member(s) diagnosed with Tuberculosis in the North West Province**
Investigator	**Mr KJ Sebothoma**
Supervisor	**Prof MD Peu**
Sponsor	
Document(s)	**OTH - Delphi questionnaire**

We hereby acknowledge receipt of the documents received on 2022-10-25 and note the content thereof. They were considered on 2022-11-09 as resolved by its quorate meeting and found acceptable.

Yours sincerely

On behalf of the FHS REC, Professor Werdie (CW) Van Staden
MBChB, MMed(Psych), MD, FCPsych(SA), FTCL, UPLM
***Chairperson**: Faculty of Health Sciences Research Ethics Committee*

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes, Second Edition 2015 (Department of Health)

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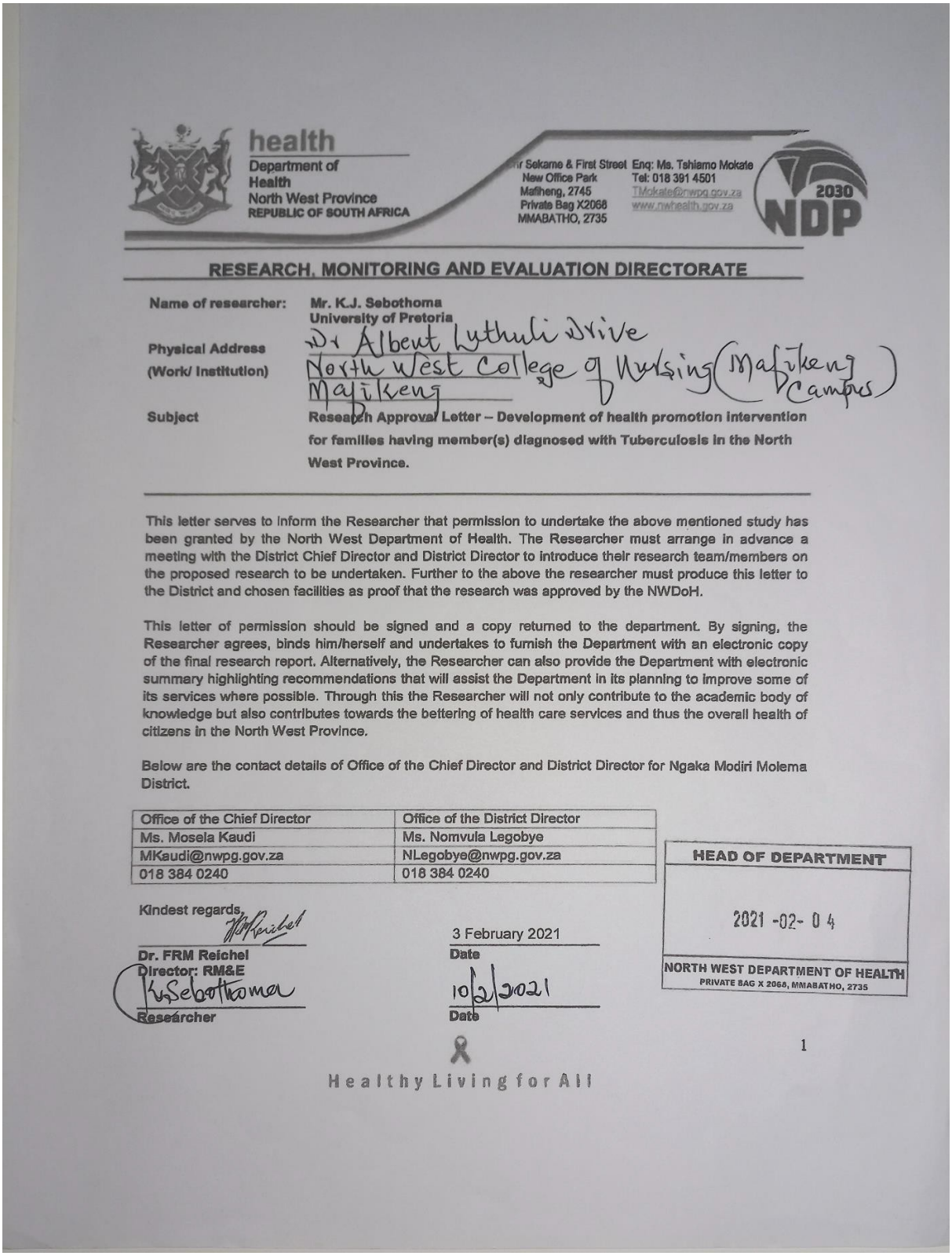
Fakulteit Gesondheidswetenskappe
Lefapha la Disaense tša Maphelo

Provincial approval from the Department of Health (North West Province)



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2030 NDP

RESEARCH, MONITORING AND EVALUATION DIRECTORATE

Name of researcher: Mr. K.J. Sebothoma
University of Pretoria

Physical Address (Work/ Institution) Dr Albert Luthuli Drive
North West College of Nursing (Mafikeng Campus)
Mafikeng

Subject Research Approval Letter – Development of health promotion intervention for families having member(s) diagnosed with Tuberculosis in the North West Province.

This letter serves to inform the Researcher that permission to undertake the above mentioned study has been granted by the North West Department of Health. The Researcher must arrange in advance a meeting with the District Chief Director and District Director to introduce their research team/members on the proposed research to be undertaken. Further to the above the researcher must produce this letter to the District and chosen facilities as proof that the research was approved by the NWDoH.

This letter of permission should be signed and a copy returned to the department. By signing, the Researcher agrees, binds him/herself and undertakes to furnish the Department with an electronic copy of the final research report. Alternatively, the Researcher can also provide the Department with electronic summary highlighting recommendations that will assist the Department in its planning to improve some of its services where possible. Through this the Researcher will not only contribute to the academic body of knowledge but also contributes towards the bettering of health care services and thus the overall health of citizens in the North West Province.

Below are the contact details of Office of the Chief Director and District Director for Ngaka Modiri Molema District.

Office of the Chief Director	Office of the District Director
Ms. Mosela Kaudi	Ms. Nomvula Legobye
MKaudi@nwpg.gov.za	NLegobye@nwpg.gov.za
018 384 0240	018 384 0240

HEAD OF DEPARTMENT
2021 -02- 04
NORTH WEST DEPARTMENT OF HEALTH
PRIVATE BAG X 2068, MMABATHO, 2735

Kindest regards.

Dr. FRM Reichel
Director: RM&E

3 February 2021
Date

K.J. Sebothoma
Researcher

10/2/2021
Date

Healthy Living for All

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ANNEXURE B1 (PARTICIPANTS INFORMED CONSENT FORM FAMILIES)

PARTICIPANT'S INFORMATION & INFORMED

CONSENT DOCUMENT FOR FAMILIES HAVING MEMBER(S) DIAGNOSED

WITH TB IN THE NORTH WEST PROVINCE

TITLE: DEVELOPMENT OF HEALTH PROMOTIONAL INTERVENTIONS FOR FAMILIES HAVING MEMBER(S) DIAGNOSED WITH TUBERCULOSIS IN THE NORTH WEST PROVINCE

SPONSOR **:** NIL

PRINCIPAL INVESTIGATOR **:** SEBOTHOMA K.J.

INSTITUTION: UNIVERSITY OF PRETORIA

DAYTIME NUMBER/S **:**

AFTER-HOURS NUMBER **:**

DATE AND TIME OF INFORMED CONSENT DISCUSSION:

Date	**Month**	**Year**

Time
:

Dear Prospective Participant

Dear Mr/Mrs.....

1. INTRODUCTION

You are invited to volunteer for a research study. I am doing research for a Doctor of Philosophy degree at the University of Pretoria. The information in this document is to help you to decide if you would like to participate. Before you agree to take part in this study, you should fully understand what is involved. If you have any questions, which are not fully explained in this document, do not hesitate to ask the researcher. You should not agree to take part unless you are pleased with all the procedures involved.

2. THE NATURE AND PURPOSE OF THIS STUDY

The aim of this study is to find out the experiences of families with members diagnosed with TB in the North West Province. You, as families, have important information that can help us to improve the care and management of TB.

3. EXPLANATION OF PROCEDURES AND WHAT WILL BE EXPECTED FROM PARTICIPANTS

The study involves unstructured interviews, which will last thirty minutes to an hour. It will be an in-depth individual interview. The researcher will ask you some questions about your experiences with having a member diagnosed with TB. The interview will be recorded with your permission, notes will also be taken, answers will be reviewed, and more questions will be asked as the need arises for clarity. Participation is voluntary, and if you decide to withdraw from the study at any time, you can do so without any explanation.

4. POSSIBLE RISKS AND DISCOMFORTS INVOLVED

There are no medical risks associated with the study.

5. POSSIBLE BENEFITS OF THIS STUDY

Although you may not benefit directly, the study results will enable us to understand your experiences as families of members diagnosed with tuberculosis and improve TB care and management.

6. COMPENSATION

Your participation is voluntary, and you will not be paid to take part in the study.

7. YOUR RIGHTS AS A RESEARCH PARTICIPANT

Your participation in this study is entirely voluntary, and you can refuse to participate or stop at any time without stating any reason. Your withdrawal will not affect you or your patient in any way.

8. ETHICS APPROVAL

This protocol was submitted to the Faculty of Health Sciences Research Ethics Committee, the University of Pretoria, telephone numbers 012 356 3084 / 012 356 3085 and written approval has been granted by that committee. Copies of the letter are available if you wish to have one.

9. INFORMATION

If you have any questions concerning this study, please contact:
K.J. Sebothoma on Tel: 0183920631 or Cell: 0825303961

10. CONFIDENTIALITY

All information obtained during the course of this study will be regarded as confidential. Each participant that is taking part will be provided with an alphanumeric coded number, e.g. A001. This will ensure the confidentiality of the information collected. Only the researcher will be able to identify you as a participant. Results will be published or presented in such a fashion that participants remain unidentifiable. The hard copies of all your records will be kept in a locked facility at the University of Pretoria.

11. CONSENT TO PARTICIPATE IN THIS STUDY

I confirm that the person requesting my consent to take part in this study has told me about the nature and process, any risks or discomforts, and the benefits of the study.
I have also received, read and understood the above-written information about the study.
I have had adequate time to ask questions and have no objections to participating in this study.
I am aware that the information obtained in the study, including personal details, will be anonymously processed and presented in the reporting of results.
I understand that I will not be penalised in any way should I wish to discontinue the study and that withdrawal will not affect my family in any way.
I am participating willingly.
I have received a signed copy of this informed consent agreement.

_____ _____

Participant's name and signature Date

SEBOTHOMA K.J _____

Researcher's name and signature Date

AFFIRMATION OF INFORMED CONSENT BY AN ILLITERATE PARTICIPANT

(if suitable)

I, the undersigned, **Sebothoma K.J.,** have read and have explained fully to the participant named ..... , the informed consent document, which describes the nature and

purpose of the study in which I have asked him/her to participate. The explanation I have given has mentioned both the possible risks and benefits of the study. The participant indicated that s/he understands that s/he will be free to withdraw from the study at any time for any reason and without jeopardising the family member(s) standard care.

I hereby certify that the patient's family has agreed to participate in this study.

_____	_____
Participant's name (Please print)	Date
_____	_____
Participant's signature	Date
SEBOTHOMA K.J.	_____
Investigator's Name (Please print)	Date
_____	_____
Investigator's Signature	Date
_____	_____
Name of the person who witnessed the informed consent (Please print)	Date
_____	_____
Signature of the Witness	Date

ANNEXURE B2 (PARTICIPANTS INFORMED CONSENT CHN)

PARTICIPANT'S INFORMATION & INFORMED

CONSENT DOCUMENT FOR COMMUNITY HEALTH NURSES

STUDY TITLE: DEVELOPMENT OF HEALTH PROMOTIONAL INTERVENTIONS FOR FAMILIES WITH MEMBER(S) DIAGNOSED WITH TUBERCULOSIS IN THE NORTH WEST PROVINCE

SPONSOR **:** NIL

PRINCIPAL INVESTIGATOR **:** SEBOTHOMA K.J.

INSTITUTION **:** UNIVERSITY OF PRETORIA

DAYTIME AND AFTER-HOURS TELEPHONE NUMBER(S):

DAYTIME NUMBER/S 0825303961

AFTER-HOURS NUMBER 0825303961

DATE AND TIME OF INFORMED CONSENT DISCUSSION:

Date	Month	Year

Time
:

Dear Prospective Participant

Dear Mr / Mrs.....

1. INTRODUCTION

You are invited to volunteer for a research study. I am doing research for a Doctor of Philosophy degree at the University of Pretoria. The information in this document is to help you to decide if you would like to participate. Before you agree to take part in this study, you should fully understand what is involved. If you have any questions, which are not fully explained in this document, do not hesitate to ask the researcher. You should not agree to take part unless you are pleased with all the procedures involved.

2. THE NATURE AND PURPOSE OF THIS STUDY

The aim of this study is to develop health promotion intervention for families with member(s) diagnosed with TB in the North West Province. As a community health nurse providing TB healthcare, you are a crucial source of information about TB programs. Your input can help to improve the care and management of TB.

3. EXPLANATION OF PROCEDURES AND WHAT WILL BE EXPECTED FROM PARTICIPANTS

The study involves unstructured interviews, which will last thirty minutes to an hour. The researcher will ask you about your experiences and needs regarding the TB programs. The interview will be recorded with your permission, notes will also be taken, answers will be reviewed, and more questions will be asked as the need arises for clarity. Participation is voluntary, and if you decide to withdraw from the study at any time, you can do so without any explanation.

4. POSSIBLE RISKS AND DISCOMFORTS INVOLVED

There are no medical risks associated with the study.

5. POSSIBLE BENEFITS OF THIS STUDY

Although you may not benefit directly, the study results will enable us to understand your experiences as community health nurses, your needs regarding the TB programs, and improve TB care and management.

6. COMPENSATION

Your participation is voluntary, and there are no costs involved for you to be part of the study.

7. YOUR RIGHTS AS A RESEARCH PARTICIPANT

Your participation in this study is entirely voluntary, and you can refuse to participate or stop at any time without stating any reason. Your withdrawal will not affect you in any way.

8. ETHICS APPROVAL

This protocol was submitted to the Faculty of Health Sciences Research Ethics Committee, the University of Pretoria, telephone numbers 012 356 3084 / 012 356 3085 and written approval has been granted by that committee. Copies of the letter are available if you wish to have one.

9. INFORMATION

If you have any questions concerning this study, please contact:

K.J. Sebothoma on Tel: 0183920631 or Cell: 0825303961

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All information obtained during the course of this study will be regarded as confidential. Each participant that is taking part will be provided with an alphanumeric coded number, e.g. A001. This will ensure the confidentiality of the information collected. Only the researcher will be able to identify you as a participant. Results will be published or presented in such a fashion that participants remain unidentifiable. The hard copies of all your records will be kept in a locked facility at the University of Pretoria.

11. CONSENT TO PARTICIPATE IN THIS STUDY

- I confirm that the person requesting my consent to take part in this study has told me about the nature and process, any risks or discomforts, and the benefits of the study.
- I have also received, read and understood the above-written information about the study.
- I have had adequate time to ask questions, and I have no objections to participating in this study.
- I am aware that the information obtained in the study, including personal details, will be anonymously processed and presented in the reporting of results.
- I understand that I will not be penalised in any way should I wish to discontinue the study and that withdrawal will not affect my job.
- I am participating willingly.
- I have received a signed copy of this informed consent agreement.

_____ _____

Participant's name (Please print) Date

_____ _____

Participant's signature Date

SEBOTHOMA K.J _____

Researcher's name (Please print) Date

_____ _____

Researcher's signature Date

ANNEXURE B3 (EXPERTS LEAFLET AND CONSENT FORM)

PARTICIPANT'S INFORMATION & INFORMED

CONSENT DOCUMENT FOR EXPERTS

STUDY TITLE: DEVELOPMENT OF HEALTH PROMOTIONAL INTERVENTIONS FOR FAMILIES WITH MEMBER(S) DIAGNOSED WITH TUBERCULOSIS IN THE NORTH WEST PROVINCE

SPONSOR **:** NIL

PRINCIPAL INVESTIGATOR **:** SEBOTHOMA K.J.

INSTITUTION **:** UNIVERSITY OF PRETORIA

DAYTIME AND AFTER HOURS TELEPHONE NUMBER(S):

DAYTIME NUMBER/S 0825303961

AFTER HOURS NUMBER 0825303961

DATE AND TIME OF INFORMED CONSENT DISCUSSION:

Date	**Month**	**Year**

Time
:

Dear Prospective Participant

Dear Mr / Mrs/Dr/Prof.....

1. INTRODUCTION

You are invited to volunteer for a research study. I am doing research for a Doctor of Philosophy degree at the University of Pretoria. The information in this document is to help you to decide if you would like to participate. Before you agree to take part in this study, you should fully

understand what is involved. If you have any questions, which are not fully explained in this document, do not hesitate to ask the researcher. You should not agree to take part unless you are pleased with all the procedures involved.

2. THE NATURE AND PURPOSE OF THIS STUDY

The aim of this study is to develop health promotion intervention for families with member(s) diagnosed with TB in the North West Province. As experts in the field of TB, you are a crucial source of information about TB and your input can help in the development of health promotion intervention for families with member(s) diagnosed with TB, which may lead to the improvement of the care and management of TB.

3. EXPLANATION OF PROCEDURES AND WHAT WILL BE EXPECTED FROM PARTICIPANTS

You will be requested to fill in a questionnaire with open-ended questions. The questionnaire will comprise instructions on how you should answer. In this study, three rounds will be used to collect your opinions, views, suggestions, and confirmation of the data through emails
in the first to the third rounds. The fourth round of data will be quantitatively analysed to collate comprehensive judgements. Participation is voluntary, and if you decide to withdraw from the study at any time, you can do so without any explanation.

4. POSSIBLE RISKS AND DISCOMFORTS INVOLVED

There are no medical risks associated with the study.

5. POSSIBLE BENEFITS OF THIS STUDY

Although you may not benefit directly, the study results will enable us to improve TB care and management.

6. COMPENSATION

Your participation is voluntary, and there are no costs involved for you to be part of the study.

7. YOUR RIGHTS AS A RESEARCH PARTICIPANT

Your participation in this study is entirely voluntary, and you can refuse to participate or stop at any time without stating any reason. Your withdrawal will not affect you in any way.

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This protocol was submitted to the Faculty of Health Sciences Research Ethics Committee, the University of Pretoria, telephone numbers 012 356 3084 / 012 356 3085 and written approval has been granted by that committee. Copies of the letter are available if you wish to have one.

9. INFORMATION

If you have any questions concerning this study, please contact:
K.J. Sebothoma on Tel: 0183920631 or Cell: 0825303961 Or Prof Peu on Tel: 082534 4245

10. CONFIDENTIALITY

All information obtained during the course of this study will be regarded as confidential. Each participant that is taking part will be provided with an alphanumeric coded number, e.g. A001. This will ensure the confidentiality of the information collected. Only the researcher will be able to identify you as a participant. Results will be published or presented in such a fashion that participants remain unidentifiable. The hard copies of all your records will be kept in a locked facility at the University of Pretoria.

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- I confirm that the person requesting my consent to take part in this study has told me about the nature and process, any risks or discomforts, and the benefits of the study.
- I have also received, read and understood the above-written information about the study.
- I have had adequate time to ask questions and have no objections to participating in this study.
- I am aware that the information obtained in the study, including personal details, will be anonymously processed and presented in the reporting of results.
- I understand that I will not be penalised in any way should I wish to discontinue the study and that withdrawal will not affect my job.
- I am participating willingly.
- I have received a signed copy of this informed consent agreement.

_____ _____

Participant's name and signature Date

_____ _____

Researcher's name and signature Date

ANNEXURE C1 (INTERVIEW GUIDE FOR FAMILIES)

DRAFT OF DATA COLLECTION INSTRUMENT

RESEARCH QUESTION OF THE STUDY:

The questions form part of my research study being conducted as part of my thesis as required for my degree conferring purposes. I'm currently a student registered for my Doctor of Philosophy Degree in nursing science at Pretoria University. The study is currently conducted under the supervision of Professor M.D. Peu, Prof M.M. Moagi and Doctor N. Mshunqane.

The main research question that guides the study will be the following:

- What are the experiences of families with member(s) diagnosed with TB in the North West Province?

PHASE 1

Step One – Individual interviews

For the patient's families

Main research question

- Would you like to share with me your experiences since your family member(s) was diagnosed with TB? Please include your experiences at home, with other family members, community members, and at the health facility.

Probing questions:

- Tell me how the community nurses support you.
- Is there anything important you would like to talk about?

ANNEXURE C2 (COMMUNITY HEALTH NURSE INTERVIEW GUIDE)

DRAFT OF DATA COLLECTION INSTRUMENT RESEARCH QUESTION OF THE STUDY:

The questions form part of my research study being conducted as part of my thesis as required for my degree conferring purposes. I'm currently a student registered for my Doctor of Philosophy Degree in nursing science at Pretoria University. The study is currently conducted under the supervision of Professor M.D. Peu, Doctor M.M. Moagi and Doctor N. Mshunqane.

The main research question that guides the study will be the following:

- **What are the needs of community health nurses regarding health promotion programs for families with member(s) diagnosed with TB in the North West Province?**

PHASE ONE

Step 2 – Individual interviews;

The following research questions will be asked of the participants:

For the community health nurses Main question

- Would you like to share with me your experiences since you worked with tuberculosis regarding TB health promotion programs?

Probing questions:

- Tell me more about your support of TB patients and their families.
- Tell me about how the district leaders support you.
- Is there anything else important you would like to talk about?

SAMPLE INTERVIEW - FAMILY MEMBERS

Family member (FM01

Researcher: Morning Madam Participant: Morning

Researcher: I'm Kenny Sebothoma. I'm going to interview you about TB as we agreed.

Researcher: Would you like to share with me your experiences since your family member was diagnosed with TB?

Participant: I was happy because I found out what his problem was. I accepted his condition and believed that he will get assistance from our clinic**.**

Researcher: What was wrong with him before going to the clinic?

Participant: He was not eating, coughing, struggling to breathe, he could not walk and he was Sometimes dizzy.

Researcher: How are you supporting him?

Participant: When I wake up in the morning, I open the windows, give him food and give him his medication. I then prepare water for him to bathe. After that, I take him out of the room as he cannot walk. I support him with my arm and put him in the sitting room, and continue with my house chores**.**

Researcher: How did the other family members feel about him having TB?

Participant: The other family members are staying far away, and they do not have telephones.

I am the only one taking care of him**.**

Researcher: Did you inform the other family members about his condition?

Participant: Yes, I did inform them.

Researcher: Did they come to visit him?

Participant: They did come to pay him a visit, however, they were held up by work**.**

Researcher: How are the neighbours supporting you?

Participant: They know about his condition, and they do support me. They were the ones who encouraged me to take him to the clinic when he was coughing so that he could be helped and know what was wrong with him**.**

Researcher: How did they react when you came back from the clinic and inform them that he has TB?

Participant: They took it well and I informed them that he got help from the clinic. So they did not take it negatively, they accepted us.

Researcher: "Are they still coming to pay you a visit?

Participant: "Yes, they do come, and they know that we have a patient with TB.

Researcher: How were the community health nurses supporting you at the clinic?

Participant: They informed me to encourage him to take his medication as he should.

Researcher: Were you informed what TB is, what causes it, and how can it be prevented?

Participant: No, I was never informed.

Researcher: Do you know what TB is?

Participant: I know about it as my aunt had it, and she passed on. So I know about TB from home.

Researcher: Do you know what causes TB and how it can be prevented? Participant: I do not know.

Researcher: What challenges do you have related to TB?

Participant: "The challenge I have with TB is that I am staying with him, I am the only one taking care of him. I have three kids. I am the one fetching treatment for him from the clinic. I go to the clinic and explain to them that he cannot walk and he is struggling to breathe. I do not have an income, so that I can get transport to take him to the clinic. At times they want me to take him to the clinic to check his blood pressure and his weight. I do have transport challenges. I do not have an income, as I'm not working and depend on the children's grant.

Researcher: Was there no arrangement for him to get a grant?

Participant: "He just received his first grant recently. There is no relief yet as he just obtained it recently, and it found that there was a huge gap, and I do not see any difference yet. I will see, as time goes by, how to re-arrange things.

Researcher: "How are you protecting yourself and the kids from contracting TB?

Participant: "He is eating his food, and he is not sharing with the kids or leaving his food to be eaten by the kids. He has his own cutlery and does not share with anybody. He knows all the rules about TB, as it is not the first time for him to be infected with TB. He works with cement thus, he is contracting TB for the second time.

Researcher: "Is he drinking or smoking? Participant: "No, he is not drinking or smoking."

Researcher: "What other challenges concerning TB do you have, excluding transport?

Participant: "I am requesting assistance from the government to provide me with food parcels because the grant is not helping me as such. I must buy clothes and toiletry with the grant for him to be presentable, pay policies and even buy food, so the grant is not enough. He was the sole breadwinner here, so now he cannot work.

Researcher: "**How are you protecting the kids from being infected with TB?**
Participant: "I am taking the kids this coming Monday to be checked at the clinic."
Researcher: Is there anything important you want to share with me?

Participant: "No.

Researcher: That's the end of our interview. Thank you for sharing your experiences.

SAMPLE INTERVIEW - COMMUNITY HEALTH NURSE (CHN 02)

Researcher: "Afternoon, Madam"

Participant: "Afternoon, Sir"

Researcher: "My name is Kenny Sebothoma. As we agreed about the interview, can we start?

Participant: Okay"

Researcher: "Would you like to share with me your experiences since you work with Tuberculosis regarding health promotion programme?

Participant: "My experience of working with TB patients is a nice experience as we get patients who are hopeless about TB, and they think they are about to die. In working with them, I counsel them and explain all the side effects pertaining to TB treatment. I do encourage the patients to take treatment as prescribed in order to improve. When I see them improving, it brings joy to my heart. At least I did something special for the patient. However, it can be frustrating at times when you have defaulters or patients interrupting treatment as you struggle to trace the patient. At the moment, I have six defaulters. In our facility, we have a challenge with telephones. They were not working, thus making it difficult to trace the patients."

Researcher: Tell me how your District leaders are supporting you.

Participant: "We have TB coordinators who support us. They provide workshops to ensure that we are well updated with the new TB updates. If there are new TB guidelines, they invite all the staff to attend the workshops. We have monthly meetings with them, and all the staff from different healthcare facilities attend, and we share our experiences and challenges. The TB coordinators address our needs. I had some issues last month, I raised the concerns to them at the meeting and now some of them are resolved."

Researcher: What else do you do for TB patients and their families?

Participant: "Besides providing TB treatment and health education to the patients, we refer them to social workers if they are not working. They must have a balanced diet before taking treatment. So, the social worker arranges food parcels and social grants for six months or more, depending on the condition, as the others get permanent social grants. "For depressed patients, we refer them to a psychologist to help them emotionally. We have a multi-disciplinary team like physiotherapists/occupational therapists etc., depending on the patients' needs during the assessment."

Researcher: Is there anything important you would like to share with me?

Participant: "Let me start with the challenges. We are out of TST (Tuberculin skin test). It has been out of stock for over four (4) months now. If there is a TB patient and there is a family contact and amongst them there are children under five, we need to do a Mantoux test (PPD). In the absence of TST, it becomes a problem as you have to book the patient to come and see a doctor. The doctor will refer the patient to another facility for an X-ray and must bring it back to the doctor. So, the patient is doing ups and downs and they end up not coming back. We do have an X-ray department but is not functioning."

"Another challenge is that there is no TB focal nurse. We work there in turns. No one is willing to work with TB for five days. There was a focal nurse who left. So, there is no quality, as there is nobody who is stationed at the TB department. The person working there is working at other departments and will only go there when getting the chance. So, the patient can come to fetch TB treatment and must wait for a long time. You may find that the nurse is busy with casualty, maternity or immunisation in other departments, is only when she is finished that she can attend to TB patients. This can lead to the patients defaulting to treatment. Most of the nurses are not willing to work with TB, as some nurses contracted TB before, they fear working with TB."

"Another problem is that there is a poor screening of TB, leading to undiagnosed TB. In consultation rooms, there is a PHC tick register. Some nurses just tick during examination for TB."

"We don't have a functioning X-ray department and we don't have TST. We rely only on Gene-Expert (the sputum). At times you want to confirm, let's say you have HIV positive patient who is coughing, then gives you sputum for Gene-

Expert and is negative. However, you want to do some more tests to rule out TB still. So, you have to refer the patient to the doctor, be referred for an X-ray somewhere and come back. It is a long process, tiring and unfair to the patient. It is also money for the patient. We now rely on Gene–Expert, which is not so reliable. I would say that out of ten patients with TB, three of them tested negative with Gene-Expert, luckily, I did refer them for X-ray, and the X-ray revealed TB. The high TB defaulter rate, I would say, is contributed to the way TB is managed here. The thing is, once you get a new TB patient when you initiate treatment, you have to link the patient to the community health worker (CHW). You have to check the address and the CHW working in that area and inform her to monitor the patient. However, at times is not done like that."

Researcher: Go on, madam, anything else to share with me? Participant: "No."
Researcher: That's all I wanted to interview you about, thank you.

SAMPLE INTERVIEW - COMMUNITY HEALTH NURSE (CHN05)

Researcher: Afternoon Madam Participant: Afternoon, Sir

Researcher: I'm Kenny Sebothoma. I'm here to interview you about TB as we agreed. Participant: Okay

Researcher: Would you like to share with me your experiences since you work with TB regarding health promotion programs?

Participant: "Our challenge here, let me start by saying that TB is an interesting program, it all needs passion and dedication, but unfortunately, we are working with a community that is poverty stricken. They are not working most of them and are relying on social grants that take a long time before being approved.

Of course, they come from clinics and most of them come with ambulances. When going back, there is no transport hence most of them don't adhere to their appointments or come back at all. The district decided that all the patients should start TB treatment in the hospital here (Out- patient TB clinic) and be referred to follow up at their nearest clinics.

However, some prefer to do their follow up here and still, they are not reliable some do come and some don't. Now it forces us to engage with other stake holders like ORAM (Non-Governmental Organization).

We have limited resources for tracing, now we have to liaise with our partners. There is a tracing team at ORAM and we ask them to trace Mr so and so because it is a TB defaulter so that we can meet with him halfway. Then still above all, we still experience challenges as patients are not honest with their physical addresses and contact numbers.

Most of our clients here are the ones giving us challenges, I want to be more specific, our nearest village is that one, and it is very big. So if you don't have the correct physical address and contact number, you struggle to trace them. However, the good thing in a way, we have the Primary Health Care (PHC) re-engineering team that helps us a lot. They do succeed as the community health workers are from the same villages. They really try, but if you say trace five clients, they cannot bring five. So it takes a longer time because like here, he will be Mr so and so and in the village is another name. So at times, when

the tracers come back, they will say they did not find him and after a day or two, the same person who was not found will be here. From my observation, they just hide from the tracers. So when we see him, we do not question him, we just continue. We emphasise health education and step up adherence counselling about treatment adherence.

Researcher: What do you do with step up adherence exactly?

Participant: "You stay with the client, you counsel and show him/her the importance of TB treatment adherence. Then we do an agreement. You say look here, you gave me the wrong address and contact numbers, and now you meet me half way, you see. Furthermore, you engage the same client with the PHC re-engineering team or community health workers for supervision. However, if still difficult with the community health workers, you engage the PHC re-engineering team to go and assist the poor community health workers.

Researcher: "What is your role/ contribution regarding TB health promotion for the families with members diagnosed with TB?

Participant: "The families, when they are here, is the time to liaise with them and assist them. We ask them, like, we start with health education. We say Mr so and so is having TB, now you have to behave like this, eat the correct nutrition, and exercise. If we see the family is poverty stricken, we have a dietician and social worker here. We engage them so that they continue with care and support. We too, when they come for check-ups, give them the support.

Researcher: "**How are the Centre of disease control (CDC) supporting you?**

Participant: "The CDC people come almost every month. They come here to check us and if there are new TB trends, they make an appointment and start with us, and introduce the new system. We then make appointments for the other staff and engage them. We share information so that it does not end up with this house dealing with TB only. The CDC disseminate their information.

Researcher: "Is there anything important you would like to share with me?

Participant: “An important thing for now, which can improve TB, as I would say in our institution, I don’t know in others. If we can change our mindset about TB and even HIV, I think I should involve them as they are related. They must like, I think, change their mindset and see the importance of having knowledge about TB. They should not see it as a program, therefore, the people dealing with TB are out there, and then we can win this TB battle. But as long as people are resisting TB, pushing it towards others, then we can’t. That’s my everyday dream that if one day I get into this facility, then people should say we want to hear more from you about TB, let us join hands so that we all can own it.”

Researcher: “Okay, is there anything else?

Participant: “No “.

Researcher: “Okay, thanks for your contribution, madam. We have come to the end of our interview.