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TITLE: **PROFESSIONAL NURSES' PERCEPTIONS OF THE DISPENSING OF CHRONIC MEDICINES THROUGH THE CENTRAL CHRONIC DISPENSING AND DISTRIBUTION (CCMDD) PROGRAM IN THE AMATOLE HEALTH DISTRICT, EASTERN CAPE**

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Professional nurse's perceptions of the dispensing of chronic medicines through the Central Chronic Medicines Dispensing and Distribution (CCMDD) program in the Amatole Health District, Eastern Cape

by

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A mini-dissertation submitted in fulfillment of the requirements for degree of Masters in Public Health.

DEPARTMENT OF PUBLIC HEALTH

FACULTY OF HEALTH SCIENCES

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03rd November 2021

DECLARATION

I, Vatliswa Monica Mjekula, declare that the dissertation is my own original work. Where other people's work has been used (either from a printed source, Internet or any other sources), this has been properly acknowledged and referenced in accordance with departmental requirements. I understand that the University reserves the right to use plagiarism detection systems, and to the best of my knowledge, the work does not breach any copyright law. I solemnly declare that, to the best of my knowledge, no part of this report or full dissertation has been previously submitted to the University or any other institution in South Africa for the awarding of a degree. I give consent for my dissertation, if accepted, to be lodged with the library system and I understand that any reference or quotation of my work will receive an acknowledgement.

Signed_____

V.M. MJEKULA

CERTIFICATION

This dissertation, "Professional nurses' perceptions of the dispensing of chronic medicine through the Central Chronic Medicine Dispensing and Distribution (CCMDD) program in the Amatole Health District, Eastern Cape", has been accepted because of its contribution to scientific knowledge and because it meets the University of Fort Hare's standards for a Masters of Public Health degree.

06 June 2022

Prof M.G. Pinkoane
Research Supervisor

Date

DEDICATION

My work is dedicated to my children and family who are my greatest sources of inspiration. They recognized my talent, believed in me and encouraged me to pursue my academic goals. Above all, I am grateful to God for bringing me thus far.

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LIST OF ACRONYMS

CCMDD	Central Chronic Medicine Dispensing and Distribution
TB	Tuberculosis
HIV	Human Immunodeficiency Virus
NCD	Non-Communicable Diseases
SANC	South African Nursing Council
UK	United Kingdom of Great Britain
ADC	Automated Dispensing Cabinet
APC	Adult Primary Care
IMCI	Integrated Management of Childhood Illnesses
NIMART	Nurse Initiative Management of Anti Retro Viral Treatment
NDoH	National Department of Health
KZN	KwaZulu Natal
HST	Health System Trust
WHO	World Health Organisation
SyNCH	Synchronised National Communication in Health
IMCI	Integrated Management of Childhood Illness
SLA	Service Level Agreement

ABSTRACT

Central Chronic Medicine Dispensing and Distribution is an outsourced, public dispensing service that has been operating in the Eastern Cape Province since 2014. The program was created for stable chronic patients with the goal of reducing waiting times, decongesting Primary Health Care facilities in the sector and increasing chronic medicine accessibility to all South Africans. It is designed to operate in three models, the Fast Lane, Adherence Clubs and External Pick-Up Points. This research study aims to explore perceptions of professional nurses of the dispensing of chronic medicines through the CCMDD program in the Amatole Health District, to establish what the contributory factors are around its effectiveness or its ineffectiveness.

The researcher has employed a mixed method approach, using both qualitative and quantitative designs. Creswell (2013) describes mixed methods research as both a method and methodology for conducting research. It involves collecting, analyzing and integrating quantitative and qualitative research in a single study or in a process of inquiry. In combination, it provides a better understanding of a research problem.

According to Polit and Beck (2017: 15), explorative studies are undertaken when a new area is being investigated or when little is known about the area of interest. The purpose of this approach is to give full understanding of research problem. Participants were identified by means of non-probability purposive convenience sampling method. Participants were selected based on the fact that they have knowledge of the phenomenon and were already implementing CCMDD program in their facilities. Study population is the group of 62 in total and only 50 professional nurses working in Primary Health Care facilities of Amatole, Eastern Cape that are implementing CCMDD program were interviewed. Data was collected by means a semi structure interview guide with open ended questions for participants to respond in writing, as well as a tape recorder for quality assurance. This was complemented by writing field notes

Data analysis was achieved by translation and transcription of both the interview schedule and the tape-recorded information. Content analysis was carried out using the combined methods of content analysis described by Tesch (in Creswell, 2013). A method of content analysis was employed where the researcher analysed the data independently of the co-coder, who was employed to validate the analysed the

transcriptions. After independent analysis, the researcher and the co-coder met to compare their findings and to reach consensus. A demographic data was analysed quantitatively and this was going to help the managers in terms of anticipating how many that need to trained in computer and in program management.

The results and findings of the study show that the CCMDD program reduces the clinical workload in the congested health care facilities. It also reduces the waiting time for patients before receiving their medication and, furthermore, it encourages adherence to treatment.

Key words: Perceptions, professional nurses, patients, Central Chronic Medicine Distribution and Dispensing, Primary Health Care facilities.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTORY BACKGROUND

1.1 INTRODUCTION

Central Chronic Medicine Dispensing and Distribution is an outsourced, public dispensing service that has been operating in the Eastern Cape Province since 2014. It is a program which was created for stable, chronic patients and aimed to reduce waiting times and to decongest the sector's primary health care facilities. According to the Adherence Guidelines for Human Immune Virus (HIV/AIDS), Tuberculosis (TB), and Non-Communicable Diseases (NCDs) (National Department of Health (NDoH), 2014), in recent years, there has been an upsurge of the number of patients who require chronic care. This increase is demonstrated by a population of 2.5 million who are on anti-retroviral treatment. There has also been an increase in the demand for chronic medication which has negatively impacted on the clinical workload of professional nurses. Furthermore, it has burdened the government resources. This burden has been exacerbated by the brain drain of professional nurses through resignations, which has left facilities mostly staffed by junior personnel (Democratic Nurses Organization of South Africa (DENOSA, 2019).

The high prevalence of non-communicable diseases, including the Human Immune Virus, in South Africa and other Sub-Saharan African countries, has forced the country to reassess its approach to centralized pharmaceutical dispensing, particularly for stable chronic patients. It has become critical to make it easier for patients to access their medication much closer to their homes. As stipulated by the South African White Paper on National Health Insurance, the Central Chronic Medication Dispensing and Distribution (CCMDD) Program was established to improve access to excellent health care services for the uninsured population (NDoH, 2014). Since this is a relatively new strategy introduced in 2014, the necessity for research to examine perceptions of professional nurses in the implementation of this new decanting strategy in Amatole Health District has emerged.

1.2 BACKGROUND

The Republic of South Africa's Constitution, Act 108 of 1996, Chapter 2 of the Bill of Rights, promotes democratic principles such as human dignity, equality and liberty for all people. Everyone has the right to health care, including reproductive health care, per Section 27 (1) of the country's constitution (NDoH, 1996).

Minister Aaron Motsoaledi announced the Universal Test and Treat Act in his budget statement on 10 May 2016. The Act aims to reduce the waiting time for primary health care, as it was anticipated that patients would have to queue for treatment after being tested positive for HIV Aids National (NDoH, 2016 a). As a result, the Health Minister declared that in the 2016/17 financial year, South Africa would launch a "scale up" plan for the National Health Insurance by decongesting 800 000 people. The goal of the Central Chronic Medication Dispensing and Distribution (CCMDD) decanting strategy is to improve access to appropriate and differentiated care services. The purpose of this initiative is to improve outcomes, ensure that people with chronic illnesses are not discriminated against and to link, retain, and support people with chronic illnesses. The Adherence guidelines for TB, HIV and NCD (NDoH, 2016b) outlines three models of decanting strategies, as recommended by the World Health Organization:

i) Space and Fast Lane appointment system;
ii) Adherence Club model;
iii) Central Chronic Medicine Dispensing and Distribution.

Although these three models have both similarities and differences, all suggest guiding principles for individual patients to qualify.

1.3 PROBLEM STATEMENT

In the Amatole Health District, professional nurses' impressions of CCMDD dispensing of chronic drugs are currently unknown, as the program has only recently been launched. South Africa's determination to adopt CCMDD on an unprecedented district-wide scale has generated concerns about the country's ability to meet all of the

service's needs. CCMDD's implementation, if properly managed, might put a variety of resources at risk, and under-supported nurses could end up giving sub-optimal care. This could impact on patient outcomes, staff confidence, morale, and the greater healthcare system. Its knock-on effect is extremely difficult to predict.

Results of the clinical audit conducted revealed that there have been several hiccups in the implementation of the program such as rejection of prescriptions because of several reasons such as failure of the prescriber to capture practise number, wrong dosage, strength and medicines that are not in the prescriber's approve list (NDOH, 2015). Some of these, mentioned in the weekly reports issued by service providers have been an inconsistency of delivery of chronic medicines for patients on the CCDD program and a rejection of scripts by the service providers (NDOH, 2015) . Report given by professional nurses during the monitoring support visit also in program's meetings showed that approximately 40% of expected parcels were identified as not having reached the facilities of the PHC sites implementing the program.

The rapid implementation of the CCMDD program gave rise to concern as strategies for dealing with challenges were not shared. This prompted the researcher to investigate how professional nurses felt about the implementation of the dispensing and distribution service. Its efficacy or lack of it could have far reaching effects, either as an agency matter and or as a national imperative.

1.4 The purpose of study:

The purpose of this research is to learn more about professional nurses' perceptions of dispensing chronic medicines through the CCMDD so as to mitigate factors that impact on this program in the Amatole Health District of the Eastern Cape Province.

1.5 Research Objectives

The following are the objectives of the study:

- To explore perceptions of professional nurses of the dispensing of chronic medicines through the CCMDD program in Primary Health Care (PHC) facilities of the Amatole Health District of the Eastern Cape Province;
- To examine the factors that impact on the dispensing of chronic medicines through the CCMDD program in Primary Health Care (PHC) facilities of the Amatole Health District of the Eastern Cape Province.

1.6 Research Questions

The research questions are the following:

- What are the perceptions of professional nurses of the dispensing of chronic medicines through the CCMDD program in Primary Health Care facilities of the Amatole Health District of the Eastern Cape Province?
- What are the factors that impact on the dispensing of chronic medicines through the CCMDD program in Primary Health Care facilities of the Amatole Health District of the Eastern Cape Province?

1.7 Significance of the study

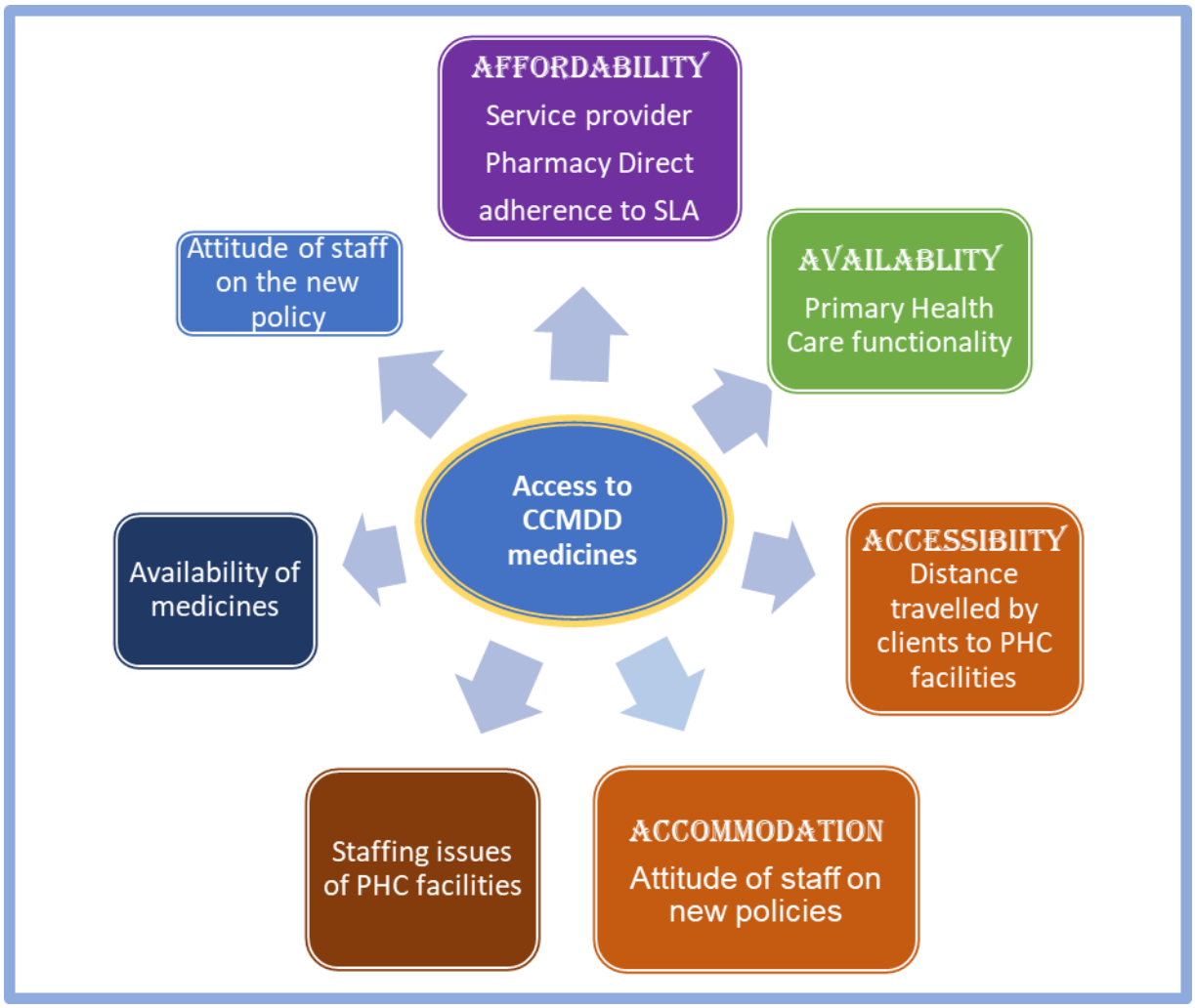
The proposed study will bring to awareness the challenges of CCMDD to all levels of carers involved. They will become sensitive to the needs of patients on chronic medicine and will ensure that they serve them appropriately. Furthermore, the research may be used to make recommendations to the district, provincial, and national Departments of Health to enhance holistic treatment and a favourable healthcare environment for patients on chronic medication. The study may also be used by healthcare managers and other policymakers to design policies and guidelines for improving health outcomes throughout South Africa.

1.8 Theoretical framework

The Neoliberal conceptual framework (figure 1) of Penchansky and Thomas, using the Five Dimension Framework, is applied as it promotes affordability, accessibility, availability, accommodation and acceptability. These are the 5 A's of health care which enable freedom of choice. As on the CCMDD program, patients can choose a Pick-Up Point which is convenient to their day-to-day routines and lives. Saurman (2016)

The Five Dimension Framework is illustrated in Figure 1 below:

Figure:1



The above framework summarizes assumptions of the accessibility of chronic medicines in Primary Health Care facilities through the CCMDD program. It is based

on the World Health Organization description of accessibility, geographic, affordability and availability, as the basis of consumer satisfaction. (Penchansky & Thomas, 2016).

Accessibility is further defined as the distance travelled to facilities where the medicines are dispensed. In Amatole Health District because of its rural nature this was identified as a problem for the patients. According to Dennil (2013), the primary health care approach as implemented by the National Department of Health ensures that there is availability and affordability of services to the patients irrespective of the geographical location and this will be inclusive of the CCMD program.

The applicability of this framework is reason for the researcher to have chosen it as it is based on the WHO principles as described by Penchansky and Thomas (2016).

1.9 Operational Definitions

The operational definition of the research attends to the applicable definitions which follow:

Perceptions

Perceptions are the way something is perceived, understood or interpreted; a widely held idea or opinion based on how things appear (Thesaurus, 2014)

Professional nurses

Professional nurses are persons formally educated and trained in the care of the sick or infirm; they have graduated from a registered University or nursing college and registered as nurse's midwives (South African Nursing Council (SANC), 2005).

Dispensing

Provision of pharmaceuticals or medicines in accordance with the terms of a valid prescription. Only a registered pharmacist, veterinarian, dentist or member of the medical profession write a prescription or provide the medication. (Thesaurus, 2014). In this instance, Pharmacy Direct is the service provider dispensing and distributing to the health facilities (Medicinet, 2021).

Chronic medicines

In medicine, chronic medicines are medicines prescribed for conditions that are not acute but require lifelong use; these are prescribed for three months or more with repeated doses. Chronic diseases contrast with those that are acute (abrupt, sharp and brief). (Medicinet, 2021)

Central Chronic Medicine Distribution and Dispensing (CCMDD)

The Central Chronic Medication Dispensing and Distribution(CCMDD) System was implemented by the National Department of Health and consists of two types of the program:

1. Central Chronic Medicine Dispensing and Distribution (CCMDD) and
2. Pick-up points

1.10 Conclusion

This chapter introduces the study's purpose by offering background information, a problem statement, research questions and objectives, as well as the study's framework. The study's importance and shortcomings are also examined. Chapter 2 presents a review of the literature consulted to gather information about professional nurses' perceptions of chronic medicine delivery through the CCMDD program, nationally and internationally**.**

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

The study's research topic and aims are discussed in the first chapter. This chapter further presents an overview of different professional nurses' perceptions of the dispensing of chronic medicines through CCMDD. A wide-range of factors that impact

on the dispensing of CCMDD are also presented in the literature review with the intention to clarify and motivate the research.

2.2 Different factors that impact on the role of Professional Nurses regarding the CCMDD Program

The Nursing Act 33 of 2005, as amended, Section 56 (6), states the mechanisms for nurses to perform certain functions, including the prescribing of medicine. This section of the South African Nursing Council Act (SANC, 2005), indicates that nurses, after a physical examination and diagnosis of any person, may prescribe, administer and dispense medicines. Their roles and the way they understand the new dispensing methodology are critical to patient care and treatment (SANC, 2005).

According to Humphries and Green (2017), one of the potential advantages and benefits is improved patient care, as professional nurses are better equipped to manage patients' conditions. This also improves the nursing practice's patient time and patients receive treatment without delays. Furthermore, it was noted that the introduction of nurses' prescribing enhances their sense of autonomy and professional standing. In the United Kingdom, the rules currently apply the Code of Professional Scope of Practice to regulate nursing practice in the country (United Kingdom Nursing and Midwifery Council, 2015). In the case of the Amatole District, the research strives to substantiate this claim.

Rochais., Atkinson, Guilbault, Bussieres (2014) found that in the UK, nursing staff were satisfied with the use of the Automated Dispensing Cabinet (ADC), believing it made their jobs easier, promoted safe patient care and Elkady, Rees and Khalifa (2019) states that the impact of the ADC on patient safety was viewed by practising professional nurses as characterised by decentralisation of the nurses' clinical decision-making, and enhanced autonomy and collaborative relationships with the physicians to improve patient outcomes. Professional nursing practice has the potential to create a harmonious and healthy caring atmosphere. This study was conducted in a Teaching Health Care Centre in the UK and it will also be implemented at the Amatole District. The weekly reports from Pharmacy Direct indicate that a

number of rejected scripts are sent to districts and facilities (Anon, 2015) and scripts are rejected for some several common reasons:

- Unknown prescribers who could not be verified by the nursing council;
- Incorrect dosages;
- Prescribed items that are not on the approved list;
- Unsigned scripts;
- No dates on scripts.

Giampaolo, Velo and Minuzy (2012) state that prescription errors are common and each step of a prescription may generate an error. There are numerous other reasons for unacceptable scripts like, handwriting, transcription, inadequate knowledge or competency, incomplete information about clinical characteristics and previous treatment of the individual. Other factors that contribute to incorrect prescriptions that could lead to their rejection are an unsafe environment and a lack of control or supervision. It is clear that there are many contributory factors to prescription rejections. The Nursing Act, section 22 (SANC, 2005), further directs that “nurses who hold such authorisation should only prescribe medicines in accordance with the latest version of Primary Health Care Essential Medicine List and Standard Treatment Guidelines.”

The Amatole Health District is currently using the 2014 version of the Standard Treatment Recommendations and Essential Medicines List with formulary drugs, as well as other guidelines like Adult Primary Care 101, to guide prescriptions for patient management (NDoH, 2014).

Authorization is only granted to nurses who have at least one of one recognized qualification after being assessed according to the revised Policy for Authorizing Professional Nurses to Perform Prescriptions in accordance with Section 56 (6) of the Nursing Act 33 (SANC, 2005). The recognized qualifications are a postgraduate qualification or other suitable courses accredited by the South African Nursing Council, such as the Diploma in Clinical Nursing Science, including:

- (Applied Pharmacology Course(APC) 101) all modules;

- Integrated Management of Child Illness (IMCI) for children aged 0-5 years,
- Other in-service training approved by the NDoH in consultation with the province or municipality;
- A professional nurse with Nurse Initiative Management of Anti-Retroviral Treatment (NIMART) training is licensed to prescribe drugs in the Eastern Cape;
- Active registration with South African Nursing Council.

A registered nurse who has completed the NIMART training and is actively registered with the South African Nursing Council is qualified to prescribe drugs in the Eastern Cape (SANC, 2005). It is clear when referencing the above requirements that the study should also look at issues of the competency levels of those who hold qualifications and/or the requisite training. Mansouri, Ahmadvand, Hadjibabeie, Kargar, Javadi and Gholami. (2013) describe the main goal of nurses in Iran as “the provision and improvement of human health.” Medication errors are common health threatening mistakes that negatively affect patients and, at times, may lead to death.

Although the current study has been conducted based on a hospital situation, it is evident that it applies to all levels of care. With unverified prescriptions being sent to Pharmacy Direct, patients run the risk of receiving the wrong medication, particularly patients who are illiterate and solely dependent on the nurses for the correctness of their scripts. This suggests that the study should look into the issue of supervision by Operational Managers before the script is captured by the agent from Pharmacy Direct; the agent is a lay person who is computer literate, but not qualified to assess the scripts.

With an awareness of the technical innovations in the health sector, the National Department Policy on Quality Assurance (NDoH, 2007), is targeting professional nurses, because the policy clearly indicates that professional nurses are overloaded with erroneous, outdated information and skills. The current research probes the extent of skills and expertise amongst the professional nurses of the Amatole district.

The policy further recommends that the curriculum of professional nurse training should be adjusted to include change management because the needs of communities are not static. This means that if re-scripting is programd into the training, it might reduce the high incidence of script rejections and it would thus extend the scope of the research.

The National Department of Health issued Guidelines for Patient Advocacy for Health Care Quality (NDoH, 2007) in which it stated that “professionalism is to value a patient’s right to self-determination.” As a result of valuing a patient's rights t, efforts are required to reduce script rejections. Patients become disappointed when they are dispensed by the facility when they were expecting a parcel from Pharmacy Direct. The extent of this challenge is also examined.

The South African Nursing Act 33, section 22 (SANC, 2005) further states that professional nurses are licensed to prescribe drugs in order to promote access to medicines and assure compliance with the Central Chronic Medicines Dispensing and Distribution initiative's goals. It continues to state that professional nurses may only perform the functions and prescribe the medicine as provided for in the original authorisation granted to him / her as aligned to the Essential Medicines list. The high volume of script rejection does not only negatively impact on service delivery; patients are also inconvenienced. They come to collect their medicine only to find that the parcels have not been delivered because of rejected scripts.

It is evident that there is a high probability of non-adherence and that the proper implementation of the Standard Operating Procedure for Central Chronic Medicine Dispensing and Distribution is disrupted. Furthermore, the evidence suggests that verification of all the steps should be done by the pharmacist, nurses or the operational manager to meet the standards of South Africa’s National Guidelines for Adherence to HIV, TB, and NCD. (NDoH, 2016).

2.3 Factors impacting on the dispensing of CCMDD

2.3.1 National models of CCMDD

The National Health Insurance for South Africa, Version 40 (NDoH, 2015) reflects that the World Health Organization encourages countries throughout the world to work towards universal health coverage, citing financial risk, equal access to critical health care services. The access to safe, effective, high-quality, affordable vital drugs and vaccines as further examples of universal health coverage. Despite many challenges, positive experiences have been reported, resulting from the strategy. Cape Town cited benefits from Central Chronic Medicine Dispensing and Distribution through adherence club models. The decanting model has been implemented in areas like KwaZulu Natal, Limpopo, North West and the Cape. Although these areas have experienced challenges, patients are benefitting from the program (Health Systems Trust, 2015).

The model of repeat script prescriptions has also been practised by private organisations like Clicks, My Medicine and Dischem. The Clicks group cited some of the benefits of the repeat prescription model as its convenience, ease and it saves time as clients simply collect their parcels (Clicks, 2019).

Ngcobo and Zulu (2016) further report that the program involving collecting chronic medicines closer to home or work, was launched by the Department of Health, in collaboration with service provider Medipost has been introduced it in the ILembe District of KwaZulu Natal. This program is currently being implemented in three districts in KwaZulu Natal, Amajuba, UMgungundlovu and UMzinyathi. This program has stimulated an interest in investigating what might contribute to challenges in the Amatole Health District and what might be done to improve the situation.

The central filling system specialises in re-scripting which uses the same model as the CCMDD model of the South African Department of Health, hence the need to investigate professional nurses' perspectives of the program's implementation in the Amatole Health District.

The National Health Insurance, in its efforts to improve universal cost coverage, plans to contract all accredited clinicians, including pharmacists, to provide services to the uninsured population in an effort to eliminate fees for these services. Most poor people are severely hampered by the fees.” The fee for universal cost will be paid at the point

of access, utilising professional nurses. The service providers will be paid through the National Health Insurance Fund" (NDoH, 2016c).

Rather than the prescriptions themselves medicine misidentification, heavy workloads, diversions and dispensing against approved medicine list created during the process were found to be sources of errors in England when using a similar technique. It is possible that even using Pharmacy Direct as a service provider may contribute to these challenges. It is important to explore this possibility (Schellack, 2020).

2.3.2 International models implementing CCMDD

In the United Kingdom, a similar technique to the CCMDD has been implemented as cited above. The only difference is that in England, the pharmacist and doctor are seen as the most appropriate professional people to dispense. Anon (2015) describes the theme "Is Central Dispensing the Next Step in Pharmacy Evolution?" in the Pharmaceutical Journal, and emphasises the significance of amending regulations to level the playing field for centralised dispensing.

In 2019, United Kingdom Department of Health announced a new five-year plan for the Community Pharmacy Contractual Framework that the Department of Health and Social Care, together with the Pharmaceutical Services Negotiating Committee (PSNC, 2019), would develop a new vision of the future for the pharmacy community.

The centralised dispensing was viewed as both the hub and spokes of the plan, with a dedicated central point from which prescriptions are assembled, dispensed before being sent to a local pharmacy (the spoke), the patient's pick-up location, or the patient's home. Each item is labelled as the plan is more automated than traditional dispensing and claims to be safer and more efficient. Despite big pharmaceutical companies, like Royal Pharmaceutical Society, questioning the issues of efficiency of the system, Alistair Burt, the Minister Pharmaceuticals, announced on 7 June 2016 that the bill would allow pharmaceutical teams to spend more time in the dispensary, to provide patients and customers with over-the-counter medicines, advice,

counselling and other clinical services, such as medicine use, reviews and influenza vaccines (Ashcroft, Morecroft, Parker & Noyce, 2017).

This model, proposed in the United Kingdom, has similar benefits to the Central Chronic Medicine Dispensing and Distribution model, as it is designed to relieve professional nurses of the burden of a heavy clinical workload in order to enable them to attend to acute patients.

Sundaramurthy (2018) explains that in the Netherlands, the central filling system is recognised as a model that reduces costs, dispensing repeat prescriptions from multiple pharmacies. However, even in the Netherlands, nurses are still not afforded the opportunity to dispense medicines as pharmacy automation is seen as revolutionary in the pharmacy sector where the central files would accept electronic orders from connected branches, administer the medications, inspect labels and individual packages and wrap all prescription goods in a labelled bag. These are then categorised and delivered to the appropriate branches where patients receive notification by text message to go and collect medicines from their respective pick-up points.

This system has benefits that have been highlighted. For example, the increase in efficiency and reduction in dispensing errors, speed, reliable, simplicity and the maximising of available space.

Shemilt, Morecroft and Markridhe (2017) identified a connection between prescription volume and dispensing errors in the United States of America (USA) through a self-report survey of community pharmacists, investigating the socio-technical factors in medicine safety. They also looked at the way the technical, psychological and social parts of the labour system interact. Further, their study illustrated the influence of the technical elements such as staff workload, social elements, attitudes towards incident reporting and organisational learning on the proliferation of medication incidents. However, these factors only describe pharmacists, no nurses were involved in the study.

Wu-bin, Yang, Liao and Wen (2019) noted concern among Chinese community pharmacists that an increase in workload creates more opportunities for dispensing errors to occur.

It is evident that other issues that could negatively affect the CCMDD, as indicated by Ashcroft, Morecroft, Parker and Noyce (2017), like inadequate time to report adverse effects and additional staff-related issues. The relationship between technical elements and social elements in the increase of dispensing errors was further emphasised.

2.4 Conclusion

To conclude what has been discussed above, it seems that there are many factors to be considered to ensure proper dispensing of chronic medication through the CCMDD program. Since the program is new, there is not much relevant literature, only the studies conducted by different scholars. Many studies highlight the dispensing role in terms of the competency of pharmacists and they focus mainly on hospitals, ignoring the part played by professional nurses.

The literature further investigates other issues relating to dispensing medicines like the adverse effects of medications that require awareness of patients and reinforcement either in writing on the folders or verbally, before decanting for patients.

The CCMDD program is designed to cater for drastic shortages of staff in an era of an increased burden of disease, and to improve the accessibility of chronic medicines within the geographic reach of each patient. This is critical in terms of interpretation and conceptualisation because it has ramifications for policy implementation, particularly in the context of policy transition, as seen in primary health care.

CHAPTER 3 RESEARH METHODOLOGY

3.1 Introduction

In chapter two, relevant recent literature related to the Central Chronic Medicines Dispensing and Distribution (CCMDD) program is discussed according to the research objectives and responding to research questions. The objectives of the study are to explore and describe the perceptions of professional nurses of the dispensing of chronic medicines through the CCMDD, as well as to examine factors that impact on the dispensing of chronic medicines through the CCMDD in the Primary Health Care facilities of the Amatole Health District.

3.2 Research design and method

In chapter 3, the research design and method followed is described in detail. The researcher has employed a mixed method approach, using both qualitative and quantitative design. Collins and Hussey (2014) define the mixed method approach as applying both quantitative and qualitative methods to the process of data collection and analysis. The mixed method gives an in depth and accurate exploration and description of events as they unfold in the research setting.

Creswell (2014) describes mixed methods research as a method and methodology for conducting research. It involves collecting, analyzing and integrating quantitative and qualitative research in a single study or a program of inquiry. Furthermore the purpose of this form of research is that qualitative is to explore human experiences in a systematic, interactive, subjective approach to describe life experiences and give them meaning and promote our understanding of experiences such as pain, caring, and comfort in a more natural approach (Burns & Grove 2017).

Quantitative was used for demographics to give an epidemiological profile which is descriptive in nature to give numerical values to validate the population of the study. Polit & Beck (2017:11) explain that quantitative research is the numerical information that is obtained from the formal dimension and is analysed statistically.

A mixed method combination in any study provides better understanding of a research problem or phenomena than either research approach alone Creswell (2014), hence the decision to use a mixed method approach for this study.

Design is described as a blueprint of the study employed to gain more information as well as to provide a picture of situations as they naturally happen. It improves areas of control that could skew the study's validity (Burns & Grove, 2017).

3.3 Research Method

The research method followed is dealt with in detail hereunder under the headings of sample, sampling, population, sample size data collection and data analysis.

3.3.1. Population

The target population was selected from the group of professional nurses working high volume facilities including Community Health Centers of Amatole as they were among the first twenty facilities that were implementing CCMDD program. Burns and Grove (2017) describe population as all the elements that meet the criteria for inclusion in a study. Polit and Beck (2017) describe the target population as those who meet the sampling criteria and are accessible when the study is conducted.

Participants were also selected because of “their knowledge and experience with a phenomenon of common interest”, that is, the CCMDD (Creswell, 2013). The purpose of focusing on a sample of a few participants rather than the entire district, was to facilitate an in-depth study that would yield more valuable insights

3.3.2. Sampling Method

A non-probability purposive voluntary sample was used (Botma, Greeff, Malaudzi & Wright, 2016) to select the participants who were conveniently available and willing to participate in the research. The method allows for a greater in-depth study of a smaller

sample and facilitates sensitivity to meaning and context. Participants were selected based on the fact that they have knowledge of the phenomenon and were already implementing CCMDD program in their facilities.

Grove (2013) supported by Ritchie, Lewis, Mc Naughton. et al. (2016) describe this method of sampling in qualitative research as the approach which can be used as a guide for public health practitioners and graduate-level students interested in the concept and practice of rigorous research in health care settings.

3.3.3. Sampling Size

Brink, van de Walt, Rensburg. (2017: 132) define sampling as a process of selecting a sample from a population in order to obtain information about a phenomenon in a way that represents the whole population. All participants were those individuals who were conveniently available at the time the research was conducted and were willing to participate. A total number was 62 and only a group of 50 professional nurses who are employed in the Health District of Amatole and are already implementing the distribution of chronic medicines through CCMDD program in primary health care facilities that were interviewed and 5 was on leave. Polit and Beck (2017) state that size also determines data saturation."**.**

The same group of 50 professional nurses were used for quantitative as it was their demographic information which was used to validate their profile and was descriptive, used for interpretation of data.

3.3.4. Selection criteria

The selection criteria was for the population of professional nurses who had an equal chance of being selected to take part in the study. This was to ensure full representation of the entire population of professional nurses who were implementing CCMDD program in the high volume facilities of Amatole Health District.

3.4.3. Inclusion

According to Grove (2013), inclusion implies participants who meet the selection criteria. These were professional nurses, who worked in high volume PHC centers of the Amatole district and agreed voluntarily to sign the consent forms after being verbally approached by the researcher; they were included until data was saturated. They also had to meet the selection criteria set for the objectives of the study. These are defined as the traits that a subject or element should have in order to be included in the study's target audience. Rubin and Babbie (2013) describes "the inclusion of all individuals who are conveniently available at the time the research is conducted and are willing to participate in the study."

The following inclusion criteria apply to the purpose of this study:

- Licensed professional nurses who are members of the South African Council of Nurses;
- Working as a professional nurse at a chronic dispensing medicine nit in a Primary Health Care facility;
- Working at Amatole Primary Health Care facilities implementing the CCMDD program;
- Individuals giving their informed consent to participate in the study;
- Those who were able to communicate through the medium of English;
- Those who were willing to consent to an audio-tape recording of the interviews to be conducted.

3.4.4. Exclusion

In this study, the exclusion criteria were the following:

- Professional nurses working in the Primary Health Care facilities who were not dispensing chronic medications nor implementing the CCMDD Program;

- Community Service professional nurses were not included because they were being mentored by experienced professional nurses and fell in lower categories;
- Professional nurses working in the private sector of the Amatole Health District;
- Professional nurses working in other districts than Amatole;

3.5. Preliminary exploration

According to Holloway and Wheeler (2010) a pilot study is not done in qualitative research but a preliminary can be done to get used to the type of collection tool. A pilot study assesses whether respondents can provide the necessary information; Burns and Grove (2017) describe it as a small-scale study. It is carried out in order to determine the feasibility, strength and limitations of the research approach in advance of the main investigation. Polit and Beck (2017) stress that, for every pilot study, the aspects tested and the criteria used to identify the success should be outlined in the reporting of the research to guide researchers conducting a study using similar participants, tools and processes. A small-scale preliminary study undertaken in order to examine feasibility, time, cost, adverse events and effective size is an attempt to forecast an acceptable sample size and improve upon the design, prior to the initiation of a full-scale investigation. It is a pre-test carried out to examine for possible flaws in the instruments, as well as whether the variables defined as operational definitions are actually observable and measurable. Professional nurses selected for pilot study met the inclusion criteria and were not part of the sample (Brink et al., 2017).

A pilot study was conducted in four high volume facilities, using office space one from each of the four sub-districts to test the interview guide. One Primary Health Care facility was chosen from each sub district and at least two professional nurses were interviewed, that makes eight participants. As Brink et al., (2017) explain, the pilot study's findings might reveal some lack of clarity in the questions. These were revealed in the current study and were amended. The pilot trial participants were not included in the main study.

3.6. Data Collection

3.6.1 The data collection instrument

A semi structure interview guide with open ended questions was used. It consists of two sections, section A extracts the demographic information of the participants and Section B was comprised of auditory, verbal responses to specific questions. These were tape recorded.

3.6.2 The data collection process

Burns and Grove (2017) define the data collection process as the systematic gathering of information relevant to the research on specific objectives and questions arising from the hypothesis. Maree, Creswell, Ebersohn, Elloff, Ferrera *et al*., (2019) further describe data collection as the way in which the researcher approaches the answering of the research questions. It affords an opportunity to clarify the way the results or findings are derived as well as presenting a rationale for the chosen method.

Data collection started in January 2020 and was finished by the end of August 2020. Data was personally collected by the researcher using a semi-structured questionnaire and a tape recorder (Polit & Hungler, 2013).

A weekly schedule was drawn up which reflected the date and time of the interviews, a telephone call was made by the researcher as a follow up to confirm the appointment.

The interview guide was developed in English and is divided into two sections (ANNEXURE F). The demographic information in Section A includes code names, ages, gender, qualifications and experience. Section B asks about the perceptions of the professional nurses of the CCMDD program. Ten questions were asked in the interview guide. The interview guide with biographic questions was intended to prompt information through written responses from the participants (ANNEXURE I). During

the study, the researcher further explored some relatively unknown research areas related to the topic of interest through probing questions. This was done to gain new insights into the phenomena and to extend her understanding, rather than merely collecting accurate data or replicating data. The participants were given adequate time to answer each question in writing on the interview guide.

Additional blank paper was supplied in case of a shortage of space provided on the interview response sheet. The tape recorder was used to collect verbatim data as some of the participants were more eloquent talking than responding in writing.

3.6.3. Physical setting and the role of the researcher

The physical setting for the research field work was PHC clinics in the Amatole Health District. To facilitate data collection, a separate room was identified at each health facility in which to conduct the interviews. Privacy was maintained by placing a notice on the closed door where the interview sessions were being conducted to ensure that the environment was relaxed and free from distraction (Burns & Grove 2017). Seating was arranged to facilitate eye contact and continuous rapport. Prior to the interview, the researcher collected the written informed consent forms if these had not been collected earlier. The participants completed the section on their biographical data; the same order of questions was posed to each participant so that no subjectivity could creep in. One on one interview method was applied using open ended questionnaire with an interview guide to probe questions for clarity. The researcher explained to each participant the aim and the objectives of the study. The researcher read the questions aloud for the participants to get a clearer understanding of what the interview was about and to explain what was expected of them. Each participant's questions were phrased in exactly the same way which also helped to improve the validity of the data. The professional nurses were encouraged to communicate freely within the scope of the research objectives and when answering the semi-structured interview questions through the use of non-verbal body language like nodding and eye contact. The responses were tape recorded, to be prepared for transcription by the researcher. They were supported by field notes.

After the interviews the researcher collected the consent forms and kept them as proof of voluntary participation in the research.

3.6.4. Field notes.

According to Polit & Beck (2017), there various types of field notes that can be recorded during data collection. Field notes are taken to support the interview process (Brink, 2017). They are taken in the field as the study progresses, and are made up from the researcher's observations, personal and methodical notes.

3.6.4.1 Observation notes

These are descriptions of the events seen and heard. They entail the who, what, where and how of the situation with as little interpretation as possible.

3.6.4.2 Personal notes

These are notes of personal reactions, reflections and experiences of the researcher who needs to place herself in the situation of the participants and to be empathetic.

3.6.4.3 Methodical notes

The researcher's critique of the interview process, interpretations and motivations are formulated to serve as a guide for data analysis.

The researcher recorded the dates, the coded names of the participants and the place names of the sites where the field notes were taken to facilitate an orderly and full description of the data for analysis.

3.6.5 Indemnity

All participants in the study were covered by University of Fort Hare and the Eastern Cape Department of Health Insurance for the course of the study. This included the research team.

3.7. Data analysis

Brink and Van der Walt (2017) emphasise that before analysis or processing the data, the researcher must examine them for completeness and accuracy. Further clarification is required in a qualitative study for it comprises an examination of text rather than numbers.

In the current study, the audiotapes of the interviews were transcribed verbatim by the researcher. Content analysis was carried out using the combined methods of content analysis described by Tesch (in Creswell, 2013). The transcriptions were executed as follows:

- Transcriptions were presented so that there is an area for notes in the left margin and the researcher's perceptions in the right margin;
- The researcher read all the transcriptions to get a sense of the whole of the data collected repeatedly till it makes sense,
- The most exciting or shortest transcription was chosen and read through;
- Words, themes and sub themes as units of analysis were selected;
- The transcripts carry the spoken words in the left column and any perceptions are noted in the right column;
- The left-hand column signifies the main categories and sub-categories that spontaneously come to mind and were systematically in a table format;

Spoken words were transferred to the sub- and main categories in the table. Perceptions were used to help in clarifying these tables.

The co-coder was asked to assist in the interpretation, editing, analysis (ANNEXURE G) and compilation of a report. The report will be kept for five years after the study. The field notes tape, interview guide, research questions and study objectives and protocols were all given to the co-coder.

3.8 Trustworthiness

Trustworthiness in a qualitative study is a measure to ensure reliability and validity as Polit and Beck (2017) describe them as encompassing the truth value, and in this study the following criteria was applied:

- Credibility as the assurance of the truth in the analysis of the data. It encompasses the true value by cross validation, using the co-coder as an independent data analyser.
- Applicability referred to the degree to which this research study's finding can be applied to another situation within the same district, using the same research approach and methodology;
- Consistency refers to dense description of the research methodology which was followed in this study;
- Neutrality was maintained by keeping all the records in case other researchers would like to review them.

3.9. Ethical considerations

3.9.1. Ethical Clearance and Permission

The University of Fort Hare's Research Ethics Committee accepted this study which follows the principles and ethical considerations of the Helsinki Declaration, as well as the University's ethical standards. (See Certificate of Ethics Number Ref no 2019-10-003 amongst the Appendices).

The Ethical Committee at Fort Hare University's School of Health Science granted permission to the researcher to conduct the study. In addition, the Eastern Cape Provincial Department of Health granted its permission. This was obtained through the Superintendent General and the Health Department's Research Unit.

3.9.2 Ethical considerations

The National Department of Health (NDoH, 2015) sets guidelines and principles for ethical considerations and these are to be strictly adhered to in South Africa by all studies involving human participants in research. They are informed consent, confidentiality and anonymity, privacy, freedom from discomfort or harm, acknowledgement of risks and benefits

3.9.2.1 Informed consent

Participants met the study's inclusion criteria and gave their informed agreement to participate (ANNEXURE D). All participants were informed about the study's goals, techniques, benefits and the way their confidentiality and privacy would be protected both before and after the study. The participants were further informed that they had the right to discontinue with the research if they were uncomfortable with the process or felt intimated during the interviews.

3.9.2.2 Confidentiality and anonymity

To respect their privacy, professional nurses' information was captured anonymously and all of the information gathered was coded. The recorded information, which was kept under lock and key, was only accessible to the researcher and the co-coder. Furthermore, no one outside the project was allowed access to the responses to the interview questions and responses were stored in envelopes and after completion, were sealed and locked away. These records will be saved for five years and then disposed of appropriately (NDoH, 2015).

3.9.2.3 Privacy

According to Burns and Grove (2017), privacy is the right of an individual to choose when, how and under what conditions personal information will be shared with or withheld from others. Privacy is maintained in this study by conducting semi-structured

interviews in private consulting rooms. A “Do not disturb” notice also placed on the entrances throughout the interview sessions so that no interruptions would take place. Transcribed interviews and field notes made use of coding to protect the identity of participants. This anonymity was appreciated by the participants.

3.9.2.4 Discomfort and Harm

Throughout the procedure, the principles of beneficence and non-harm were upheld. Because interviews were performed in a separate office and a sign stating that an interview was in progress was posted on the door, each participant in the study was treated fairly and their right to privacy was respected in terms of the principle of justice.

3.9.2.5 Risks and benefits

The study had no potential to cause physical or psychological harm to the participants, as all participants were over 18 years old and their right to discontinue was explained to them and options were given. There was no financial inducement to any participant to participate in the study. Incentives should not be used as a lure to continue with the research. The process of the research was transparent.

3.9.2.6 Termination and withdrawal

The interviews would be terminated should the participant indicated a desire to do so and if the relevant data could not be obtained. Participant withdrawal would be accepted with no penalty should anyone so wish and no coercion was undertaken, neither would they be punished in any way for not continuing with the research (NDoH, 2015).

3.9.3 Limitations

The research process was exposed to possible interruptions by competing work activities. The circumscribed area of the research created transportation problems as these are rural outreach areas. Staff rotation resulted in missed opportunities to continue with the study. Interview dates were allocated to one place and then to another at short notice because of COVID 19 staff absenteeism. The research study is contextual to Amatole and cannot be replicated to other health districts in the Eastern Cape.

The following are some of the study's limitations:

3.9.3.1. Generalising

It will be difficult to generalise results to the rest of Eastern Cape Province, as the study was conducted in selected Primary Health facilities of the Amatole Health District.

3.9.3.2. Time

The researcher is a beginner in the research field and is studying on a part-time basis, therefore, she needed to find a balance between allocating enough time to conduct the research and implementing key performance areas in the workplace. Obtaining ethics approval impacted on delaying the period of formulation and implementation of the guidelines.

3.10. CONCLUSION

In conclusion, the researcher details the research methodology, design, sample, sampling, population, method of data collection and the ethical considerations. Data analysis is also described as are the study limitations.

In Chapter 4, the results of data collection are analysed and interpretations are presented and discussed, supported by the literature.

CHAPTER 4 RESULTS, DISCUSSION AND INTERPRETATION OF FINDINGS

4.1. Introduction

The research findings and their interpretations based on the data acquired are discussed in this chapter. Findings are compared to earlier studies described in the literature review, where appropriate. The goal of this research was to find answers to the following research questions:

- What are the perceptions of professional nurses of the dispensing of chronic medicines through the CCMDD program in Primary Health Care facilities of the Amatole Health District of the Eastern Cape Province?
- What are the factors that impact on the dispensing of chronic medicines through CCMDD program in Primary Health Care facilities of the Amatole Health District of the Eastern Cape Province?

The information is organised according to the research questions. In the presentation and interpretation of the data, inductive reasoning was used as was befitting to gain an understanding of human experiences.

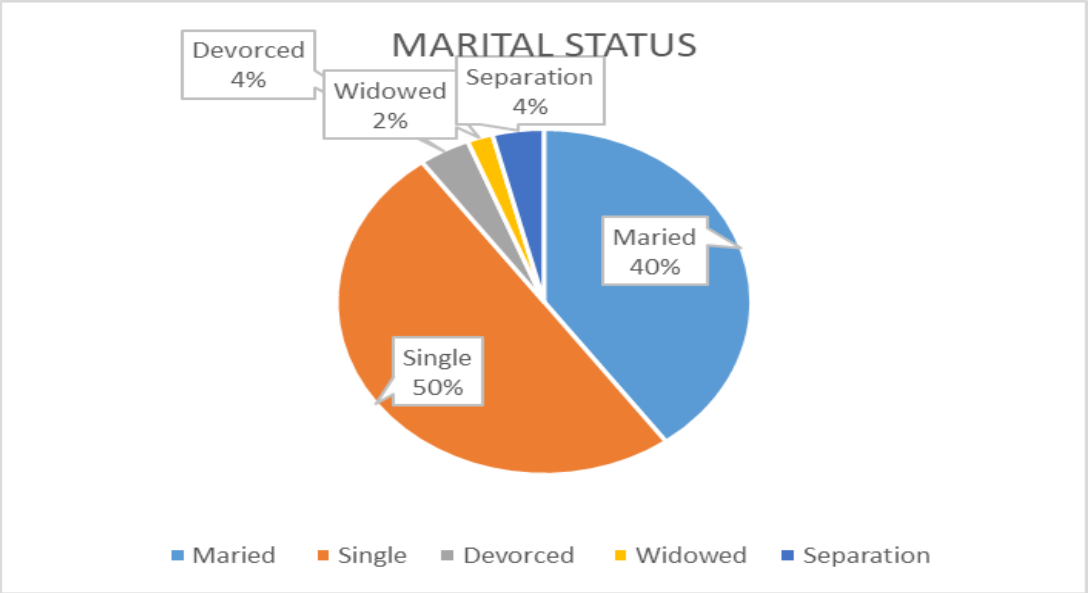
4.2. Presentation and Interpretation of data

Two sections have been used to show and interpret the data: Section A is demographic and uses quantitative strategies involving statistical interpretation, whereas Section B incorporates the qualitative responses obtained in an interview situation.

4.2.1 Section A: Quantitative interpretations

This section contains quantitative data about the (50) fifty participants' different variables: age, educational level, marital status, employment status.

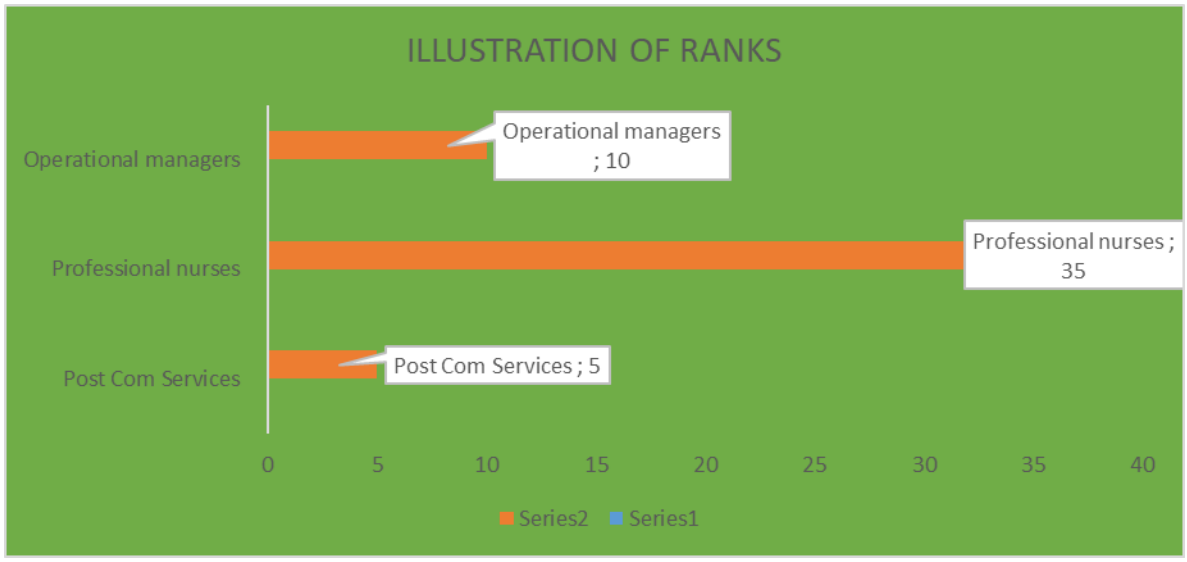
Figure 1.1 The graph below illustrates the marital status of the participants:



According to the graph above, 50% of the participants were single, followed by 40% married., four percent divorced or separated and two percent widowed.

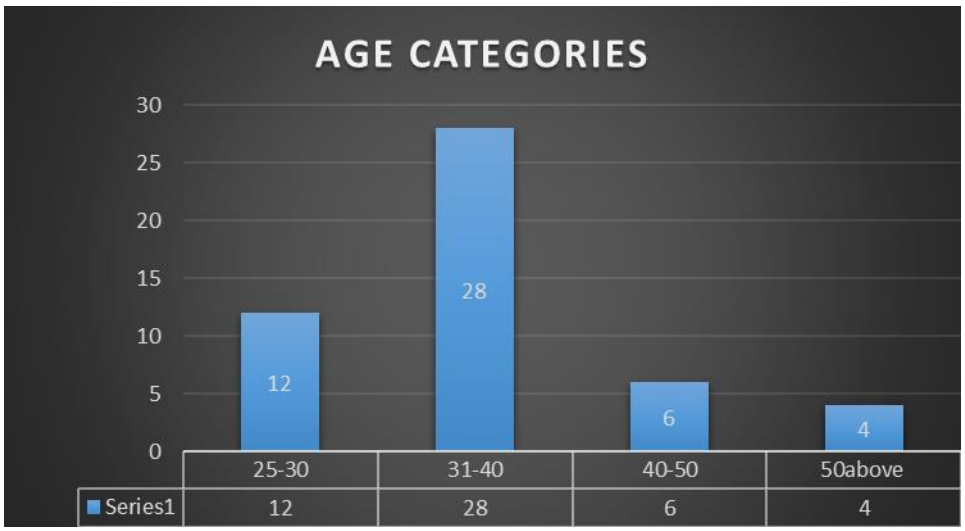
Figure1.2 below shows participants according to the posts they occupy in their different facilities. It is clear that 70% of professional nurses implementing the CCMDD program are professional nurses and only 20% involved in the implementation of the program are operational managers. Ten percent are post community services professional nurses:

Fig 1.2



Graph 1.3 below shows the age categories of the professional nurses implementing the CCMDD program in Primary Health Care facilities in the Amatole district. Note that 56% are between 31 and 40, followed by 24% who are 25 to 30 and only 12% are between 40 and 50, with eight percent falling in the last category of above 50.

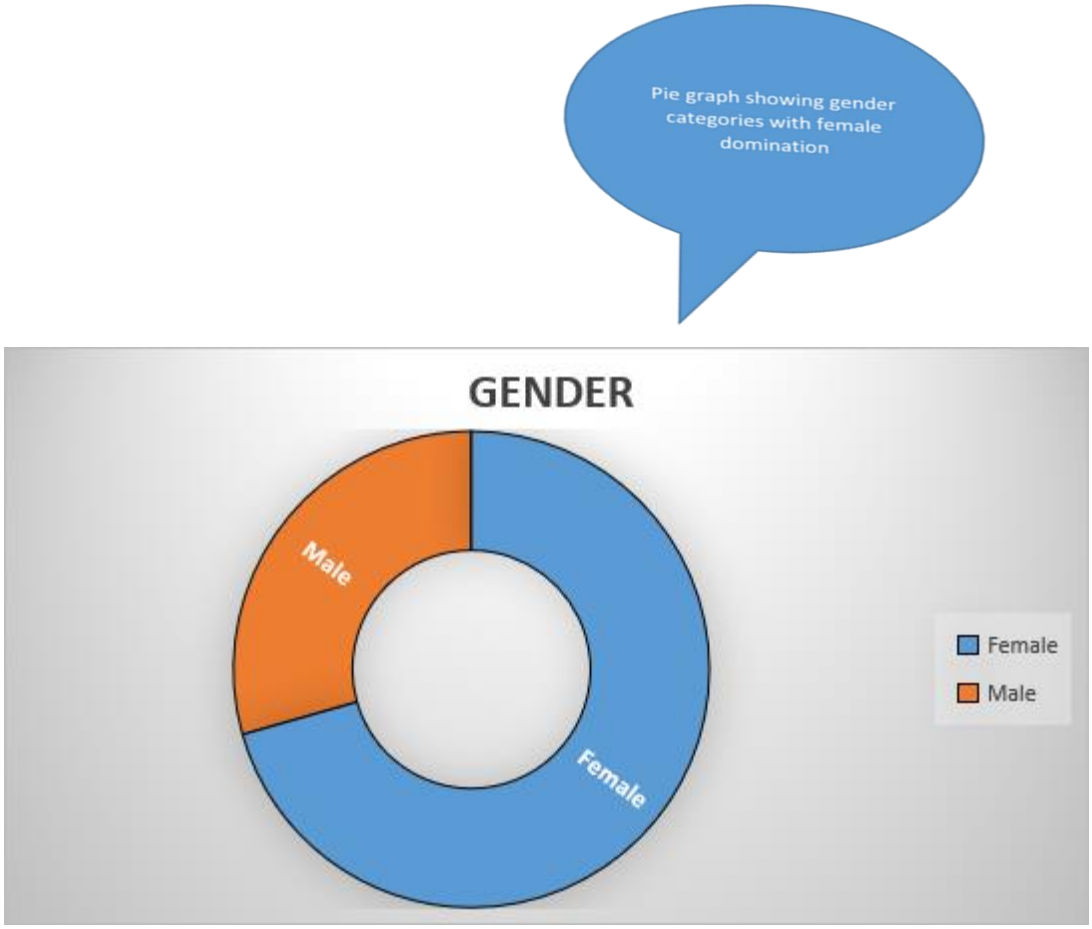
Fig 1.3



The above graph further indicates that people aged between 31 and 40 (56 %) were interested in participating in the study. According to the findings, those over the age of

50, or 8% of the population, were hesitant to engage in the study because of their need for more information.

Figure 1.4 Illustrating participants according to gender:



The analysis shows that females dominate the study sample. This, aligns with and substantiates Kelly Vanas' (2021) finding which confirm the preponderance of women in the nursing profession.

4.3. SECTION B: QUALITATIVE INTERPRETATION

This section pertains to the open-ended questions that allow participants to reply to research questions in their own words. The questions further enable the researcher to elicit more information from the subjects (Polit & Beck, 2017). The table below presents the categories according to the research objectives, as perceptions of the dispensing of the CCMDD and the factors impacting on the dispensing. The themes for discussion are proper distribution and the convenience experienced by both patients and staff.

4.3.1. Perceptions of professional nurses of the dispensing of chronic medicines through the CCMDD program in Primary Health Care facilities of the Amatole Health District of the Eastern Cape Province

4.3.1.1 Perceptions of the dispensing of CCMDD

TABLE I: PERCEPTIONS OF THE DISPENSING OF CCMDD

CATEGORY	THEME	SUBTHEME
Perceptions of dispensing	Dispensing CCMDD	Proper distribution and dispensing
		Convenience for professional nurses
		Convenience for patients
		Staff ill-prepared for dispensing
		I wish higher office could involve us when developing policies
		Professional nurse have little knowledge regarding preparation and dispensing of medicine,
Factors impacting on dispensing	Negative factors	Staff shortages
		Poor implementation of CCMDD
		Poor service delivery by external providers
Factors impacting dispensing	Positive factors	Aligning patient circumstances and technological advances
		Inclusivity of program
		Reduced waiting time
		Reduced work load
		Nicely packed parcels motivating clients
	Spoken words	

The above categorisation and themes clearly show different views how the program is being perceived by professional nurses and some concepts are showing up for example waiting time and work load reduction count positively on the issues of accessibility, availability accommodation. Program has been said is convenient for both nurses and patients

4.3.1.2. Proper distribution and dispensing of medication

Dispensing must be done correctly and in a systematic manner, with the disciplined application of appropriate methods. Most nurses are of the view that the CCMDD program is meant to improve the current practices of distributing and dispensing medication to patients. The nurses understand that the program came into existence to ensure proper and efficient administration and distribution of medication. The issue of efficiency is emphasised by the South African Nursing Council Act 33, Section 22 as referenced in South African Nursing Act, (2005:12) ruling that nurses should attain the qualification of professional nurse before being registered as prescribers.

Participant A states that:

"CCMDD is about centralising the distribution and dispensing of chronic medication. It is about dispensing treatment in a convenient way. It reduces time spent at medical dispensation centres in health facility."

Participant B states that:

"It's the program that is designed for chronic clients to collect treatment after two months. Their medication is packaged in a safe place and they are given the treatment without having to wait for long."

Participant G states that:

"As far as I know, the CCMDD program was initiated in 2014 to improve access to quality medication to all stable clients and reduce nurse workload by reducing the number of patients queueing in health facilities."

From the responses, it can be seen that the participants believe that the CCMDD program is meant to assist with the distribution of medication to patients. The CCMDD initiative is task-shifting, transferring responsibility for a large number of patients from public health facility staff to an external service provider (Pharmacy Direct) who administers and delivers drugs (Health Systems Trust, 2019). The participants saw this as a positive way to improve the dispensing of medication.

Participant H states that:

"This is a very good initiative, benefiting both health workers and clients. We need to educate our clients more about the program so that even those who are not stable yet can be motivated to become part of the program."

When dispensing employees are confronted with a multitude of patients who require speedy attention, good dispensing practices are jeopardised. Bierman (2018) notes the connection between prescription volume and dispensing errors in a self-report survey of US community pharmacists. In the dispensing process, the necessity for speed must be balanced with the need for accuracy and care. The patient's care, and maybe his or her life, is often in the hands of the dispenser.

However, the responses of some of the participants show that they perceive that the program is only designed for a certain group of patients.

Participant E states that:

"*CCMDD is a program that was meant for chronic clients with stable conditions. Clients get treatment for six months and are reviewed every sixth months by coming for blood tests. It helps the facility by minimising the workload and shortens the long queues that are always present at the facility."*

The Clicks journal cites some of the benefits of the repeat prescription as its being convenient, easy and saving time as clients simply collect their parcels. Repeat Prescription Service (Clicks, 2019).

Participant C states that:

“The CMDD is a program to improve access to chronic medication to patients who have proved to be stable and are reliable to follow their treatment. It enables patients to collect medication from convenient venues.”

From the foregoing, it is clear that, according to the participating nurses, the CCMDD program is designed for patients who are on chronic medication, according to Magadzire, Ward and Leng (2017), the National Department of Health's Central Chronic Medicine Dispensing and Distribution program distributes and dispenses medicine from a central point for patients with chronic diseases who are stable on their medication. The Standard Operating Procedure for registration of patients on the CCMDD (SOP 2) clearly stipulates that patients must be stable, have a specific non communicable disease and be willing to be enrolled in the program. The CCMDD program attempts to improve medicine accessibility by delivering medicine packets to registered patients at convenient locations. The National Health Insurance for South Africa, Version 40 (NDoH,2015) is also working towards the improvement of accessibility by complying with the World Health Organization’s encouragement of countries around the world to work toward universal health coverage, citing financial risk, equal access to critical health care services and access to safe, effective, high-quality, affordable vital drugs and vaccines as examples. The CCMDD is a pharmaceutical company that specialises in treating chronic diseases When a patient has a persistent or otherwise long-lasting health problem or disease, he or she is started on chronic medicine to render the ailment manageable or to bring it to within a normal range (Health Systems Trust, 2019). Arthritis, asthma, congestive heart failure, chronic obstructive pulmonary disease, diabetes mellitus, hypertension and HIV infection are examples of chronic illnesses

4.3.1.3. It is convenient to both health workers and patients

Participants perceived that the CCMDD is a program that ensures that both the nurses and patients are assisted. Participants argue that through this program, time and effort

can be saved. Table 1 below shows some of the responses that were given by the participants and percentage of participants who gave the responses.

Table 1. 1: Reflection of participants' responses.

Response	Percentage
It saves time for patients	44%
It saves times for nurses	32%
Minimises work load	24%

Table 1 indicates that 44% of the participants believe that the CCMDD program saves time for patients. This shows that the participants believe that the CCMDD program assists patients in saving their time. For instance, Participant D states that:

"It is convenient to the nurses. It reduced time spent on patients. It then gives nurses an opportunity to devote more time to unstable patients."

Participant F states that:

"CCMDD is very much convenient to stable patients and it consumes little time because parcels are already available for them when they need them"

The participants believe that the program makes it easier for patients to collect their medication without having to spend much time at the health facility or collection point. This was one of the reasons for the creation of the CCMDD program. It is meant to

reduce the number of people at health facilities. According to Health Systems Trust (2019), patients in health institutions fall into three categories:

- Patients who are 'acute' or 'unstable' and require immediate attention and continual treatment;
- Mothers and children in need of prenatal care and vaccines;
- Patients with stable chronic conditions who fill their prescriptions once a month at a health facility.

When there is a program that dispenses medication well, the load that health facilities face is reduced. This is what the CCMDD program has been doing. Table 1 also shows the participants believe that that the CCMDD program assists nurses save time. Most participants state that they do not have to spend as much time giving patients medication as they did before the introduction of the program.

Participant H states that:

"The program, though Synch, is making things easy because of electronic prescription. You do not have to do paperwork as before. You just scan and the prescription will be shown and the patient will get what they want."

This is echoed by Participant F who argues that:

"The program should continue because it has advantages. It reduces waiting time and makes medicine dispensing much easier."

Participants believe that the fact that queues have been reduced, means that patients would not spend a great deal of time at the health facilities (clinics). This makes it easier for professional nurses to divert their time spent with chronic patients to attend those who are acute. Dispensing must be performed accurately and in an orderly manner, with disciplined use of effective procedures. When there is proper dispensation, and if the process is speedy, health workers spend less time on distributing medication. They can then use that time in performing other duties Participants recognised that this reduces their workload. (Muthelo, Nemagumoni, Mothhiba, Phukubje and Mabila, 2020)

Participant G states that:

“As far as I know, the CCMDD program was initiated in 2014 to improve access to quality medication to all stable chronic clients and to reduce nurse workload by reducing the number of patients in health facilities.”

Other participants also claim that since they have spent less time on patients with chronic conditions, they have diverted much of their time to those who need it the most.

Participant J states that:

“It makes our life very easy because we as nurses do not have to spend time on stable patients. Our patients also do not have to spend much time at our health facility and we have more time to spend on our clients who need more attention.”

Participant E offers a similar perception of CCMDD:

“It is very good for our clients and nurses because we have enough time to spend to patients who need special attention. Especially patients who have a problem of poor adherence.”

From the above analysis, it can be seen that the participants believe that the CCMDD program has a number of benefits that it affords health facilities. They believe that it helps both the nurses and the patients. Giving an eligible chronic stable patient the option to pick up his or her prescription at a convenient location allows the facility to focus on the unstable chronic patients, as well as the acute and mother-and-child patients (Zeeman, 2016). Waiting times for visiting patients are reduced as a result of reduced foot traffic in health institutions. The quality of care at the health institutions is improved by reducing the stress on healthcare personnel in this way.

Participant G argues that, since the CCMDD enables patients to collect the medication more quickly, it motivates them to collect their drugs on time. Participants believe that the fact that queues are reduced means that patients do not spend as much time at

the health facilities (clinics) as they simply collect their parcels from the designated point and left (NDoH 2016 b). Nurses have an easier time because the amount of time they spent with chronic patients was reduced. As seen in the preceding chapter, dispensing must be done accurately and in a systematic manner, with the disciplined use of effective methods.

This enables clients to spend less time at the facility and to perform other duties rather than spending the whole day at the facility. This is corroborated by Schellack *et al*. (2020). Medication is prepacked in neat, clearly labelled parcels at the facility for the whole day as cited by the service provider. This also contributes positively to the reduction of dispensing errors that commonly happen because of long queues waiting for collection of chronic medicines from the facilities. The prepacking and early delivery facilitate the defaulting rate.

Participant B states that:

"As I have mentioned earlier, clients get treatment quicker, our workload is reduced and clients are better monitored on this program."

Participant H echoes this perception with a similar sentiment:

"This program reduces waiting time on the part of the patients for those who will be collecting medication. There is also a reduction in the workload for nurses. There is increased treatment success because patients will be collecting their medication easily and this makes them to be more eager to collect their treatments."

Participant L states that:

"There is a good appointment system. Patients only came as per their appointment. When we are using the paper-based approach, we would spend a great deal of time and some papers would get lost. This was bad for the patients because they would miss out on their medication. But with CCMDD now, we just use technology and the process is technology-based."

The burden on health facilities is eased when there is a scheme that properly delivers drugs in the areas where clients reside. This is exactly what the CCMDD program is

accomplishing. This significantly minimises treatment failure. Patients who stop taking chronic medication are at a higher risk of complications and mortality, as seen in AIDS, hypertension and diabetes patients. As a result, many research studies, including several in South Africa, have attempted to quantify and ascertain the status of patients reported as lost to follow-up (Rosen and Fox, 2011).

4.3.3 Factors that impact on the dispensing of chronic medicines through the CCMDD program in Primary Health Care facilities of the Amatole Health District of the Eastern Cape Province.

4.3.3.1 Staff not prepared to deal with the CCMDD

Adequate qualified staff is one of the most critical factors that affects public health organisations. Participants in the current study believe that they, as nurses, do not really have much knowledge about dispensing medicine and that this needs to be addressed. Where a dearth of skilled pharmacists or trained dispensers makes a high level of this service difficult to accomplish, medicines and related goods are supplied by people with no pharmacology training and little knowledge of how to use them safely. The Nursing Act, section 22, (2005) further supports the above statement by recommending that all professional nurses need to be trained in Adult Primary Care (Adult Primary Care) and how to use standard treatment guidelines when prescribing for the patients. Schellack (2020) underlines that when people are not well versed in dispensary mechanisms, they might end up contributing toward an increase of dispensing errors. This is what several participants observe about the CCMDD. For instance, participant M says:

“Staff members who dispense must be trained in the knowledge, skills and practices necessary to dispense the range of medicines prescribed at the facility.”

Participant M further argues that:

“The program is still new and it needs people who are able to use it, especially the technology. There should be some training on how to use the technology because

some people are not well versed in this new technology. The implementers of the program are not given enough training."

The above statements indicate the participants feel that they lack certain skills or knowledge in ensuring the proper implementation of CCMDD. In order for them to obtain such skills, there is a need for training The type of drugs administered and the amount of calculation and preparation necessary, determine the level of training required for each dispensing task. Bull, Mason, Junior *et al.* (2017) maintain that dispensing workers should obtain adequate training in order to correctly dispense the wide range of medicines prescribed in their facilities. Both the public and private sectors are affected by this. Dispenser training in a basic health facility, where a restricted range of medicines is used and the number of patients is modest, may be simple. However, it needs to be structured and built on the trainee's previous health care training, in accordance with the WHO article, "Ensure good dispensing practice " (30:17). This level of training allows dispensing assistants to work at higher levels (such as in a district hospital). However, they must be supervised and guided by professional pharmaceutical staff like pharmacy technicians or technologists.

The Nursing Act 33 (South African Nursing Council, 2005:3) recommends that a postgraduate qualification or other suitable course accredited by the South African Nursing Council, such as the Diploma in Clinical Nursing Science, Adult Primary Care, NIMART or IMCI can offer dispensing skills to nurses and enable them to function independently, especially in Primary Health Care settings where there is a dearth of doctors. (Laurie and Huryk, 2010). It had been suggested that older nurses are afraid that using technology may dehumanise patient care. This might account for some of the responses of the participants. Mc Kenna, 2017, also promotes the career development of nurses through education, professional development, information technology and network opportunities.

4.3.3.2 Staff shortages

Participants believe that there is an issue with health-care staffing shortages. In the healthcare industry, there are human resource shortages and, Tiyese Jeranji (2021) note that if more nurses were employed, Health Care costs would be reduced, especially with the Revitalisation of Primary Health Care where accessibility of chronic medicines is addressed by the CCMDD program. Participants explained that other key factors contributing to poor performance include the government's inability to deal decisively with the health workforce crisis and the lack of a fully functional district health system. Unprofessional behavior, a lack of staff motivation, poor performance and negative attitudes of health workers toward patients all pose a danger to the quality of patient care and the efficiency of health services. (Naicker, Eastwood, Plange-Rhul and Tutt, 2010) Under study, the CCMDD reflects the same problems. Quality care has been hampered by shortages of personnel further states that, “Employment of more nursing staff. This will assist in tracking other clients who do not come to collect their medication”.

Participant L states that the nature of the CCMDD program needs a staff complement that is qualified to deal with it. This type of staff complement was non-existent at the time of the interviews:

“The program is still new and it needs people who are able to use it, especially the technology. There should be some training on how to use the technology because some people are not well versed in this new technology. The implementers of the program are not given enough training.”

The issue of staff shortages in South Africa is widespread and it does not only affect the CCMDD program. It affects almost every aspect of the health sector. Biermann (2018) indicates that the delivery of qualified nursing staff in all nursing categories has decreased by almost 40% since 2013. Since 2013, annually, 8,535 fewer nursing practitioners have entered the workforce; the private sector is experiencing similar difficulties, (Bierman, 2018). Heavy workloads, long hours, difficult working conditions, a lack of support, as well as insufficient funding and equipment, among other things, contribute to the scarcity of nursing personnel. The model proposed in the United Kingdom would have similar benefits to the Central Chronic Medicine Dispensing and

Distribution model as it is designed to relieve professional nurses of the burden of an overwhelming clinical workload in order to enable them to attend to the acute patients. The shortage of workers in the CCMDD program may be attributed to its technical nature. Rapidly expanding high-tech health care, the growth of medical services and an aging population have been mentioned as the primary causes of staff shortages in developed countries (Liu, Wang, Chen, Zhang, Yue, Ke, Wang and Peng, 2020).

4.3.3.3 Poor implementation of CCMDD

Respondents cite poor policy implementation as a reason for the program's being unsuccessful. Its implementation is a complicated process because it involves political, financial and administrative issues, and it requires motivation, proper lobbying and technical, professional and administrative support. The participants as perceived the CCMDD program as facing these challenges, by, with regard to its implementation. Some participants believe that the poor implementation of the CCMDD program impacts on the overall plan of the policy. Participant G claims that:

"The planning of the program was good, but implementation is weak. People still do not know about the program."

Participant E maintains that:

"The CCMDD is not being implemented according to plan. The main purpose was to move the patient outside the facility to have collection points near their homesteads where they would collect their medication."

From these comments, it can be seen that the participants perceive that the CCMDD does not really allow patients to access their medication from the pick-up points. A pick-up point (PuP) is a place that has been approved by the NDoH to provide the service of handing out patient medicine parcels (Health Systems Trust, 2018). Clicks Pharmacies, Dischem Pharmacies, Medirite Pharmacies, Pick 'n Pay Pharmacies, independently owned pharmacies, doctors' surgeries, other business sites, as well as community-based facilities, such as churches are among the registered PuPs in KZN.

Participant E further maintains that, *"The government has failed to ensure that the pick-up points are operational; as result patients are still flocking in health facilities to collect their medicines."*

This was not the initial plan of the CCMDD, according to some of the participants. As stated by CCMDD SOP.9 (2017), in stating the requirements for recruitment, appointment and management of external Pick-up Point, each pick up point should be geographically accessible to all its users. External pick-up point users should not wait more than 30 minutes. For this reason, distance and operating hours of PuPs are assessed. This also further quantifies perceptions mentioned by respondents that the CCMDD program is not adequately implemented according to its original purpose.

Some participants also believe that the policy makers ignored their input during the drafting of the CCMDD program. This has impacted on the CCMDD. Participant O stated that:

"There is failure of good implementation at the management level. They are not there to implement the program, but they make decisions for us. It would have been better if they consulted us on how the program should be implemented."

When people are not involved in policy-making, they may not really understand how it ought to be implemented. This might be the case in this scenario. The nurses have been handed a policy and expected to implement it. Their opinions were not taken into account when the program was created. Public consultation is recognised as an important aspect of the policy-making process in most modern democracies. This is to allow people from all walks of life to participate in government activities (Egonmwan, 2014). A draft policy should be delivered to key stakeholders, published in the organisation's newsletter and on its website and discussed at subsequent meetings and forums once it has been drafted. It is necessary to seek input from stakeholders before the policy is finalised in order to fine-tune the wording, clarify meanings and to adapt the policy.

4.3.3.4 Poor service by external service providers

Participants claimed that the service providers tasked with providing medication in public health facilities were not performing well and that this negatively affected the CCMDD patients (Borgat, Shazi, MacCarthy, Mendaza-Graf *et al.,* 2022).

Several participants say that the lack of medication at times was one of the more serious challenges that affected the program. Some patients received packages that were lacking in the required drugs and some did not receive their parcels at all. This affect the overall objective of the CCMDD. Participant F explains that:

"Medicine providers must ensure that all medication must always be available when needed. Certain medications are not available, for example, peptic ulcer patients face hardships in getting medication."

Participant D clarifies that:

"There are also times when parcels are delivered incomplete because there seems to be a shortage of drugs."

Participant J says:

"Sometimes our parcels do not arrive on time. Furthermore, service providers do not contact the clients to remind the patients about medication to be collected."

Medicine scarcity is a major global problem affecting all nations. This includes South Africa, where ongoing medicine shortages in public hospitals are a source of concern as the country attempts to achieve universal healthcare coverage. Manufacturing and quality issues, production delays, a lack of manufacturing capacity, a scarcity of raw materials, political instability and profit concerns are all reasons for the pharmaceutical shortage (Modisakeng, 2020) The ongoing and proper supply of pharmaceuticals is critical in the management of diseases, particularly chronic diseases, and the availability of critical medicines is dependent on an efficient supply. Meyer, Schellack, Stokes, Lancaster *et al*. (2017) define good medical supply systems as an ecosystem of organisations with people, technologies and activities work together to provide the safe and timely supply of drugs from producers to the end user, the patient, at reasonable and acceptable rates. The idea is to detect and correct issues as soon as

possible. It is for this reason that participant L notes that there is a need for government intervention.

Participant L:

"There are late deliveries of medication parcels. At times, certain packages are prepared without knowing who needs them. This requires that the Department should push service providers to deliver medication on time."

If the government pushes the service provider, there would be better delivery of medication. Patients would be more likely to receive their medication on time and this would work towards achieving the goal of the CCMDD.

4.3.3.5 Aligning patient circumstances and technological advancement

One of the problems that participants identify is both the nurses' and the patients' inability to use technology. As far as the nurses are concerned, the participants explain that the program is new and that they need to be prepared to use technology but Since they had not done technology courses during their nursing training, it was not easy for them to use technology at work.

Participant E explains:

"The program is still new and it needs people who are able to use it, especially the technology. There should be some training on how to use the technology because some people are not well versed in this new technology. The implementers of the program are not given adequate training."

This shows that the participants feel that they lack some of the skills or knowledge to ensure the proper implementation of CCMDD. In order for them to acquire such skills, they would require sufficient training to allow them to accurately dispense the range of drugs prescribed in their facility. The levels of training necessary for each dispensing function are determined by the diversity of the medications dispensed and the extent to which computation and preparation are required (Smith, Picton and Dayan, 2013).

Medicines prescribed in their facilities must be received by dispensing personnel. The type of drugs administered and the amount of calculation and preparation necessary determine the level of training required for each dispensing task. The system was also seen affect patients due to network issues.

Participant N mentions that:

"The system can make patients not receive their medication due to network problems. At times, clients do not receive SMSs to remind them about the collection of medication."

This shows that there are some issues with the network which negatively affect patients. Worst of all, some patients do not have cell phones. as participant M points out:

"Clients who do not have cell phones are disadvantaged because they do not get reminders."

These who do not have cell phones or who face network issues may miss the SMS reminders. This may result in their not collecting their medication. This then defeats the overall goal of CCMDD because the disciplined use of effective procedures cannot always be implemented if patients do not own cell phones. Most respondents perceive that the CCMDD program is meant to improve the current practices of distributing and dispensing medication to patients (Muthelo, Nemagumoni, Mothhiba, Phukubje *et al.,* 2020). Nurses argue that the program came into existence to ensure that there is proper and efficient administration and distribution of medication. However, when patients miss out due to technological issues, the goal of the CCMDD is not achieved. This also has been revealed by the results of a study conducted in Vhembe district of Limpopo, South Africa, where patients missed their appointments because of the change of cell phone numbers (Muthelo *et al*., 2020)

4.3.3.6 CCMDD program is not all inclusive

Many participants stress the fact that the CCMDD does not cater for certain groups of people which makes the drug packages supplied inadequate for all medications. This is a problem because some patients not on CCMDD go back home without having received what they would have travelled for. Covering all patients, whether chronic or acute, stable or unstable, is seen by participants as ideal.

Participant G feels that:

“Clients needing insulins are not catered for in the program. More treatment must be added to the program such as insulin and Epilim.”

This was supposed by participant F:

“We have diabetic (insulin) patients who are not covered in this program and this disadvantages them.”

Medicine scarcity is a global issue, affecting all countries. In South Africa, ongoing drug shortages are an issue in public hospitals, despite the country's goal of universal healthcare coverage (Modisakeng, 2020). The availability of critical medicines is dependent on efficient supply chain systems, among other factors, in controlling diseases, particularly chronic conditions. Good medical supply systems, according to Meyer *et al*., (2017), are an ecosystem of organisations with people, technologies, and activities brought together to enable the safe and effective distribution of medications from makers to patients.

4.4 Conclusion

The findings of the data collection and analysis undertaken during the research are highlighted in this chapter, which also addresses the implications of the findings from the analysed data. The findings are further supported by the literature reviewed. The findings reveal that the CCMDD program achieves some of its objectives. Despite the fact that challenges remain, it is recognised that the provision and collection of medication was generally timeous and that it significantly reduced waiting time for patients.

In Chapter 5, the conclusions, limitations and recommendations for the successful implementation of the CMDD program will be dealt with.

CHAPTER 5 SUMMARY, SHORTCOMINGS AND RECOMMENDATIONS

5.1 Introduction

The previous chapter presents the results of the analysed data; these are discussed and confirmed in relation to the literature. The study aims to explore the perceptions of professional nurses of the dispensing of chronic medicines and to examine factors that impact on the dispensing of chronic medicines through CCMDD in the PHC facilities of the Amatole Health District. In this chapter, a summary of the findings, shortcomings and the recommendations is presented for policy makers, service delivery, facility managers and for further research.

5.2. Discussion of the findings

The findings of the research show that demographically, the majority of participants, 56%, were between the ages of 33 and 40. This group was followed by 24% who were between the ages of 41 and 49. The list reveals that professional nurses aged 50 and above accounted for 20% of the total number of participants. From these figures, it can be seen that the majority of participants were young professional nurses who were probably techno-smart and could understand how the technologically developed program was designed and therefore could use it.

The perceptions elicited from the professional nurses demonstrate that they believe that the CCMDD program ensures proper distribution and dispensing of properly packaged medicines. Furthermore, professional nurses think that the CCMDD is convenient for both patients and professional nurses in that it saves the waiting time of patients and also minimises the workload of the nurses, giving them an opportunity to do other work. The CCMDD program is a technologically developed initiative designed by the Health Systems Trust (Zeeman 2015) to assist in the

improvement of the dispensing of chronic medicines in the Amatole Health District. It was commended by some participants. However, some of the professional nurses are not prepared to deal with the CCMDD program as they do not have any training and do not know enough about it. They claimed that sometimes there are only a few nurses on duty which means that the unit is not fully functional. The issue of staff shortages impacts on the implementation of the CCMDD program. In addition, Magadzire *et al.* (2017) refer to the effect of staff shortages in the study of ways to improve access to essential medicines in South Africa. However, the findings of James, Barlow, Bithell, Hiom *et al.* (2013) suggest that automation has a positive impact on staff experience of stressors, improving their working conditions and workload. When fitting Automated Dispensing System, pharmacy managers should consider the impact of automation on staff. Strategies to reduce stressors associated with automation might include rotating staff activities and role expansions**.**

The poor implementation of the CCMDD is also impacted by the Key Performance Areas because operational managers are the overseers in the facilities and were in the first level of management and are not the implementers at service level. The implementation process does not affect them much as their focus is on the results. Another other factor impacting on dispensing is related to the presence of post community services' professional nurses who need to be supervised by experienced professional nurses. The SANC (2007) indicates that newly qualified nurses require supervision and the support of experienced professionals to enhance their clinical competence. Additionally, the absence of computer literacy impacts on dispensing as it was reported that older nurses generally found it difficult to use computer technology.

Late delivery and shortage of medicines from the services delivery section of the distribution centre also have a negative impact on the effectiveness of the CCMDD program for both professional nurses and patients. It means that nurses then have to dispense from their hospital stock to avoid disappointing their patients. Patients also need to be educated about the CCMDD program for them to take responsibility for

their health and to promote treatment adherence through their voluntary willingness to option for the program.

The chapter closes by making recommendations for policy makers, service delivery, facility managers and for further research.

5.3 Shortcomings

The following shortcomings have been identified:

5.3.1 Interview process

During the interview process the responses to the different questions sounded similar because of the structure of the content.

5.3.2 Age of professional nurses

Some of the older professional nurses were reluctant to fully disclose their lack of computer skills, which made it difficult to probe further as they became agitated.

5.3.3 Dispensing of other chronic medicines

Not enough information could be obtained about dispensing of other chronic medication as this was not accommodated in the questionnaire. It would have been ideal to have included this category in the questionnaire as it would have demonstrated the degree of compliance from patients.

5.3.4 The status of the researcher

The status of the researcher, as a health services manager, hampered the process of conducting interviews according to the set schedule, largely due to work demands and the participants' fear of repercussions.

5.4 Recommendations

The following recommendations are made for policy makers, facility managers and for further research, to improve health services and access to the dispensing of the

chronic medications for CCMDD. These would enhance service delivery and its utilisation for TB patients.

5.4.1 Recommendations for policy makers

- It is recommended that the policy makers involve professional nurses in the early stages and processes of policy consultation interpretation as the nurses implement the policy at service level. Their involvement during the consultation phase of the policy formulation will facilitate greater understanding of the concepts, promote buy-in and instill a sense of ownership of the policy. These aspects, in turn, will promote smoother implementation and will build confidence in the health system, especially in the Amatole Health District.
- It is recommended that during the implementation of new policy, there should be constant supervision and support of the staff. This was identified as important so as to monitor at an early stage whether the policy achieves its intended purpose.
- Another recommendation for policy makers is that they should make computer literacy training available at district levels. There is a need for on-going professional nurse training, especially for the older staff members to upskill them for the optimal functioning of the health service. Mc Closkey (2016) cited that more than 30% of older people fear and are reluctant to use computers. This corroborates the finding that some participants are afraid of using the SYNCH computerized system of CCMDD. The CCMDD program requires that prescriptions be typed, emailed to the services provider by the professional nurse attending the client, for dispensing and distribution to pick up points or facilities. Without some computer literacy, this action cannot be undertaken; this contributes negatively to the implementation of the program.

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5.4.2 Recommendations for the service delivery platform,

- It is recommended that the CCMDD service providers as external consultants, should make it a priority to provide training of personnel regarding the guidelines for use of the program; the training should be continuous even during the implementation stages.
- As part of training, it is recommended that the service delivery consultants should be invited to add pertinent information for all students to include in the CCMDD program, , in same mode as presented to professional nurses.
- It is further recommended that the Provincial Department of Health should monitor adherence to the Service Level Agreement by the service providers as external consultants, to prevent noncompliance. This monitoring is necessary as numerous concerns were raised by professional nurses highlighting non or late delivery, coupled with missing items from the patients' packages. Prompt intervention is therefore required at the level of the Provincial Department of Health to ensure that service providers adhere to the Service Level Agreement.
- Another recommendation is that the Provincial Health Department create posts to employ more pharmacy assistants and professional nurses at district level to improve the dispensing process and to increase the quality of care.
- It is recommended that the Provincial Health Department increase the number of external pick-up points to relieve the department's workload, particularly because the strategy is intended to decant patients away from health facilities to locations where they can access medicines more easily, thereby improving treatment adherence.
- Employment of tracing teams is suggested and recommended.
- Continuous quality improvement projects are strongly recommended by Quality Assurance teams who should be equipped to identify noncompliance to guidelines early and to develop strategies to avoid litigation.

5.4.3. Recommendations for health services managers

- It is recommended that policy makers involve health services managers in the development of guidelines in the same way as they do for professional nurses. It is essential to provide constant supportive supervision to facilities for the smooth implementation of guidelines and to build capacity in the middle managers in the facilities as they are the links between the Provincial Health Department and the professional nurses.
- It is recommended that the necessary resources be available before the introduction of a new strategy to ensure its smooth implementation, as is the case for CCMDD.
- It is recommended that health services managers involve and allocate young professional nurses who are techno-wise to champion the CCMDD program and other new programs that require computer literacy.

5.4.4. Recommendations for further research

- As CCMDD is a new program, other areas that need further research are to investigate the perceptions of patients who are the consumers of the service; the findings from the data analysis might be compared with those of the professional nurses recruited for the current study. Having the patients' perspectives too, would lead to richer information and lend more weight to the present findings about the services. It would also serve to indicate possible ways forward.
- Research should also be carried out continuously on the professional nurses and pharmaceutical staff who are central to service delivery. This would maintain and enhance the standards of delivery.
- Research should be carried out to see the impact of the strategy, especially in rural areas where external Pick-up Points, such as Clicks and Dischem or other pharmacies, are not available. Such research findings might provide valuable input that could improve service delivery to remote areas.
- In addition, further research on the impact of external Pick-up Points in the clinical management of patients would be very enlightening. For example, it

would reveal whether patients can adhere to their blood-testing appointments, despite collecting treatment from external Pick- up Points.

- Research for inclusion of patient education in the new strategy is of paramount importance. This should be done before enrolling them because although the system is meant to benefit them, they need to know exactly what is expected of them. For example, the program has appointment cards that serve as reminders if the patients do not have phones on which to receive SMS reminders. Patients, if they understand the benefits of external pick-up points, will understand their geographic and economic convenience.
- Furthermore, research should focus on the systems of patient monitoring and early identification of missed appointments which should be in place. These would detect missed appointments and evaluate their impact.

5.5 Conclusion

This study was initiated to investigate the perceptions of professional nurses of the dispensing of chronic medicines through the CCMDD program and to examine the factors that impact on the dispensing of chronic medicines through the CCMDD program in the Primary Health Care facilities of the Amatole Health District of the Eastern Cape. The goal of the research was to increase the uptake of dispensing chronic medications through the CCMDD program. The goals have been reached as the participants verbalised their individual perspectives of the challenges of dispensing chronic medicines through the CCMDD program. They suggested measures that could be put in place to facilitate and enhance the CCMDD program in its dispensing of chronic medicines, especially in the Amatole Health District.

The CCMDD program, as a new program, had some hurdles to overcome when it was introduced but this study identifies that it is an ideal method of dispensing chronic medicines in health care facilities as it reduces the waiting time of patients when collecting their treatment. It reduces the workload of the health professionals, enabling them to focus on other work areas and their perceptions reveal that the dispensing of chronic medicines is relatively successful. It is evident that the CCMDD program is

necessary and not simply a convenience. Furthermore, the majority of participants express an interest in its implementation.

Finally, this study has enabled the researcher to gain a greater understanding of the CCMDD program in the health care setting, the inter-relatedness of service delivery and its impact on patients who are the ultimate consumers of these services.

It also has enhanced the researcher's ability to study the processes of change which deserve urgent attention.

6. References

Anon. Centralised dispensing: the next step in the evolution of pharmacy*? Pharmarcy Journal.* 2015; 295:DOI: 10.1211/PJ.2015.20200284.

Anon., 2019. *denosa.* [Online]
Available at: https://www.denosa.org.za/wp-content/uploads/2022/04/ NATIONAL-revised-29-10-2019 .pdf
[Accessed 25 march 2021].

Ashcroft, D.M., Morecroft, C., Parker, D. & Noyce, P.R., 2006. Likelihood of reporting adverse events in community pharmacy: an experimental study. *BMJ Quality & Safety*, *15*(1), pp.48-52.

Bogart, L.M., Shazi, Z., McCarthy, S., Mendoza-Graf, A., Wara, N.J., Zionts, D., Dube, N., Govere, S. & Bassett, I.V. 2022. Implementation of South Africa's Central Chronic Medicine Dispensing and Distribution Program for HIV Treatment: A Qualitative Evaluation. AIDS and Behaviour, pp.1-13. Accessed January 2022

Bierman, J.2018. Fighting the disease of poverty.1st ed. Routledge, London.

Botma, Y., Greeff, M., Malaudzi, F.M. & Wright, SCM. 2016. Research in health sciences .5th ed. Cape Town, Pearson.

Brink, H., van der Walt, C. & van Rensburg, G. 2017. Fundamentals of research methodology for health care professionals. 4th ed. Cape Town, Juta.

Bull, E.R., Mason, C & Junior, F.D. 2017. Developing nurse medication safety training in a health partnership in Mozambique using behavioural science. *Global Health* **13,** 45 (2017). https://doi.org/10.1186/s12992-017-0265-1 Accessed March 2022

Burns, N. & Grove, S.K. 2017. The practice of nursing research: Appraisal, synthesis and generation of evidence. Missouri: 8th Edition. Elsevier, Inc.

Clicks. 2019. 'Repeat Prescription Service'. Available from: https://www.clicks.co.za/myMedicines. Accessed on: 2 May 2021.

Creswell, John W. 2013. *Qualitative enquiry and research design: Choosing among the five approaches*. 3rd edition, Thousand Oak, California United States: SAGE

Collins J. & Hussey, R. 2014. Business research: A Practical guidance for under graduate and post graduate students. 4th Edition. Palgrave Macmillan.

DENOSA. 2019. Democratic Nurses Organization of South Africa. National congress resolution.https:www.denosa.org.za.

Egonmwan, J.A. 2014. *Public policy analysis, Concepts and application.* Benin City, Resyin.

Elkady, T., Rees, T. & Khalifa, M. 2019.Nurses Acceptance of Automated Medication Dispensing Cabinets.https://www.researchgate.net/publication/334291365_Nurses_Acceptance_of_Automated_Medication_Dispensing_Cabinets.

Giampaolo, P., Velo. & Minuzy, P.2012. Medication errors. Clinical, *British Journal of Clinical Pharmacology,* volume 67 issue no 6, page 624-628. *doi.org.110.1111/j.1365-2125.2012. 0325.*

Grove, S.K. Burns, N. & Gray, J.R. 2013. The Practice of Nursing Research. Appraisal, Synthesis and Generation of Evidence. 7th Edition. St Louis: Elsevier Saunders Publishers.

Health System Trust. 2015. *A Leading resource on health system and primary health care in southern Africa.* Available from: https://www.hst.org.za/publications. Accessed 13 November 2017.

Holloway, I. & Wheeler, S. 2010. Qualitative research in nursing and healthcare.

3rd ed. United Kingdom: Blackwell Publishing Ltd.

Humphries, J. L & Green, J. 2017. Nurse prescribing. 2nd Ed. London, Palgrave.

James, K.L., Barlow, D., Bithell, A., Hiom, S., Lord, S., Oakley, P., Pollard, M., Roberts, D., Way, C. & Whittlesea, C. 2013. The impact of automation on pharmacy staff experience of workplace stressors. *Int J Pharm Pract.* 2013 Apr;21(2):105-16. doi: 10.1111/j.2042-7174.2012.00231. x. Epub 2012 Aug 6. PMID: 23418779.Accessed January 2022.

Kelly, V.P., Beth, A & Altmiller, G. G. 2018. *Quality and safe education for nurse's core: Competency for nursing leadership and care management*. 3rd Edition. New York, Springer.

Kelly, V.P.2021. Kelly's Nursing Leadership and Management .4th Edition. Willey Blackwell.

Laurie, A & Huryk ,R.N. 2010. Factors influencing nurses' attitudes towards healthcare information technology, *Journal of Nursing Management* **18,** 606–612 published: 12 July 2010 https://doi.org/10.1111/j.1365-2834.2010.01084.x

Liu, Y., Wang, H., Chen, J., Zhang, X., Yue, X., Ke, J., Wang, B. & Peng, C. 2020. Emergency management of nursing human resources and supplies to respond to coronavirus disease 2019 epidemic. *International Journal of Nursing Sciences*, *7*(2), pp.135-138.

Magadzire, B.P., Ward, K. & Leng, H.M.J. 2017. Inefficient procurement processes undermine access to medicines in the Western Cape Province of South Africa. *S AfrMedJ. 2017*(*7*)581–4 DOI:10.7196/SAMJ.2017.v107i7.11356 Accessed 12 May 2021.

Magadzire, B.P., Marchal, B. & Ward, K. 2015. Improving access to medicines through centralised dispensing in the public sector: a case study of the chronic

dispensing unit in the Western Cape Province, South Africa. *BMC Health Serv Res* 2015; 15: 513.

Mansouri, A., Ahmadvand, A., Hadjibabeie, M., Kargar, M., Javadi, M. & Gholami, K. 2013. Type and severity of medication errors in Iran, a review of the current literature. *Dur. (volume49 date issue 20 June 2013)* page21-49.

Maree, K., Creswell, J.W., Ebersohn, L., Elloff, L., Ferrera, R., Ivankova, N.V., Jansen, J. D., Niewenhuis, J., Pietersen, J. & Plano Clark, V.L. 2019. *First steps in research*. Pretoria. Van Schaik.

Mc Closkey, D. 2016.An examination of the technology acceptance model with older customers, *Journal of Organisational and End User Computers*. volume 18, issue 3, page no 47-65 available from: https://www.researchgate.net/publication/279928848_The_Importance_of_Ease_of_Use_Usefulness_and_Trust_to_Online_Consumers_An_Examination_of_the_Technology_Acceptance_Model_with_Older_Customers Accessed 30 May 2021.

Mc Kenna, M. 2017. Australian nursing practice scholarship research. *Journal Collegian*, *24(3).* Elsevier. Available from: https://www.collegianjournal.com/. Accessed on 12 May 2021.

Meyer, J.C., Schellack, N., Stokes, J., Lancaster, R., Zeeman, H., Defty, D., Godman, B. & Steel, G., 2017. Ongoing initiatives to improve the quality and efficiency of medicine use within the public healthcare system in South Africa; a preliminary study. *Frontiers in pharmacology*, *8*, p.751.

Modisakeng, C. 2020. *Medicine shortages and challenges with the procurement process among public sector hospitals in South Africa; findings and implications*. Available from https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-020-05080-1. Accessed on: 4 May 2021.

Muthelo, L., Nemagumoni, T.,Mothiba,T.M.,Phukubje, A.T. & Mabila,L.N.,2020.

Experiences of Professional Nurses Regarding the implementation of a central chronic medicine dispensing and distribution program at primary health care facilities in South Africa . University of Limpopo.
https://doi.org/10.2174/1874944502013010477

Naicker, S., Eastwood, J.B., Plange-Rhule, J. & Tutt, R.C.2010. Shortage of healthcare workers in sub-Saharan Africa: a nephrological perspective. *Clin Nephrol*. 2010 Nov;74 Suppl 1: S129-33. doi: 10.5414/cnp74s129. PMID: 20979978

NDOH. National Department of Health. 1996. National Health Act, 2003(Act no. 61 0f 33): Pretoria. (South3rd Edition Africa). 2015. White Paper on National Health Insurance for South Africa towards universal coverage. version 40: Pretoria. Government Gazette. https://www.gov.za/sites/default/files/gcis_document/201512/39506gon1230.pdf. Accessed on: 2 May 2021.

NDOH. National Department of Health. 2007. *National policy on quality in health care.* Pretoria. South Africa: Government Printers.

NDOH. National Department of Health. 2011.a. *Integrated chronic disease management guidelines.* Pretoria. Government Printers.

NDOH. National Department of Health. 2011.b. *National core standards for health establishment in South Africa.* Pretoria. Government Printers.

NDOH. National Department of Health. 2014.a *Standard treatment guidelines and essential medicines list.* Pretoria. Government Printers.

NDOH. National Department of Health. 2016.a. *Adult Primary Care Symptom Based Integrated Approach to the adults in Primary care guidelines.* Pretoria. Government Printers .

NDOH. National Department of Health. 2016b. *Standard Operating Procedures for Central Chronic Medicine Dispensing and Distribution*. Pretoria. Government Printers.

NDOH. National Department of Health. 2016c..*Adherence guideline for HIV, TB and NCDs*. Pretoria. Government Printers

NDOH. National Department of Health. 2017. *South Africa insurance towards universal health coverage*. Pretoria, South Africa. Pharmacy Automation. 2019. Available from www.robopharma.com. Accessed on 2 April 2021.

NDOH. National Department of Health.2014.b. *Standard operating procedure for registration(enrolment)of patients on the CCMDD program*. Pretoria. Government Printers.

Ngcobo, N. & Zulu, B. 2016*. ILembe Stay Informed Newsletter*, October 2016 https://wwwkznhealth.gov.za Accessed February 2021.

Penchansky, R. &, Thomas, J.W. 1981.The concept of access: definition and relationship to consumer satisfaction. Med Care. 1981 Feb;19(2):127-40. doi: 10.1097/00005650-198102000-00001. PMID: 7206846.

Polit, D. J. & Beck, C.T. 2017. Nursing research: Generating and assessing evidence for nursing practice. Philadelphia, Lippincott.

Polit, D. J. & Hungler, B.P. 2013. Nursing research: Principles and methods. Philadelphia, Lippincott.

Ritchie, J., Lewis, K., Mc Naughton Nicholls, C.& Ormiston, R. 2016. *Qualitative research practice. A guide for Social Science students & reseachers*.2nd Ed. Sage publishers. London.

Rochais, É., Atkinson, S., Guilbeault, M. & Bussières, J.F.2014. Nursing perception of the impact of automated dispensing cabinets on patient safety and ergonomics in a teaching health care centre. *Journal of Pharmacy Practice*. 2014;27(2):150-157. doi:10.1177/0897190013507082 Accessed 13 May 2021

Rosen, S. & Fox, M.P. 2011. Retention in HIV care between testing and treatment in sub-Saharan Africa: a systematic review. *PLoS medicine*, *8*(7), p.e1001056.

Rubbin & Babbie, E. 2013. The practice of social reseach.13th ed. Belmont, C.A: Cengage Learning Inc.

Saurman, E. 2016. Improving access: modifying Penchansky and Thomas's Theory of Access. *Journal of Health Services Research & Policy*, 21(1), pp. 36–39. doi: 10.1177/1355819615600001.

Schellack, N., Stokes, J., Lancaster, R., Zeeman, H. & Defty, D. 2017. Ongoing initiatives to improve the quality and efficiency of medicine use within the public healthcare system in South Africa; A Preliminary Study. *Front Pharmacol.* Volume, 9,8 Issue date 09 Nov2017. Page: 751.

Schellack, N., Maimin, J., Malan, S.F., Moodley, S. & Eksteen, M.J. Navigating medication errors 2020. https://online.pharmaciae.org.za/navigating-medication-errors-an-overview-and-cautionary-tales-for-pharmacists/August 2020.

Shemilt, K., Morecroft, C. W., Ford, J. L., Mackridge, A. J., & Green, C. 2017. Inpatient prescribing systems used in NHS Acute Trusts across England: a managerial perspective*. European journal of hospital pharmacy : science and practice, 24(4), 213–217. https://doi.org/10.1136/ejhpharm-2016-000905.*

Smith, J., Picton, C. & Dayan, M., 2013. Now or never: shaping pharmacy for the future, the report of the Commission on future models of care delivered through pharmacy. *Royal Pharmaceutical Society of Great Britain,* London.

South Africa. (n.d.) *American Heritage® Dictionary of the English language,*

Fifth Edition. 2011. Retrieved May 30 2021.

https://www.thefreedictionary.com/South+Africa.

South African Nursing Council. 2005. Nursing Act, (Act no 33 of 2005). Pretoria. South Africa.

Stoppler,M.C.2021.*Medicinet.2*9(3),P1.https://www.medicinenet.com/script/main/hp.asp.

Statutes of the Republic of South Africa – Constitutional Law. 1996. Constitution of the Republic of South Africa. Act 108. Pretoria. South Africa. https:o/www.gov.za/sites/default/files/images/a108-96.pdf. Accessed on: 2 May 2021.

Sundaramurthy, S.S., 2018. Mining frequent item sets of a central fill pharmacy transaction database to enhance the planogram of robotic dispensing *system*. (Doctoral Thesis, State University of New York at Binghamton).

The Code. 2015. The Professional standards of practice and behaviour for nurses, midwives and nursing associates. *Nursing and Midwifery Council* Published 29 January 2015. London. www.nmc.org.uk.

Thesaurus, C.2014. Collins English dictionary- Complete and unabridged.12th edition. (https://medical-dictionary.thefreedictionary.com

Tiyese, J.2021." Employing more nurses can reduce total health costs, study suggests".2021/05/25, P 1.https://www.spotlightnsp.co.za/2021/05/25/employing-more-nurses-can-reduce-total-health-costs-study-suggests/

WHO.World Health Organisation. 2016. Ensuring good dispensing practices Management Science for Health - Part II: Pharmaceutical Management. dated17 October 2016. https://www.pharmacy.gov.my/v2/en/documents/guide-good-dispensing-practice-gdsp.html Accessed May 2021.

Wu-bin, L., Liao, Yang, J. & Wen, W. 2019. Prescrinbing errors in electronic prescription for outpatients intercepted by pharmacists and impact of workload on error rate in Chinese tertiary –care women and children's hospitals. *BMC Health Serv Res* **19,** 1013 2019. https://doi.org/10.1186/s12913-019-4843-1 Accessed Feb 2020.

Zeeman, H. 2016. CCMDD: A vehicle towards universal access to anti-retroviral and other chronic medicines in South Africa, 2016. Available from: https://www.hst.org.za/hstconference/hstconference2016/Presemtations/hst_conf_h_zeeman_28_04_2016.pdf. Accessed on: 5 Oct 2019.

Appendix A: Certificate of Proofreading from Mrs L. Scheckel

TO WHOM IT MAY CONCERN

I have 42 years' experience in the teaching profession, both at high school and tertiary level. In my last position before retiring in December 2016, I was a Teaching and Learning Consultant for eight and a half years and had acted as Manager of the Teaching and Learning Centre (TLC) of the University of Fort Hare on three different occasions. As a consultant, I facilitated modules on the Post Graduate Diploma in Higher Education and Training (PGDipHET) and also evaluated lecturers' teaching and their courses. My skills set allowed me to focus on management, language, research and student development. Activities which speak to this include being the Co-ordinator of the Language and Writing Advancement Program (LWAP) and the Supplemental Instruction Program (SI) for two years plus being the

Editor of the TLC's bi-annual newsletter for approximately eight years.

For the past four years, five months, I have been proofreading and editing for academics on a time-on- task basis. I hereby certify that I have proofread a Masters' mini-dissertation in Public Health submitted to me by the corresponding author, Vathiswa Mjekula, Student Number: 2009090873, whose study's research topic is:

`PROFESSIONAL NURSES' PERCEPTIONS REGARDING DISPENSING OF CHRONIC MEDICINES THROUGH THE CENTRAL CHRONIC DISPENSING AND DISTRIBUTION (CCMDD) PROGRAM IN THE AMATOLE HEALTH DISTRICT'

I have corrected superficial errors in spelling, syntax, punctuation and idiom in the preamble, abstract, the body of the manuscript and the end references. I have checked the balance required between in-text referencing and end-

referencing, where the one needs to be a mirror image of the other, according to Harvard referencing guidelines, 2020. I trust that the aforementioned will meet with the examiners' approval and that the language used accurately reflects the author's intended meaning. Furthermore, I have made every effort to ensure that the manuscript is clear, reads smoothly and avoids confusion or misunderstanding. The principles of anonymity, confidentiality, accountability and reliability have been respected by all researching parties.

DISCLAIMER: The proof-reader cannot be held responsible for any errors introduced after the proofreading has been completed, due to changes being made during the corrections' process. Should there be any questions that arise from this exercise, kindly contact me on lscheckle@gmail.com.

Linda Scheckle (Private Editing Service) **21 May 2021**

Address:

20 Kleinbron Mews

Moepel Crescent

Kleinbron Estate

Cape Town

7560

Appendix B: Certificate of Proofreading from Mrs S.E Matthis

S E Matthis (B A Hons UNISA)

1 Oden Place Johannesburg 2191

Email:suematthis@gmail.com

Cell: 0837817646

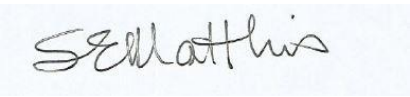
20 May 2022

TO WHOM IT MAY CONCERN

This is to confirm that I have proofread and language edited the dissertation:

Professional Nurses' Perceptions of the Dispensing of Chronic Medicines through the Central Chronic Dispensing And Distribution (CCMDD) Programme in the Amathole Health District, Eastern Cape

by Vatiswa Monica Mjekula.



Mrs S E Matthis

20 May 2022

Appendix C : Ethics approval UFH

FACULTY OF HEALTH SCIENCES
Research Ethics Committee
P.O Box 1054
East London 5200
Tel: +27 (0) 43 704 7368
E-mail: dgoon@ufh.ac.za

University of Fort Hare
Together in Excellence

ETHICAL CLEARANCE CERTIFICATE
REC-100118-054

Certificate Reference Number:	**Ref # 2019=10=003=MjekulaV**
Project title:	**Perceptions of professional nurses regarding chronic medicines dispensation through central and distribution programme at Amathole health district, Eastern Cape**
Nature of Project	Masters of Public Health
Principal Researcher:	Mjekula V
Student Number:	2009090873
Supervisor:	Prof M Pinkoane

On behalf of the Faculty of Health Sciences Research Ethics Committee (FHREC), I hereby give ethical approval in respect of the undertakings contained in the above-mentioned project and research instruments(s). Should any other instruments be used, these require separate authorization. The Researcher may therefore commence with the research as from the date of this certificate, using the reference number indicated above.

Please note that the FHREC must be informed immediately of

- Any material change in the conditions or undertakings mentioned in the document
- Any material breaches of ethical undertakings or events that impact upon the ethical conduct of the research

The Principal Researcher must report to the FHREC in the prescribed format, where applicable, annually, and at the end of the project, in respect of ethical compliance.

Figure 1

FACULTY OF HEALTH SCIENCES
Research Ethics Committee

P.O Box 1054
East London 5200
Tel: +27 (0) 43 704 7368
E-mail: dgoon@ufh.ac.za

University of Fort Hare
Together in Excellence

The FHREC retains the right to

- Withdraw or amend this Ethical Clearance Certificate if
  - Any unethical principles or practices are revealed or suspected
  - relevant information has been withheld or misrepresented
  - regulatory changes of whatsoever nature so require
  - the conditions contained in the Certificate have not been adhered to

- Request access to any information or data at any time during the course or after completion of the project.
- In addition to the need to comply with the highest level of ethical conduct principal investigators must report back annually as an evaluation and monitoring mechanism on the progress being made by the research. Such a report must be sent to FHREC monitoring@ufh.ac.za.

The Ethics Committee wishes you well in your research endeavours.

Yours sincerely

Professor DT Goon
Chairperson: FHREC
18 October 2019

Appendix D: Permission to conduct research from the Department of Health

Province of the
EASTERN CAPE
HEALTH

Enquiries: Zonwabele Merile

Email: zonwabele.merile@ecdoh.gov.za

Tel no: 083 378 1202

Fax no: 043 642 1409

Date: 12 November 2019

RE: Perceptions of professional nurses regarding chronic medicines dispensation through central and distribution programme at Amathole health district, Eastern Cape. (EC_201911_002)

Dear Ms .V. Mjekula

The department would like to inform you that your application for the abovementioned research topic has been approved based on the following conditions:

1. During your study, you will follow the submitted protocol with ethical approval and can only deviate from it after having a written approval from the Department of Health in writing.

2. You are advised to ensure, observe and respect the rights and culture of your research participants and maintain confidentiality of their identities and shall remove or not collect any information which can be used to link the participants.

3. The Department of Health expects you to provide a progress update on your study every 3 months (from date you received this letter) in writing.

4. At the end of your study, you will be expected to send a full written report with your findings and implementable recommendations to the Eastern Cape Health Research Committee secretariat. You may also be invited to the department to come and present your research findings with your implementable recommendations.

5. Your results on the Eastern Cape will not be presented anywhere unless you have shared them with the Department of Health as indicated above.

Your compliance in this regard will be highly appreciated.

SECRETARIAT: EASTERN CAPE HEALTH RESEARCH COMMITTEE

Appendix E: Letter to the participants

University of Fort Hare
Together in Excellence

Ethics Research Confidentiality and Informed Consent Form

Please note:
This form is to be completed by the researcher as well as the participant before the commencement of the research. Copies of the signed form must be filed and kept on record

I, Vatiswa Mjekula, student at the University of Fort Hare / Health Science Department is asking professional nurses from Amatole Health District Community Health Centers and one Primary Health Care facility of Amahlathi who are working on the CCMDD program to answer questions, which we hope will benefit communities in the future

The title of the study is:

Professional nurse's perceptions of the dispensing of chronic medicines through the Central Chronic Medicines Dispensing and Distribution (CCMDD) program in the Amatole Health District of the Eastern Cape

The goal of the study is to contribute to the development of strategies for strengthening the CCMDD program and chronic medicine access in underserved communities.
Please realize that you are not obligated to participate in this study and that the decision to do so is entirely yours. However, I would be grateful if you could share your opinions with me.

To guarantee your anonymity, your name will not be recorded anywhere on the form.

The interview is expected to take about 30 minutes. I'll be asking you questions, and I'd like you to be as open and honest as possible in your responses. There are no right or incorrect responses when it comes to answering inquiries.

_____ _____
Researcher Date

Appendix F:	**Informed consent forms for participants**

INFORMED CONSENT

I hereby agree to participate in research regarding Professional nurses' perceptions of the dispensing of chronic medicines through the CCMDD program in the Amatole Health District, I understand that I am participating freely and without being forced in any way to do so. I also understand that I can stop this interview at any point should I not want to continue, and that this decision will not in any way affect me negatively.

I understand that this is a research project whose purpose is not necessarily to benefit me personally.

I've been given a phone number to call if I have any questions or need to speak with someone about anything that comes up during the interview.

I accept that my answers will be kept private and that this consent form will not be linked to the questionnaire.

……..

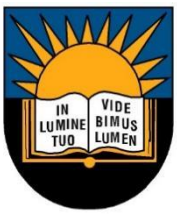
Signature of participant **Date**: ……...

I hereby agree to the audio tape recording of my participation in the study

……..

Signature of participant **Date**: …….

Appendix G



University of Fort Hare
Together in Excellence

PROFESSIONAL NURSES' PERCEPTIONS OF THE DISPENSING OF CHRONIC MEDICINES THROUGH THE CENTRAL DISPENSING AND DISTRIBUTION (CCMDD) PROGRAM IN THE AMATOLE HEALTH DISTRICT

VATISWA MONICA MJEKULA

2009090873

SUPERVISOR: PROFESSOR MARTHA PINKOANE

2017

INTERVIEW GUIDE

1. **SEMI STRUCTURED INTERVIEW TO EXPLORE THE PECEPTION OF PROFESSIONAL NURSES OF THE DISPENSING OF CHRONIC MEDICINES THROUGH THE CCMDD PROGRAM AT THE AMATOLE HEALTH DISTRICT OF THE EASTERN CAPE**

Once again, thank you for participating in the in-depth interview.

SECTION A. DEMOGRAPHIC INFORMATION (Tick to the appropriate box)

1. **Gender**

   Male

   Female

2. **Age**

   25-30 years

   30-40 years

   40- 50 years

   50 above

3. **Occupation level**

   Operational manager

   Professional nurse

   Post community serve

4. **Marital status**

   Married

Single

SECTION B.

2. **Professional nurses' perceptions of the Dispensing and Distribution of Chronic Medicines in Primary Health Care facilities of the Amatole Health District in the Eastern Cape**

2.1 Tell me what you know about the CCMDD program.

---

3. **Professional nurses' perceptions of the Dispensing and Distribution of Chronic Medicines in Primary Health Care facilities of the Amatole Health District of the Eastern Cape**

3.1. How do you feel about the CCMDD program for Amatole?

---

4. Professional nurses' perceptions of the Dispensing and Distribution of Chronic Medicines in Primary Health Care facilities of the Amatole Health District of the Eastern Cape

4.1. What are your views regarding the implementation of the CCMDD program?

---

5. Professional nurses' perceptions of the Dispensing and Distribution of Chronic Medicines in Primary Health Care facilities of the Amatole Health District of the Eastern Cape

5.1. What do you see as advantages of the CCMDD program?

---

6. Professional nurses' perceptions of the Dispensing and Distribution of Chronic Medicines in Primary Health Care facilities of the Amatole Health District of the Eastern Cape

6.1. What do you see as disadvantages of the CCMDD program?

---

7. Professional nurses' perceptions of the Dispensing and Distribution of Chronic Medicines in Primary Health Care facilities of the Amatole Health District of the Eastern Cape.

7.1. Is there anything that could be done to improve the services on what is currently being done?

---

8. Professional nurses' perceptions of the Dispensing and Distribution of Chronic Medicines in Primary Health Care facilities of the Amatole Health District of the Eastern Cape

8.1. How can the CCMDD program be improved for the betterment of service delivery?

---

9. Professional nurses' perceptions of the Dispensing and Distribution of Chronic Medicines in Primary Health Care facilities of the Amatole Health District of the Eastern Cape

9.1. What do you see as disadvantages of the CCMDD program in the service delivery?

THANK YOU FOR ACTIVE PARTICIPATION

Annexure H

: Co-coder and data analysis letter

Mangosuthu
University of Technology

15th March 2020

Dear Sir/Madame

Ref: Confirmation of statistical analysis

This letter serves to confirm that I, Courage Mlambo, independently coded and analysed Ms. Mjekula V's data. The analysis was mainly mixed (involved descriptive and inferential statistics aspects). It also had qualitative aspects.

Yours faithfully,

Courage Mlambo

PhD, Economics (University of Fort Hare)

Masters Certificate in Health and Environmental Economics (Vrijie University, Netherlands)

Annexure I: Request approval from the district

Province of the
EASTERN CAPE
HEALTH

Room 114 • 1st Floor • old medical centre Building • East London• Eastern Cape
Private Bag X002 • southernwood • 5605 • REPUBLIC OF SOUTH AFRICA
Tel.: +27 (043) 7076700 • Fax: +27 (0)86 2752750• Cell 0609631293
Email: vathiswamjekula@gmail.com. Enc: V.Mjekula

To	District Ethics Committee Chairperson
From	Ms. Mjekula – student no 200909873
Subject	Request approval to conduct study at Amatole Health district
Date	01st August 2019

Purpose

The above mentioned student requests the permission to conduct research study to the facilities of Amathole Health District.

Background

Vatiswa Mjekula, student no :200909873 is a student at the University of Fort Hare studying Master in Public Health under the Aselph programme. According to the Master programme, it is mandated that every student conduct module on research for the programme to be complete. The selected topic is Perceptions of professional nurses regarding dispensing of chronic medicines through CCMDD programme.

Request

I Vatiswa Mjekula humbly requests the committee to grant permission to conduct research to the facilities of Amatole Health District that will also help to improve outcomes for the whole district.

Your approval will be highly appreciated

Thank you

Mjekula V.

19/08/2019
Date

Approve / Not approved
Chairperson of Ethics Committee

19/08/2019
Date

United in achieving quality health care for all

Fraud prevention Line 0800 701 701
24 hour Call Centre: 0800 032 364
Website: www.ecdoh.gov.za

Annexure: J Participant response

University of Fort Hare
Together in Excellence

PERCEPTIONS OF PROFESSIONAL NURSES REGARDING DISPENSING CHRONIC MEDICINES THROUGH CENTRAL DISPENSING AND DISTRIBUTION (CCMDD) PROGRAM AT AMATHOLE HEALTH DISTRICT

VATHISWA MONICA MJEKULA

2009090873

SUPERVISOR: PROFESSOR MARTHA PINKOANE

2017

INTERVIEW GUIDE

1. **SEMI STRUCTURE INTERVIEW TO EXPLORE THE PECEPTION OF PROFESSIONAL NURSES REGARDING DISPENSING OF CHRONIC MEDICINES THROUGH CCMDD OROGRAM AT AMATHOLE HEALTH DISTRICT IN EASTERN CAPE**

Once again, thank you for participating in the in-depth interview.

SECTION A. DEMOGRAPHIC INFORMATION (Tick to the appropriate box)

1. **Gender**

Male	✓
Female	

2. **Age**

25-30 years	
30-40 years	✓
40- 50years	
50 above	

3. **Occupation level**

Operational manager	
Professional nurse	✓
Post community serve	

4. **Marital status**

Married	
Single	✓

SECTION B.

2. Perception of professional nurses regarding Dispensing and Dispensing of Chronic Medicines at Amathole Health District in the Eastern Cape

2.1 Tell me what do you know about the CCMDD program?

CCMDD is a good program more especially during this time of staff shortage because it help us as nurses to cope with the work load in our Clinic.

Almost every day ques are long yet nurses are few and there are lot of programs that are implemented

During our time of Nursing people are very sick the burden of diseases is causing strain to our Nursing and patients if this program can be implemented well because it has a potential to make our work easy

3. **Perception of professional nurses regarding Dispensing and Dispensing of Chronic Medicines at Amathole Health District in the Eastern Cape**

2.2. How do you feel about CCMDD program for Amathole?

It is a very good program because it started we have put most chronic patients on the programe although there are challenges I mean delivery of forms at times but they are not considered.

I recommend that all nurses must be trained on the program so that every Consulting room must be able to provide the service.

I request more training and if medicines can be delivered early also to provide insulin for diabetic patients

4. **Perception of professional nurses regarding Dispensing and Dispensing of Chronic Medicines at Amathole Health District in the Eastern Cape**

2.3. What are your views regarding the implementation of the CCMDD program?

To continue with the programme as it is beneficiary for both nurses and patients. Also it there can be pick up points more especially in rural areas so that patients may collect from their

2.Perception of professional nurses regarding Dispensing and Dispensing of Chronic Medicines at Amathole Health District in the Eastern Cape

2.4. What do you see as advantages of CCMDD program?

The advantage of the program is that all Chronic patients that are in the program they come and collect They don't stay long in the Clinic

Ques are small.

there was a long time waiting time when has be reduce' now.

we are able to attend to acute patients

2.Perception of professional nurses regarding Dispensing and Dispensing of Chronic Medicines at Amathole Health District in the Eastern Cape

2.5What do you see as disadvantages of CCMDD program?

The disadvantage is that not every Chronic patient is on CCMDD so if all patients can be in a program it will assist us.

Inconsistancy in adherence of patients medicines

2.Perception of professional nurses regarding Dispensing and Dispensing of Chronic Medicines at Amathole Health District in the Eastern Cape .

2.5. Is there anything that can be done to improve the services from what is currently being done?

Include fridge items in the list of medicines

Increase number of pick up points

Improve delivery of medicines

Training of more staff on the program

Training of old nurses on computer to make things easier for young nurses

2. Perception of professional nurses regarding Dispensing and Dispensing of Chronic Medicines at Amathole Health District in the Eastern Cape

2.6. How can the CCMDD program be improved for the betterment of service delivery?

Every clinic must implement the program

Every nurse must implement the program

Increase pick up points in rural areas

Supervisor to own the program and assist us to improve the program

All chronic patients must be collected to the patients