

**PROFESSIONAL NURSES' PERSPECTIVES ON THE IMPLEMENTATION OF  
THE INTEGRATED CHRONIC DISEASE MANAGEMENT MODEL IN MOGALE  
LOCAL MUNICIPALITY, GAUTENG PROVINCE, SOUTH AFRICA**

by

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Submitted in accordance with the requirements for  
the degree of

**MASTER OF PUBLIC HEALTH**

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**SUPERVISOR: Prof TG Lumadi**

**October 2023**

## DECLARATION

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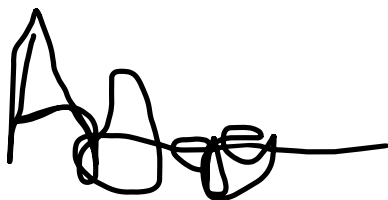
### **PROFESSIONAL NURSES' PERSPECTIVES ON THE MPLEMENTATION OF THE INTEGRATED CHRONIC DISEASE MANAGEMENT MODEL IN MOGALE LOCAL MUNICIPALITY, GAUTENG PROVINCE, SOUTH AFRICA**

I proclaim that this thesis is my own work and that all the sources used or cited have been recognised and acknowledged using comprehensive list of references.

This thesis has also been subjected to reliable software testing to check its originality.

I further confirm that this thesis has never been submitted at any institution of higher learning elsewhere before, including submission to Unisa for any degree purposes.

Signature:



Date:02 October 2023

# **PROFESSIONAL NURSES' PERSPECTIVES ON THE IMPLEMENTATION OF THE INTEGRATED CHRONIC DISEASE MANAGEMENT MODEL IN MOGALE LOCAL MUNICIPALITY, GAUTENG PROVINCE, SOUTH AFRICA**

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## **ABSTRACT**

The implementation of the Integrated Chronic Disease Management model has gained greater recognition and significance within healthcare settings. The purpose of the study was to determine professional nurses' perspectives on the implementation of the Integrated Chronic Disease Management model at the Primary Health Care facility of Mogale Local Municipality in Gauteng Province, South Africa. A descriptive qualitative design was used to explore professional nurses' perspectives on the implementation of the ICDM model. Data was collected through semi-structured interviews with nine professional nurses from three selected PHC facilities using purposive sampling. Data were analysed using thematic analysis and NVivo computer software. The study revealed these themes: professional nurses' perceived benefits, challenges, and recommendations on ICDM model implementation. The challenges included shortage of staff, poor infrastructure, and patients missing scheduled appointments. The study noted the need for adequate staff, infrastructure, and ongoing training to provide professional nurses with the right skills and knowledge to implement the ICDM model.

## **KEY CONCEPTS**

Chronic disease; Gauteng Province; Implementation; Integrated Chronic Disease Model; Mogale Local Municipality; Perspectives; Primary healthcare facility; Professional nurses; South Africa; West-Rand District.

**MAIKUTLO A BAKI BA TSEBA MABAPI LE HO KENYA TSEBETSONG  
TSAMAISO YA BOHLOKO BA MOSHWELELLA E KOPANETSWENG  
MMASEPALENG WA LEHAE WA MOGALE, POROFENENG YA GAUTENG,  
AFRIKA BORWA.**

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**KGUTSUFATSO**

Ho kengwa tshebetsong ha mokgwa o kopantsweng wa taolo ya mafu a moshwelella (ICDM) e fumane tlhokomelo e kgolwanyane le bohlokwa ka hara maemo a tlhokomelo ya bophelo bo botle. Sepheo sa phuputso e ne e le ho fumana maikutlo a baaki ba ditsebi mabapi le ho kengwa tshebetsong ha motlolo wa ICDM setsing sa tlhokomelo ya bophelo ya mantlha (PHC) sa Masepala wa Lehae sa Mogale City profinseng ya Gauteng, Afrika Borwa. Moralo o hlahosang wa boleng o ile wa sebediswa ho hlahloba maikutlo a baaki ba ditsebi mabapi le tshebetso ya motlolo wa ICDM. Dintlha di ile tsa bokellwa ka tsela ya dipuisano tse hlophisitsweng hantle le baaki ba profeshenale ba robong ho tswa ditsing tse tharo tse kgethilweng tsa PHC ho sebediswa disampole tse reretsweng. Dintlha di ile tsa hlahlojwa ho sebediswa hlahlobo ya thematic le software ya komporo ya NVivo. Melemo ya baaki ba profeshenale, diphephetso le dikgothaletso mabapi le tshebetso ya motlolo wa ICDM di ile tsa totobatswa e le dihlooho. Melemo ya baaki ba profeshenale, diphephetso le dikgothaletso mabapi le tshebetso ya motlolo wa ICDM di ile tsa totobatswa e le dihlooho. Diqholotso di ne di kenyeletsa kgaello ya basebetsi, meaho e sa sebetseng hantle le bakudi ba siyo ditulong tse rerilweng. Phuputso e hlokometse tlhokahalo ya basebetsi ba lekaneng, mekgwa ya motheo le kwetliso e tswelang pele ho fana ka baaki ba ditsebi ka tsebo e nepahetseng le tsebo ya ho kenya tshebetsong motlolo wa ICDM.

## **MANTSWE A BOHLOKWA**

Lefu le sa foleng; Porofense ya Gauteng; phethahatso; mohlala o kopanetsweng wa taolo ya mafu a sa foleng; Masepala wa Lehae wa Mogale City; maikutlo; setsi sa mantlha sa tlhokomelo ya bophelo; baaki ba ditsebi; Afrika Borwa; Setereke sa West Rand.

**IMIBONO YABAHLENGIKAZI ABANGOCHWEPHESHE EKUSETSHENZISWENI  
KWEMODELI EHLANGANISIWE YOKULAWULWA KWEZIFO  
EZINGAMAHLALAKHONA KUMASIPALA WASENDAWENI WASEMOGALE,  
ESIFUNDAZWENI SASEGAUTENG, ENINGIZIMU AFRIKA**

INOMBOLO YOMFUNDI: 64045919

UMFUNDI: DAGUME-NDU AVHAATHU SYLVIA

IZIQU: IZIQU ZEMASTERS ZOKUPHILA KAHLE KOMPHAKATHI

UMNYANGO : IZIFUNDO ZEZEPILO, ENYUVESI YASENINGIZIMU AFRIKA

UMELULEKI OHLOLAYO: USOLWAZI TG LUMADI

**IQOQA**

Ukusetshenziswa kwemodeli ehlanganisiwe yokulawulwa kwezifo ezingamahlalakhona (i-ICDM) kuye kwaqashelwa kakhudlwana futhi kwabaluleka kakhulu ezindaweni zokunakekelwa kwezempilo. Inhloso yalolu cwaningo bekuwukunquma imibono yabahlengikazi abangochwepheshe ekusetshenzisweni kwemodeli ye-ICDM esikhungweni sezempilo esiyinhloko (i-PHC) sikaMasipala Wendawo Wedolobhakazi LaseMogale esifundazweni saseGauteng, eNingizimu Afrika. Umklamo ochazayo wezingahle wasetshenziselwa ukuhlola imibono yabahlengikazi abangochwepheshe ekusetshenzisweni kwemodeli ye-ICDM. Imininingo yaqoqwa ngezixoxo ezihleliwe nabahlengikazi abayisishiyagalolunye abangochwepheshe abavela ezikhungweni ezintathu ezikhethiwe zePHC kusetshenziswa amasampula enhloso. Imininingo yahlaziywa kusetshenziswa ukuhlaziya okuhlelwe ngokwezihloko kanye nohlelo lwekhompuyutha i-NVivo. Izinzuzo, izinselelo nezincwadi zabahlengikazi abangochwepheshe ekusetshenzisweni kwemodeli ye-ICDM kwaqokonyiswa njengezihloko. Izinselelo zazihlanganisa ukuntuleka kwezisebenzi, ingqalasizinda embi kanye neziguli ezingafiki ngezinsuku okufanele zibonwe ngazo. Ucwaningo luphawule ngesidingo sezisebenzi ezanele, ingqalasizinda kanye nokuqeqeshwa okuqhubekayo ukuhlinzeka abahlengikazi abangochwepheshe ngamakhono afanele nolwazi lokusebenzisa imodeli ye-ICDM.

## **IMIQONDOMAGAMA ESEMQOKA**

Isifo esingamahlalakhona; isifundazwe saseGauteng; ukuqaliswa; imodeli ehlanganisiwe yokulawulwa kwezifo ezingamahlalakhona; uMasipala Wendawo Wedolobha LaseMogale; imibono; isikhungo sokunakekelwa kwezempilo esiyinhloko; abahlengikazi abangochwepheshe; iNingizimu Afrika; iSifunda saseWest Rand.



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- Gauteng Department of Health-West Rand District Family Medicine for granting me permission to conduct my studies.
- The participants, for their willingness to participate, and ability to share their experiences with me, as well as their insightful ideas.

## DEDICATION

*I dedicate this dissertation to the following beloved people in my life:*

*My late father, Frans Rafele, for my education, and my mother,*

*Nyamukamadi (Khametsi), Maria, for bringing me into the world and their prayers,*

*My husband, Muthewana, for his love, prayers, support, and care for the children,*

*My brother, Dr Mbulaheni Albert, for all his sacrifices and encouragement,*

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## LIST OF ABBREVIATIONS/ACRONYMS

AIDS	:	Acquired Immunodeficiency Syndrome
ART	:	Antiretroviral Treatment
CCM	:	Chronic Care Model
CDPM	:	Chronic Disease Prevention Management
CDs	:	Chronic Diseases
CHC	:	Community Health Centres
COPD	:	Chronic Obstructive Pulmonary Disease
DMPs	:	Disease Management Programs
GDP	:	Gross Domestic Product
HIV	:	Human Immunodeficiency Virus
ICCC	:	Innovative Care for Chronic Conditions
ICDM	:	Integrated Chronic Disease Management
LMIC	:	Low-and-Middle-Income Countries
MDR-TB	:	Multidrug Resistant Tuberculosis
NCDs	:	Non-Communicable Disease
NDoH	:	National Department of Health
NHS	:	National Health Systems
PHC	:	Primary Health Care
PLHIV	:	People Living with HIV
PMTCT	:	Prevention of Mother to Child Transmission
SPO	:	Structure Process Outcome
TB	:	Tuberculosis
WHO	:	World Health Organization

# **CHAPTER 1**

## **ORIENTATION TO THE STUDY**

### **1.1 INTRODUCTION**

The Integrated Chronic Disease Management (ICDM) model is a managed-care strategy that was initiated using the concepts of Chronic Care Management and Innovative Care for Chronic Conditions (ICCC). The ICDM model has been recognised by researchers and stakeholders as a promising strategy for improving healthcare delivery in primary healthcare (PHC) facilities. It is an appropriate model for the management of persons suffering from chronic diseases (CDs) (Lebina, Alaba, Kawoga & Oni 2019:2).

Professional nurses are the core of the healthcare system and key stakeholders in the implementation of the ICDM model (Lebina, Oni, Alaba & Kawonga 2020:5; Mahomed & Asmall 2017:2). However, the literature review indicated that previous studies have neglected the qualitative aspect of professional nurses' perspectives on the implementation of the ICDM model. To address the existing literature gap, this study aimed to explore the perspectives of professional nurses on the implementation of the ICDM model at PHC facilities in Mogale Local Municipality of Gauteng Province, South Africa.

In this chapter, an overview of the research study is presented, which includes - the introduction, background, problem statement, purpose of the study, research objectives, research questions, significance of the study, definitions of key terms, theoretical foundations of the study, research methodology and research design, scope of the study, structure of the dissertation, and a summary.

### **1.2 BACKGROUND**

Chronic diseases, often known as 'non-communicable diseases' (NCDs), have become an urgent public health problem globally. Cancer, chronic lung disease, cardiovascular disease, and diabetes are the four most prevalent chronic diseases

(Reiners, Sturm, Bouw & Wouters 2019:1). South Africa, like many other countries around the world, is struggling with a growing burden of NCDs. NCDs prevention and management have become a global concern although, they predominantly affect poor nations, hence, researchers and policymakers are increasingly viewing the treatment of chronic disease as a significant issue (Hajat & Stein 2018:284).

World Health Organization (WHO) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) have invented strategies to combat CDs including the “Innovative Care for Chronic Conditions” (ICCC) framework and the “Chronic Care Model” (CCM) (Lebina 2021:14). Reorganizing and enhancing clinical services, as well as extending treatment of CDs into all areas of countries, are among the UNAIDS recommended ways to combat CDs. Some of the measures recommended by WHO to address the CDs crisis involve the basic management of existing NCDs. This approach aims to prevent premature deaths and enhance the overall quality and long-term health of people who suffer from chronic diseases (WHO 2021:7) As a result, the South African National Department of Health (NDoH) has refocused on improving chronic illnesses’ management to extend life expectancy and improve the efficacy of the health system. Hence, a re-engineered PHC framework was conceptualised, developed, and implemented (Mahomed & Asmall 2017:2).

The implementation of the ICDM model has garnered increasing attention and significance within healthcare settings. The ICDM model is made up of four interconnected intervention phases - facility reorganization, clinical supportive management, assisted self-support, and strengthening of support systems and structures outside the facility (Lebina, Oni, Alaba & Kawonga 2020:3). Mahomed and Asmall (2017:2) claimed that the ICDM marks a significant transformation in managing patients with CDs, by moving away from a disease-centred paradigm and toward a patient-centred care model, in which patients are informed and taught to play a proactive role in their well-being. The researcher recognised the significance of professional nurses as essential stakeholders in ICDM since they have the ultimate responsibility for implementing all ICDM operations at the PHC facility level.

The ICDM model is aimed at increasing facility competency and efficiency, patients' better perception and engagement in the care of their CDs, and a positive patient and

healthcare professional experience. The model proposes reorganizing the facility for better performance through ways, like - improve bookings and patient flow, strengthening clinical management support by providing training and guidance on the delivery of the ICDM model, providing supervised self-management through participation, providing support at the community level, and prioritizing health promotion and population screening to achieve the ICDM model's outcomes (Lebina 2021:15).

The ICDM model has great objectives for enhancing operational efficiency and patient outcomes in facilities, however, its implementation, and long-term sustainability depend on active management support and positive experiences (Mahomed & Asmall 2017:3). Furthermore, the researchers argue that the implementation of the ICDM model also serves the purpose of reducing the treatment isolation for individuals with multiple chronic diseases. This is supported by Lebina (2021:15), who noted that the clinical supportive management guideline advocates for the integration of healthcare providers. This reduces treatment isolation for patients with various chronic diseases.

There is scientific evidence that the ICDM model improves patient care outcomes, however, there are barriers to implementing the ICDM model (Ameh, Klipstein-Grobusch, Musenge, Kahn, Tollman & Gómez-Olivé 2017:2). The factors which are generally acknowledged by researchers to have the potential to negatively affect the ICDM model's sustainability and scale-up are - inadequate leadership, subpar staff involvement with the ICDM model, lack of responsiveness or adaptability to external factors, and infrastructure limitation (Mahomed, Asmall & Voce 2016:1).

Godongwana et al (2021:1) indicated several barriers to the ICDM's implementation, including unclear guidelines for integrated care delivery and limited support. Lebina et al (2020:2) also identified various factors that determined adherence to the implementation of the ICDM model in South Africa. A 2017 cross-sectional descriptive study conducted at PHC clinics in South Africa, which examined various professional nurses' opinions on their satisfaction with the ICDM model's implementation, concluded that professional nurses expressed satisfaction with the implementation of the model. Nonetheless, the findings suggested that more studies are needed to

ensure that the ICDM model is implemented successful (Mahomed & Asmall 2017:1-4).

The purpose of the present study was to determine professional nurses' perspectives on the implementation of the ICDM model at selected PHC facilities in Mogale Local Municipality, Gauteng Province, South Africa. The present study hopes to give insight into professional nurses' perspectives on the ICDM model implementation at three selected PHC facilities of Mogale Local Municipality, Gauteng Province.

### **1.3 RESEARCH PROBLEM**

The purpose of implementing the ICDM model is to reduce treatment isolation for people with numerous chronic diseases, although, increased efficiency and satisfaction among healthcare personnel and patients, and ultimately improved clinical outcomes were also anticipated (Mahomed & Asmall 2017:3). In South Africa, the ICDM model is also gaining acceptance as an effective approach for addressing the diverse demands of patients with chronic diseases (Akugizibwe, Zalwango, Namulundu, Namakoola, Birungi, Okebe, Bachmann, Jamie, Jaffar & Van Hout 2023:2). However, the literature review revealed a dearth of literature on professional nurses' perspectives on the implementation of the ICDM model.

According to Lebina (2021:15), the professional nurses at PHC facilities in South Africa still experience some challenges when implementing the ICDM model. The challenges include shortage of equipment, drug stock-outs, insufficient monitoring, and long waiting times, which Malakoane, Heunis, Chikobvu, Kigozi, and Kruger (2020:2) attest continue to plague PHC facilities in South Africa, including those at Mogale Local Municipality, Gauteng Province.

A lack of appropriate training in the ICDM model implementation and support, and resistance by healthcare professionals to the ICDM model adaptation are some of the issues which need to be dealt with (Godongwana et al., 2021:7-8). Some of the challenges highlighted, from a consultation with two nursing staff in the implementation of the ICDM model, in the study area were - unsatisfactory experience with the ICDM

model implementation, poor supervision, patients who miss their scheduled appointments, and the problem of feasibility of the initiative.

A previous study conducted in South Africa in 2018 by Bosire et al (2021:16) discovered that while the ICDM model exists, it is not implemented in most of the PHC facilities in South Africa. In addition, previous studies done on several PHC facilities of Mogale Local Municipality in West-Rand District, Gauteng Province focused on the challenges in the implementation of the ICDM model without ascertaining nurses' views about the model (Godongwana et al., 2021:7; Lebina 2021:15; Malakoane et al., 2020:2).

Consequently, the researcher identified a gap in the literature on how the implementation of the ICDM model can be improved. Furthermore, the aforementioned lack of data on professional nurses' perspectives on the implementation of the ICDM model, given their vital role as implementers of the ICDM model at PHC facility, highlighted a literature gap on the perspectives of professional nurses on the implementation of the ICDM model. This has motivated the need to explore professional nurses' perspectives on the model, challenges experienced during implementation, and factors that can improve the implementation of the ICDM model at PHC facilities, particularly, in the Mogale Local Municipality.

## **1.4 PURPOSE OF THE STUDY**

### **1.4.1 Research purpose**

The purpose of this study was to determine the perspectives of professional nurses on the implementation of the ICDM model at selected PHC facilities in Mogale Local Municipality of Gauteng Province, South Africa.

### **1.4.2 Research objectives**

- To explore and describe the perspectives of professional nurses on the implementation of the ICDM model at PHC facilities in Mogale Local Municipality.
- To identify challenges experienced by professional nurses when implementing the ICDM model at PHC facilities in Mogale Local Municipality.
- To identify factors that can improve the implementation of the ICDM model at PHC facilities in Mogale Local Municipality.

### **1.4.3 Research questions**

- What are professional nurses' perspectives on the implementation of the ICDM model at PHC facilities in Mogale Local Municipality?
- What are the challenges experienced by professional nurses when implementing the ICDM model at PHC facilities in Mogale Local Municipality?
- What are the factors that can improve the implementation of the ICDM model at PHC facilities in Mogale Local Municipality?

## **1.5 SIGNIFICANCE OF THE STUDY**

This study will be helpful because of the need to understand how the implemented ICDM model is performing as the model is seen as a promising strategy for improving healthcare delivery. Exploring and understanding the perspectives of professional nurses of the ICDM model will assist in strengthening its implementation at the provincial, district, and facility levels.

Specifically, the study findings on the factors that can improve the implementation of the ICDM model will benefit NDoH, provincial, district, and facility teams as they will be directed on how to efficiently expand the integration of chronic disease management programs across other districts in Gauteng and across other provinces in South Africa.

In addition, the findings of the study might have policy implications for low- and middle-income nations that are seeking empirical evidence on the feasibility of implementing an ICDM model. In addition, the study's findings will enhance the health professionals' understanding of the factors that can improve the ICDM model's implementation, thereby, significantly, improving the model's sustainability, scale-up, and scale-out.

## **1.6 DEFINITIONS OF KEY TERMS**

Noori (2021:2) states that defining key terms gives a better overview of a study's content, hence, the process will help the audience to understand what the study is all about. The terms - chronic diseases, communicable diseases, implementation, ICDM, model, non-communicable diseases, perspectives, primary health care facility, and professional nurses are the study's key concepts, therefore they are elaborated below.

### **1.6.1 Chronic diseases**

Chronic diseases are defined by the World Health Organisation (WHO) as non-communicable diseases (NCDs) that persist for a long time and are the result of a combination of genetic, physiological, environmental, and behavioural variables (WHO 2022). In this research study, chronic diseases refer to a persistent or ongoing medical conditions, either communicable or non-communicable, with the potential for worsening over time and require long-term care (Toledano-Toledano, Moral de la Rubia, McCubbin, Cauley & Luna 2020:3). The following chronic diseases are addressed by the ICDM model - hypertension, diabetes chronic obstructive pulmonary



disease (COPD), asthma, epilepsy, and mental health illnesses - that are to be managed at a PHC level.

### **1.6.2 Communicable diseases**

The term "communicable diseases" refers to chronic disease that can be spread by direct contact with an affected person, their secretions, or through other indirect methods (Hammer, Brainard & Hunter 2018:2). In the context of this study, communicable diseases focused upon are Tuberculosis (TB) and Human Immunodeficiency Virus (HIV)/ Acquired Immunodeficiency Syndrome (AIDS).

### **1.6.3 Implementation**

For this research's purposes, "implementation" is the act of practising a plan, a technique, or any concept, idea, model, guideline, practice, or strategy. Sofia (2022:1) refers "implementation to the practical execution or application of a plan, method, design, idea, model, specification, standard, or policy in order to achieve a specific objective". "Implementation", as used in this research study, refers to putting an ICDM program into action.

### **1.6.4 Integrated Chronic Disease Model (ICDM)**

ICDM is a sustained care paradigm that was piloted in three South African regions in 2011 (Ameh et al., 2017:257). The ICDM is a paradigm that incorporates a public health strategy to empower individuals to take charge of their health at the community levels (Mahomed, Asmall & Freeman 2014:1724). In this study, the ICDM model is a strategy developed for CDs management at a PHC facility.

### **1.6.5 Model**

According to Noori (2021:31), “a model is a representation of things, ideas, principles, or procedures that are frequently imitated or emulated”. For research purposes, a model is a detailed representation of a phenomenon, a character, or a process”. In this study, a model outlines aspects that are required to enhance the treatment of patients with CDs, aimed at improving their wellness through a health-care strategy.

### **1.6.6 Non-communicable diseases**

According to the World Health Organisation, the term "non-communicable diseases" refers to medical diseases or illnesses that are, by definition, non-infectious, hence, cannot be transmitted from one person to another (WHO 2022). Non-communicable diseases are a broad category of diseases that include - chronic respiratory conditions, cancer, diabetes, and cardiovascular disorders (Nethan, Sinha, & Mehrotra 2017:2005). In this research “non-communicable diseases”, thus, refer to diseases such as hypertension, diabetes, chronic obstructive pulmonary disease (COPD), asthma, epilepsy, and mental health illnesses (NDoH 2014:16).

### **1.6.7 Primary Health Care facility**

Hattingh, Dreyer and Roos (2013:70) cited in Meno (2017:5), identify a Primary Health Care (PHC) facility as a health institution that provides people, families, and the community with comprehensive integrated care services. In the context of this research, a PHC facility is an institution that is supervised and administered by an Operational Manager and renders certain services, including health condition diagnosis, care and treatment, encouragement of healthy well-being, as well as managing persistent and chronic conditions.

### **1.6.8 Professional nurses**

A professional nurse is a healthcare worker who has received specialized training, has passed recognised national examination, and is licensed, by the state, to deliver and coordinate patient care. The definition of a professional nurse is based on the scope of practice in healthcare facilities where nurses are responsible for thorough health evaluations as well as planning for person-centred, life-sustaining and life-affirming care as part of their scope of practice (Meno 2017:5). They serve as staff mentors and role models, advocating for essential resources and coordinating with multidisciplinary teams as well as local, state, and regional authorities to guarantee safe, high-quality care. Professional nurses in this context are essential role players as they oversee implementing and practising of the ICDM model at the PHC level.

## **1.7 THEORETICAL FOUNDATIONS OF THE STUDY**

### **1.7.1 Research paradigm**

Paradigms are preferred ways of comprehending reality, accumulating knowledge, and acquiring data about the world (Tracy, 2019:49). A paradigm, according to Alharahsheh and Pius (2020:40), consists of different aspects that may be categorized as ontology, epistemology, methodology, and axiology. According to Guba and Lincoln (1994) cited in Khatri (2020:1436), a paradigm is a fundamental set of beliefs or worldview that provides guidance for research actions or investigations. It may be deduced that a research paradigm is a method that a researcher uses to get knowledge, for example, about people's social views.

In qualitative research, people's experiences are context-bound, meaning they cannot be separated from time, place, or the mind of the human actor. The qualitative method is frequently connected with interpretivism (Alharahsheh & Pius 2020:43). Hence this paradigm was used in this study. The researcher explored the perspectives of professional nurses as their views can only be interpreted and cannot be directly observed or quantified, thereby, in line with interpretivism.

### **1.7.1.1 Interpretive paradigm**

The interpretive paradigm is regarded as the "anti-positivist" paradigm since it was formed as a reaction to positivism. It is also known as constructivism since it emphasizes an individuals' power to construct their own meaning (Okesina 2020:60). Pitney, Parker, Mazerolle and Potteiger (2020:25) assert that the interpretive paradigm has been widely employed in qualitative investigations, where researchers collect data in the form of written or spoken language and they do not marginalize the participants during data collection. In the interpretivism paradigm, the goal is to comprehensively understand participants' created meaning of the studied topic, through their answers to the research questions which required the researcher to fully understand the perspectives of the participants. The development of this paradigm, according to Alharahsheh and Pius (2020:40), is around the following assumptions - ontology, epistemology, methodology, and axiology.

### **1.7.1.2 Ontology assumptions**

Ontology is explained by Palermo, Reidlinger and Rees (2021:253), as the foundation of inquiry, or the nature of reality, which involves reflection on what is real. For Creswell and Poth (2016:16), the ontological question concerns the nature and characteristics of reality. In this study, this process was achieved through the researcher using quotations and themes from participants' statements to demonstrate their various perspectives on the implementation of the ICDM model at PHC facility. In this study, audio data was transcribed to obtain quotations and themes using NVivo software.

### **1.7.1.3 Epistemology assumptions**

Palermo et al (2021:253) elaborated epistemology as a philosophical concept that examines the nature of human knowledge or the nature of knowing. To achieve this,

a rapport must be established between researchers and participants/respondents/interviewees. Similarly, Creswell and Creswell (2018:275) claimed that the accuracy and validity of research findings are positively influenced by the researcher's knowledge and level of experience with participants in their real surroundings. Furthermore, while conducting a qualitative study, researchers should interact closely with the participants. Therefore, qualitative researchers carry out their study in the "field," where the participants live and work, as these are significant settings for an understanding of what they are saying. The more time researchers spend in the "field" or getting to know the participants, the better the interaction and the quality of the information or data they provide.

The researcher conducted a study with professional nurses who are trained and are expected to understand the ICDM model because they use it regularly. The research sites were ICDM model-initiated facilities, where the researcher conducted in-depth interviews with professional nurses. To ensure prolonged engagement, the researcher conducted interviews with participants until data saturation was reached. Furthermore, the researcher provided flexibility in the data collection method to accommodate the preferences and schedules of nurses. Researcher spent an extensive period at PHC facilities, prioritizing patient consultations as requested by participants.

#### ***1.7.1.4 Methodology assumptions***

The methodology is a research philosophy plan that explains how a study is to be carried out and, along with other things, outlines the approaches and methods to be utilized in it. The methodology comprises of the methods, approaches, and procedures used to better understand a topic (Alharahsheh & Pius 2020:40), and for this study an exploratory descriptive qualitative design was exploited. A qualitative approach was selected for this study since the researcher was unfamiliar with the participants' perspectives. In-depth, semi-structured, face-to-face interviews were used by the researcher to better understand how professional nurses felt about the ICDM model's implementation at selected PHC facilities.

### **1.7.1.5 Axiology assumptions**

Axiology refers specifically to the ethics that should be considered while conducting research. Kivunja and Kuyini (2017:34) outline the involvement of the researcher in the subject under study as the interpretation of the findings of the study should reflect the researcher's values. Axiology assumptions in this study are premised on the fact that the researcher should not cause harm, treat others fairly, and interpret the findings appropriately.

### **1.7.2 Theoretical framework**

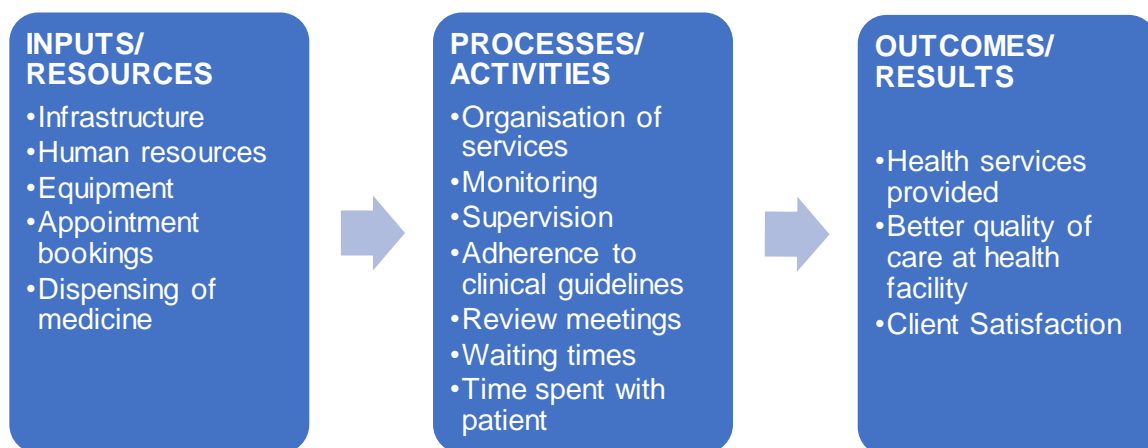
Varpio, Paradis, Uijtdehaage and Young (2020:990) identify theoretical framework as a representation of the researchers' application of a theory in an area of study. This study used the Modified System's Framework for health-service delivery (NDoH 2014:62). It is derived from Donabedian's framework focusing on structure, process, and outcome (SPO) - usually represented as a chain of three boxes (LoPorto 2020:42). The Modified System's Framework, however, is comprised of inputs, processes, and outcomes/results (IPO). The rationale for choosing the Modified System's Framework for health-services delivery, is that it is commonly used as a reference to determine healthcare quality, and it was applied to conceptualize the integrated framework in South Africa (NDoH 2014:62). An explanation of the IPO framework is undertaken in the sections below.

**Inputs/Resources** are resources required to complete a process (NDoH 2014:62). In the context of this study, inputs include, method of data collection adopted (interviews), potential variables and factors that might have had an effect on the perspectives of professional nurses. Thus, information about their demographic characteristics, work (years) experience, training, and PHC facility in which they are working is included.

**Processes/Activities** are a collection of tasks that interact with each other to accomplish a goal (NDoH 2014:62). In this research study, processes refer to perceived benefits surrounding the outcomes of patients. In particular, adequate medication supply and alleviation of stigma relating to diseases.

**Outcomes/Results** are defined as the results of the interaction between inputs and processes (NDoH 2014:62). In the present study, these stand for the satisfaction of the professional nurses with the implementation of the ICDM model as well as professional nurses' perspectives on the care they are providing using the ICDM model. In line with the study findings, recommendations were provided for the effective implementation of the ICDM model. This included provision of adequate staff, infrastructure, and regular/more training for professional nurses.

According to Modified System's Framework, providing good inputs leads to a good process, which leads to good outputs/outcomes. In other words, to provide effective health care, the inputs, processes, and outcomes of care must achieve the intended objectives (NDoH 2014:62). To answer the study question, information on the perspectives of professional nurses on the implementation of the ICDM model was drawn from "inputs", "processes", and "outcomes." The interview questions were consistent with the concepts and constructs of the Modified System's Framework. The researcher used the IPO constructs as themes focusing on one outcome of the ICDM model, namely, improved operational efficiency and high quality of care as seen in Figure 1.1 below. The study focused on two activities of the ICDM model, namely, reorganization and clinical management support as they occur at the facility level.



**Figure 1.1: Modified systems framework for health service delivery**

Source: ICDM Manual (2014:62) <https://www.knowledgehub.org.za>.

The Modified Systems Framework provided the variables of this study and ensured that the researcher was not diverging from the identified objectives. As previously stated, data collection was guided by the Modified Systems framework. Theoretical framework application in the study: The interview questions were in line with the IPO concepts and constructs of the Modified System's Framework. The theoretical framework guided the researcher in determining the most suitable approach to study and an appropriate tool to be used in the study. Furthermore, the theoretical framework enabled the researcher to analyse and categorise variables at PHC facility level of the healthcare sector. For this reason, the data analysis process involved the application of the framework, wherein the data was categorized and interpreted according to the IPO concepts and constructs outlined within the Modified Systems framework for health service delivery. Moreover, the theoretical framework enabled the researcher to gain an in-depth understanding of both challenges and possibilities related to the ICDM model implementation processes (objective 2 and 3).

## **1.8 RESEARCH METHODOLOGY AND RESEARCH DESIGN**

### **1.8.1 Research design**

Polit and Beck (2017:743) describe research design as the systematic methods used to organize a study and gather and analyse data. An exploratory descriptive qualitative design was used to conduct the study. According to Brink, Van der Walt and van Rensburg (2018:54), the research design is the most suitable method for addressing the research question and attaining the research objectives. Hunter, McCallum and Howes (2019:5) suggest that the literature in exploratory descriptive qualitative study is relatively short in comparison to other qualitative methods. The exploratory descriptive qualitative method was the most appropriate to achieve the objectives of the research study since the literature was short and the purpose of this study was to



determine the perspectives of professional nurses which had not been explored before.

### **1.8.2 Research method**

According to Creswell (2014:34), a research approach refers to a systematic plan and procedure that outlines the various steps involved in conducting research, starting from broad assumptions and leading to specific methods of data collection, analysis, and interpretation. The researcher adopted a qualitative approach to fully explore the topic in question. This approach was used because it enabled an in-depth exploration of professional nurses' perspectives on the implementation of the ICDM model. According to Stutterheim and Ratcliffe (2021:9), "qualitative approach aims to generate knowledge by gaining a comprehensive understanding of peoples' perspectives, the subjective meanings they attribute to those perspectives (sense-making), and the social and cultural contexts that influence their perspectives".

#### **1.8.2.1 Sampling**

The researcher used a non-probability purposive sampling procedure to identify the target population for this study. Etikan, Musa and Alkassim (2016:2) point out that purposive sampling is the deliberate choosing of a participant depending on the qualities the person possesses.

#### **1.8.2.2 Setting**

The study was carried out in Mogale City Local Municipality, located in the West-Rand District of Gauteng Province, South Africa. Three out of the 12 ICDM model initiated PHC facilities in the West-Rand District were identified for this study. The selection criteria required the PHC facility to be implementing the ICDM model, located in Mogale City Local municipality. Furthermore, the PHC facility was required to operate from Monday to Friday/Saturday, providing services for a duration of 8 to 24 hours.

### **1.8.2.3 Population**

Professional nurses utilising the ICDM model were the target population for this study. Marczyk, DeMatteo and Festinger (2021:18) state that population in research refers to all individuals who are of relevance to the topic. In this study, the target population included 11 professional nurses implementing the ICDM model at the selected PHC facilities.

### **1.8.2.4 Sample**

The inclusion sampling criteria included: a permanently employed professional nurse with a degree/diploma. One to ten years of experience implementing the ICDM model and an additional training on the ICDM model were decisive factors. Two participants were not willing to participate in the study, therefore, they were excluded from the study. The researcher, therefore, involved professional nurses who met the inclusion criteria and were willing to participate in the study. In total, 9 professional nurses were interviewed. Data saturation was achieved with participant number 8 and an additional participant was then included to determine if any new information emerged. Participant number 9 did not introduce any new theme. Hence, the final sample size was 9 professional nurses.

### **1.8.3 Data collection method**

The researcher conducted individual face-to-face semi-structured interviews with the professional nurses who met the inclusion criteria, and the interviews were conducted during working hours. A pre-tested interview guide made up of open-ended questions (Annexure G) was used to collect data. The researcher employed a tape recorder to record the interviews; in addition, field notes were taken. Additional information is presented in Chapter 3.

#### **1.8.4 Data analysis**

The NVivo software was used to analyse the collected data and a thematic analysis was used to synthesize the merging themes. Further information regarding the specific research methodology and research design is provided in Chapter 3.

### **1.9 SCOPE OF THE STUDY**

The purpose of this study was to determine the perspectives of professional nurses on the implementation of the ICDM model at selected PHC facilities in Mogale Local Municipality of Gauteng Province, South Africa. The study involved 9 participants over the age of 18 years working with the ICDM model, who could be reached by personal visit to their workplaces, which were PHC facilities in Mogale Local Municipality.

Only professional nurses meeting the inclusion criteria were eligible for the research. Other healthcare professionals like pharmacists, were excluded from the study, as a result, it is not possible to generalise the findings.

### **1.10 STRUCTURE OF THE DISSERTATION**

The research was divided into five core chapters and are organized in the following manner:

#### **1.10.1 Chapter 1: Orientation of the study**

Chapter 1 offered an introduction and background to the study as well as providing details on the problem statement, theoretical framework, definitions of major concepts, study aim, objectives, research questions, and structure of the research.

### **1.10.2 Chapter 2: Literature review**

In Chapter 2, what was already known and unknown about the area of the current study was outlined. To achieve this, a literature review was conducted from both global and local perspectives. Related literature on the study topic from reputable sources was reviewed.

### **1.10.3 Chapter 3: Research design and method**

The research paradigm and design, as well as the methodology that was utilized to perform the study are presented in this Chapter 3. Topics covered include research design, research method, population, sampling, data collection approach and method, development and testing of the data collection instrument, data collection process, ethical considerations related to treatment of research participants, data collection, data analysis, and the rigour of the study.

### **1.10.4 Chapter 4: Analysis, presentation, and description of the research findings**

The data collected, their analysis, research results, and an overview of the research findings are presented in Chapter 4. The qualitative interview data were recorded using a tape recorder, transcribed, analysed, and interpreted using the NVivo software.

### **1.10.5 Chapter 5: Conclusions and recommendations**

In Chapter 5, a summary and interpretation of the research findings, conclusions, and recommendations, including the contribution and limitations of the study is presented.

## **1.11 SUMMARY**

This chapter provided the context and background of the study, described the research problem, presented the purpose of the research, identified the research objectives and questions, described the significance of the study, identified, and described the key terms. In this chapter, the theoretical foundations of the study, the research methodology and research design, and provided the scope and structure of the study was also introduced. In the next chapter, a review of the literature pertaining to the study's topic is given.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

This research's overall focus was outlined in Chapter 1, while a literature review is discussed in this chapter. The purpose of this study was to determine the perspectives of professional nurses on the implementation of the ICDM model at PHC facilities of Mogale Local Municipality Gauteng Province, South Africa. A literature or information review, according to Snyder (2019:333), entails gathering and synthesizing previous scientific exploratory studies. A literature review places the research project in context by demonstrating how it fits into a specific sector, finding knowledge gaps, as well as assisting in formulating a research challenge.

Literature review, according to Paul and Criado (2020:1), is a critical examination of previously published studies. Oztemel and Gursev (2020:1) claim that perusing the literature on a specific topic indicates its current standing, hence, the primary goal of a literature review is to keep the researcher up to date on current knowledge and practice in the field of study.

Accordingly, the purpose of this literature review was to offer a justification for the investigation, design the interview questions, and illustrate topics that are significant to the research. Professional nurses, chronic diseases, and the ICDM model, as well as related studies are explored in the literature. The researcher used appropriate articles from the internet and journals, libraries, relevant records from the NDoH in South Africa, and reputable organizations such as the WHO, to conduct the literature search.

The reviewed literature indicated the paucity of exploratory descriptive qualitative research on the implementation of the ICDM model at PHC facilities in South Africa, thereby, generating a precise study topic and problem statement for the research. To provide a comprehensive context to the research subject, the following will be explained: chronic disease, global burden of CDs, local burden of CDs, responses to the increasing burden of CDs (globally and locally), the main integrated intervention

phases of the ICDM model and the benefits of using the ICDM model in primary health care. Also reviewed is literature on ICDM Model implementation, key players, and their roles in the implementation of the ICDM model, the role of the professional nurses in the implementation of the ICDM model, and lastly related studies on the ICDM model at PHC facility level, challenges in the implementation of the ICDM model and factors that can enhance the implementation.

## **2.2 CHRONIC DISEASES**

For this study, chronic disease refers to a persistent or ongoing medical condition, either communicable or non-communicable, with the potential for worsening over time and require long-term care (Toledano-Toledano et al., 2020:3). CDs are significant public health concerns in both LMIC and high-income countries, causing 60% of all deaths. CDs are defined by the WHO, as diseases that last for a long time and are caused by a mix of genetic, physiological, environmental, and behavioural factors (Nazarov, Manuwald, Leonardi, Silvaggi, Foucaud, Lamore, Guastafierro, Scaratti, Lindström & Rothe 2019:2).

According to the Centre for Disease Control and Prevention (CDC), CDs are problems that persist for a year or more, need continuous medical care, restrict everyday activities, or both (Airhihenbuwa, Tseng, Sutton & Price 2021:1). In the context of this study, the CDs addressed by the ICDM model are hypertension, chronic obstructive pulmonary disease (COPD), asthma, epilepsy, mental health illnesses, tuberculosis (TB) as well as people living with HIV and AIDS (PLHIV) who are managed at the PHC level.

Neuhouser (2019:2) notes that the etiological factors of CDs are diverse and numerous, although, the study recognized age, family history, genetic disposition, weight, physical inactivity, smoking, alcohol use, and diet as risk factors. Anderson

and Durstine (2019:1) highlight that CDs are commonly caused by a poor lifestyle, environment, or heredity.

### **2.2.1 Global burden of chronic diseases**

According to Merson, Black and Mills (2020:335), chronic diseases are one of the major concerns to global human health, which WHO was established to combat, however, there is substantial evidence that the prevalence of CDs is rising, worldwide (Neuhaus 2019:1). The populations throughout the world are living longer and are more likely to get chronic diseases. The burden of CDs is a major problem for middle- and low-income countries' healthcare systems; there is currently a significant burden of illnesses in many developing countries. Italy, for example, has the most prevalence of diabetic patients and the highest incidences of several contagious diseases, like TB. Prevalence of obesity which is a prevalent risk factor for CDs such CVD, type 2 diabetes, and several cancers is well documented in low to middle income countries; a country like the United States of America has the highest prevalence of obesity (Anderson & Durstine 2019:4).

Bigna and Noubiap (2019:129) assert that NCDs account for seven of the top ten worldwide causes of mortality. Heart diseases currently account for 16% of all deaths, making it the leading cause of mortality. Between 2000 and 2019, diabetes mortality surged by 70% worldwide, with an 80% increase in deaths, among men. The estimates, however, indicated a worldwide substantial reduction in communicable disease mortality. Additionally, the estimates highlighted the heavy burden that communicable diseases such as tuberculosis and HIV/AIDS persist to impose on low-income countries; from the estimates, communicable diseases continue to be the fourth leading cause of mortality in Africa.

According to WHO's 2021 estimates, NCDs are accountable for 41 million deaths every year, with 77% of NCDs mortality occurring in low-and middle-income countries. Estimates predict that by 2030, NCDs would be accountable for 60% of all mortality worldwide (WHO 2021:4).



### **2.2.2 Local burden of chronic diseases**

According to recent data published by the International Diabetes Federation, the current prevalence of diabetes in Sub-Saharan Africa is 19 million. The report estimated that diabetes will affect 47 million people in Sub-Saharan Africa by 2040 (Adenekan, Mensah & Amissah-Arthur 2023:96). South Africa, like every other developing country, has a high CDs burden and appears to be failing to address it (Maphumulo & Bhengu 2019:5). The incidence of HIV and AIDS in Africa, particularly in Sub-Saharan Africa, has impacted negatively on healthcare systems, leaving countries incapable of meeting the needs for high-quality care. Ntusi (2021:74) notes that NCDs are the major causes of death in Sub-Saharan Africa including South Africa, accounting for 35% of all fatalities in Sub-Saharan Africa.

The WHO's 2019 Global Health estimates indicated that NCDs contributed to 51% of total deaths (WHO 2020:171). According to the Centre for Strategic and International Studies (CSI), South Africa continues to be the epicentre of HIV with 20% of new CDs arising from HIV infections. Currently, South Africa, which has a population of 58 million, is burdened by the most common CDs including HIV/AIDS (7 700 000), tuberculosis incidences (3 010 005), diabetes (3%), Hypertension in 18+ years (27%), and mental health in adults (16%) (Lebina 2021:23).

### **2.2.3 Global response to chronic diseases**

To address the growing burden of chronic illnesses, numerous programs, such as task shifting, community-based chronic disease self-management, and patient-centred treatment have been implemented worldwide (Merson et al., 2020:353). The CCM was initiated in the middle of the 1990s by the MacColl Center for Health Care Innovation, as a strategy for managing chronic diseases. The CCM is a prominent framework for managing and implementing care for people suffering from CDs. A more refined version of the model called Improving Chronic Illness Care was created in 1997.

The WHO has developed a model of care called, Innovative Care for Chronic Conditions (ICCC) premised on principles of the CCM. The ICCC framework serves

as a road map for decision-makers looking to improve their health system's ability to manage chronic conditions (Lebina 2021:26). Some multiple efforts have proven effective chronic disease management techniques; however, these control efforts have been limited as efforts are plagued with complicated political and economic issues (Merson et al., 2020:361-365).

Lebina (2021:14) indicates that globally, countries are employing the CCM/ICCC framework principles to CD management initiatives that incorporate disease screening, prevention, and control. Numerous countries, including Ireland, have implemented integrated care programs, namely, the “Integrated Care Programme for the Prevention and Management of Chronic Disease (ICPCD) to manage chronic diseases (Buckley, Mulholland & O’Reilly 2018:1).

#### **2.2.4 Local/South Africa’s response to chronic diseases**

The burden of disease is having a significant impact on South Africa's healthcare system. Currently, managing HIV infection and tuberculosis has been given the highest priority, due to their burden on the healthcare system (Peer, de Villiers, Jonathan, Kalombo & Kengne 2020:2). Around the world there is evidence of the benefits of the chronic disease management model, such as CCM. Lebina (2021:31) highlighted some of the benefits of the implementation of the ICDM model at PHC facilities, such as improving diabetes management and lowering the entire cost of healthcare. Two key factors of the poor health outcomes, such as the challenges in the health system and the burden of CDs necessitated the implementation of the ICDM model.

Model” provided the framework for the development of the ICDM model. South African health policy for chronic disease management (CDM) recommends an integrative approach based on the ICDM model, for improved outcomes (Matima, Murphy, Levitt, BeLue & Oni 2018:1). An ICDM model was developed by the National Department of Health in 2011 as a pilot initiative in PHC facilities that employ the health systems approach (Ameh, D’Ambruoso, Gomez-Olive, Kahn Tollman & Klipstein-Grobusch 2020:3). The ICDM framework illustrates a paradigm change in the management of

patients with long-term chronic diseases, shifting from a disease-centred to a patient-centred care approach (Mahomed & Asmall 2017:2).

The South African government launched a pilot ICDM strategy which utilized the innovative HIV treatment program for NCDs to enhance the quality of care and health outcomes of patients, in response to the dual high burden of HIV and NCDs (Mahomed & Asmall 2017:2).

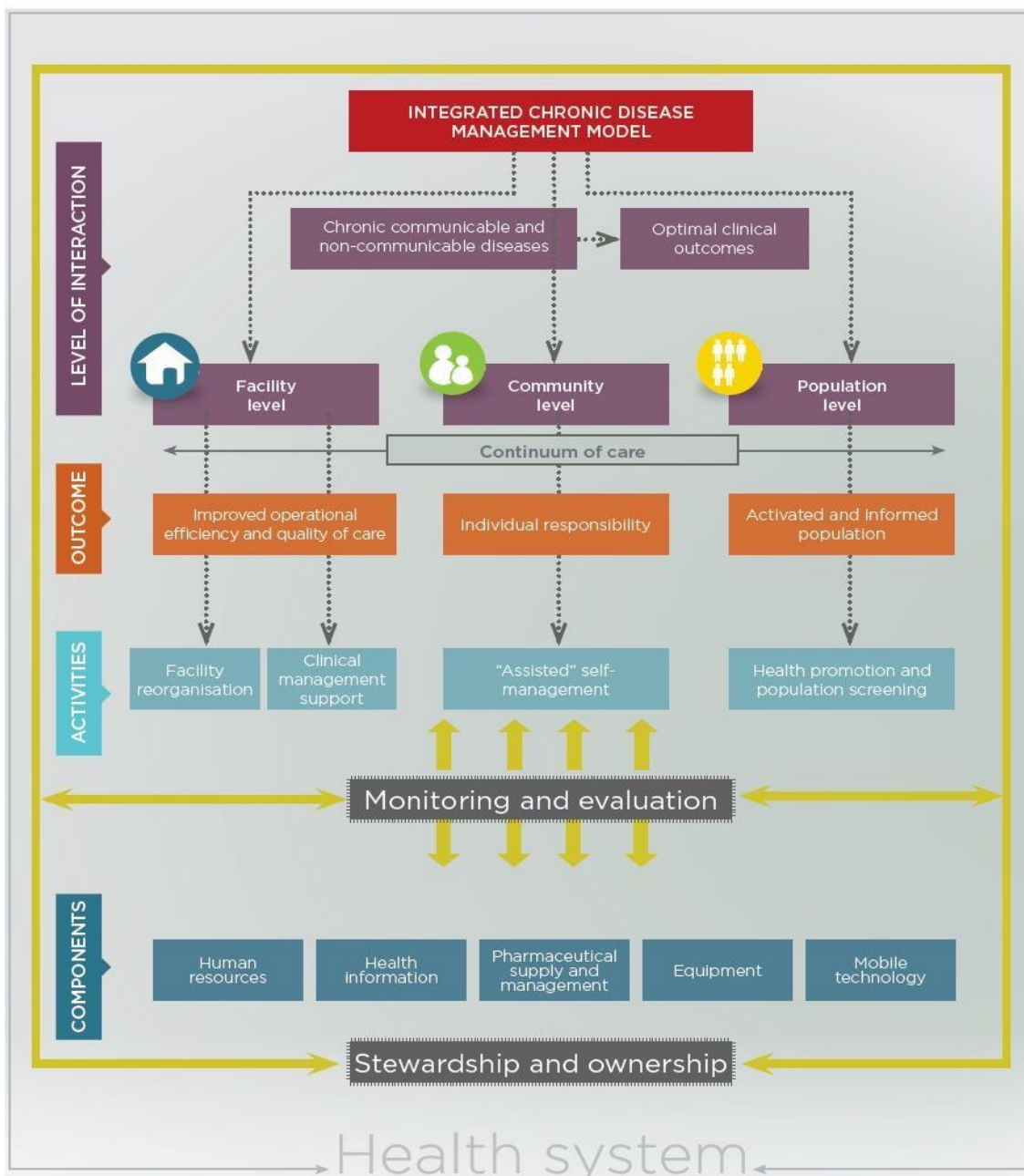
### **2.3 MAIN INTEGRATED INTERVENTION PHASES OF THE ICDM MODEL**

Ameh (2020:1), explains, below, the four phases of ICDM implementation as shown in Figure 2.1:

- **Phase 1:** Facility reorganization to strengthen service effectiveness at the facility level.
- **Phase 2:** Clinical management assistance to enhance the quality of medical treatment at the facility level.
- **Phase 3:** Assisted self-management via patient referral to the WBOT to entice individuals to take control of their health care and raise public awareness of the chronic disease at the community level.
- **Phase 4:** Health system support and strengthening to guarantee a fully operational and responsive health system in and around the healthcare system.

The ICDM model includes components for a healthcare facility, community, and population. To increase operational effectiveness and clinical outcomes, services in healthcare institutions were re-designed. Ward-based PHC outreach teams offer "assisted" self-management to encourage individual responsibility in the communities. Promotion of good health and screening is part of the population component. The ICDM model's components include, human resources, health information, pharmaceutical supply and management, equipment, as well as mobile technology (NDoH 2014:15).

Godongwana et al (2021:2) indicated that the ICDM model recommends reorganizing the PHC facilities to better manage bookings and patient flow, expand clinical management support by providing adequate training and purpose based on the provision of the ICDM model, promote assisted self-management by empowering patients, provide support at the facility and community level, and emphasize health promotion and population screening. The ICDM model addresses both communicable and non-communicable diseases. Chronic diseases which are addressed by the ICDM model include PLHIV, patients with tuberculosis (TB) who are receiving treatment, patients with multidrug-resistant tuberculosis (MDR-TB), and children enrolled in the PMTCT program or mothers who started antiretroviral therapy (ART) during pregnancy, hypertension, diabetes mellitus, chronic obstructive pulmonary disease (COPD), asthma, epilepsy, and mental health disorders that require medical care (Ameh et al., 2017:4).



**Figure 2.1: The ICDM model**

Source: National Department of Health (2014:20)

### 2.3.1 The benefits of using the ICDM model in primary health care

The objective of the ICDM model is to develop an integrated strategy that minimizes healthcare usage and emphasizes patient self-management (Lebina, Kawonga, Oni, Kim & Alaba 2020:2). Furthermore, the clinical supportive management guideline of

the ICDM model suggests integration of the healthcare worker. This helps reduce isolation of treatment for patients with various chronic diseases. Lebina (2021:15) contended that the expected outcomes of the ICDM model are improved facility competency and efficiency, improved patients' perspectives, and involvement in the management of their CDs, and a positive experience for both patients and healthcare professionals.

Improvements in patient records, adherence to clinical guidelines, and improved health outcomes are among the positive outcomes of the ICDM model's implementation. The ICDM model targets the six key areas of the National Core Quality Standards for health establishments; these are, strengthening staff values and attitudes, reducing waiting times, cleanliness, patient safety, and security, infection prevention and control, and the availability of medications and supplies.

From these discussions, the benefits of implementing the ICDM model have been conclusively proven. The ICDM model has a substantial potential to significantly reduce the challenges encountered by patients with multiple chronic diseases. The model has shown desirable clinical outcomes, namely, controlled blood pressure for hypertensive patients and viral suppression for HIV-infected individuals (Lebina 2021:33). Ameh et al (2017:472) concluded that the ICDM model's use has had a considerable effect on managing patients' CD4 levels and blood pressure.

A study by Ameh (2020:1) also reported that the ICDM model showed a small but significant impact on blood pressure management. There is substantial evidence that the ICDM model enhances health equity, promotes health equality, reduces barriers to care, improves the quality of life as well as patients' knowledge and understanding of their diseases. Additional advantages to the health system include proper utilization of medical services (lower emergency room and hospital visits), better access to integrated services, greater care, enhanced adherence to clinical guidelines, increased efficiency, and lower costs (Lebina 2021:31).

### 2.3.2 ICDM Model implementation

Lebina et al (2020:1) concluded that implementing the ICDM model with enhanced fidelity only incurs minimal variable costs, nevertheless, it has been noted that the ICDM model's implementation is challenging. In response to the simultaneous high burden of HIV/AIDS and NCDs, South Africa's National Department of Health (NDoH) implemented an integrated chronic disease management (ICDM) approach. To the researcher's knowledge, South Africa is the only country that has adopted and implemented the ICDM model at the PHC facility level. Dr Shaidah Asmall and Dr Ozayr Mahomed initiated the conceptualization, development, and translation of the ICDM paradigm at PHC and community levels (NDoH 2014:4). In 2011, ICDM was implemented as a pilot study in three of South Africa's nine provinces, namely, Gauteng, North West, and Mpumalanga (Ameh et al., 2017:257).

In Figure 2.1 above, the four phases involved in the implementation of the ICDM model include facility reorganization, clinical management support, assisted self-management, and health promotion and population screening were explained (NDoH 2014:12).

#### ***2.3.2.1 Key players and their roles in the implementation of the ICDM model***

The key players involved in the implementation of the ICDM and their roles at the facility level, according to the ICDM model manual are as follows:

- **Operational manager** – oversees all the activities involved with the implementation of the ICDM model.
- **ICDM Champions** - Primary Care 101 (PC 101) facility trainers, address all challenges and are responsible for all the updates. They ensure a constructive collaboration between the project team and its stakeholders.

- **Medical practitioners** – offer consultation with CD patients and mentoring of professional nurses.
- **Professional nurses** - provide care to the CD patients while adhering to the ICDM guidelines.

### ***2.3.2.2 The role of professional nurses in the implementation of the ICDM model***

In South Africa, professional nurses are at the forefront of providing public healthcare services, hence, they have a critical role in ensuring that healthcare services are delivered effectively (Mahomed & Asmall 2017:3).

In the context of the ICDM model implementation, professional nurses provide comprehensive medical care to CD patients while adhering to best practices and evidence-based guidelines. They offer consultation to the CD patients, prescribe medication, complete the patients' clinical information, refer the patient to the doctor if necessary and are also responsible for patient appointment scheduling (NDoH 2014:65).

### ***2.3.2.3 Professional nurses' training for the ICDM model implementation***

Current evidence attested that inadequate knowledge on CDs among clinical professionals is attributed to inadequate supervision, a lack of standards, and inadequate training (Lebina 2021:15). Preferably, professional nurses assigned to consult with chronic patients are required to have experience in PHC, complete Primary Care (PC) 101 training, obtain accreditation in the Practical Approach to Lung Health in South Africa (PALSA) PLUS program, and be trained in Nurse-Initiated Management of Anti-Retroviral Therapy (NIMART). Prior to consulting with CD patients, professional nurses who required further development should be identified and given training (NDoH 2014:97).



## **2.4 LITERATURE REVIEW OF THE RELATED STUDIES ON THE ICDM MODEL**

### **2.4.1 Professional nurses' perspectives on the implementation of the ICDM model**

The ICDM provides noble objectives, such as increasing operational efficiency at facilities, Mahomed et al (2017:3) note that the success of the implementation and sustainability of the ICDM model depends on active employee participation and positive staff perspectives. The researchers reported that after the ICDM model was implemented, there were improvements in the care process, the level of engagement with patients, the level of knowledge, and the level of collaboration, as well as an improvement in satisfaction with the workplace settings at the facilities. This study highlighted a positive experience with the implementation of the ICDM model.

An Agincourt sub-district study, in South Africa, which investigated the perspectives of operational managers and patients regarding the quality of treatment under the ICDM model, fully supported the view that PHC facilities' ongoing long patient waiting times are caused by a scarcity of professionals and missed appointments (Ameh 2017:257). Cross-sectional research which was carried out at seven PHC facilities in the Bushbuckridge Municipality of the Province of Mpumalanga reported that both patients and operational managers confirmed satisfaction with many aspects of the ICDM model implementation, although there were divergent views on satisfaction with some aspects of care, including "patient waiting time, pre-packaging of medications, clinic appointments, defaulter tracing and hospital referrals" (Ameh 2017:13).

A recent study, titled, "Paradox of HIV stigma in an integrated chronic disease care in rural South Africa: Viewpoints of service-users and providers" revealed that implementation of a complete ICDM model was associated with decreased HIV stigma in health institutions but was associated with stigmatization in the community (Ameh 2020:13).

#### **2.4.2 Challenges in the implementation of the ICDM model**

Mahomed et al (2016:1) argued that the lack of optimal clinical leaderships' involvement, negative staff attitudes towards the ICDM, the model's adaptability or flexibility to external variables, and infrastructure restrictions all have the potential to negatively impact the ICDM model's sustainability and scale-up. Lebina et al (2019:11) described long waiting times, poor adherence to guidelines, limited number of professional nurses, and inadequate access to clinical guidelines and DCST support as some of the challenges in the implementation of the ICDM model.

The findings of research by Godongwana et al (2021:13) revealed, lack of staff capacity, unclear rules on the administration of integrated care for patients with HIV comorbidities, non-disclosure, financial burden, lack of treatment expertise, and access to treatment were among the challenges and needs of people living with HIV and other chronic diseases. In addition, this study recognised other challenges, such as a lack of support, poor integrated-chronic initiatives, and nurses' little knowledge of how to address HIV's long-term comorbidities.

Lebina et al (2020:1) concur with Godongwana et al (2021:7) in saying that the implementation of the ICDM model is further limited by poor adherence to the ICDM model's components and the existing scarcity of professional nurses. In addition, the researchers discovered that nurses and operational staff did not receive appropriate training on how to implement the ICDM model, hence, there was resistance to the model's adaptation. A previous study indicated that PC101 training is mandatory for professional nurses to enhance their ability to effectively care for patients with common diagnostic diseases (Mahomed & Asmall 2017:3). Moreover, Lebina et al (2020:5) indicated that the second component of the ICDM model emphasizes the provision of support for healthcare workers through training, guidelines, and clinical mentoring by the DCST. Interestingly, the literature has indicated that professional nurses' lack of experience in managing CDs makes it challenging for them to provide efficient care to patients using the model.

New evidence has revealed that inadequate adherence to the model's components, patient non-compliance, negative staff attitude, poor training, and inadequate clinical

mentorship are among the challenges limiting the implementation of the ICDM model at PHC facilities (Lebina 2021:8). Hence, recent research done in Cape Town, revealed that the ICDM model implementation is slow and is not being used in most public PHC facilities (Bosire et al., 2021:16).

### **2.4.3 Factors that can enhance the implementation of the ICDM model at a PHC facility**

The three key components for any program's success are, leadership, ownership, and responsibility, thus, the district management team, the facility, and the community must play an active role and take ownership if the implementation of the ICDM model is to be successful (NDoH 2014:25).

A qualitative study which looked at both the healthcare professionals and patients, examined the challenges being faced by healthcare professionals and patients in elected urban and rural PHC facilities that are using the ICDM model in South Africa. This study recognized training in the provision of chronic care services under the ICDM model, assisted self-management to increase patient involvement in managing chronic diseases, and improving initiatives for chronic preventive medicine as some of the factors that will make the ICDM model's implementation more feasible (Godongwana et al., 2021:1). A study conducted in Soweto, South Africa, concluded that addressing significant challenges like shortage of staff would benefit the CDs management (Bosire, Norris, Goudge & Mendenhall 2021:15).

Supply chain management, infrastructure, adequate staffing levels, and patient caseload balance were identified as contextual factors that impacted trust in the model during a recent cross-sectional study that used mixed methods approaches at PHC facilities in the Gauteng Province's Dr Kenneth Kaunda (DKK) and West Rand (WR) health districts (Lebina 2021:8). The researcher thus believes that strengthening such contextual factors will enhance the implementation of the ICDM model at the PHC facilities.

## **2.5 CONCLUSION**

The benefits of using the ICDM model in primary health care were proven in this review as the strategy was considered successful in most research. The review also highlighted the importance of professional nurses' perspectives, the challenges in the implementation of the ICDM model and the factors that can enhance the implementation of the ICDM model at a PHC facility.

This literature review has revealed that previous studies have neglected the qualitative aspects of professional nurses' perspectives on the implementation of the ICDM model at PHC facility. On the long-term viability and scaling up of the ICDM program, little support, guidelines that are not clear, negative staff behaviours, and limited information are some of the barriers to the implementation of the ICDM model at PHC facilities. The lack of data on the perspectives of professional nurses on the ICDM model implies a gap in ICDM sustainability and scale-up, hence, the essential nature of this research. The research paradigm, design, and methods are presented in Chapter 3.

## **CHAPTER 3**

### **RESEARCH DESIGN AND METHOD**

#### **3.1 INTRODUCTION**

A literature review to contextualise the study was undertaken in Chapter 2. This chapter concentrates on significant areas of the research methodology. The research setting, research design, research method, population of the study, sampling, data collection method, data analysis, ensuring rigour, and ethical considerations are the focal points of this section.

#### **3.2 RESEARCH DESIGN**

##### **3.2.1 Design chosen**

To attain the study's purpose, an exploratory descriptive qualitative research design was used. Research designs are forms of inquiry either in the qualitative, quantitative, or mixed techniques that offer guidance for processes in a research project (Creswell & Creswell 2020:53). The exploratory descriptive qualitative research design has been recognised as a feasible design for exploring under-explored aspects of healthcare practice (Hunter et al 2019:7). Hence, these designs have been deemed suitable and effective for addressing the objectives of the study.

##### **3.2.2 Exploratory design**

Reiter (2017:144) explains that an exploratory research design investigates subjects and questions that have not been studied extensively previously. The design offers insight into problems that have not yielded conclusive solutions or evidence. The field of study has limited existing studies. According to Houser (2018:137), in situations where there is limited existing studies on a particular topic or population, the

researchers primarily depend on responses from participants to develop an understanding of the subject matter. This is achieved through active listening and gathering information from the participants. A deficit of literature on the qualitative aspects of the professional nurses' perspectives on the implementation of the ICDM model at PHC facility justifies the use of the exploratory design. This exploratory research design explored the perspectives of professional nurses on the implementation of the ICDM model at PHC facilities.

### **3.2.3 Descriptive design**

A descriptive research design describes life events as they develop (Taherdoost, 2020:58). Thereby, providing accounts of feelings and perceptions, especially on topics where little is known. The research design produces data in response to questions that seek information on the "who, what, and where" of events, situations, or phenomena (Doyle, McCabe, Keogh, Brady & McCann 2020:445).

In this research study, the researcher's focus is to describe participants' perspectives on the implementation of the ICDM model at PHC facility rather than discussing the root causes associated with these perspectives. The emphasis was primarily on providing descriptions rather than engaging in conceptualisation or interpretation (Musoke 2020:48). The aim of employing the descriptive approach was to offer clear and direct insights of different perspectives (Doyle 2020: 444). The researcher used a descriptive research design to describe professional nurses' perspectives on the implementation of the ICDM model.

### **3.2.4 Qualitative approach**

Qualitative research is a type of social inquiry in which a researcher attempts to comprehend human behaviour, particularly the meaning that individuals place on events (Pitney et al., 2020:23). According to Taherdoost (2022:54), qualitative research's focus is on collecting primary, direct, textual data and examining it using

certain interpretative methodologies. Qualitative research is exploratory in nature and focuses on the natural world, perspectives, and interpretation (Gani, Imtiaz, Rathakrishnan & Krishnasamy 2020:140).

The primary objective of the qualitative approach is to derive significance, intention, or real-life from the perspectives as well as the experiences of individuals involved. This approach allowed the researcher to gain understanding of professional nurses' perspectives (Asenahabi 2019:81). This methodology was deemed appropriate for the present study since the purpose of the study was to determine participants' perspectives.

### **3.3 RESEARCH METHOD**

According to Polit and Beck (2017:743), research methodology refers to the systematic techniques employed to structure a study for the purpose of gathering and analysing information. The research method including, sampling, data collection method, ethical considerations, data analysis and measures to ensure rigour of the study are discussed in this section.

#### **3.3.1 Sampling**

The study employed purposive sampling method. Sampling involves the selection of objects, participants, or respondents for a study (Islam & Aldaihani 2022:4). Purposive sampling is a non-probability sampling method in which the researcher purposefully selects participants who met the specific objectives of the study, based on the researchers' judgement (Obilor 2023:4). The use of purposive sampling was deemed suitable in this study as it enabled the researcher to selectively identify research participants who possessed the necessary expertise, information, and experience associated with the issue under study (Doyle 2020:446). The sampling procedures used to select study participants for semi-structured interviews are discussed in this section.

### **3.3.1.1 Population**

O'Leary (2021:417), states that the term "population" refers to all the elements that match the study's inclusion criteria or the total number of individuals, objects, or events that belong to a specific group. Marczyk et al (2021:18) define the population as all individuals who are of relevance to a research topic, while Cash, Isaksson, Maier and Summers (2022:3), similarly note the population of research as referring to the entirety of relevant contexts. In the context of qualitative studies, the selection of a population is not based on the goal of generalizability, but rather on identifying individuals who are appropriate for participation in the study (Polit & Beck 2017:491).

Musoke (2020:49) defines target population as all individuals or entities that fall within the defined parameters of the population. In the context of this research, the population of interest comprised of all permanent employed professional nurses with diploma or degree, related training courses on ICDM model.

In this study, the target population comprised of 11 professional nurses, as selected PHC facilities had 11 professional nurses implementing the ICDM model. Clinic A had 4 professional nurses implementing the ICDM model, Clinic B had 3 professional nurses implementing the ICDM model, and Clinic C also had 3 professional nurses implementing the ICDM model. Participation in the study was based on the set of criteria mentioned below.

#### **Inclusion criteria**

- Professional nurses permanently employed in the chosen facilities with diploma or degree, and related training courses on the ICDM model.
- All professional nurses in the chosen facilities with one to ten years' experience in using the ICDM model.
- All professional nurses, in the chosen facilities who were willing to participate in the research.



## **Exclusion criteria**

- Professional nurses who are working in the chosen facilities but are hired on a temporary basis.
- All professional nurses, in the chosen facilities with less than one year of experience in using ICDM model.
- All professional nurses in the chosen facilities who were not willing to participate in the study.
- Professional nurses without related training courses on the ICDM model.

### **3.3.1.2 Sampling**

#### *3.3.1.2.1 Setting (site sampling)*

The study was conducted in Mogale City Local Municipality in the West-Rand District of Gauteng Province (Figure 4.1). The West-Rand District is in the western region, on the south-western outskirts of Gauteng Province, South Africa. The West-Rand District consists of three local municipalities: Mogale City, Merafong City, and Rand West City. The population of the Mogale City Local Municipality is estimated to be over 362,422 people.

Three out of the 12 PHC facilities in the West-Rand District, which implemented the ICDM model, were purposefully chosen for this study. These three PHC facilities serve the communities in the Mogale City Local Municipality. Pitney et al (2020:166) advocate that purposive sampling be used in qualitative research, which involves picking a subject based on a specific purpose rather than randomly. Regarding this study, purposive sampling was considered appropriate as the researcher employed her expertise to identify ICDM-initiated model PHC facilities.

PHC facilities were chosen according to their geographical location (Mogale city). Additionally, the facility had to be ICDM model- initiated, opened from Monday to Friday/Saturday and operated for 8 to 24 hours per day. The PHC facilities in this study were categorised as Clinic A, Clinic B, and Clinic C.



**Figure 3.1: Map of West-Rand District with municipalities**

Source-[https://municipalities.co.za/img/maps/west\\_rand\\_district\\_municipality.png](https://municipalities.co.za/img/maps/west_rand_district_municipality.png)

### 3.3.1.2.2 Participant sampling

The researcher employed purposive sampling to recruit participants in accordance with the characteristics they possess. According to Sebele-Mpofu (2020:10), purposive sampling is the deliberate choosing of a participant depending on the

qualities the person possesses. The study participants were professional nurses since they are key role players in service delivery at PHC facilities and have ultimate responsibility for implementing all ICDM operations. Previous researchers emphasized that the focus of sampling should not be on the quantity of interviews or participants, but rather on the identity and characteristics of the individuals being studied. What relevant insights and skills do they possess that are applicable to the study and the formation of plausible conclusions? (Sebele-Mpofu 2020:11). Purposive sampling was suitable as the participants were recruited in accordance with the characteristics they possess.

The researcher recruited participants with the assistance of the operational managers from each PHC facility. The researcher visited each PHC facility after receiving approval from the West-Rand District Family Medicine to submit written permission letters to carry out the study and comprehensively informed the operational manager on the research methodology and verbal permissions were obtained from the PHC facilities' operational managers.

The researcher sought the help of operational managers to find participants who matched the study's criteria, and the operational manager provided the names of professional nurses who satisfied the study's criteria. All participants in the study who met the study criteria were told what the study's purpose was and were provided with a participant information sheet containing more context about the study. The target population for participation in this study consisted of 11 professional nurses because the selected PHC facilities had a maximum of 3-4 professional nurses (4 from clinic A, 4 from clinic B, and 3 from clinic C) working with the ICDM model.

Two participants from PHC facility (Clinic A) and PHC facility (Clinic B) expressed their unwillingness to participate in the study. Therefore, they were excluded from the study. Nine professional nurses participated in the interview process.

### **3.3.1.3 Sample**

Islam and Aldaihani (2022:4) define a sample as a subset of a larger population from which information is gathered. According to Cash et al., (2022:3), “sample” refers to a target within the overall population. In qualitative research, sample size numbers are not a set rule, rather, recruitment is directed by various factors, such as data saturation, or the point at which all ideas have been saturated and no new information is being generated (Borcsa, Willig & Schröer-Werner 2021:22). Data saturation occurs when no new information is discovered during the data collection process, or when participating individuals continue to share the same information with the researchers (Busetto, Wick & Gumbinger 2020:7; Pitney et al 2020:60), thus, the size of the sample was decided by data saturation as indicated below.

The final sample size of participants in the study was 9, as determined by data saturation. Data saturation was attained at participant number 8, and 1 additional participant was added to see if any new information had appeared. No new theme emerged with participant number 9. Sebele-Mpofu (2020:6) outlined saturation as the stage in data collection and analysis where new data contributes minimal or no additional information to address the study question. The researcher utilised 9 participants who provided sufficient rich information about their experiences with the ICDM operations. Given that this study was exploratory, a sample size of 9 participants was deemed appropriate.

### **3.3.2 Data collection**

#### ***3.3.2.1 Data collection approach and method***

The researcher recognized the significance of exploring professional nurses' perspectives on the ICDM model implementation in PHC facilities, as indicated in the research problem in Chapter 1. Grønmo (2019:11) emphasized that in a qualitative approach, data are provided as text. The researcher followed a qualitative approach to achieve the study's objective, which was to determine the perspectives of

professional nurses on the implementation of the ICDM model at PHC facilities in the West-Rand District of Gauteng Province, South Africa. The researcher used an interview guide with open-ended questions, which is recognised as appropriate for a descriptive and explanatory study that requires in-depth insight into participants' perspectives (Creswell & Ploth 2018:43). To preserve the method's interactive element, qualitative interviews are often not carried out in text form (Busetto, Wick & Gumbinger 2020:3), hence, to collect primary data, the researcher used face-to-face semi-structured interviews.

#### *3.3.2.1.1 Semi-structured interviews*

One of the most used methods for qualitative data collection is semi-structured interviews, (Busetto et al., 2020:2-3). The authors went further to confirm that interviews are conducted to learn more about a person's life experiences, viewpoints, and influencing factors. The researchers, similarly, stated that semi-structured interviews are comprised of open-ended questions and use an interview guide that defines the major concepts. The authors concur that interviews have the benefit of being participatory, which enables the researcher to address unexpected issues as they arise.

Naz, Gulab and Aslam (2022:42) maintained that semi-structured interviews are efficient strategies for learning about study participants' perspectives and experiences regarding an investigation's main aspects. To preserve the method's interactive element, qualitative interviews are often not carried out in text form.

This method was considered suitable for this study as the researcher was interested in learning more about the perspectives of professional nurses on the implementation of the ICDM model rather than learning about the mere facts about the model. The selected method gave participants considerable freedom to express their perspectives and encouraged new perspectives and concerns to emerge throughout the interview (Naz et al., 2022:46). Semi-structured in-depth interviews are the most widely employed qualitative data source in healthcare, nonetheless, there are several challenges as well. DeJonckheere and Vaughn (2019:7) cited lack of a well-developed

interview guide, asking inappropriate questions, failing to listen attentively as well as translation inaccuracies as some of the common disadvantages of semi-structured interviews. For this reason, the researcher used appropriate interview questions, asked follow-up questions, and listened attentively and respectfully to the details shared by participants to mitigate the challenges associated with semi-structured interviews.

### *3.3.2.1.2 Interview guide*

An interview guide produces discriminative, qualitative, comprehensive, and voluntary responses from participants and ensures that all data collected from each participant is comparable and identical. The open-ended questions were developed in line with the interview guide before the interview sessions.

### **3.3.2.2 Development and testing of the data collection instrument**

#### *3.3.2.2.1 Development of the data collection instrument*

Naz et al., (2022:45), explicated that an “interview guide” is comprised of a set of questions, utilized as an instrument to collect data. The researcher developed a semi-structured face-to-face interview guide featuring open-ended questions in English (Annexure G) guided by the outcomes of the ICDM model, improved operational efficiency and quality of care (Ameh et al., 2017:2).

The questions were aligned with the concepts and constructs of the Modified System's Framework. The focus for the questions included, facility cleanliness, human resources availability, provision of training, supervision of professional nurses on ICDM model implementation, ICDM model acceptance/adherence, challenges faced during implementation of the ICDM model and factors that can improve the model implementation at the PHC facilities.

#### *3.3.2.2 Testing of the data collection instrument*

The interview guide was pre-tested with 3 professional nurses who were not employed in the study area to determine if the guide required any revisions. The pre-test sample consisted of 3 participants who shared similar characteristics with the chosen participants for the study and were not employed within the identified study area. The interview guide was pre-tested at a PHC facility in Soweto.

The researcher obtained permission from the operational manager of the facility, who also assisted in identifying suitable participants for the pilot study. Participants who expressed their willingness to participate in the pre-testing of the interview guide were given study information and consent forms prior to the pilot test. The researcher scheduled the interview session by deciding the date, time, and venue for the interview with the participants.

The researcher conducted interviews using a structured interview guide to gather detailed information. Interviews were conducted during lunch time in a quiet room provided by the operational manager at the facility. The interviews were recorded using a recorder, and the researcher also took notes on the ideas shared by the interviewees. The interview lasted less than 30 minutes. It is important to note that the participants in the interview guide pre-testing were excluded from the main study as they were outside the scope of the study's geographical focus.

The interview guide pre-test confirmed that the instrument adhered to the recommended interview time frame and methods. The interview guide pre-testing did not achieve data saturation due to the small sample size. The findings that were identified were sufficient for conducting the main study. The data collected in the pre-testing of the interview guide informed minor revisions to the data collection tool for the main study. The interview guide was updated to include age and gender as demographic characteristics. Furthermore, the researcher included further question on the perceived benefits of implementing the ICDM model (See Annexure G). The guide was submitted to the supervisor for review prior to the data collection process.

### **3.3.2.3 Characteristics of the data collection instrument**

According to DeJonckheere and Vaughn (2019:1), semi-structured interviews are a method for collecting data characterized using open-ended questions and thereafter probing questions to gain insight into participants' responses and the subject matter under investigation. One characteristic of this tool for collecting data is the utilization of formal interviews conducted by the researcher with the participants.

Saarijärvi and Bratt (2021:392) describe qualitative interview as a method of collecting data in which “an interviewer asks questions to an interviewee”, either in person or remotely. A semi-structured interview guide facilitates distinct, comprehensive, and voluntary responses from participants. It is adaptive because it features open-ended questions and ensures that data collected from each participant is comparable and identical. The study used interviews to gain a comprehensive understanding of professional nurses' perspectives on applying the ICDM model. The interviews were conducted in a one-on-one, face-to-face format. The interviews were conducted in a conversational manner, aiming to create a relaxed and reflective environment for the participants. The interviews were recorded using a tape recorder, while the researcher simultaneously took notes on any new information that emerged.

The researcher utilized an interview guide consisting of open-ended questions to facilitate in-depth discussions about the participants' experiences and perspectives. The use of pre-developed questions offered the researcher the benefit of maintaining focus on the topic of interest and minimized distractions. The open-ended questions were developed in line with the interview guide before the interview. The researcher constructed the questions using insights gained from literature and professional experts; in addition, they were descriptively phrased and participant-centred, aimed at obtaining the required data (Naz et al., 2022:47). The study's interview guide comprised of questions requesting demographic details, one introductory question, and seven open-ended questions that were developed based on the outcome principles of the ICDM model (see Annexure G).



#### **3.3.2.4 Data collection process**

The researcher applied for ethical clearance certificate from the University of South Africa College of Human Sciences Research Ethics Committee (See Annexure A) and approval to conduct a study from Gauteng Human Research Ethics Committee (West-Rand District Family Medicine) (See Annexure B). The researcher visited each PHC facility to submit written permission letters to carry out the study and comprehensively informed the operational manager on the research methodology and verbal permissions were obtained from the operational managers of the three selected PHC facilities.

The researcher sought the help of operational managers to find participants who matched the study's criteria, and the operational manager provided the names of professional nurses who satisfied the study's criteria. The researcher was introduced to the professional nurses by the operational managers from all three PHC facilities. The researcher provided all potential participants at the respective PHC facilities with participant information sheets and invited to take part in the interviews.

Subsequently, depending on their willingness to engage in the study, the researcher scheduled interviews based on the participants' availability. Prior to conducting the interviews, the researcher provided a comprehensive explanation of the ethical issues involved, including confidentiality, anonymity, justice, and voluntary participation to each participant. This included informing them about the purpose and potential benefits of the study. The researcher then obtained written informed consent.

The researcher conducted in-depth interviews with professional nurses from each facility at their workplace as described below, in a private room provided by the PHC facility operational manager during the month of September and October 2022. Even though the interviews were carried out at the respective PHC facilities, the quality of the service was not impacted. English was used during the interviews as it is the most common language that professional nurses understood. The researcher interviewed participants individually using an interview guide comprised of a question requesting demographic details, one introductory question, and seven open-ended questions that were developed based on one outcome of the ICDM model (see Annexure G).

The researcher visited each PHC facility on the agreed date and time for the interviews. The researcher reminded the participant about the purpose of the study and the recording of the interview. Once the participant was ready to begin the interview, the researcher ensured that the informed consent form was signed. The researcher initiated the interview by asking basic questions about the participant's demographic details including age, gender, training attended, and number of years using the ICDM model. Following that, the researcher proceeded on to the introductory question regarding the understanding of the ICDM model. After the introductory question, fundamental questions followed (Annexure G).

Additionally, most of the questions emerged from the responses given by the participants to the primary questions. The prompts, such as "Please elaborate" and "What do you mean?", were used to prompt participants to provide additional information and expand on their responses. Further prompting enabled participants to provide additional information to the researcher. Field notes were also taken to identify possibly contradictory statements and follow up on new, interesting topic areas not addressed in the interview guide. With consent from the participants, the in-depth interviews were audio-recorded to ensure the accuracy of data collection. The duration of each participant's interview session was approximately 30 minutes. The researcher concluded each interview by expressing gratitude to the participants for their time and willingness to participate in the study. During the interviews, data saturation was attained with the eighth participant. An additional participant was included to explore the presence of any new information. With participant number 9, no new themes emerged.

### **3.3.3 Data analysis**

Goodwin, Mays and Pope (2020:112) argued that detailed data may be presented via transcripts and field notes, nevertheless, they may be unable to explain or make accurate predictions about a phenomenon. To make sense of an audio-recorded data, a researcher has to sort and interpret it. The researcher sought the help of an independent coder (see Annexure I: for confirmation letter) for analysing the audio-recorded data. Thematic analysis was used to synthesize the emerging themes and

subthemes. Sundler, Lindberg, Nilsson and Palmér (2019:736) described the process of thematic analysis as involving a step-by-step approach from the initial data to the identification of meanings, followed by the organization of these meanings into patterns. Finally, the researchers write the results in the form of themes that are relevant to the study's objective and the specific context.

For data analysis, the following steps were followed: “preparing and organizing the data, transcribing the data, becoming familiar with the data, memoing the data, coding the data, producing categories and themes from underlying coded passages” (Lester, Cho & Lochmiller (2020:98).

### **Phase 1: Preparing and organizing the data for analysis**

The independent coder utilised the NVivo software to analyse the semi-structured data. The interviews recordings and field notes were used for analysis. The independent coder imported these data into NVivo.

### **Phase 2: Transcribing the data**

Audio-recorded data were transcribed verbatim by an independent coder. The researcher validated all interview transcriptions for accuracy before analysis of data.

### **Phase 3: Becoming familiar with the data**

Lester et al (2020:99) stressed the importance of understanding data so that a researcher is aware of the limitations or gaps in the collected data. The researcher read and validated all interview transcriptions for accuracy before analysis of data.

### **Phase 4: Memoing the data**

Lester et al (2020:99) pointed out that when a researcher is reviewing their data, it might be useful to create memos that detail specific reflections on the data as well as any emerging interpretations. Data memos were generated electronically.

### **Phase 5: Coding the data**

Linneberg and Korsgaard (2019:259) state that coding is an essential part of the process of turning raw qualitative data into as into a "story" that is clear and reliable.

The core of coding is looking at a coherent piece of the empirical data, like a word, a paragraph, or a page, and labelling it with a word or short phrase that sums up what it is about. Coding is a crucial part of qualitative analysis because it cuts down on the amount of data and makes it easy to analyse; the process also improves the quality of the analysis and results.

Key phrases were identified and categorised according to their meaning. Significant associations were identified from the data-derived codes. Based on the information from the transcripts, the codes were assigned to give meaning to the information in the transcripts.

#### **Phase 6: Producing categories and themes from underlying coded passages**

According to Lester et al (2020:101), this phase entails the use of codes, the formation of categories, and finally development of themes. Significant associations were identified from the data-derived codes. These associations were thoroughly captured within the identified categories. After categories were created, themes were identified through the grouping of codes. The themes emerged from the data are presented in Chapter 4. To ensure participant and PHC facility anonymity, names and other identifiers were replaced with numbers and alphabets (P1-P9, Clinic A, Clinic B and Clinic C).

### **3.4 RIGOUR OF THE STUDY**

Rigor is the attribute or state of being highly accurate, cautious, or precise or the characteristic of being truthful and accurate (Cypress 2017:254). Semi-structured in-depth interviews with open-ended questions were employed in this study. The method of this study validates its trustworthiness. The Lincoln and Guba (1985) rigor and trustworthiness criteria were used in this investigation, hence, each of the following factors was followed to assure trustworthiness: credibility; transferability; dependability, and confirmability.

### **3.4.1 Ensuring credibility**

Credibility focuses on the plausibility or the criteria to ensure that the findings of a qualitative study are believable (Nyathi 2018:135; Palermo, Reidlinger & Rees 2021:254). Continuous interaction with the participants, data, and frequent reviews of interviews were used to establish credibility in the study. The researcher ensured that the questions, data, and the analytical method all fit together, and that each step in the data analysis is appropriately accounted for. The researcher also gathered as much information as possible to obtain a credible and comprehensive results.

### **3.4.2 Ensuring transferability**

According to Palermo et al (2021:254), transferability is the findings' applicability to other groups, populations, and contexts. Moradi, Baghaei, Hosseingholipour and Mollazadeh (2021:3) believe that transferability may be possible with a thorough understanding of the study's context and a clear explanation of what was investigated and how. For data transferability, the researcher comprehensively explained the setting in which the study was done, including an accurate description of the participants, sampling procedure, and time and place of data collection.

### **3.4.3 Ensuring dependability**

The term "dependability" refers to the capacity of results to be used at other periods or the consistency or stability of the inquiry approach utilized, over time (Moradi et al., 2021:3; Palermo et al., 2021:254). An independent coder was used to ensure that the study's conclusions accurately represent the raw data that was collected.

For this study, dependability was attained by the description of the data collection methodology, as well as the subsequent processes employed for analysing the data and interpretation. Furthermore, the researcher conducted member checks, allowing

participants to review and validate the researcher's interpretation of their responses, thus ensuring accuracy.

#### **3.4.4 Ensuring confirmability**

Confirmability is the belief that the data accurately reflects the viewpoints of the participants rather than those of the researcher, according to Palermo et al (2021:254). In terms of confirmability, all actions, including research phases and data collection methods, were meticulously recorded to enable others to conduct a similar study should they wish to.

The present study's confirmability aspects included audio recordings of the interviews, thorough transcripts, and notes taken during the interview process; together, these elements created a thorough audit trail for data analysis and interpretation. The steps of the study, such as data collecting, data analysis, and theme development, were thoroughly detailed for readers to examine and ensure confirmability. The researcher enlisted the help of an independent coder to examine the study author's complete audit trail (Johnson, Adkins & Chauvin 2020:143-144).

#### **3.5 Ethical considerations**

Arifin (2018:30) points out that ethical considerations are of significant importance in qualitative studies due to the comprehensive and detailed nature of the research method. Ngozwana (2018:25) explains that ethics pertains to morally good or correct practice and avoiding any harm that may emerge during a study, hence, it is crucial for the researcher to apply relevant ethical principles to protect the participants. The study received ethical clearance from the University of South Africa College of Human Sciences Research Ethics Committee (See Annexure A) and approval to conduct the study was granted by Gauteng Human Research Ethics Committee (West -Rand District Family Medicine) (See Annexure B). Ethical concerns related to the purpose of the study are discussed below.

### **3.5.1 Informed consent**

Husband (2020:2) states that the informed consent is a process that ensures that participants are provided with comprehensive information regarding the study, including the objectives of the study, intended outcomes, the rationale for their participation, the dissemination of findings, and the extent of their involvement. The researcher informed the participants about the details of the study. The researcher made it apparent to the participants that their participation in the study was completely voluntary, therefore, they can withdraw from participating at any stage. The researcher approached each participant one-on-one and explained the study's objectives and methods. Participants were allowed to ask any questions and the researcher properly addressed all of their concerns. The researcher obtained agreement to participate from the participants after a comprehensive overview of the research methodology was provided to them.

Participants were given participants information sheets written in English to make the further explicate the study. The participants were given 24 to 72 hours to read the information sheet and decide if they want to participate in the study. Prior to the interview, they were expected to sign the informed consent form indicating their consent to participate in the study and the signature was then verified by the researcher before the interview.

According to Mazur and Berg (2020:8), a participant is assumed to be independent of the influence of others and has the mental capacity to make his or her own judgments. In respect of the autonomy of the participants, the researcher allowed the participants to make their own free and voluntary decisions about participating in the study by providing them with the knowledge they needed to make an informed decision. In this study, the researcher ensured voluntary participation of the participants by obtaining written informed consent from participants and permission for audio recording them. Participants were informed about all the roles in participating in the study and the opportunity to withdraw from the research at any point, including after signing the informed consent.

### **3.5.2 Anonymity**

Anonymity implies that in all reporting, the settings and participants should not be identified (Ngozwana 2018:25). Thus, anonymity is achieved when the researcher is unable to link the identity of the participants with their particular response. To ensure anonymity, participants names were not requested on the data collection tool, and no space was provided for such information. While symbols were used for PHC facilities. The researcher preserved participant and PHC facilities anonymity by not disclosing any identifying information in all study-related reports. The researcher employed pseudonyms (numbers and alphabets) for people and locations. Participants in the study were assigned identification numbers (P1 - P9), while PHC facilities were identified using letters (Clinic A, B, and C).

### **3.5.3 Confidentiality**

According to Marczk et al (2021:244), the concept of confidentiality refers to the non-disclosure of personal identifying information, about participants, collected throughout the study process, according to Marczyk et al (2021:244). Goodwin, Mays and Pope (2020:32) highlighted that confidentiality is maintained by keeping something private. The researcher-maintained confidentiality by not connecting identifiable information to the raw data. Numbers and alphabets (P1 - P9) were employed to identify participants and alphabets were employed to identify PHC facilities (Clinic A, B, and C). For privacy and confidentiality, interviews were undertaken in a private room offered by the PHC facility. Data were password-protected and secured on encrypted devices.

### **3.5.4 Justice**

Mazur and Berg (2020:9) emphasized that justice is generally associated with fairness or equality. Concepts of justice are described in terms of what everyone deserves and is entitled to, without bias and with the goal of providing equitable treatment to everyone. For this study, the researcher sought the help of operational managers of PHC facilities to identify the prospective participants. Even though the study had no



economic benefits, the prospective participants were given equal opportunities to participate in it freely, and the researcher ensured that the participants feel valued and always respected by allowing them to express their perspectives.

### **3.5.5 Beneficence**

Marczyk, DeMatteo and Festinger (2021:241) point out that the principle of beneficence is concerned with maximizing benefits and minimizing harm to the participants. Prior to seeking ethical approval and data collection, the researcher analysed the potential risk and benefits of the study to the potential participants. The researcher conducted approximately 30 minutes of semi-structured face-to-face interviews with the participants in a private room to minimize any discomfort or harm. The researcher protected participants' information by use of passwords and encrypted devices.

### **3.5.6 Non-maleficence**

Mazur and Berg (2020:8) described "non-maleficence" as the researcher's purposeful duty to do no harm to the participants and population. For data collection, the researcher conducted interviews, in private rooms, using an interview guide with open-ended questions. Potential participants who did not want to participate in the study were assured that their refusal to participate in the study will not have any negative effect on their job. Furthermore, the researcher obtained ethical clearance from the Unisa College of Human Sciences Research Ethics Committee (See Annexure A) to ensure that participants' rights to privacy and confidentiality were respected.

### **3.6 SUMMARY**

This research investigated the perspectives of professional nurses on the implementation of the ICDM model at PHC facilities in the West-Rand District of Gauteng Province, South Africa. The research design and methodology used to achieve the study objectives were outlined and discussed in this chapter. There are two more chapters to follow - the results of the study are presented in Chapter 4, and after that, conclusions and recommendations are presented in Chapter 5.

## **CHAPTER 4**

### **ANALYSIS, PRESENTATION, AND DESCRIPTION OF THE RESEARCH FINDINGS**

#### **4.1 INTRODUCTION**

This chapter presents a concise overview of the findings of the study from professional nurses' interviews conducted at three PHC facilities. This section outlines an in-depth analysis of the perspectives of professional nurses on the implementation of the ICDM model. A purposive sampling technique was employed to select a total of 11 participants. Two of the participants showed a lack of interest in participating in the study and only 9 participants consented to participate in the study. The study was guided by the following objectives:

- To explore and describe the perspectives of professional nurses on the implementation of the ICDM model at PHC facilities in Mogale Local Municipality.
- To identify challenges experienced by professional nurses when implementing the ICDM model at PHC facilities in Mogale Local Municipality.
- To identify factors that can improve the implementation of the ICDM model at PHC facilities in Mogale Local Municipality.

## 4.2 DATA MANAGEMENT AND ANALYSIS

Lucas (2022:1) noted that qualitative data management and analysis seek to organize, structure, and interpret the data collected. Data were coded and transcribed electronically. An electronic coding system using CAQDAS NVivo's latest version software (NVivo 12) was applied to code and analyse all the information provided by the participants. Thematic analysis was employed to determine the themes emerging from the data on the participants' lived experiences as an interpretive lens to give insights into the implementation of the model. Thematic analysis is a research approach that involves coding procedures to develop ideas, meaning, and understanding from the data (Ozuem & Howell 2020:5).

The meanings derived from the perspectives of participants were described in a coherent text and were categorized into themes. The demographic characteristics were initially presented during the presentation of the findings, followed by the underlying themes and subthemes. The researcher used an independent coder for data analysis. The independent coder was requested to sign a confidentiality agreement to prevent the discussion of the findings of the study and data on any other platform, to safeguard the privacy of the study participants.

Themes and sub-themes were obtained from second-and third-generation models adopted to explain the research questions. These themes were professional nurses' perceived benefits, challenges experienced by professional nurses during the ICDM model implementation, and professional nurses' recommendations to ensure effective implementation of the ICDM model and sub-themes were integrated care, adequate medication, alleviation of stigma relating to diseases, shortage of staff, poor infrastructure, and patients missing scheduled appointments.

## 4.3 RESEARCH RESULTS

The findings presented here are the credible outcomes of the collected data, discovered while adhering to relevant ethical considerations. The meanings derived from the perspectives of participants were described in a coherent text and were categorized into themes. The findings are reported in a conversely manner, beginning with the themes and descriptive text, which are supported by quotes illustrated in italics.

The personal information of the participants and the study site were kept confidential. The researcher employed codes like P1, P2, and up to P9 to ensure the anonymity of the participants and Clinic A (Annexure D), Clinic B (Annexure C), and Clinic C (Annexure E) to ensure the anonymity of the selected PHC facilities. At the very end of each quotation, codes were used. The unique codes were presented in the sequential order of the conducted interviews. In this context, the letter P is used to identify a participant, which is then followed by a unique identifier number (P1). This particular number was provided in the sequence of the conducted interview. Table 4.1 presented below illustrates the clinics (PHC facilities).

### 4.3.1 Socio-demographic characteristics

A total of 11 professional nurses were identified in 3 selected PHC facilities, and 9 out of 11 professional nurses participated in semi-structured interviews.

- **Years of experience**

The professional nurses who participated in this study had at least 2 to 10 years of experience in their area of work - treating and managing people living with chronic health conditions.

- **Gender**

The study findings indicated a higher proportion of female participants (8) compared to male participants (1) as shown in Figure 4.1 below. The findings suggest that a greater number of female professional nurses are employed in the implementation of the ICDM model. The inclusion of gender as a variable aimed to identify any gender-related disparities in participants' perspectives on the implementation of the ICDM model. This gender imbalance is consistent with the gender composition observed in research conducted in the study "to assess the perspectives of healthcare providers and users, as well as their interactions, regarding the quality of care in the ICDM model in PHC facilities in a rural South African setting" (Ameh et al 2017:261). This is corroborated by a comparable study conducted in South Africa which explored "The challenges experienced by healthcare providers and patients in urban and rural health facilities implementing the ICDM model". The study findings also identified a gender imbalance in those health facilities (Godongwana et al 2021:5).

- **Age**

The age factor aimed to emphasize the potential differences in attitudes and perspectives towards the ICDM model across various ages. The findings of the study identified that three of the participants fell within the age range of 41 to 50 years, while six were between 51 and 60 years old.

- **Training attended**

All participants stated that they have attended Nurse Initiated Management of Anti-Retroviral Therapy (NIMART) and Primary Care 101 (PC 101), and HIV Counselling and Testing (HCT) training. Three participants are Primary Health Care (PHC)-trained and only two participants have attended the Practical Approach to Lung Health in South Africa (PALSA). Table 4.1 below presents a concise overview of the socio-demographic characteristics of the 9 participants.

Table 4.1: Socio demographic characteristics of the participants

<b>TABLE 4.1: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS</b>					
<b>PARTICIPANT NUMBER</b>	<b>AGE</b>	<b>GENDER</b>	<b>NO. OF YEARS USING THE ICDM MODEL</b>	<b>TRAINING ATTENDED</b>	<b>CLINIC</b>
1	52 years	Female	7years	NIMART /PC101	A
2	57 years	Female	10 years	PHC/PALSA/NIMART /PC101	A
3	50 years	Female	2 years	NIMART /PC101	A
4	50 years	Female	5 years	NIMART /PC101	B
5	53 years	Female	7 years	PHC/PALSA/NIMART /PC101	B
6	52 years	Female	9 years	NIMART /PC101	C
7	49 years	Male	5 years	PHC/NIMART/PC101	C
8	55 years	Female	5 years	NIMART /PC101	B
9	54 years	Female	4 years	NIMART /PC101	C

(Researcher own work)

#### **4.4 OVERVIEW OF RESEARCH FINDINGS**

The findings of this study related to the perspectives of professional nurses on the implementation of the ICDM provide significant insights in the context of understanding the acceptance, challenges, recommendations for improvement, and prospective benefits attributed to this innovative healthcare strategy. An in-depth understanding of the nurses' perspectives have been achieved through the utilization of semi-structured interviews.

The findings of the study generated themes and sub-themes. These themes include professional nurses' perceived benefits, challenges experienced by professional

nurses during the implementation of the ICDM model, and professional nurses' recommendations to ensure effective implementation of the ICDM model. The sub-themes include integrated care, adequate medication, alleviation of stigma relating to diseases, shortage of staff, poor infrastructure, and patients missing scheduled appointments.

#### 4.4.1 Main themes and sub-themes generated from the data

The themes and sub-themes that emerged from the data analysis process are presented in the Table 4.2 below.

Table 4.2: Main themes and subthemes

<b>TABLE 4.2: THEMES AND SUB-THEMES</b>	
<b>THEMES</b>	<b>SUB-THEMES</b>
1. Professional nurses' perceived benefits	1.1 Integration of care 1.2 Adequate medication supply 1.3 Alleviation of stigma relating to diseases
2. Challenges experienced by professional nurses during the implementation of the ICDM model	2.1 Shortage of staff 2.2 Poor infrastructure 2.3 Patients missing scheduled appointments
3. Professional nurses' recommendations to ensure effective implementation of the ICDM model	3.1 Adequate staff 3.2 Adequate infrastructure 3.3 Provision of training for staff

(Researcher own work)

The themes and sub-themes that emerged from the study are covered in detail with literature support in the subsections below.



#### **4.4.1.1 Theme 1: Professional nurses' perceived benefits**

Theme 1 describes professional nurses' perceived benefits of the ICDM model implementation. It addresses the perspectives of professional nurses on the implementation of the ICDM model at PHC facility. Most professional nurses acknowledged some benefits associated with the implementation of the ICDM model. These include integration of care, adequate medication, alleviation of stigma relating to diseases. The benefits highlight positive effect of the ICDM on the field of nursing and the quality of care provided to patients and are outlined below as sub-themes.

##### *4.4.1.1.1 Sub-Theme 1.1: Integration of care*

One of the primary objectives of the ICDM model is to offer comprehensive and coordinated treatment and care for people with chronic diseases (Godongwana et al., 2021:8). Most participants indicated that their understanding of the model is the integration of services that entail the integration of chronic disease management which leads to improved patient care outcomes. Participants expressed that the ICDM model facilitates close collaboration and effective information sharing among diverse healthcare providers, including physicians, nurses, specialists, social workers, and others. In addition, this coordination facilitates the provision of consistent and integrated care to patients across various healthcare settings and disciplines:

*“Okay, my understanding is that you integrate the services. ICDM is about the integration of chronic disease management. So, the healthcare professionals work together to provide services needed for chronic disease patients so that we can be able to render quality care to these patients”, (P1, Clinic A).*

*“The ICDM model is really helpful for us as healthcare professionals because it allows us to easily share information and responsibility for well-being of our patients”, (P2, Clinic A).*

Participants have stated that they delivered comprehensive care for various chronic diseases, such as HIV, hypertension, and diabetes. Furthermore, participants highlighted the potential benefits of providing comprehensive care to patients with

comorbidities in one visit. Simultaneous treatment and care of chronic conditions during a single clinic visit offer a comprehensive and continuous method of addressing comorbidities, thus providing tailored treatment that addresses the specific needs of the patients.

In their account, when a patient with multiple chronic diseases seeks healthcare services, the patient is helped in one room. This arrangement facilitates early detection and management of any potential health issues, thereby reducing the risk of complications.

*“In the ICDM model, everything is integrated in one. You are able to identify and address health issues early on, and if necessary, refer a patient to get further help. This can potentially prevent more serious complications”, (P3, Clinic A).*

*“The ICDM model is all in one place.... but the good thing is that you can manage one patient and pick up the problems that arise. Maybe you are dealing with HIV patient, who have developed diabetes in the process, now you know exactly how to treat the patient”, (P4, Clinic B).*

*“The ICDM model speaks of integrating all the patients. We are looking at all levels of how the patient is coming to the clinic, and the different solutions that they want. If a patient comes to you with chronic diseases and has minor sicknesses, it means the patient cannot run around and go to another side of the clinics. If the patient has come and she is sick or he sick, we're going to sit the patient in one room and attend to all of her needs”, (P6, Clinic C).*

Buttressing the aforementioned, some participants indicated that integration of care also includes having to collect medical supplies in one place and not having to collect medication for specific illnesses in different sections of the healthcare facilities:

*“The ICDM means one thing and that is all the programs are integrated for instance when people come to get something, they get in one place, so if the patient has flu and is also here for chronic medication, they will get the medicine in one place, the service is in one place”, (P5, Clinic B).*

The findings of the study show that the ICDM model offers a comprehensive approach to delivering integrated care. The findings of this study are comparable with the study by Mwagomba, Ameh, Bongomin, Juma, MacKenzie, Kyobutungi, Lukhele, Mwangi,

Amberbir, Klipstein-Grobusch and Gómez-Olivé (2018:28), which highlighted that ICDM model integrates all chronic disease in contrast to a particular HIV/ NCD. The study findings demonstrated that PHC facilities are effectively delivering integrated chronic care services, hence ensuring the provision of continuous care for individuals with chronic diseases.

#### *4.4.1.1.2 Sub-theme 1.2: Adequate medication supply*

The principle of the ICDM model further includes the provision of sufficient quantities of medications and supplies (Lebina et al., 2019:2). Adequate medication supply is essential for continuous patient care. Most of the participants expressed contentment with the essential medication. Similarly, participants stated that ICDM model collaboration with the Central Chronic Medicines Dispensing and Distribution (CCMDD) initiative, improved the delivery and access of chronic medications to patients. Participants highlighted the following:

*“A shortage of essential medications is very seldom, and overall, we have no reason to complain about the medication supply in our facility”, (P2, Clinic A).*

*“We're actually doing great when it comes to the supply of essential medication. No problems there at all. I can't recall a time when we ever ran out of medication. We're good with the medication supply”, (P4, Clinic B).*

*“In this facility, there is no problem with medication supply. The availability of medication is satisfactory. Medication is ordered and delivered on time”, (P5, Clinic B).*

*“There is an adequate supply of medication. Medication supply is timely. Every Monday, we conduct a stock check to ensure that any items that are in short supply are ordered on time”, (P6, Clinic C).*

*“We don't have any problem with the availability of medication. The medication is always available”, (P8, Clinic B).*

Participants indicated that the CCMDD program was offered at three PHC facilities. Participants reported on time delivery and sufficient availability of medication in all PHC facilities. The findings of this study are inconsistent with previous studies on the implementation of the ICDM model, which indicated challenges such as delayed medication delivery and medication stock-outs (Lebina et al., 2020:10; Godongwana et al., 2021:6; Malebo 2022:44). Adequate medication supply positively impacts

patient outcomes by preventing worsening health conditions and mortality. The findings of the study indicate the anticipated outcomes of adhering to medication management guidelines on the implementation of the ICDM model. This improves operational efficiency by allowing patients to receive their medication on the same day, reducing the need for them to return on a different date. Moreover, that decreases the possible risk of patients defaulting from their treatment.

#### *4.4.1.1.3 Sub-theme 1.3: Alleviation of stigma relating to diseases*

Participants highlighted that the implementation of the ICDM model has been found to effectively reduce the discrimination and stigmatization experienced by patients with chronic diseases. Most participants endorsed the ICDM model as a promising initiative and expressed that the ICDM model reduced the separation of patients as all patients with different chronic diseases are mixed in the same waiting area. For example, there is no separation of patients who are HIV-positive and patients with other chronic diseases. The following comments indicate the perspectives of the participants:

*“But it is a nice thing they did because it removed even the stigma attached to some diseases. Because now patients can sit all together and discuss and feel free. So, it does relieve some burden in terms of stigma”, (P1, Clinic A).*

*“...in the ICDM model, everybody is in the same room. I think it makes things better for the patients”, (P3, Clinic A).*

*“... the ICDM model I think it's more of taking care of the chronic patient in the same setting so that it makes it better so that patients don't feel like they're being isolated from other patients; for instance, HIV patients usually defaulted due to concerns about their status being known by others”, (P4, Clinic B).*

*“With the ICDM model, patients are not separated according to their sickness, all patients share the same waiting room and collect medication from the same place with other chronic disease patients which is good because in the past HIV “patients were treated at their special clinic and it was easy to identify patients who were HIV-positive”, (P7, Clinic C).*

*“Previously, we used to separate patients according to their illnesses, but now we have started combining them together. For example, HIV/AIDS patients are being grouped together with people who have other chronic conditions like high blood pressure and diabetes”, (P9, Clinic C).*

One of the benefits associated with the implementation of the ICDM model is its ability to promote the integration and non-segregation of patients. In all the PHC facilities,

participant reported that the implementation of ICDM model significantly contributed to a reduction in HIV-related stigma due to the lack of segregation among patients receiving care for chronic diseases. Participants explained that previous practices of separating patients based on their illness facilitated the identification of patients receiving treatment for HIV/AIDS in PHC facilities. Further to that, participants mentioned that HIV patients used to default on their treatment because they had their own designated settings.

The findings of content analysis conducted in the rural Agincourt sub-district of Mpumalanga province, South Africa are comparable to the findings of this study, in that the implementation of the ICDM model was perceived to have played a role in reducing HIV-related stigma in PHC facilities (Ameh et al., 2020:2). The findings of this study demonstrate that the implementation of the ICDM model produced the expected outcome of reducing HIV-related stigma.

#### ***4.4.1.2 Theme 2: Challenges experienced by professional nurses during the implementation ICDM model***

Theme 2 outlines the challenges experienced by professional nurses during the implementation of the ICDM model. It addresses the objective associated with the challenges experienced by professional nurses during the implementation of the ICDM model. It comprised of sub-themes. The participants pointed out several key challenges that have had an impact on the successful implementation of the ICDM model. These challenges include shortage of staff, poor infrastructure (small waiting rooms, few consultation rooms), and patients missing appointments. Subthemes are presented below:

##### ***4.4.1.2.1 Sub-theme 2.1: Shortage of staff***

The participant identified the shortage of staff as one of the main challenges encountered during the implementation of the ICDM model within their respective facilities. Participants indicated that there is no substitution or temporary staff hired

when a staff member is ill or on leave, thus the remaining staff must manage the same number of patients. One of the participants referred to the resignation of a staff member, which has resulted in an ongoing vacancy for that position. This situation has created a burden for the participants as it impacts service provision in accordance with the guidelines. Participants highlighted the issue of an imbalanced patient-to-nurse ratio, which creates strain on healthcare providers. Participants noted:

*“Yes, staff availability is the problem here because we have many patients in this clinic, mostly chronic patients. Yes, but limited numbers of staff. I will say somehow, we lack because of the patient ratio, because there are more chronic, and then the sisters, we are limited”, (P1, Clinic A).*

Similarly, other participants cited those nurses are faced with the challenge of managing an overburdened healthcare system, characterized by a high patient volume and a scarcity of human resources.

*“I mean, because the program is always overbooked because unfortunately, that is where we are as a facility. Let's say, you book 120 patients for that specific day. If an additional 20 patients arrive without scheduled appointments, the total number of patients would be 140. Considering the limited capacity of four staff to manage this number of patients, the situation is undeniably challenging. I mean, this is absolutely ridiculous”, (P2, Clinic A).*

*“ICDM is a good thing but....it needs staff.....staff is a problem. Our facility is usually filled with chronic patients. Sometimes, there isn't enough time to spend with one patient and you are forced to rush to the next patient on the line”, (P3, Clinic A).*

*“Shortage of staff is always the case”, (P4, Clinic B).*

*“Shortage of staff”, we don't have enough staff”, (P5, Clinic B).*

*“Our patients are many in number, but the staff is very few, others resign and others you find that at one time when it's time for the bookings, the patients will be more because some nurses will be sick and because of the shortage of staff, then it will not be a good day for me”, (P6, Clinic C).*

*“The staff is limited, and there is a vacant position in our facility due to the resignation of a former staff member. This situation has placed a lot of pressure on us, as we are still required to attend to the same or an increased number of patients”, (P7, Clinic C).*

*“The number of staff, I can say...so due to the condition that we are now, we are short staff, yes, we have got limited staff”, (P8, Clinic B).*

In all PHC facilities, participants expressed concerns about inadequate staff. Participants reported experiencing a high level of distress due to the consistent influx of patients. Participants expressed that their limited time spending with patients is primarily attributed to their heavy workload, since they are required to attend to a significant number of patients daily.

The findings of the study are consistent with a cross-sectional study conducted in South Africa. This previous study examined 16 PHC clinics in two health districts and found that a lack of human resources may have contributed to a lower commitment to implementing ICDM model (Lebina et al., 2019:11). The study findings indicated that the shortage of staff negatively impacts the quality of patient care.

#### *4.4.1.2.2 Sub-theme 2.2: Poor infrastructure*

Most of the professional nurses have expressed concerns over poor infrastructure. The participants expressed that the implementation of streams of care is challenging due to the limitations posed by the current infrastructure of the PHC facilities. Participants voiced concerns about the limited size of the consultation space, which limits a comprehensive assessment of the patient and subsequently affects the quality of patient care. Participants indicated that the facility has limited space, resulting in patients being required to wait outside in adverse weather conditions.

Participants expressed the need for the Department of Health to address infrastructure issues. Participants highlighted the importance of developing a facility infrastructure that adheres to the principles of the ICDM model and facilitates collaboration and patient-centred care. They emphasized that such an infrastructure can greatly improve the quality of care for patients with chronic diseases. Participants stated:

*“If consulting rooms are few, how are you going to manage...Department needs to do something with the structure. The number of consultation rooms is limited and their size is small. In addition, the waiting area is also small”, (P1, Clinic A).*

*“The rooms are very small, making it difficult to do a thorough assessment. So, proper infrastructure is necessary”, (P5, Clinic B).*

*“In our facility we only have 8 consulting rooms ...infrastructure is a problem...number of consulting rooms is not enough”, (P6, Clinic C).*

*“Because we are the only government facility that caters to a population of plus or minus 45,000 and in our facility, we only have eight consulting rooms. Limited space capacity is currently a major concern”, (P7, Clinic C).*

*“The infrastructure is not organised. It needs more consultation rooms...consultation rooms are few and clients are many”, (P8, Clinic B).*

*“When it's raining or really hot, people have to stand outside because there's not enough space inside the facility”, (P9, Clinic C).*

In all PHC facilities, participants reported challenges in implementing the ICDM model guidelines for the three distinct streams of care, namely chronic care, minor ailments care, and maternal and prenatal care due to existing clinic infrastructure. The findings of the study align with the findings reported by Malebo (2022:35), which revealed that adherence to the ICDM model guidelines for the three streams of care was compromised due to poor infrastructure. The study findings demonstrated that inadequate infrastructure hinders patients' access to comprehensive and integrated care, thus affecting patient health outcomes.

#### *4.4.1.2.3 Sub-theme 2.3: Patients missing scheduled appointments*

The participants highlighted patients' poor attendance to scheduled appointments as the biggest barrier to implementing the ICDM approach. Some of the participant expressed their frustration regarding this issue. Participants mentioned that chronic patients are compromising the effectiveness of the ICDM model due to their non-compliance with the booking system and frequent defaults.

Other participants described how patients often miss appointments because they have to report to work on the scheduled check-up date, this is despite the attempts they engage in to educate patients on the need to stick to their appointments. The participants also made reference to the employer's need to care and be considerate towards employees who have chronic illness.

*“We schedule a specific number of patients each day, but some of them do not attend their scheduled appointments. Instead, they arrive on a different date than the one they were originally booked for. As a result, the total number of*



*patients increases, leading to a high patient volume on that particular day”, (P1, Clinic A).*

*“A lot of our frustrations come from patients who default on their appointment dates and as much as you educate them it makes no difference, I think the patients have got this thing that they can come to the clinic whenever it's suitable to them, ... On numerous occasions, patients have expressed their inability to visit the facility due to work commitments, because of employer refusal to grant them time off to attend their scheduled appointments. I am concerned about this issue because employees have a significant responsibility towards their workers, particularly in matters related to health... It is not acceptable to me”, (P2, Clinic A).*

*“Our chronic patients don't keep their appointments and they default on their treatment”, (P4, Clinic B).*

*“I think it's the defaulters, they don't come on the given dates or sometimes they are taking a six-month treatment, and they don't come back after six months. Then you find that when they come, their blood pressure and viral loads are high because they last took treatment six months ago”, (P5, Clinic B).*

*“Our big problem is the defaulting on the different programs that have been implemented, like the collection from CCMDD but the people are defaulting even in that way, people always miss their appointments”, (P6, Clinic C).*

Participants indicated that the high patient volume can be attributed to patients failing to attend their scheduled appointments. Participants at all PHC facilities reported that a significant number of chronic patients failed to adhere to their scheduled appointments. Participants reported that patient's non-adherence to scheduled appointments negatively impacts their care, leading to deterioration in their health condition. This further supports a study by Malebo (2022:22), that claimed that patients who miss their scheduled appointments default on their medical treatment. These study findings showed that poor attendance at scheduled appointments has a negative impact on clinics' adherence to proposed guideline activities.

#### **4.4.1.3 Theme 3: Professional nurse's recommendations to ensure effective implementation of the ICDM model**

Theme 3 presents the recommendations of professional nurses for the effective implementation of the ICDM. Three sub-themes emerged from this theme, namely

adequate staff, adequate infrastructure, and provision of more training for staff. Outlined below is a discussion of the sub-themes:

#### *4.4.1.3.1 Sub-theme 3.1: Adequate staff*

Most of the participants mentioned that the ICDM model implementation requires more staff. Participants indicated that provision of adequate staff should be in line with the goals and objectives of the ICDM model. The participants articulated that increasing the number of staff members would enable them to provide high-quality care, prioritizing patient well-being over the need to expedite queues. The perspectives of the individuals are presented in the following comments:

*“So... but it goes back to staffing. More staff is needed as you can see the number of patients we are seeing daily. So, it is the structure of the facility, staffing, and human resource but it comes back to provision of adequate human resource”, (P1, Clinic A).*

*“I personally think that the ICDM is a good model, but it definitely requires more staff to be effective. That's why I'm suggesting that perhaps having enough staff would allow us to focus more on taking care of the patient, rather than being overwhelmed with pushing through queues and worrying about statistics. Yes, it's important to make sure you're getting good quality care. It's not just about the stats, but ensuring good quality for our patients”, (P4, Clinic B).*

*“If we have more staff, even the patients would be happier because some of them complain about having to wait for a long time. Government need to attend to the shortage of staff”, (P7, Clinic C).*

*“As I said the influx of chronic care patients is a problem, while having insufficient human resources to meet this demand. You know, and then the staff issue also comes in because the more patients you have, the longer the waiting period is going to be. So, the provision of sufficient staff is an urgent issue”, (P9, Clinic C).*

Participants identified staff shortage as one major limiting factor in implementing the recommended ICDM model guidelines. Some participants attributed long waiting times and the influx of chronic patients to a shortage of the staff. Participants emphasized the importance of adequate staffing for the effective implementation of the ICDM model. The study findings align with the findings of Lebina et al (2020:8), which suggest that ensuring an adequate number of staff members on a rotational basis can enhance fidelity in implementing the ICDM model.

The study findings indicated that sufficient staffing is crucial for the effective implementation of the ICDM model. It facilitates comprehensive delivery of care and improved patient outcomes. Moreover, adequate staffing enables healthcare facilities to deliver high-quality, patient-centred care in accordance with the principles of the ICDM model.

#### 4.4.1.3.2 Sub-theme 3.2: Adequate infrastructure

The planning and development of adequate infrastructure, space, and facility design were recognized as essential prerequisites for the successful implementation of the recommended ICDM model activities (Lebina et al., 2020:8). Participants emphasized role in the efficient implementation of the ICDM model. The perspectives of participants are represented in the remarks that follow:

*“Well, even if we have enough staff, it would still be a challenge to manage all the tasks if we only have three consultation rooms. Yes, I think that the Department needs to address the issues of infrastructures. It's not enough to just come up with ideas; they also need the necessary resources to make them work. Otherwise, there will definitely be problems”, (P1, Clinic A).*

*“...if the structure can be increased or made in a way that accommodates the number of the population the clinic is serving”, (P6, Clinic C).*

*“I think the first thing they should do is try to increase the infrastructure before implementing any changes. I know the department always claims they don't have enough money, but if they can find a way to accommodate the number of patients or the population the clinic serves, it would be much easier. For example, here at the Covid side, we only have three rooms. In the past, we used to see around 150 or more patients per day. But if we had a bigger clinic with more rooms and staff, it would be much easier for everyone”, (P7, Clinic C).*

*“I think the first thing they should consider is the infrastructure, you know? Well, if we make sure to maintain the infrastructure properly, everything should run smoothly. I've noticed these new clinics they're constructing, and it's really convenient to perform the ICDM there. For example, when patients come to us, we make sure to check their blood pressure as soon as they enter. So, if they can improve the infrastructure, I think everything will run smoothly. And then, of course, they'll be adding more staff”, (P8, Clinic B).*

*“If the facility can be re-constructed and have more rooms”, (P9, Clinic C).*

Some participants emphasized the significance of sufficient infrastructure, citing that the presence of adequate staff alone is insufficient to address the issue. They suggested that the Department of Health should promptly address the infrastructure problem in order to successfully implement the ICDM model. The findings of this study align with the findings reported by Lebina et al (2020:8), who stated the need for a larger filing station space to effectively implement pre-retrieval of medical records. The findings of the study suggested that adequate infrastructure and space are essential prerequisites for achieving the desired outcomes of the ICDM model.

#### *4.4.1.3.2 Sub-theme 3.3: Provision of training for staff*

Participants identified adequate training as a mandatory requirement for the ICDM. Participants also identified the training of staff on the principles of the ICDM model as a significant component that would promote the adoption and sustainability of high adherence to the model. Furthermore, participants suggested that this training should be made available to everyone, rather than just a few selected people. The perspectives of the participants are expressed in the comments that follow:

*“Staff need more training on how to integrate the services. I think they should definitely consider in-service training for all staff”, (P1, Clinic A).*

*“...constant training and in-service training are necessary for the successful implementation of the ICDM model”, (P3, Clinic A).*

*“It's important to have ongoing training and workshops for the staff. That way, they'll know exactly what to do and really understand their roles. I think it would be a good idea for all staff to go for some additional training”, (P4, Clinic B).*

*“I really appreciate that we have training sessions to attend. However, the ICDM model champion is the one who usually goes most of the time. I strongly believe that the addition of service training is necessary in order to improve the efficacy of the ICDM model's implementation”, (P7, Clinic C).*

In all PHC facilities, participants expressed a significant concern regarding the insufficient amount of training in implementing the ICDM model. Participants indicated that only selected few staff members, mainly clinical managers and the ICDM model champions attended the training. These findings are consistent with a previous study

conducted in Bushbuckridge, which examined the perceptions and experiences of clinic managers on the implementation of the ICDM model in PHC clinics. The previous study reported that the workshops were primarily attended by clinic managers (Malebo 2022:41).

The findings of the study suggested that regular training and workshops are essential for staff members to acquire knowledge and a thorough understanding of their tasks and responsibilities. Furthermore, these findings suggest that it is recommended for all staff members to receive in service training.

#### **4.5 INTEGRATION OF THE STUDY FINDINGS TO THE THEORETICAL FRAMEWORK**

This study employed the Modified System's framework to determine the association between three variables (Inputs, processes, and outputs) with a view to explore the perspectives of professional nurses on the implementation of the ICDM model at PHC facility. The Modified System's framework originated from Donabedian's framework (SPO) as outlined in chapter 1. "IPO refers to the inputs that initiate processes that eventually result in outcomes", of which can be regarded as assets in the implementation of the ICDM model (Deng, Huang, Wang, Deng & Yang 2022:2). For this study, the frameworks' fundamental logic was dependent on a series of cause – effect associations.

- **Inputs variables**

The researcher identified factors that might influence professional nurses' perspectives (inputs), which lead to anticipated outcomes (perceived benefits), and ultimately result in achieving the effective implementation of the ICDM model. The variables of interest in this study were gender, training attended, and years of experience using the ICDM model. The findings of the study represented the place of employment for professional nurses, which is PHC facility. Professional nurses have noted the significance of implementing the ICDM model in the facilities structure, particularly highlighting changes in waiting areas and the absence of separation for

chronic patients. The study findings reported that limited space in PHC facility limits their ability to conduct thorough patient assessments, thereby impacting the overall quality of patient care.

The findings of the study demonstrated a gender imbalance, with a higher proportion of female professional nurses (8) compared to those who were male (1). Professional nurses have reported that implementation of the ICDM model has enhanced the provision and availability of chronic medication to patients. This improvement has proved to have a positive effect on patient outcomes, as it prevents the progression of health conditions and reduces mortality rates. Moreover, the improvement highlighted the expected benefits of adhering to medication management guidelines on the implementation of the ICDM model. The study indicated that all professional nurses have received specific training related to the implementation of the ICDM model. The findings of the study revealed no significant variations in professional nurses' perspectives on the implementation of the ICDM model in relation to demographic characteristics.

- **Process variables**

The findings of the study indicated that professional nurses are proficiently delivering integrated chronic care services, which ensures the consistent provision of care to patients with chronic diseases (Mwagomba et al., 2018:28). Professional nurses reported that the implementation of the ICDM model enhanced collaboration and information sharing among various healthcare providers. Furthermore, this coordination enhanced the delivery of consistent patient care. In addition, professional nurses noted that the implementation of the model reduced stigma for HIV patients and that patients who previously failed to adhere to their scheduled appointments because they had their own designated settings are now attending to their appointments (Ameh et al., 2020:2).

Professional nurses highlighted few challenges experienced during the implementation of the ICDM model. These challenges included shortage of staff, inadequate infrastructure, and patients' non-compliance with scheduled appointments (Ameh et al., 2020:8; Lebina et al., 2020:8; Malebo 2022:43). The study findings

indicated that these challenges present a burden for the professional nurses as it affects their ability to provide services in line with the guidelines of the implementation of the ICDM model.

- **Outcome variables**

Professional nurses suggested recommendations for the successful implementation of the ICDM model, including the provision of adequate staffing, adequate infrastructure, and more training opportunities (Lebina et al., 2020:10). For that reason, this framework has the potential to enable researchers and healthcare organisations to conduct an in-depth evaluation of the ICDM model's impact, hence enabling them to make well-informed decisions regarding potential improvements. The perceived benefits by professional nurses in process variables highlight positive effect of the ICDM on the field of nursing and the quality of care provided to patients. This study acknowledges that the implementation of the ICDM model has the potential to affect the management and control of chronic diseases. Nevertheless, it is essential to provide adequate human resources as well as appropriate support systems to enhance the effectiveness of professional nurses for a successful implementation of the ICDM model.

#### **4.6 SUMMARY**

This chapter presented the findings of the study and established a correlation between the study question and objectives. This study determined the perspectives of professional nurses on the implementation of the ICDM model at a PHC facility located in the Mogale Local Municipality of Gauteng Province, South Africa. Interviews were conducted with 9 participants and the findings of the study were presented with themes sub-themes and illustrated references. The demographic characteristics that were investigated in this study comprised the professional nurse-related aspects of age, gender, training attended and number of years using the ICDM model. The findings of the study indicated that there were no significant differences in the perspectives of professional nurses on the implementation of the ICDM model regarding demographic characteristics.

The study identified themes and sub-themes relating to the participants' perspectives on ICDM model implementation; three themes were professional nurses perceived benefits, challenges experienced by professional nurses during the implementation of the ICDM model, and professional nurses' recommendations to ensure effective implementation of the ICDM model; sub-theme were integrated care, adequate medication, alleviation of stigma relating to diseases, shortage of staff, poor infrastructure, and patients missing scheduled appointments.

The summary of the study, discussions of the themes, sub-themes and an integration among the different studies' findings are presented in Chapter five as well as the study's limitations, contributions, and recommendations.



## **CHAPTER 5**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 INTRODUCTION**

The purpose of this study was to determine the perspectives of professional nurses on the implementation of the ICDM model at selected PHC facilities in Mogale Local Municipality of Gauteng Province, South Africa.

This chapter presents a summary of the findings of the study, presents conclusions based on the findings of the study, and provides recommendations to help improve the implementation of the ICDM model in South Africa and for future studies. The contributions and limitations affecting the generalizability of the findings of the study are also outlined.

#### **5.2 RESEARCH DESIGN AND METHOD**

A qualitative, exploratory descriptive research design was used in this study to solicit primary data. Participants were purposively selected according to their job titles and responsibilities so that they can provide their in-depth perspectives of the model. Participants included 9 professional nurses implementing the ICDM model from three selected PHC facilities of Mogale Local Municipality Gauteng Province, South Africa.

The qualitative data collected was analysed using the NVivo version 12 software package. Thematic analysis was employed to determine the themes emerging from the data analysis of the participants' lived experiences, as an interpretive lens to give insights into the implementation of the model. Semi-structured interviews conducted with nine participants provided in-depth insights into their perspectives. Trustworthiness was ensured by a process of member checking. Some of the participants who were available were provided with the opportunity to review and validate the researcher's interpretation of the responses to ensure accuracy. The

findings of the study were presented and explored in Chapter 4 with the aid of tables, themes, sub-themes, and illustrative quotes.

### **5.3 SUMMARY AND INTERPRETATION OF THE RESEARCH FINDINGS**

#### **5.3.1 Professional nurses' socio-demographic characteristics**

The socio-demographic characteristics of professional nurses encompass age, gender, training attended, and number of years using the ICDM model. The findings of the study indicated that the participants were within the age range of 40 to 55 years.

The findings revealed that there was an unequal representation of both genders in the sample. The findings indicated that most of the participants were female (8) and only 1 male. The study found no significant differences in how professional nurses perceived the implementation of the ICDM model based on their socio-demographic characteristics.

#### **5.3.2 Summary of the research findings**

The purpose of this study was to determine the perspectives of professional nurses on the implementation of the ICDM model at selected PHC facilities in Mogale Local Municipality of Gauteng Province, South Africa.

The study aimed to achieve the following objectives:

- To explore and describe the perspectives of professional nurses on the implementation of the ICDM model at PHC facilities in Mogale Local Municipality.
- To identify challenges experienced by professional nurses when implementing the ICDM model at PHC facilities in Mogale Local Municipality.

- To identify factors that can improve the implementation of the ICDM model at PHC facilities in Mogale Local Municipality.

In this study, professional nurses' perspectives on the ICDM model implementation have been influenced by a wide variety of issues, including professional nurses' perceived benefits, challenges experienced by professional nurses during the implementation of the ICDM model, and professional nurses' recommendations to ensure effective implementation of the ICDM model and recommendations for improvement.

Professional nurses expressed positive perspectives on the implementation of the ICDM model. Professional nurses' positive perceptions, experiences, and attitudes towards the implementation of the ICDM model were also expressed by previous studies on the ICDM model implementation (Lebina 2021:31; Mahomed & Asmall 2017:3). Professional nurses emphasized that the ICDM model has proven to be effective in delivering integrated care, ensuring adequate medication supply, and reducing stigma associated with certain diseases.

The findings of the study revealed that the ICDM model integrates care for patients with chronic diseases. The findings of the study further demonstrated that professional nurses from all three PHC institutions implemented integrated care for patients with chronic diseases. The findings of the study aligned with the findings that the ICDM model effectively integrates care for patients with chronic diseases (Mwagomba et al., 2018:28). The findings of the study indicated adequate medication supply in all PHC facilities. These findings confirm previous studies on the implementation of the ICDM model, which identified challenges such as delayed medication delivery and medication stock-outs (Godongwana et al., 2021:6; Lebina et al., 2020:10; Malebo 2022:44).

The study suggested that the implementation of the ICDM model alleviated HIV-related stigma. The findings of the Agincourt study conducted in Mpumalanga province, South Africa are comparable with the findings of this study, as both studies indicate that the implementation of the ICDM model contributed to a reduction in HIV-related stigma in PHC facilities (Ameh et al., 2020:2). The findings, however, indicate

that the ICDM model implementation is still being threatened by a variety of challenges, including shortage of staff, poor infrastructure (small waiting rooms, few consultation rooms), and patients missing scheduled appointments.

The study revealed that the shortage of staff has a negative impact on the provision of services, as outlined by the ICDM model guidelines. The shortage of staff is a major human resources challenge faced by many low and middle-income countries, including South Africa, when implementing health measures (Malebo 2022:43). In all the PHC facilities, professional nurses attributed long waiting times and influx of chronic patients to shortage of staff. The findings of the study are comparable to the study done by Ameh (2020:8), which identified staff shortage as a primary challenge in providing quality care in PHC facilities. Mahomed and Asmall (2017:1) voiced the same views and noted that despite PHC facilities' readiness and the commencement of management, the lack of necessary resources including the shortage of staff at the PHC facilities provides a major impediment to the successful implementation of the ICDM model.

An additional significant factor affecting the implementation of the ICDM model was determined to be poor infrastructure. Professional nurses raised concerns over poor infrastructure. The findings of the study revealed that the space is small and there is a limited number of consultation rooms. The findings of this study are comparable with the findings presented by Lebina et al (2020:8), who noted that the current infrastructure of PHC facilities is limited in size and has a limited number of consulting rooms.

Chronic patients missing scheduled appointments was also discovered to be compromising the implementation of the ICDM model. The common issue of patients constantly missing scheduled appointments confirms both the challenges and effects of appointment non-adherence in the context of the ICDM model. The findings of the study are comparable with the findings reported by Malebo (2020:43), who asserted that patients with chronic diseases often fail to attend their scheduled appointments at PHC facilities or decentralized pick-up stations in South Africa. Furthermore, the findings of the study indicated that patient's non-adherence to scheduled

appointments results in PHC facilities non-compliance with the recommended guidelines which negatively impacts the provision of health services at the facilities. The identified contextual factors for effective implementation of the ICDM model were provision of adequate staff, infrastructure, and training. The study discovered that both staff and infrastructure factors play a key role in the successful implementation of the ICDM mode. Moreover, the findings claimed that training is imperative for healthcare personnel to gain insight into the principles as well as the processes of the ICDM model. The findings suggested that there should be additional training and that this training should be made available to everyone, rather than just a few selected staff members.

The findings of the study pointed out that addressing the aforementioned factors will provide an optimal context for the successful implementation of the ICDM model. This will ultimately lead to improved patient care outcomes and increased efficiency in the provision of health services. The findings of this study are consistent with a cross-sectional mixed method study conducted in two health districts in South Africa, which also emphasized the significance of adequate staff, infrastructure, and training in facilitating the implementation of the model (Lebina et al., 2020:10).

## **5.4 CONCLUSIONS**

This study determines the perspectives of professional nurses on the implementation of the ICDM model. The professional nurses' different perspectives highlighted their crucial role as PHC providers in influencing the successful implementation of the ICDM model. The objectives of the study were to explore and describe the perspectives of professional nurses on the implementation of the ICDM model, to identify challenges experienced by professional nurses when implementing the ICDM model, and to identify factors that can improve the implementation of the ICDM model at PHC facilities in Mogale Local Municipality of Gauteng Province, South Africa. The findings revealed that the objectives of the study were met.

Professional nurses expressed positive perspectives on the perceived benefits of the ICDM model implementation including integrated care, adequate medication supply,

improved efficiency, and alleviation of stigma relating to diseases. The findings, however, indicate that the ICDM model implementation is still being threatened by a variety of challenges, including shortage of staff, poor infrastructure (small waiting rooms, few consultation rooms), and patients missing scheduled appointments.

Considering these challenges, the findings of the study emphasized the need for adequate staff, infrastructure, and ongoing training to enhance their performance within the ICDM model. This is in line with their complete commitment to ensure patient-centred care, to acquire knowledge or information about the latest advancements and evidence-based practices to deliver the most effective feasible care for patients who are managing chronic diseases. The discovered outcomes may be attributed to the limited number of participants and potential self-selection bias among professional nurses who refused to participate in the study.

## **5.5 RECOMMENDATIONS**

### **5.5.1 Recommendations for management**

#### **5.5.1.1 Recommendations for the improvement of the ICDM model implementation**

Professional nurses have expressed concerns about the shortage of staff. The concern of staff shortage contributes to long patient waiting times, influx of chronic patients, and additional workload. Shortage of staff also hinders the ability of professional nurses to provide adequate time to each patient. Considering this, it is recommended to consider the hiring of additional staff. The existence of inadequate infrastructure was identified as an additional major challenge that compromises the successful implementation of the ICDM model. Poor infrastructure affects the implementation of the ICDM model guidelines. Therefore, it is recommended to address the issue of infrastructure to ensure the provision of comprehensive and integrated chronic disease management for patients.

### **5.5.1.2 Recommendations for the provision of training for professional nurses**

The findings of the study indicate that adequate training is a key factor in promoting the successful implementation of the ICDM model. Professional nurses training plays a crucial role in enabling them to effectively contribute to the success of the ICDM model, leading to improved patient outcomes in chronic disease management. Hence, it is recommended to provide ongoing training and learning opportunities for professional nurses.

### **5.5.2 Recommendations for future studies**

Future studies on subject, in other South African districts, are recommended so that those findings could subsequently be compared with those of the current study. Future studies should consider using larger sample sizes to build further upon the findings of this study. It is recommended that future studies explore the varying perspectives of all ICDM model users, including chronic-disease patients and other healthcare professionals such as pharmacists and doctors.

## **5.5 CONTRIBUTION OF THE STUDY**

As chronic disease comorbidities are becoming more prevalent in South Africa and other low-and middle-income countries. This study presents perspectives on the challenges and facilitators perceived by professional nurses on the implementation of the ICDM model. These findings may benefit healthcare establishments in developing more tailored and effective implementation strategies, resulting in a smoother implementation of the model. In addition, the findings of the study can inform evidence-based recommendations for policymakers in developing policies that influence chronic disease management and nursing practice.

Professional nurses' perspectives can provide valuable insights into areas that need more investigation or where knowledge gaps exist. Their perspectives on challenges,

unmet needs, and emerging patterns could benefit researchers with identifying appropriate study questions.

## **5.6 LIMITATIONS OF THE STUDY**

The following limitations were identified by the researcher in this study.

### **5.6.1 Inclusion criteria**

This study only included professional nurses with a one - ten years of ICDM model experience, hence, other professional nurses with less experience were excluded from the study. In addition, the study included only participants who voluntarily agreed to participate, while those who did not provide consent were excluded. The perspectives of professional nurses who agreed to participate in the interviews may have been similar or different from those who declined to be interviewed or those who did not meet the specific criteria for inclusion. Thus, the findings cannot be generalised to the entire population of the professional nurses as such.

### **5.6.2 Sample size**

The study sample size was small, which may limit the generalizability of its findings to the wider population of professional nurses implementing the ICDM model. To address this limitation, the researcher employed meticulous study design, ensured transparency in reporting, and provided thoughtful interpretation of the findings.



### **5.6.3 Study setting**

The current study was exclusive to the Mogale Local Municipality of Gauteng Province, South Africa, while other local municipalities that utilized the ICDM model were not part of the study. In addition, the study focused on three PHC facilities which was a small number. The study findings are limited to the specific PHC facilities where the study took place. The small sample size, consisting of only three PHC facilities, means that the results cannot be generalised to other settings.

### **5.6.4 Limited long- term follow- up**

The study did not incorporate a follow-up method, which may have resulted in a potential oversight of any changes in perspectives that could occur as nurses acquire more experience with the ICDM model. Lack of follow-up may affect the findings of the study in terms of their validity and generalisability. For this reason, the study included experienced professional nurses to address the limitation of long-term follow-up.

### **5.6.5 Limited previous study**

The study literature review revealed a scarcity of exploratory descriptive qualitative research on the implementation of the ICDM model in PHC facilities in South Africa. A scarcity of sources may result in a lack of diverse perspectives being represented. To address this limitation, the researcher performed a thematic analysis on the study to identify recurring themes and patterns in the perspectives of professional nurses.

### **5.6.6 Self-selection bias**

The sample for this study consisted only of participants who agreed to participate. Therefore, self-selection bias may have contributed to the sample's representativeness and the generalisability of the findings in this study. Subsequently, the generalisability of the findings of the study to the entire population of professional nurses is limited. Given that the self-selected sample may not provide a true representation of the diverse range of perspectives within the broader nursing population.

To address the potential influence of self-selection bias, the researcher provided a comprehensive description of the interviewing methods followed and acknowledged the potential for self-selection bias in the discussion of the limitations of the study.

## **5.8 CONCLUDING REMARKS**

In summary, this study explored the perspectives of professional nurses on the implementation of the ICDM model at PHC facilities in Mogale Local Municipality of Gauteng Province, South Africa. Nurses play a crucial role as key stakeholders in the effective implementation of the comprehensive approach to managing chronic diseases, as evidenced by their experiences and perspectives.

The perspectives of professional nurses on the implementation of the ICDM model demonstrated a comprehensive interaction of views, benefits, and challenges. In addition, the study identified factors that can improve the implementation of the ICDM model, hence, the findings of the study indicated that enhancing the implementation of the ICDM model is feasible. Nonetheless, conducting more studies with a larger sample size would offer more perspectives on the implementation of the ICDM model.

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## ANNEXURE A



### COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

27 June 2022

Dear Mrs Avhaathu Sylvia Dagume-Ndou

**Decision:**  
**Ethics Approval from 27 June 2022 to 27 June 2025**

NHREC Registration # :  
Rec-240816-052  
CREC Reference # :  
64045919\_CREC\_CHS\_2022

**Researcher(s):** Name: Mrs Avhaathu Sylvia Dagume-Ndou  
Contact details: [64045919@mylife.unisa.ac.za](mailto:64045919@mylife.unisa.ac.za)  
**Supervisor(s):** Name: Prof TG Lumadi  
Contact details: [lumadtg@unisa.ac.za](mailto:lumadtg@unisa.ac.za)

**Title: Professional nurses' perspectives on the implementation of the integrated chronic disease management model at primary healthcare facility, Mogale Local Municipality, South Africa.**

**Degree Purpose: MPH**

Thank you for the application for research ethics clearance by the Unisa College of Human Science Ethics Committee. Ethics approval is granted for three years.

The **low risk application** was reviewed and approved by the College of Human Sciences Research Ethics Committee, in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the




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confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.


5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No fieldwork activities may continue after the expiry date (**27 June 2025**). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

*Note:*  
The reference number **64045919\_CREC\_CHS\_2022** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,

Signature: 

Prof. KB Khan  
CHS Research Ethics Committee Chairperson  
Email: khankb@unisa.ac.za  
Tel: (012) 429 8210

Signature: PP 

Prof K. Masemola  
Executive Dean: CHS  
E-mail: masemk@unisa.ac.za  
Tel: (012) 429 2298



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## ANNEXURE B



### WEST RAND DISTRICT FAMILY MEDICINE

Dr. E.E. WENEGIEME  
Telephone: (011) 9516219  
Cell: 0783993190  
0674196257

[wenegiemeegbert@gmail.com](mailto:wenegiemeegbert@gmail.com)  
[Wenegieme.egbert@gauteng.gov.za](mailto:Wenegieme.egbert@gauteng.gov.za)

Date: 30 August 2022

PI Name and Surname: Mrs. Avhaathu Sylvia Dagume-Ndou

Email: [dagsandrew@yahoo.com](mailto:dagsandrew@yahoo.com)

NHRD REF NO: GP\_202208\_067

Title: Professional nurses' perspective on the implementation of the integrated chronic disease management model at primary healthcare facility, Mogale local Municipality, South Africa.

Protocol: I have studied the protocol and it is well articulated. Sample size will not impact service delivery.

The location where the study will be conducted: West Rand District Health

#### Facilities Requirements:

1. There will not be an additional load on nursing staff, e.g. asking them to recruit patients for study
2. Support services e.g. administration staff including clerks, and reception staff will not be part of facilitating this study (IT Specialist)
3. Consumables e.g. swabs and gloves will not be used in these facilities
4. Laboratory tests will not be done in the above-mentioned facilities
5. Equipment's e.g. BP cuffs belonging to these facilities will not be used
6. Space (office space/counselling cubicles) of these facilities will not be used but the location of the interview will be negotiated according to the interviewee's preferences may be hospital offices at a time convenient for the interviewee
7. Communication e.g. announcements, and handing out leaflets will not be undertaken in these facilities (Survey Questionnaire)
8. Dates, days of the week, and times you wish to access the facilities should not be determined by the researcher without knowledge of the facilities
9. There will be no additional OPD visits for this study
10. Admission of patients will not be part of this study

Ethics: Approval granted by HREC as provided by the researcher

Funding Source: Researcher

Take note that you will need to share your findings and recommendations with the facilities to assist with future clinical policies.

We wish you well during this project. For any additional information, feel free to contact our department.

Regards,

Dr Wenegieme (DRC WRD)



ANNEXURE C

**REQUEST FOR PERMISSION TO CONDUCT THE STUDY**

Request for permission to conduct research at Thusong clinic

Professional nurses' perspectives on the implementation of the integrated chronic disease management model at primary healthcare facility, Mogale Local Municipality, South Africa.

19 September 2022

Operational manager

12527 Ainslie St

Kagiso

Krugersdorp

Gauteng

011 9512210

Dear Sir/Madam

I, Avhaathu Sylvia Dagume-Ndou am doing research with Lumadi TG, a professor in the Department of Health Studies towards an MPH at the University of South Africa. We are inviting you to participate in a study entitled Professional nurses' perspectives on the implementation of the integrated chronic disease management model at primary healthcare facility, Mogale Local **Municipality**, South Africa.



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The aim of the study is to determine professional nurses' perspectives on implementation of the ICDM model at PHC facility of Mogale local municipality in West-Rand District, Gauteng Province.

Your company has been selected because your institution was among the first PHC facilities to initiate the ICDM concept in 2011.

The study will entail a semi-structured in-depth face-to-face interviews with open-ended questions relevant to the study with professional nurses. The interview will be recorded using a radio recorder and will last for 30 minutes. The institution name and the professional nurses' personal details will not be mentioned or recorded anywhere in the study.

The benefits of this study are contributions to health advancement and reinforcement for the ICDM model's sustainability and scale-up. There will be no tangible benefits from this study.

Potential risks are minimal in this study, The foreseeable risk will be of discomfort.

Feedback procedure will entail paper report including average information.

Yours sincerely



Avhaathu Sylvia Dagume-Ndou

Student/Researcher



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ANNEXURE D

PERMISSION LETTER

**Request for permission to conduct research at Krugersdorp Central clinic**

Professional nurses' perspectives on the implementation of the integrated chronic disease management model at primary healthcare facility, Mogale Local Municipality, South Africa.

18 May 2022

Operational manager

Jack Smidt Building, Cnr Commissioner and Fountain Street

Krugersdorp

1739

0119512205

Dear Sir/Madam

I, Avhaathu Sylvia Dagume -Ndou am doing research with Lumadi TG, a professor in the Department of Health Studies towards an MPH at the University of South Africa. We are inviting you to participate in a study entitled Professional nurses' perspectives on the implementation of the integrated chronic disease management model at primary healthcare facility, Mogale Local Municipality, South Africa.



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The aim of the study is to determine professional nurses' perspectives on implementation of the ICDM model at PHC facility of Mogale local municipality in West-Rand District, Gauteng Province.

Your company has been selected because your institution was among the first PHC facilities to initiate the ICDM concept in 2011.

The study will entail a semi-structured in-depth face-to-face interviews with open-ended questions relevant to the study with professional nurses. The interview will be recorded using a radio recorder and will last for 30 minutes. The institution name and the professional nurses' personal details will not be mentioned or recorded anywhere in the study.

The benefits of this study are contributions to health advancement and reinforcement for the ICDM model's sustainability and scale-up. There will be no tangible benefits from this study.

Potential risks are minimal in this study, The foreseeable risk will be of discomfort.

Feedback procedure will entail paper report including average information.

Yours sincerely



Avhaathu Sylvia Dagume-Ndou

Student/Researcher



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ANNEXURE E

PERMISSION LETTER

**Request for permission to conduct research at Maki Legwete Clinic**

Professional nurses' perspectives on the implementation of the integrated chronic disease management model at a primary healthcare facility, Mogale Local Municipality, South Africa.

19 September 2022  
Operational manager  
Maki Legwete Clinic  
16218 Geba street  
Kagiso Ext 128757  
011 4108439

Dear Sir/Madam

I, Avhaathu Sylvia Dagume-Ndou am doing research with Lumadi TG, a professor in the Department of Health Studies towards an MPH at the University of South Africa. We are inviting you to participate in a study entitled Professional nurses' perspectives on the implementation of the integrated chronic disease management model at primary healthcare facility, Mogale Local Municipality, South Africa.

The aim of the study is to determine professional nurses' perspectives on implementation of the ICDM model at PHC facility of Mogale local municipality in West- Rand District, Gauteng Province.



Your company has been selected because your institution was among the first PHC facilities to initiate the ICDM concept in 2011.

The study will entail a semi-structured in- depth face-to-face interviews with open-ended questions relevant to the study with professional nurses. The interview will be recorded using a radio recorder and will last for 30 minutes. The institution name and the professional nurses' personal details will not be mentioned or recorded anywhere in the study.

The benefits of this study are contributions to health advancement and reinforcement for the ICDM model's sustainability and scale-up. There will be no tangible benefits from this study.

Potential risks are minimal in this study, The foreseeable risk will be of discomfort.

Feedback procedure will entail paper report including average information.

Yours sincerely



Avhaathu Sylvia Dagume-Ndou

Student/Researcher



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**ANNEXURE F**  
**CONSENT TO PARTICIPATE IN THIS STUDY**

I, \_\_\_\_\_, confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty.

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the interview.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname..... (please print)

Participant Signature.....Date.....

Researcher's Name & Surname: Avhaathu Sylvia Dagume-Ndou

Researcher's signature



Date: 19 September 2022



## ANNEXURE G

### INTERVIEW GUIDE

#### **Demographic information**

Name of PHC facility (Clinic):

Age:

Gender:

Training attended: (PHC, PALSAs, NIMART, PC 101)

No. of years using the ICDM model:

**Introductory question:** What is your understanding of the ICDM model?

- ❖ In your opinion, is the ICDM Model acceptable to staff?
- ❖ In your perspective, what are the potential benefits associated with integrating the ICDM model into the provision of healthcare services to patients?
- ❖ What is your opinion about the number and availability of staff in relation to patients?
- ❖ What is your view about the cleanliness of the facility, availability of essential equipment, and medication supply?
- ❖ Is there a waiting time survey conducted at this clinic? If yes, what is the average waiting time?
- ❖ May you please describe the audits/review meetings on adherence to clinical guidelines for ICDM model implementation at this clinic?
- ❖ What are the challenges you have experienced while implementing the ICDM model?
- ❖ In your opinion, what can be done to improve the implementation of the ICDM model at PHC facilities?

Thank you



## ANNEXURE H



### PARTICIPANT INFORMATION SHEET

18 May 2022

**Professional nurses' perspectives on the implementation of the integrated chronic disease management model at primary healthcare facility in Mogale Local Municipality, South Africa.**

**Dear Prospective Participant**

My name is Avhaathu Sylvia Dagume-Ndou and I am doing research with Prof TG Lumadi a supervisor in the Department of the Department of Health Studies towards an MPH at the University of South Africa. We are inviting you to participate in a study entitled Professional nurses' perspectives on the implementation of the integrated chronic disease management model at primary healthcare facility in Mogale Local Municipality, South Africa.

#### **WHAT IS THE PURPOSE OF THE STUDY?**

I am conducting this research to find out about the perspectives of professional nurses on the implementation of integrated chronic disease management model at PHC facility.

OR

This study is expected to collect important information that could contribute to health advancement and reinforcement for the ICDM model's sustainability and scale-up.

You have been chosen to participate in this study because you are a professional nurse working in a primary healthcare facility in which the ICDM model is being used. All potential participants who meet the inclusion criteria and give a written consent will be enrolled in this study.



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The study involves audio-taping semi-structured interviews. I will be asking you questions relevant to the study and request that you be open and honest as possible in answering these questions. You may choose not to answer some of the questions that you are not comfortable with. Participation should require about 30 minutes of your time and should the time be exceeded you have a right to end the interview.

Please understand that your participation in this study is voluntary and there is no penalty or loss of benefit for non-participation. You are under no obligation to consent to participation. If you choose not to participate you will not be affected in any way whatsoever. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and have any of your data already recorded removed from the analysis where this is possible.

There are no major benefits to you for your participation. The only benefit is the experience of participating in this research.

There will be no level of any negative consequences for you if you participate in this study as your personal information will not be linked in any way and your response will remain anonymous.

Records of your participation in this study will be held confidential as far as is permitted by law. You have the right to insist that your name will not be recorded anywhere and that no one, apart from the researcher and identified members of the research team, will know about your involvement in this research OR your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code number or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

No one except the researcher will be able to identify you as the person who provided any specific information for the study. Your anonymous data may be used for another purpose, such as a research report, journal articles, and/or conference proceedings but you will not be identifiable as only codes linked to your identifiable information will appear on the data.

Hard copies of your answers will be stored by the researcher for a period of five years in a locked cupboard/filing cabinet at the Unisa Department of Health Studies for future research or academic purposes; electronic information will be stored on a password-protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if



applicable. When research records are to be destroyed, paper records will be shredded and recycled and records stored on a computer hard drive will be erased using commercial software applications designed to remove all data from the storage device and data stored or recorded data on tapes, the audio recorder will be destroyed. The researcher will keep records stating what records were destroyed, and when and how it was done.

There are no tangible benefits like payment or any incentives for your participation in the study.

This study has received written approval from the Research Ethics Review Committee of the CHS, Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

If you would like to be informed of the final research findings, please contact Avhaathu Sylvia Dagume-Ndou on 0761523381 or [64045919@mylife.unisa.ac.za](mailto:64045919@mylife.unisa.ac.za). The findings are accessible for indefinite.

Should you require any further information or want to contact the researcher about any aspect of this study, please contact Avhaathu Sylvia Dagume- Ndou, [64045919@mylife.unisa.ac.za](mailto:64045919@mylife.unisa.ac.za).

Should you have concerns about the way in which the research has been conducted, you may contact Prof TG Lumadi, [lumadtg@unisa.ac.za](mailto:lumadtg@unisa.ac.za), 012 4296513. Alternatively, contact the research ethics chairperson of the CREC, Dr KJ Malesa, [maleskj@unisa.ac.za](mailto:maleskj@unisa.ac.za), 012 429 6054 if you have any ethical concerns.

Thank you for taking time to read this information sheet and for participating in this study.

Thank you.



Avhaathu Sylvia Dagume-Ndou



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## ANNEXURE I

351 Ontdekkers Road  
Roodepoort, Johannesburg  
1709  
09 January 2023

### CONFIRMATION OF QUALITATIVE DATA ANALYSIS

This letter confirms that I, Thabisile Qwabi, an independent research consultant, analysed qualitative data of Sylvia Ndou for her Master's project.

Yours sincerely,



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Ms TD Qwabi

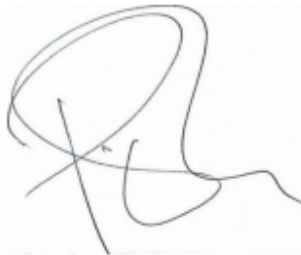
(Independent research Consultant)

## ANNEXURE J

### PROOF OF EDITING

18 January, 2023

This is to certify that I, Dr P Kaburise, have proofread the dissertation titled - **PROFESSIONAL NURSES' PERSPECTIVES ON IMPLEMENTATION OF INTEGRATED CHRONIC DISEASE MANAGEMENT MODEL, IN MOGALE LOCAL MUNICIPALITY GAUTENG PROVINCE, SOUTH AFRICA** - by Avhaathu Sylvia Dagume-Ndou. I have indicated some amendments which the student has undertaken to effect before the final dissertation is submitted.



Dr P Kaburise (0794927451/ 0637348805; email: [phyllis.kaburise@gmail.com](mailto:phyllis.kaburise@gmail.com))

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Dr P Kaburise: BA (Hons) University of Ghana (Legon, Ghana); MEd University of East Anglia (Cambridge/East Anglia, United Kingdom); Cert. Teaching English as a Foreign Language (Cambridge University, United Kingdom); Cert. English Second Language Teaching, (Wellington, New Zealand); PhD University of Pretoria (South Africa).