PROFESSIONAL NURSES' CHALLENGES REGARDING DRUG SUPPLY MANAGEMENT IN THE PRIMARY HEALTH CARE CLINICS

by

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submitted in accordance with the requirements for

the degree of

MASTER OF ARTS

in the subject

NURSING SCIENCE

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: DR SM ZUMA

February 2021

DEDICATION

I dedicate this dissertation to my late father and mother, George Mgidi Masemola and Emily Namsiza Masemola, who gave me the gift of physical life and the desire to never give up in life.

DECLARATION

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I declare that the above dissertation is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the dissertation to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.

24 February 2021

Eleanor Mflathelwa Dube **Date**

ACKNOWLEDGEMENTS

Firstly, I would like to give all the Glory and Honour to Almighty Lord, my God and personal saviour for strengthening and protecting me to run this race. Without His Mercy and Grace, this would not be possible at all for the blessings come from Him.

I wish to express my heart-felt gratitude to the following people for their continuous support, patience, guidance and encouragement also donors for their funding as without them, this study would not have been successfully completed.

Dr SM Zuma, my supervisor, the exceptional support, positive attitude, guidance, valuable encouragement and commitment to completion of the research project. You have been an inspiration to me. You are greatly appreciated.

A special thank you to Dr HC de Swart, my initial supervisor, for support, tutorship and selfless coaching. You were my strength when I felt weak and without coping mechanism. Her continuous guidance and patience during the time of crises will forever be valued.

I am grateful to the National Health Research Department, Ekurhuleni Health District and City of Ekurhuleni (PHC division and special programmes) for the collective authorisation to conduct the research project in the PHC clinics.

The awesome encouragement from the pillar of my strength, my husband, Mduduzi. Thank you for your love, constant patience and always being on my side. You are the best, rock in my life and have supported me throughout this journey.

Sibusiso and Khanyi-Mfundo, my children, I would have never succeeded without your endless encouragement and loads of love. I am grateful for your patience and assistance with computer skills.

My late father and mom, George Mgidi Masemola and Emily Namsiza Masemola, who have instilled a desire to never give up but to endure irrespective of circumstances. You were passionate about education and thanks for building tenacity within all of us and encouraging us to always study.

A special thanks to my siblings (Jack, Julia, Lizzy, Jan, Barbara and late brother, Thulane). Your prayers kept me strong. You are the light of my life. You were always there to encourage and provide support. You are greatly appreciated.

I wish to extend a word of gratitude to all the health care professionals for their assistance, willingness and time to participate in the research project for without them this study would not be possible.

A special thanks to my manager, Ms Cheryl Mngomezulu in the training unit, City of Ekurhuleni for all your support and encouragement while embarking on research journey.

I would like to acknowledge and thank all my colleagues and friends for support, understanding and guidance over the period of the research project.

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ABSTRACT

The purpose of the study was to explore the challenges experienced by professional nurses regarding the implementation of the drug supply management standard operating procedure in the primary health care setting of the City of Ekurhuleni. The study was conducted in primary health care clinics in the City of Ekurhuleni. An exploratory contextual qualitative research design was followed. The study population included all professional nurses working in the City of Ekurhuleni. Purposive sampling was used to select a sample of professional nurses with at least two years' experience.

Semi-structured interviews were conducted. Data analysis was conducted and using qualitative content analysis according to Erlingsson and Brysiewic (2017). The study identified the following challenges: non-adherence to the standard operating procedure for drug supply management, human resources challenges, inadequate management support and compromised patient care. The suggested recommendations from the study will promote adherence to the standard operation procedure regarding drug supply management outcomes.

Key concepts

Challenges, drug supply management (DSM), professional nurse, standard operating procedures (SOPs).

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LIST OF ABBREVIATIONS

AGL	Adherence Guidelines
CDC	Community Day Centre
CHC	Community Health Centre
CoE	City of Ekurhuleni
DSM	Drug Supply Management
EML	Essential Medicine List
EPWP	Expanded Public Works Programme
FEFO	First Expire First Out
FIFO	First in First Out
GDoH	Gauteng Department of Health
GP	Gauteng province
GPEDC	Global Partnership for Effective Development Cooperation.
GPP	Good Pharmacy Practice
ICN	International Council of Nurses
KEMSA	Kenya Medical Supplies Agency
MSD	Medical Supplies Depot
NDoH	National Department of Health
NDP	National Drug Policy
NHRD	National Health Research Database
PHC	Primary Health Care
SADC	South African Development Community
SAPC	South African Pharmacy Council
SOPs	Standard Operating Procedures
SVS	Stock Visibility Solutions
TB	Tuberculosis
UNICEF	United Nations Children's Fund
US	United States
USA	United States of America
WHO	World Health Organization

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Drug supply management (DSM) is an essential component for the provision of quality health services in the primary health care (PHC) setting. The National Department of Health (NDoH) in South Africa recognised the drug supply component of nursing to such an extent that professional nurses employed either by the provincial health or local government as prescribers, have to undergo training in the dispensing of drugs provided by a school of pharmacy and accredited by the South African Pharmacy Council (SAPC). On successful completion of the course in dispensing, the department will allow the professional nurse to apply for the License in Dispensing to Director-General: Health, in terms of section 22C (1) of the Medicines and Related Substance Act (Act no 101 of 1965), as amended (South Africa 1965). The head of the Department of Health or medical officer in charge of PHC clinics has to ensure that professional nurses acquire a dispensing license and renew it if it expires (National Department of Health [NDoH] 2018:3).

The National Drug Policy (NDP) provides a sound foundation for managing drug supply and adhering to the stipulated principles (South Africa 2014). According to the NDP of South Africa, the Government is demonstrating its commitment to ensure an adequate and reliable supply of safe, cost effective drugs of acceptable quality to all citizens of South Africa. This commitment is in support of the Constitution of Republic of South Africa, 1996 (Act 108 of 1996), which states that patients should have access to medical treatment including essential medicines, which is affordable, feasible, safe, acceptable and sustainable (NDoH 2015:12). Effective DSM is recognised as an essential component of quality and affordable health care services. DSM ensures that essential medicines are available in adequate quantities to meet the health needs of the South African population (Zuma 2016:25). An example from India shows that an inadequate DSM resulted in financial wastage, shortage of essential drugs, loss of confidence by health care providers and these forced patients to buy drugs from the local pharmacies (Kokilam, Joshi & Kamath 2015:53).

1.2 BACKGROUND INFORMATION ABOUT THE RESEARCH PROBLEM

1.2.1 The source of the research problem

According to Crowley and Stellenberg (2015:84), DSM is the core responsibility of pharmacists and pharmacist assistants. However, South Africa has a huge shortage of pharmacists as explained in 2014 when only 13 364 were registered with the SAPC but only 4 516 were employed in the Public Sector (Gray, Riddin & Jugathpal 2016:39). In order to deal with the excessive shortage of pharmacy personnel, the DSM responsibilities were handed over to professional nurses through strategies such as task shifting, which were introduced as an alternative method to improve access to health care services especially in the PHC clinics (Crowley and Stellenberg 2015:84).

The City of Ekurhuleni (CoE) introduced the task shifting to the professional nurses to manage drug supply and made provision for training through a short course programme. Despite those measures, it appeared that the DSM systems in the CoE PHC clinics lacked effectiveness, which could be attributed to poor storage, inadequate organising of drugs and supplies, poor reception of ordered drugs and supplies, inaccurate record keeping, inadequate cold chain management and poor dispensing of drugs and supplies to patients or clients.

1.3 STATEMENT OF THE RESEARCH PROBLEM

The CoE PHC clinics have experienced challenges in supplying drugs and this has impacted negatively on the provision of treatment to users of the services. Audit visits were conducted by the pharmaceutical team in PHC clinics of the CoE in 2017. The findings were that professional nurses working in PHC clinics do not adhere to the DSM standard operating procedures (SOPs) (Mathye & Mokgehle 2018:2).

During site visits as a Manager in the CoE, the researcher found that in some PHC clinics medicine rooms were untidy and filthy, record keeping of drugs and supplies was inaccurate, room temperatures were not being monitored, expired stock were kept in the storeroom, bin cards were not utilised and emergency cupboards were not locked. The researcher intended to understand what challenges prevented professional nurses from

implementing the DSM SOPs and which impacted negatively on the provision of treatment in the services.

1.4 PURPOSE OF THE STUDY, RESEARCH OBJECTIVES AND RESEARCH QUESTIONS

1.4.1 Research purpose

The purpose of the study was to explore challenges experienced by professional nurses in the implementation of the DSM SOPs in the CoE primary health care clinics.

1.4.2 Research objectives

The research objectives were to:

- describe professional nurses' challenges regarding the implementation of the DSM SOPs in the CoE PHC clinics
- make recommendations to enhance the implementation of the DSM SOPs

1.4.3 Research question

The following grand tour question was asked:

- Kindly share with me the challenges experienced when implementing the SOPs with regard to DSM in your PHC clinic?

1.5 SIGNIFICANCE OF THE STUDY

The study would assist the professional nurses to share their experiences regarding the implementation of DSM SOPs. The suggested recommendations could be implemented to improve DSM, which in turn would benefit the service delivered to patients or clients of the PHC clinics and the broader society. From a management perspective, specific interventions could be introduced to streamline the DSM system that might reduce cost and indirectly relieve the burden on the taxpayer.

Based on the study findings, recommendations could be made to improve the DSM system in the nurse-led PHC clinics.

1.6 DEFINITION OF KEY CONCEPTS

1.6.1 Challenges

Challenges refer to concerns or difficult situations that require a coordinated effort physically and mentally from communities, policy makers, international agencies and global health sectors to be successfully overcomed (WHO 2021:1). In this study context, challenges imply difficult circumstances or issues experienced by professional nurses when they have to perform all the tasks related to the components of DSM in the PHC clinics.

1.6.2 Drug

A drug is defined as the medicine or chemical substance that has the physiological effect when ingested or introduced into the body and is used to treat, prevent or cure a disease or ailment, also to promote physical and mental well-being (WHO 2018:2). In this study drugs are regarded as essential medicines required in the PHC setting.

1.6.3 Drug supply management (DSM)

DSM is a set of practices, processes and policies related to the selection of essential drugs and supplies, procurement, distribution and the storage of drugs and supplies in a safe medicine storeroom (NDoH 2015:4). This definition is adopted for the study.

1.6.4 Professional nurses

According to the Nursing Act (Act No 33 of 2005), a professional nurse is defined as any person who is qualified and competent to independently practise comprehensive nursing in the manner and to the level prescribed and can assume responsibility and accountability for such practice (South Africa 2005:25). In this study, the professional nurse shall mean registered nurses whose core function is to provide PHC and manage drugs in the PHC setting.

1.6.5 Standard operating procedures (SOPs)

SOPs is defined as written authorised procedures that provide instructions or steps that must be adhered to in order to perform the task properly and consistently in order to attain pre-determined specifications without a dangerous impact on the environment and in such a way that will enhance operational and production requirements (Gauteng Department of Health 2013:4). This definition is adopted for the study.

1.7 OVERVIEW OF RESEARCH DESIGN AND METHODOLOGY

1.7.1 Research approach

A qualitative research approach is an interactive, subjective approach used to describe life experiences and explore the meaning of the phenomena (Brink, Van der Walt & Van Rensburg 2017:121). Qualitative research concentrates on understanding the meaning of the phenomena together with life experiences rather than providing an explanation. The subjectivity of the qualitative approach is indicated when the researcher's values and perceptions are acknowledged to have a direct influence on the research findings (Gray, Grove & Sutherland 2017:26).

A qualitative research approach was chosen for this study because the researcher intended to explore and attach meaning to the challenges experienced by professional nurses when implementing DSM SOPs in the PHC clinics.

1.7.2 Research design

According to Gray et al (2017:19), qualitative exploratory studies are conducted to gain more insight into phenomena that are new and of which minimal information is known. The researcher thus wants to increase knowledge or promote understanding in the field of research study. Contextual research is described as a process whereby the qualitative researcher is deeply involved during an interview, observing how the participants conduct themselves in their natural environment (Malpass 2018:282).

A descriptive exploratory contextual qualitative research design was chosen for this study because the researcher intended to gain more information about the challenges experienced by professional nurses regarding the implementation of the SOPs of DSM. The researcher sought to explore and understand the context of professional nurses' experiences and the meaning attached to the challenges they had with the implementation of the SOPs for DSM. Qualitative researchers become highly immersed in the study by participating actively in order to gather rich information and to make sense of the events in the natural setting (Gray et al 2017:353).

1.7.3 Research methods

Pilot and Beck (2017:743) described the research methods as the techniques used to structure the research study, to gather data and analyse the obtained information in a systematic manner. The research methods, research setting, population utilised would be discussed under the following sections.

1.7.3.1 Research setting

Research setting refers to a location where the study was conducted. The research setting can be sub-divided into three types where the nursing research can be conducted. These settings are natural, partially controlled and highly controlled (Gray et al 2017:353). For this study, the research setting was the northern and southern sub-districts in the CoE district of Gauteng province (GP), an uncontrolled real-life environment and a natural setting where the research participants have experienced challenges regarding DSM in the PHC clinics, where the pharmacists and pharmacist assistant were not present.

1.7.3.2 Population

According to Polit and Beck (2017:739), a population is defined as an entire set of individuals, objects or events which have specific characteristics in the universe or that meet the sampling criteria in the study. The population is also referred as the target population (Grove, Gray & Burns 2015:509). The population of this study included all the professional nurses working in the PHC clinics of the CoE district in the Gauteng province.

1.7.3.3 Sampling

Sampling is a process of selecting participants to include when conducting the research study (Gray et al 2017:693). Sample selection was conducted through the purposeful sampling method, which enabled the researcher to understand the research problem, and questions better (Polit & Beck 2017:743). The sample size refers to the number of research participants (Polit & Beck 2017:743). The study sample was the professional nurses responsible for DSM at the two sub-districts in the CoE district. A total of 33 professional nurses met an inclusion criterion of working in the PHC clinics where no pharmacists and pharmacist assistants were present on site.

1.7.4 Data collection

According to Polit and Beck (2017:725), data collection is a process of obtaining information to tackle a research problem, relevant to the research purpose, objectives and questions of the research study. Data collection in this study was conducted using semi-structured interviews.

1.7.5 Data analysis

Qualitative data analysis is defined as an active iterative process whereby researchers deliberately look at the data in depth to familiarise themselves with it (Erlingsson & Brysiewicz 2017:94). According to Gray et al (2017:675), data analysis in qualitative research refers to reduction and organisation also pointing out the meaning of the phenomena or lived experience.

In this study, the researcher utilised Erlingsson and Brysiewicz's (2017) six steps of qualitative content analysis, which required engagement with data through listening to audio tapes and reading the transcribed data to internalise the content in order to generate codes, categories and sub-categories.

1.8 TRUSTWORTHINESS

Trustworthiness refers to the procedures, which were imperative to be implemented during the research process, to evaluate the quality and integrity of the qualitative studies to ensure the accuracy of findings (Brink et al 2017:171). The criteria of trustworthiness applied in this research study were authenticity, confirmability, credibility, dependability and transferability as suggested by Creswell (2014:202). These criteria will be discussed in detail in chapter 2.

1.9 ETHICAL CONSIDERATIONS

The ethical considerations focused on the significant actions for conducting research in an ethical manner through protection of the rights of study participants. The principles of ethical considerations are based on the rights of the research participants, which need to be protected (Gray et al 2017:162). The study was conducted after the following:

(1) The ethical clearance was granted by the University of South Africa (Annexure A).
(2) Permission was requested to conduct research and collect data at the primary health care (PHC) clinics in the northern and southern sub-district of the CoE (Annexure B).
(3 The NRHD report with the GP number was received from the NHRD support team (Annexure C).
(4) Permission was granted from both Ekurhuleni Health District and CoE (Annexure D). The researcher contacted the gate keepers and requested permission from Ekurhuleni Heath District and the CoE to conduct a study.

The documents were submitted electronically and gatekeepers communicated with PHC facility managers about the research to be conducted. The fundamental ethical principles were complied with during the conduct of the study, these principles will be discussed in detail in chapter 2.

1.10 SCOPE OF THE STUDY

The study was conducted in a district health service context, focusing on the challenges experienced by professional nurses working in the CoE PHC clinics without the pharmacist or pharmacist assistant.

1.11 OUTLINE DISSERTATION

The dissertation comprises five chapters, namely the following.

Chapter 1: Orientation to the study

Chapter 2: Literature review

Chapter 3: Research design and methodology

Chapter 4: Presentation of findings

Chapter 5: Conclusion, recommendations and study limitations

1.12 SUMMARY

The chapter provided the study overview covering the background, research purpose, research objectives, research questions and the research design. The following chapter will provide the literature review applicable to the study.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents the literature review that was conducted to identify the key research studies on the professional nurses' challenges experienced regarding the implementation of the DSM SOPs in PHC clinics. The presentation will cover the international agencies, the developed countries, the African countries and the South African context to understand whether professional nurses in other countries and regions experienced drug supply management challenges similar to those of the CoE.

2.2 INTERNATIONAL AGENCIES CONTEXT

In this section the researcher presents related information covering the World Health Organization (WHO) literature as well as the International Council of Nurses' (ICN) position on the professional nurse's role on DSM.

2.2.1 The World Health Organization (WHO) context

According to the WHO (2015a:1), essential medicines are drugs defined as the medications that fulfils the health care needs of the population. These drugs are chosen on the basis of the common diseases, evidence on clinical potency and safety, as well as comparative cost and cost effectiveness. These drugs are supposed to be available within the functioning health systems at all times in sufficient amounts, in the appropriate dosages, forms with assured quality and relevant information and at a price the individual and community can afford. Although the essential medicines for chronic ailments are provided free or at a low cost in the public sector, their availability in the PHC clinics was inadequate. According to the WHO (2016:181), drug shortages and stock outs of essential medicines and supplies posed a huge challenge worldwide covering developed continents and countries such as the United States of America (USA), Europe and China as well as developing countries like Mozambique, Nigeria and Uganda. In order to ensure the uninterrupted availability and accessibility of essential medicine, appropriate human

resources, acceptable budget, broad information systems were identified as the significant aspects to be present in the health system (WHO 2015b:1).

In the countries where drug supply challenges were experienced, various reasons were highlighted for the shortage or stock outs of medicines. These included limited quantities of raw materials, procurement challenges, natural disasters, regulatory issues, budget challenges, importation issues and termination of contracts between the suppliers and customers (Food and Drug Administration 2020:36). To address drug supply challenges worldwide, the WHO is working cooperatively with other stakeholders in medicine supply to develop solutions to mitigate the drug shortages and stock outs. The WHO has made further recommendations for safe and effective medicine supply processes to upgrade the availability and access of essential medicines worldwide (WHO 2015c:1).

Figure 2.1 indicates the proposed medicine management cycle used as a theoretical framework that has to be adhered to when dealing with the supply of drugs (WHO 2015d:1). All elements of the cycle have to be complied with for consistent drug supply.

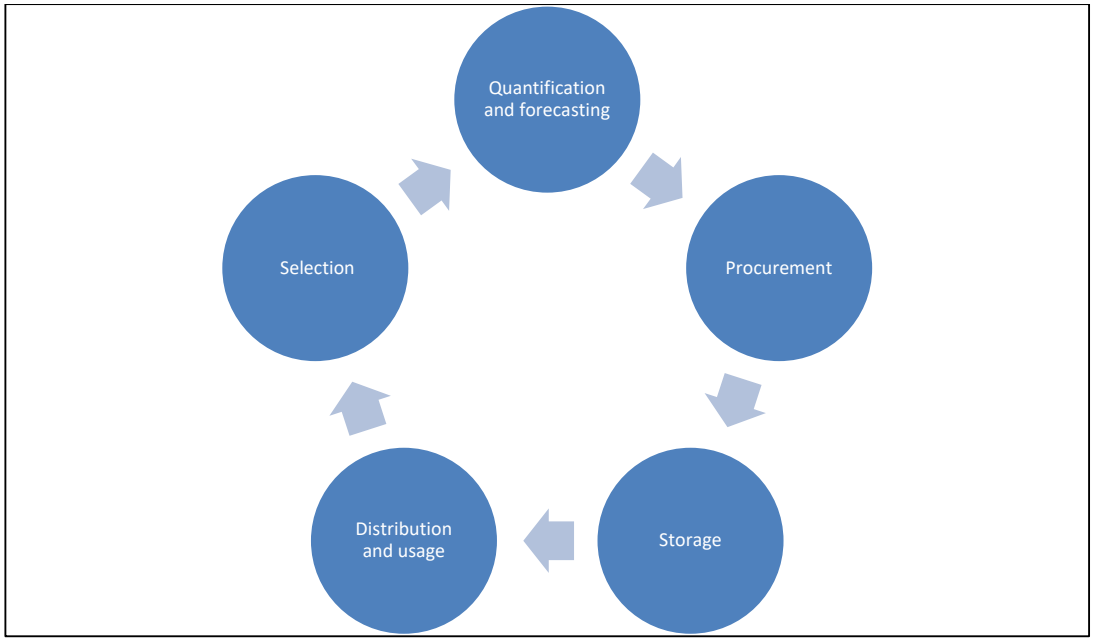

Figure 2.1 Drug Supply Management (DSM) theoretical framework
(WHO 2015d:1)

The drug supply management theoretical framework describes the various steps including selection, quantification, forecasting, procurement, distribution and usage that

should be applied for the effective medicine supply management in the health institutions. The theoretical framework formed the basis of the DSM SOP development. In this study the framework was utilised to develop the research questions and to guide the recommendations emanating from the study (WHO 2015d:1).

2.2.2 International Council of Nurses (ICN) context

The ICN is a body that serves as the critical model for ethical standards in the nursing profession, reinforcing responsibility and advocacy of human rights of patients since availability and accessibility to essential medicines are human rights (International Council of Nurses [ICN] 2019a:1). The ICN shared the view of the significant roles played by the nurses in attaining universal health coverage (ICN 2019b:1). The nurses played a pivotal role by rendering safe, high quality patient care, preventing harm to patients and improving the quality of life and safety of health care across all the levels or settings including providing essential medicines where there were no pharmacists or pharmacist assistants. The nurses rendered quality health care by providing support and treatment to the sick, injured or dying. They also rendered families and communities with the necessary support after losing a loved one, administered medications, treated patients beyond initial assessment and diagnosis. Hence, nurses were linked with the ability to address health priorities (ICN 2019c:1).

2.3 DEVELOPED COUNTRIES CONTEXT ON DRUG SUPPLY CHALLENGES IN NURSE-LED HEALTH FACILITIES

Developed countries are sovereign states with a high industrial and human development index, that are economically developed, advanced in technological infrastructure, are politically stable and experience freedom with good standards of living of the general population and who also have a stable transportation system (World Atlas 2018:1). The challenges regarding drug supply related to professional nurses' role in the developed countries, including the United States (US), European countries, Canada and Australia are described below.

The drug supply challenges have been identified as a global challenge in various developed countries especially in nurse-led health facilities resulting from several causes and had a huge impact on the patients' lives clinically and financially as evidenced by the

various reports from the US, Europe and China (Ogbodu, Maputle & Mabunda 2019:551). Drug shortages were described as a shortcoming in the supply of medicinal products when the demand projected exceeds the supply of the drug whilst drug stock outs were regarded as the medication that were out of stock and in turn affected patients' ability to access the relevant treatment timeously (Pauwels, Simoens, Casteels & Huys 2015:2). In the following paragraphs the researcher explored developing countries drug supply challenges to assess whether the developed countries experience similar challenges to the CoE.

2.3.1 United States (US) of America

Drug supply challenges had adversely affected patients' medical health care plan and displayed negative outcomes. According to Anderson (2019:1), the challenges experienced by the professional nurses were interruption of treatment and progression of diseases in patients as they were unable to administer the prescribed treatment, aggravated by possible medication errors. The shortage of vaccines reported were due to excessive pricing and professional nurses turned patients away from the health facilities, which resulted into outbreaks of infectious diseases (David, Xiaoshu & Eli 2016:3).

2.3.2 Canada

Barthelemy, Lebel and Bussieres (2019:205) state that drug supply challenges have resulted in a high rate of unreliability and instability in the Canadian health sector. The authors reported that the drug supply challenges were emotionally draining on professional nurses caring for the lives of patients at risks and their conditions deteriorated because they were unable to assist the patients as the drugs were not available.

2.3.3 Australia

Australia had a critical shortage of medicine, which included shortages resulting from the termination of products by the manufacturer. The shortage of drugs had led to challenges for the professional nurses as they were despondent, helpless and did not know how to manage the patients because they were not familiar with alternative drugs. Monitoring

and communication had to be improved in order to inform the patients about drug shortages and support by health care providers. There was a shortage of professional nurses in Australia, and the limited staff had to provide health care with limited resources. This hindered professional nurses from rendering quality patient care. The shortages of medicines aggravated the professional nurses' challenges and were less appreciated in Australia. The extensive workload of reporting to all the stakeholders, compiling mandatory reports on the current medicine shortages had a detrimental impact on patients and the Australian health systems (Australian Government Department of Health 2019:6).

2.3.4 European countries

According to Bochenek, Godman, Bucsics, Vella, Warminska and Pik (2016:2), drug shortage was a complex and global challenge that affected everyone in the European health care system. A lack of or shortage of life-saving drugs, which were anti-infective and with cancer drugs, had put the lives of patients at a health and financial risk. It was a difficult scenario for professional nurses and the European health system when medication was not available to be administered to the patient on time of a need and the quality of patient care was compromised. Ethically, the professional nurses were expected to preserve and save lives of patients based on the clinical decision made regarding the condition and management of the patients but due to shortages of medication, this has led to a constant struggle for professional nurses to provide adequate and appropriate patient care.

2.4 SOUTH AFRICAN DEVELOPMENT COMMUNITY COUNTRIES CONTEXT ON DRUG SUPPLY CHALLENGES IN NURSE-LED HEALTH FACILITIES

The Southern African Development Community (SADC) is an intergovernmental organisation, commanded from the head office in Gaborone in Botswana with the aim to maintain regional alliance and poverty eradication through economic development and to ensure peace and security within the 16 member states in southern Africa. The countries listed under SADC are Angola, Botswana, Malawi, the Democratic Republic of Congo, Mauritius, Mozambique, Namibia, Seychelles, Tanzania, Zambia Zimbabwe, Lesotho, Ethiopia, Swaziland and Kenya (Misachi 2018:2).

In the following sections studies conducted in Ethiopia, Kenya, Malawi, Swaziland and Zimbabwe on drug supply challenges in nurse-led health facilities are discussed.

2.4.1 Ethiopia

Ethiopia is a low-income country with a population of 105 million and the health sector expenditure is financed from external sources obtained from multilateral organisations and bilateral governments as indicated by the Global Partnership for Effective Development Cooperation (GPEDC) (2019:32). According to Wangu and Osuga (2014:440), the Ethiopian government had only utilised 3,8% of its budget on the health sector. The access and availability of essential medicines, medical supplies and laboratory services were central matters dealt with regarding the health needs of the population. The findings from the survey conducted in the country indicated that 21% of the health facilities had no medicines to treat tuberculosis, HIV/AIDS and malaria. The country was experiencing a shortage of human resources and the processes of supply chain were powerless hence there were serious challenges regarding access and availability of medicines. According to Kefale and Shebo (2019:4), another challenge related to the unavailability of essential medicines was poor inventory management practices and transport challenges following the procurement process. The survey was conducted in the six health centres in Ethiopia and the seventh was excluded due to a lack of records to assess the inventory. The overall availability of tracer drugs amounted to 76,4% on the day of the study but out of stock tracer drugs was 41,8% during the previous twelve months. The oral rehydration salts were out of stock for 144 days and paracetamol for 1.4 days. There were discrepancies between the physical count and the bincard ranging from 0-33%. The computerised logistical management information system, which assisted with recording of all medicines transactions and connects to all levels of supply chain, was underused in most of the developing countries including Ethiopia. The medicine shortages led to delayed or compromised therapy, which caused the professional nurses to prescribe an alternative therapy that might result in medication errors and adversely affect the patient's health outcomes (Holcombe, Mattox & Plogsted 2016:560).

2.4.2 Kenya

According to GPEDC (2019:43), Kenya was classified as a lower middle-income country with a population of 50 million inhabitants. The government budget allocated to the health sector has been low compared to the global commitments made in the Abuja Declaration, which was set at 15% of total government budget allocation to health.

According to Wangu and Osuga (2014:440), drug shortages had continued for up to two years as the Kenya Medical Supplies Agency (KEMSA), which was established to manage drug supply over procurement, supply and distribution to public health institutions, was struggling due to the inappropriate selection of medicines, poor distribution, poor funding and irrational use of medicines. These were the contributory factors leading to drug shortages and stock outs. The results were that the availability of essential medicines in the PHC facilities and community health centres was 50% lower (Ogbodu et al 2019:551) than expected. The professional nurses were at the forefront of the service delivery in PHC and had to deal with and explain issues raised by patients regarding the unavailability of medicines or stock outs.

2.4.3 Malawi

Malawi is a low-income country with a population of 19 million people (GPEDC 2019:50). According to Khuluza, Kadammanja, Simango and Mukhuna (2016:147) medicine shortages still exist in Malawi, the duration of analgesics being out of stock was between 3 to 85 days, antimicrobials between 102 to 284 days, anti-hypertensive between 62 to 127 days, anti-diabetics between 3 to 29 days and metronidazole between 42 to 230 days. The shortage of pharmaceutical human resources and poor drug-supply management practices delayed the procurement of medicines.

These findings were confirmed by *Nyasa Times Reporter* (2015:1) who reported that Malawi had experienced critical shortage of drugs and supplies that were putting the lives of patients at risk and some of the patients were turned away from the health centres without treatment. The district hospitals were actually asking for medical supplies from the rural area health centres and clinics. The doctors and professional nurses were rationing the few medications for patients as the majority of patients cannot be administered the relevant treatment.

2.4.4 Swaziland

Swaziland has the smallest population of 1.4 million people and is a low-middle income country (World Population Review 2017:1.) The expenditure of 10,3% on out-of-pocket payments on health services affected the poor who could not afford medical care. Swaziland was experiencing epidemiological transition with non-communicable diseases which cost a country a quarter of morbidity and mortality (United Nations Children's Fund [UNICEF] 2018:4).

The People Dispatch Organisation (2019:1) reported that the drug shortage crisis in Swaziland has deepen and destroyed the public health facilities in the kingdom due to budget crisis from the health government hence the pharmaceutical companies ceased the delivery of medications. Swaziland had a gross shortage of HIV/AIDS drugs and professional nurses went for mass action over the widespread drug shortages and were seeking for agent solutions. Medicine shortage had a huge impact on the health system, patients and health care providers. The professional nurses were frustrated and helpless as were unable to provide the expected quality care to patients.

2.4.5 Zimbabwe

The population of Zimbabwe amounts to 16 million people. The country consists of three regions composing more than 63 districts, which are mostly rural in nature. The country is a low-income country as indicated by the GPEDC (2019:97).

The *Zimbabwe Mail* (2017:1) reported that Zimbabwe had a challenge of massive drug shortages at its major public health institutions. This occurred because of foreign currency crippling the import of essential drugs and raw materials which accounted for 70 to 90% of the country's health needs. The suspension of the operations by the major pharmaceutical wholesalers in the country due to stock outs, had caused a shortage of life saving medications as well as asthmatic, diabetes mellitus, epileptic and hypertensive chronic medications. These challenges had converted the Zimbabwe health sector into a full-blown health crisis where the lives of patients were at a very high risk. The professional nurses were failing to provide quality care to patients because without medications for the chronic ailments they were left helpless. The system was creating

serious challenges for professional nurses any patients' life expectancy was reduced and they died in the early stages of their lives due to uncontrolled chronic ailments. The Zimbabwe Nurses Association (2018:1) indicated that the professional nurses were watching helplessly as the patients were dying after failing to receive appropriate treatment. The Zimbabwe nurse's association supported the nurses to join the strike with doctors as the Health Service Board and Health Ministry did not take measures to resolve the challenges causing drug shortages as well as salaries.

2.5 THE SOUTH AFRICAN CONTEXT OF DRUG SUPPLY MANAGEMENT

South Africa is a country in the SADC region made up of nine provinces with an estimated population of 50 million with the majority of the population accessing health care services through PHC (World Atlas 2017:2).

In South Africa, the provision of essential medicines is governed by The Medicine and Related Substance Act (Act no 101 of 1965), as amended (South Africa 1965). The act streamlines the registration procedures of drugs, medical devices, certain food products and cosmetics intended for human and animal use and contains guidelines for supervising the control of medicine. The act also controls the registration of health practitioners ensuring that South African people obtain quality care. The pharmacists are empowered to manage medicine throughout following the formulated processes of selection, procurement, storage, distribution and usage to reduce fruitless expenditure and to ensure quality care of patients or clients (Good Pharmacy Practice [GPP] 2018:74).

Good Pharmacy Practice refers to the standard of measurement that focuses on the quality of pharmaceutical services rendered according to the specified professional criteria and is obligatory for all health care providers in terms of the Pharmacy Act (Act no 53 of 1974) (South Africa 1974) and the Medicine and Related Substances Act (Act no 101 of 1965), as amended (South Africa 1965). GPP (2018:76) spells out the minimum standards required for the personnel to handle medicines, infrastructure based on the premises, facilities and equipment used to provide pharmaceutical services and makes provision for pharmacy services offered by a pharmacist, human resources working in the pharmacy and pharmacy management.

The PHC re-engineering system was introduced to strengthen the district health system and fuel the provision of PHC and district hospitals services. The transformation in South Africa towards a district-based health system focuses on providing preventative, curative and rehabilitative health services at community level through PHC services re-engineering the shortages of pharmacy workforce and service delivery challenges. The pharmacist plays a significant role in managing drugs, identifying drug shortages and establishing processes to approve alternative therapeutics in the PHC and hospital setting. Hence there was a need to strategically re-position the pharmacist's role in the district health streams and to integrate it into the three PHC re-engineering streams (Bheekie & Bradley 2016:246).

Despite these structures and processes, the unavailability or stock outs of essential medicines for chronic conditions still occurred across the nine provinces of South Africa. This state of affairs posed a heavy burden on the clients or patients financially, emotionally and clinically and was a huge challenge (Stop Stockout 2017:13). The human resource constraints in the pharmaceutical workforce compels professional nurses to manage drugs and supplies, prescribe medication, and to dispense medication, especially in the PHC setting (Crowley & Stellenbosch 2015:83).

2.5.1 South African primary health care (PHC) challenges related to drug supply in nurse-led clinics

The patients' outcomes were affected as stock outs increased their out-of-pocket finances because drugs had to be bought from private pharmacies, they regressed clinically experienced dissatisfaction (Phuong, Penm, Chaar, Oldfield & Moles 2019:2). The professional nurses as the frontliners of PHC were frustrated and helpless whilst the lives of patients were put at risk and disease progression was aggravated, which might have led to death. The clinicians experienced difficulties in prescribing alternative medications, which was found to be less effective, costlier and might be associated with more adverse side-effects compared to the preferred drug.

The quality and efficiency of client or patient care were compromised. The health care system and health care professionals became affected in their everyday tasks as the medicine shortage was a problem worldwide (Truong, Rothe & Bochenek 2019:57).

The drug shortages and stock outs in South Africa have been regarded as the national crises which affected the patient's clinical outcomes and regressing the advancement of the new treatment introduced in the country. The insufficient resources, shortage of pharmacists, inaccurate forecasting when procuring the drugs and supplies have resulted in drug shortages and stock outs (Bateman 2015:706).

The impact of the chronic shortages of medicine resulted in treatment interruption, which increased the risk of opportunistic infections, treatment failure, ARV drug resistance in patients who were HIV infected, uncontrolled non-communicable diseases with complications ultimately leading to death and unplanned pregnancies. Infant mortality also infringes on human rights to essential medicines and health care. Patients were increasingly subjected to increased financial burdens because they had to purchase medications from private pharmacies and were spending money on transport when going back to the clinics to check whether the medications were available. The professional nurses were miserable and could not explain to the patients or clients the reasons for the unavailability of medicines (Oschmann 2016:1).

The study conducted by Mokgathla and Kadama (2017:450) in the North-West province, South Africa, revealed the challenges experienced in the supply chain management starting with the pharmaceutical manufacturers to the PHC clinics, the shortage of stock from the pharmaceutical companies, clinics with inadequate storage space to accommodate the pharmaceutical stock, transport issues because the clinics are located far away from the suppliers, procurement schedules of drugs not followed and poor distribution systems. These factors had a negative impact on the roll-out of anti-retroviral therapy, immunisation and control of tuberculosis, which in turn affected the performance of the health system, professional nurses and the health of patients.

The drug stock outs and challenges facing professional nurses were also reported in KwaZulu-Natal where several hospitals and clinics were affected. The number of drug stock outs were listed in the following health facilities, Imbalenhle clinic (159), Ladysmith hospital (191), Grey hospital (132), East Street clinic (96), and Northdale hospital (389). These stock outs were the result of poor stock levels and distribution of stock. Among the drug stock outs were fluconazole, paracetamol, anti-retroviral therapy and treatment for opportunistic infections. This had a negative impact on the patient's outcomes and

hampered the work of the professional nurses as the frontliners. This state of affairs affected vulnerable groups of people (Bateman 2015:707).

According to Health Systems Trust (2015:2), drug shortages were reported across all nine provinces with Limpopo, Mpumalanga and Free State being the hardest hit. The Free State had more than half of the health facilities reporting drug shortages in all districts.

In Gauteng province the majority of the PHC facilities had experienced challenges related to drug shortages as 28 facilities were without stock for less than a week, 39 facilities were without stock for periods of between 1 to 4 weeks and 33 remained without stock for more than a month. The challenges related to stock outs could be attributed to poor forecasting where consumption-based data was utilised and patient information was not included, health information system regarding anti-regimens is inadequate and time expires when the guidelines on anti-retrovirals change whilst waiting for a tender process to be completed. Supplier challenges were not adhering to contractual delivery or distribution of medicines as planned. The inventory management system of medicines was poor and inaccurate. There was failure to manage the contract between the supplier and clinics (Stop Stockout 2017:46).

The challenges experienced by the health professionals, clients or patients and the health system were huge. The professional nurses were demotivated because it was up to them to inform patients or clients about the unavailability of medicines. There was poor communication between the professional nurses in the facilities and depots supplying the medication. The professional nurses felt as if they were indirectly telling patients or clients to go and die at home or killing patients or clients indirectly due to disease progression. Patients or clients were suffering unnecessary pain physically, became they were emotionally drained because they were battling to survive without treatment and the visits had financial implications because of taxi fares when going to check or fetch treatment from the health facility. The shortage of medicines caused the health system to be dysfunctional. Quarrels erupted between the professional nurses and the patients because the latter were dissatisfied (Stop Stockout 2017:46).

2.5.2 City of Ekurhuleni (CoE) drug supply challenges context

According to the Muthathi, Levin and Rispel (2019:3), the health sector is in the frontline to introduce Universal Health Coverage in South Africa, and primary health care is the area to commence with the National Health Insurance. Therefore, the infrastructure and the quality of the PHC facilities should match the standard of an ideal clinic. The ideal clinic should have adequate staff, good administrative processes, protocols, guidelines and medicine availability should be 90%. However, according to Mathye and Mokgetle (2018:1), the facilities stock availability was 80% of basket medicines to the customised facility formulary.

In most of the PHC clinics contraceptive injectables, Nu-Isterate and Depo-Provera have been out of stock since 2018. The Furosemide 40 mg anti-diuretics and vaccines were reported as out of stock in the various clinics. Tuberculosis items in Ekurhuleni are continuously below 90% medicine availability in various PHC clinics of CoE, the pharmaceuticals were managed by professional nurses whose focus was to provide client patient care. There was a shortage of human resources for both client or patient care and pharmacy management. There were inconsistent practices applied by health care providers and time management was a challenge.

According to Mokagwe, Ally and Magobe (2020:4) the staff shortages at the PHC clinics in the CoE, had a negative impact on workload, pharmacy practices, cleanliness of the clinic, in-service education and DSM.

2.6 CONCLUSION

The literature has revealed that medicine shortages and stock outs are a complex challenge internationally and nationally, affecting all nine provinces of South Africa. Drug shortages have a huge impact on the health systems, professional nurses, the quality of patient care rendered clinically and financially. The ongoing shortage of drugs and supplies among the public hospitals and PHC clinics, especially in South Africa was the result of bad procurement, shipping, supply chain management, challenges with the manufacturer, failure to utilise the inventory management system, drug counterfeit and budget constraints. The lack of well-trained empowered staff in pharmacies to manage medicines and supplies was the main cause of medicine shortages in the public hospitals

and PHC clinics. The role of the pharmacist is to ensure an effective and efficient supply of medicines to reduce shortages. The next chapter discusses the research design and methodology.

2.7 SUMMARY

This chapter dealt with the literature review in which it became clear that the unavailability of medicines is a crisis worldwide, including South Africa. Essential medicines should always be available and accessible at a price the community and the country can afford and as guided by the NDP in South Africa. The availability and accessibility of medicine are basic human rights and ensure that the lives of people across the globe are improved since the functioning of the health institutions and systems is strengthened. There were several causes of drug shortages highlighted nationally and internationally. The impact of medicine shortages on patients' outcomes, health institutions and clinicians in the health sector was mentioned.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter presents the research design and methodology utilised to conduct the study. The research setting, population, sampling method, sample size, methods of data collection, data analysis, ethical considerations and measures implemented to enhance the trustworthiness of the study are discussed.

3.2 RESEARCH SETTING

A research setting refers to an area or environment in which a study is conducted. This could be either a natural place or a place that is partly or fully controlled (Gray et al 2017:353). Qualitative researchers prefer to collect data in the real world, thus following the participants in their natural environment where there is no intervention and where the researcher is able to make sense of and interpret the phenomenon being studied (Moule & Goodman 2014:208). This study was conducted in a real-life setting where the participants experienced challenges regarding DSM, in the PHC clinics of the northern and southern sub-districts in the CoE district of Gauteng province. The research was conducted in clinics where no pharmacists and pharmacist assistants were present.

The district is sub-divided into three sub-districts, namely the northern, southern and eastern districts. The whole district has 80 PHC clinics under the CoE and 15 under the Gauteng Department of Health. This amounted to a total of 95 PHC clinics. According to Mashego, Maputla, Dlamini, Kinuthia and Van Rooyen (2017a:2), PHC clinics without pharmacists or pharmacist assistants were 33 for the entire district, which formed the accessible population, as visualised in Figure 3.1, the amended map of the CoE. The highlighted clinics indicated the accessible clinics.

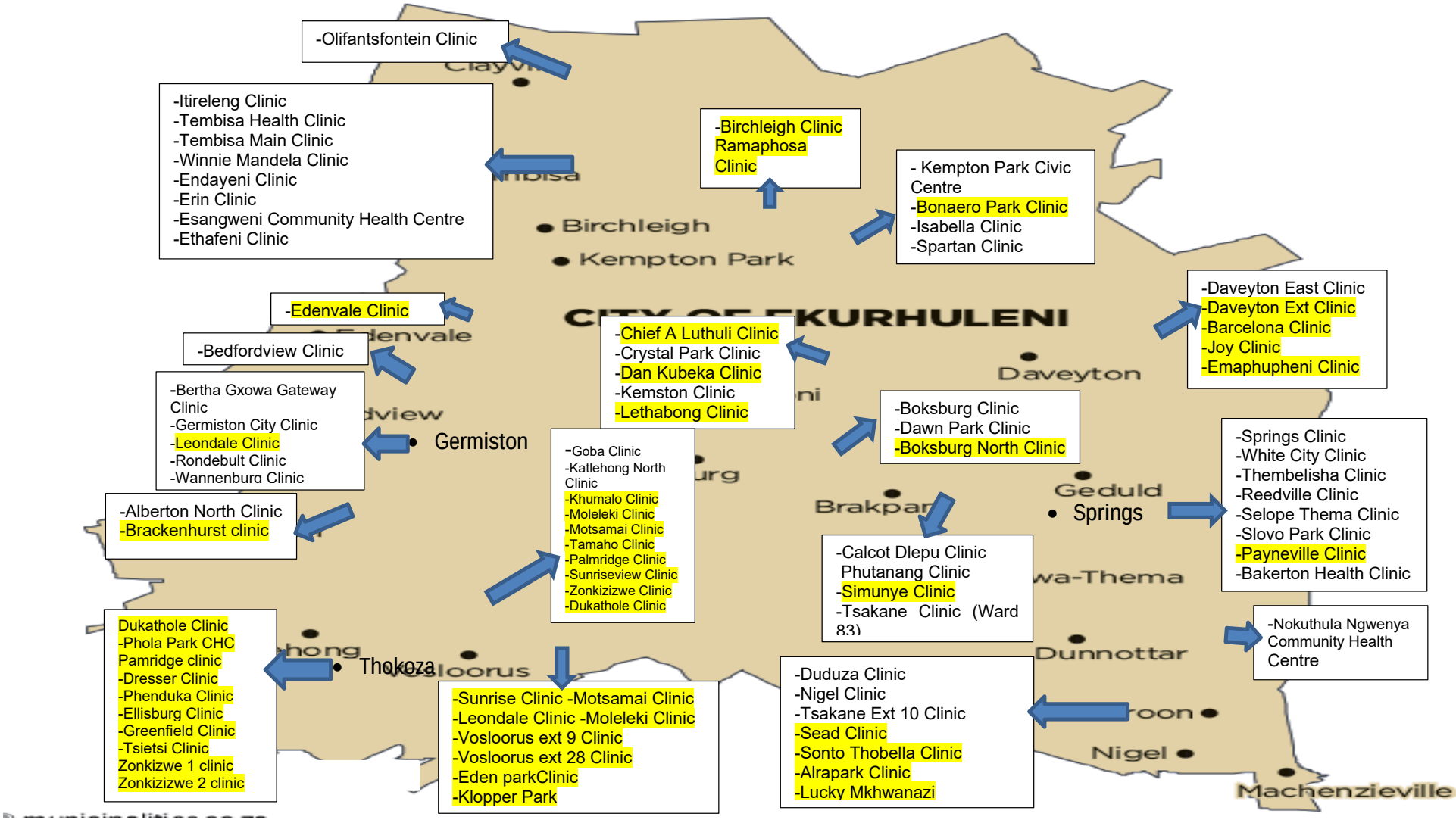

Figure 3.1 Amended map of the City of Ekurhuleni (CoE)
(City of Ekurhuleni Metropolitan Municipality 2019)

3.3 RESEARCH PURPOSE, OBJECTIVES AND QUESTIONS

3.3.1 Research purpose

A research purpose is a concise, clear statement that guides the researcher to focus on the study conducted (Gray et al 2017:78). The purpose of the study was to explore challenges experienced by professional nurses in the implementation of the DSM SOPs in the CoE PHC clinics.

3.3.2 Research objectives

According to Gray et al (2017:99), the research objectives refer to the researcher's intentions or desired outcomes to achieve after conducting the study. The research objectives were formulated to realise the purpose of the study, which were to:

- describe professional nurses' challenges regarding the implementation of the DSM SOPs in the CoE PHC clinics
- make recommendations to enhance the implementation of the DSM SOPs

3.3.3 Research question

The research question is defined as a concise, interrogative statement developed to direct the research studies (Gray et al 2017:691).

The following grand tour question was asked:

- Kindly share with me the challenges experienced when implementing the SOPs with regard to DSM in your PHC clinic.

3.4 RESEARCH APPROACH

A qualitative research approach is defined as the cautious, structured, persistent approach that describes the life experiences, cultures and social processes from the mind-set or viewpoints of the research participants (Gray et al 2017:688). The qualitative researcher focussed on aspects such as gathering meaning, gaining a profound

understanding of life experiences from the individual research informants and including the opinions, attitudes and views of people (Nassaji 2015:129). A qualitative approach is preferred when little is known about a phenomenon, its nature, context and when the boundaries are poorly defined (Brink et al 2018:120). In this type of study, the researcher would provide a holistic picture through analysed words and report in detail on aspects of the study participants (Tappen 2016:43). A qualitative approach was suitable for the current study because the researcher aimed to understand the meaning professional nurses gave to their experiences when implementing DSM SOPs as little information regarding their experiences in this setting was available. The researcher attempted to provide a detailed report on the phenomenon under research to present a holistic picture in a narrative manner.

3.4.1 Research design

Brink et al (2017:200) define a research design as an overall plan that outlines all the steps included when conducting a research study. A research design focuses on the underlying philosophical assumptions, specifies the selection of research participants, the data gathering methods, data analysis techniques and also includes strategies that enhance the quality of honesty and the highest standards together with the best practices, which have to be maintained throughout the research process.

The research design is a plan that spells out how the research study would be structured and conducted, taking into considering the significant decisions on how to select subjects, timing of data collection and methods of data analysis ensuring that the research questions and purpose are addressed (Gray et al 2017:676; Tappen 2016:60). The qualitative exploratory descriptive contextual research design was chosen for this study.

3.4.1.1 Qualitative exploratory descriptive contextual research design

A qualitative, explorative, descriptive and contextual research design was followed in this study. This research design is often applied by qualitative researchers when the knowledge about the topic concern is limited and the researcher is intending to get detailed insight into the study problem (Brink et al 2017:120, 122).

The philosophical assumption for a qualitative exploratory descriptive contextual research design is as follows. The qualitative research is correlated with a constructivist world view that concentrates on an in-depth understanding of human experiences as lived in the natural setting where rich information can be found. The nature of reality is regarded as multiple and subjective (Polit & Beck 2017:15). These philosophical assumptions were appropriate for this study as the researcher sought an in-depth understanding and meaning of the challenges experienced by professional nurses when implementing DSM SOPs.To obtain in depth understanding of human experiences, the researcher was involved throughout the research process and interacted with the research participants. The emphasis was placed on the whole picture of the phenomenon and was context bound. The focus was on the product and processes.

Exploratory studies are conducted to develop new knowledge about phenomena that are discovered recently. This type of research could assist to define a problem, generate new ideas, seek in-depth information and confirm the possibility of undertaking a more extensive study (Polit & Beck 2017:728).

Descriptive research design explains into detail the phenomena and attributes of the events in the real world that were studied with an aim to gather an in-depth understanding of human experiences (Brink et al 2017:120, 122). It provides an accurate and holistic picture of the phenomenon what exists and determines how often the phenomena occurs in order to explain a phenomenon in-depth (Nassaji 2015:129).

Contextual research design is applied when the qualitative researchers are interested in understanding the meaning of events in the natural environment (Gray et al 2017:353).

The descriptive exploratory contextual research design was found appropriate for this study because the study intended to obtain a description of the phenomenon under study, taking into account the context in which professional nurses work. Limited information was assembled regarding the challenges experienced by professional nurses when implementing DSM SOPs.

3.5 RESEARCH METHODS

Gray et al (2017:683) describe research methods as the specific ways embedded within the preferred research design that the researcher selected to conduct the study. The methods include population, sampling, data collection, data analysis, trustworthiness and ethical considerations.

3.5.1 Population

According to Gray et al (2017:323) and De Vos, Strydom, Fouché and Delport (2014:223), a population refers to a group of individuals, objects, events, documents organisation units that possess specific attributes in the universe on which the researcher based the findings and conclusions of the study for the research problem. It is also known as the theoretical or target population. The target population for the research study, constituted of a group of professional nurses working in the PHC clinics who met the inclusion criteria.

Table 3.1 Target population of the Ekurhuleni Health District

Ekurhuleni Health District	**Sub-district**	**CDC**	**CHC**	**PHC clinics**	**Dental clinics**	**Health post**	**Clinic with no pharmacist or pharmacist assistant**	**Grand total**
Managed by CoE	East			25		1	9	**26**
	North		1	24			7	**25**
	South			29			17	**29**
CoE total			**1**	**78**		**1**	**33**	**80**
Managed by GDoH								
	East	1	3	1				**5**
	North	1		2	1			**4**
	South		3	3				**6**
GDoH total		**2**	**6**	**6**	**1**			**15**
Total for CoE and GDoH		**2**	**8**	**84**	**1**	**1**	**33**	**95**

(Ekurhuleni Health District 2017)

3.5.2 Accessible population

An accessible population is defined as the group of individuals from the target population that were available for the study conducted and that the researcher could access (Gray et al 2017:330). The accessible population for this study comprised professional nurses who met the inclusion criteria and who were working in 33 PHC clinics in the CoE without pharmacists or pharmacist assistants and who were responsible for DSM. There are nine PHC clinics in the eastern sub-district, seven in the northern sub-district and 17 in the southern sub-district as indicated in Table 3.2.

Table 3.2 Accessible population in the City of Ekurhuleni

Eastern Region	Northern Region	Southern Region
1. Alra Park	1. Bonaero Park	1. Dukathole
2. Barcelona	2. Dan Khubeka	2. Moleleki
3. Daveyton Extension	3. Edenvale	3. Eden Park
4. Emaphupheni	4. Ramaphosa	4. Brankenhurst
5. Joy	5. Lethabong	5. Vosloruus Ext 28
6. Lucky Mkhwanazi	6. Chief Albert	6. Tsietsi
7. Payneville	7. Boksburg North	7. Elsburg
8. Sead		8. Palmridge
9. Simunye		9. Zonki 1
		10. Zonki 2
		11. Sunrise View
		12. Motsamai
		13. Greenfield
		14. Phenduka
		15. Vosloruus Ext 9
		16. Klopper Park
		17. Leondale

(Mashego, Maputla, Dlamini, Kinuthia & Van Rooyen 2017a)

3.5.3 Sampling

According to Polit and Beck (2017:250), sampling is described as the process of selecting a portion from the population to represent the whole population in order to enhance the accuracy and manageability of the research study so that final conclusions or inferences about the total population can be drawn. The researcher applied a non-probability purposive sampling method to select the suitable participants because they were well

acquainted with the phenomenon and would be able to express their challenges fluently. Polit and Beck (2017:736) explained non-probability sampling as the process of selecting the research participants from the accessible population using non-random methods which does not provide a chance to include all the sampling elements.

A purposive sample refers to a selection of participants chose purposefully to provide rich information related to the phenomena (Polit & Beck 2017:345). For this study, the researcher had a list of all the PHC clinics of the three sub-districts east, north and south in the CoE in order to select a sample for research study which represented a sample frame (Table 3.1). The researcher purposively selected a group of professional nurses who met the inclusion criteria as the researcher envisaged that the selected participants would provide the researcher with the information that was of interest from the 33 PHC clinics without pharmacist or pharmacists assistants (Table 3.2).

3.5.4 Criteria

The criteria describe the attributes or characteristics the research participants must possess to be included in the research study (Gray et al 2017:330).

3.5.4.1 Inclusion criteria

The inclusion criteria for this research study were professional nurses who were responsible for DSM where no pharmacist or pharmacist assistant were present on site. The professional nurses were above 24 years of age and have been working in the PHC setting for more than two years.

3.5.4.2 Exclusion criteria

The exclusion criteria were defined as the specifying attributes or characteristics that disqualify possible participants from inclusion in a study (Polit & Beck 2017:728).

The exclusion criteria for this study were professional nurses who worked in PHC clinics where pharmacist or pharmacist assistants were responsible for DSM in the PHC clinics in the CoE of Gauteng province.

3.5.5 Sample size

There are no hard and fast rules regarding the sample size to be used in qualitative research, the sample size is subject to data saturation (Gray et al 2017:352).The sample size in this study was 10 professional nurses who participated in the research.

3.6 DATA COLLECTION

According to Gray et al (2017:675) and Brink et al (2017:57), data collection refers to a precise, methodically arranged and structured process of gathering information pertaining to the research purpose, the objectives and the manner in which the researcher approaches answering the research questions. It was a complex process which occurred simultaneously with data analysis and transcription in most of the qualitative studies. The data collection process will be discussed under the following sub-headings: interview guide, piloting, semi-structured interviews, procedure, and the role of an interviewer, in accordance with Grove et al (2015:82). These methods allowed the participants to provide a rich data about personal experiences, feelings, thoughts and beliefs (Moule & Goodman 2014:176).

3.6.1 Interview guide

The interview guide is a flexible research tool consisting of a list of five or six, open-ended, unambiguous and neutral questions developed to assist the researcher to conduct semi-structured in-depth qualitative interviews (DeJonckheere & Vaughn 2019:5). An interview guide enabled the researcher to ask the participants questions in different ways, in any order as long they were all covered. Questions could be memorised to channel into a conversation allowing participants time to respond without feeling pressurised (DeJonckheere & Vaughn 2019:5). An interview guide was prepared in advance, grouping topics and questions to prepare the researcher for the semi-structured interviews as suggested by Tappen (2016:259).

The interview guide (Annexure F). consisted of Section A addressing the biographical information such as age, designation, number of years working in the PHC clinic and whether the participant received training on DSM.

The researcher attempted to understand, discover and attach meaning to the challenges experienced by professional nurses regarding the implementation of DSM SOPs in the PHC setting. These measures put the researcher in a position to comprehend the feelings and experiences as they were revealed in the real world (Tappen 2016:259).

The interview guide contained a list of questions starting with a neutral question. This enabled the researcher to ease into the interview and encourage the participants to relax, share their experiences and open-up to an interview process prior to embarking on difficult questions. It made the interviewing process easier for the researcher to ask questions because they had been prepared in advance, the interviewer could practise how to conduct an interview and probe further, summarise and clarify the information. Depending on the participant's response, the questions were followed up in order to gather in-depth information (DeJonckheere & Vaughn 2019:5).

3.6.2 Piloting of the interview guide

The interview guide was piloted in order to ensure that the researcher was familiar with the data collection method. According to Polit and Beck (2017:196), piloting refers to a trial-run process of assessing the research methods to be used in the proposed study in order to identify possible challenges with the research questions, or instrument or methodology. This would assist refining or developing the research methodology. The piloting of the interview guide was conducted with two professional nurses with similar characteristics as those selected for the sample, but who were not part of the sample. The researcher adjusted some of the wording and order of the probing questions. This also provided the researcher an opportunity to get familiar with this type of data collection.

3.6.3 Semi-structured interviews

Collecting data through interviews could be approached as structured, semi-structured or unstructured (Grove et al 2015:83). An interview is a data collection technique that includes seeking information through verbal communication with the intention of discovering specific information between a qualitative researcher and research participants (Moule & Goodman 2014:341). Semi-structured interviews were selected for this study because these interviews were moderately flexible as it assisted the researcher to collect data from the participants who had been exposed to the situation or

circumstances. For example, they had lived experiences, perceptions, beliefs and attitudes regarding the chosen topic.

Semi-structured interviews allowed the researcher to gain a better understanding and receive honest responses from the participants even in altered circumstances (DeJonckheere & Vaughn 2019:3). The questions were open-ended and broad to allow adequate responses from the participants. New ideas or concepts which might overlap with other questions could be brought up by an interviewee (Tappen 2016:259).

3.6.4 Data collection process

The data collection process was followed, after the ethical clearance certificate was obtained from the Unisa Research Ethical Commitee of the Health Studies Department (Annexure A), letter requesting permission to conduct research in PHC clinics (Annexure B) the National Health Research Database (NHRD) had issued a permission certificate with registration number GP201907038 (Annexure C) and the Ekurhuleni Health District Research Committee and the CoE management granted permission to conduct research in the CoE (Annexure D). Planning for the data collection process included using semi-structured interviews, checking the content of the interview and recording the interviews. Effective planning was significant to ensure a successful data collection process and that all the relevant procedures were adhered to.

The data was collected after obtaining ethical clearance from the University of South Africa and gate keepers' permission from the CoE. The gate keepers are the nursing service managers who are in charge of PHC clinics and authorised to grant permission to gain entry into the information-rich setting for the study. The gate keepers were informed that data collected from the PHC clinics would be kept confidential and that the participants and the researcher would sign informed consent before data collection commence. Semi- structured interviews were conducted in a natural setting, namely the PHC clinics. Appointments were made with the health facilities managers and the relevant professional nurses to agree on the interview time. On arrival at the health facility the researcher explained the purpose of the study, the research objectives and other information as stated in the participant information sheet (Annexure E). The ground rules were set prior to commencing with an interview. Those participants willing to participate signed the informed consent form. An interview guide (Annexure F) was used to collect

data. The semi-structured interviews were conducted for 30 to 45 minutes, audio recorded, transcribed and prepared for qualitative data analysis. The interviews dates were scheduled at times convenient for the research participants and PHC clinics to ensure no infringement on the clinics' activities. Audio recordings were made and allowed the researcher to focus on the interaction and the relationship with the participants during an interview. A writing pad and pen were kept at hand to document additional observations, such as non-verbal behaviour. In addition, the information leaflet and consent form (Annexure E) were provided prior to conducting an interview and signed voluntarily by the research participants. The researcher received and kept the consent forms in a locked cabinet.

3.6.5 The role of the researcher

The researcher and research participants in qualitative research could not be separated from the phenomenon under investigation. The researcher attempted to access the thoughts and feelings of the participants while interacting with them (Polit & Beck 2017:14). The qualitative researcher was immensely involved with data collection and was thus in a position of perceiving, reacting, interacting and reflecting, which enabled her to understand the challenges experienced by professional nurses regarding the DSM SOPs in the PHC clinics. The researcher attempted to remain objective by setting aside her knowledge, opinions, past experiences and assumptions through bracketing and trying to see things through fresh eyes. This was done to ensure that she did not compromise the data collection, analysis and interpretations of research findings as suggested by Creswell (2014:188). Notes were made during each interview and utilised during the data analysis process and also when transcribing the data.

3.6.6 Data saturation

In this study, data was collected through semi structured interviews, the researcher was highly involved interviewing the participants from a PHC clinics gathering data and interacting with participants in the natural setting during the period May 2020 to October 2020 until data saturation was reached. Data saturation is defined as the process whereby no new information is gathered during the interview process of the qualitative research (Gray et al 2017:675). The researcher recognised that data saturation point had been reached after the 10th research participants was interviewed. It became obvious that

no new categories and subcategories were emerging, and that the same data gathered previously was continuously repeated. This indicated redundancy and saturation.

3.6.7 Field notes

The field notes are notes made of unstructured observations occurring in the research environment during an interview and documented by the researcher and interpreted during data analysis. The field notes may include the physical setting where the study was conducted, the behaviour of the participants, activities and interactions around the surroundings (Polit & Beck 2017:549).

The semi-structured interviews were scheduled to take place from May until October 2020. There were challenges regarding access to the staff due to COVID-19. This involved a shortage of human resources due to the staggering approach applied to control the number of staff working in the PHC clinics. Appointments were made, but unfortunately the researcher found the PHC Clinic closed when she arrived. This was due to the fact that several professional nurses were infected with COVID-19. The interviews had to be postponed. Prior to commencing with an interview, the precautionary measures for COVID-19 were taken into consideration. Both the researcher's and the participant's hands were sanitised, both wore masks, they maintained a social distance of 1.5 to 2 meters during an interview and the equipment that was used for data collection was cleaned with a sanitiser and hand towel. Windows were opened for cross ventilation. At the entrance of the PHC clinic, the researcher and the participant were screened to monitor their temperature and to ensure that they were wearing masks.

Some non-verbal expressions observed during the interviews showed that participants were uncomfortable, anxious and scared regarding the challenges experienced when implementing DSM. After a thorough explanation by the researcher, reassurance was given that everything discussed would be kept confidential. This let the participants relax and they were open to communication. The researcher could observe a sigh of relief. The participant's facial expression revealed that a pharmacist or pharmacist assistant was needed to do DSM for the PHC clinic. They portrayed a negative attitude because DSM was not in their job description. The professional nurses mentioned that patients had to wait for assessment, treatment and care.

At times when the clinic was very busy, the researcher would wait or postphone the interview. The researcher observed that medicine rooms in some of the PHC clinics were small, boxes with medicines were kept on the examination couch and some were on the floor.

3.7 DATA ANALYSIS

Data analysis in qualitative research is a non-numerical process of reducing and organising data in order to gain understanding, determine significant meanings and patterns (Brink et al 2017:180). Moule and Goodman (2014:176) cited data analysis as the process of breaking down the data into essential units of meaning through a coding process, re-ordering data and drawing interpretations together with a conclusion and verification.

For this study, the researcher applied Erlingsson and Brysiewicz's (2017:94) content analysis as the researcher would tailor an enormous amount of collected data into a well organised and nutshell summary of the findings. Content analysis is defined as a qualitative research technique for a subjective interpretation of the content of the text data. This involves counting and comparing the key words by systematically extracting themes from the bulk of the existing information (De Vos et al 2014). The objective of qualitative content analysis is to consistently modify a huge quantity of text information into an orderly and brief summary of the key outcomes or findings (Erlingsson & Brysiewicz 2017:93). Data analysis includes the transcriptions from interviews, field notes and digitally recorded information (Moule & Goodman 2014:406). According to Brink et al (2017:180) and Moule and Goodman (2014:406), data analysis is an ongoing reflective and iterative process happening concurrently with data collection. Various steps are utilised by qualitative researchers to analyse data (Brink et al 2017:180; Erlingsson & Brysiewicz 2017:94). The data based on human experiences are complex, multifaceted and carry meaning on different levels, hence high and low levels were needed to reflect on the meaning of text into condensed meaningful units, codes, categories and themes.

3.7.1 Steps utilised during content data analysis

The following steps were utilised during the content data analysis as suggested by (Erlingsson & Brysiewicz 2017:94):

Step 1: Read and reread the interviews to gain understanding

- The researcher started by familiarising herself with the verbatim transcripts in order to get a true picture of the participants' discussions and thinking regarding the SOP adherence of DSM and to get a general understating of what the information was about.
- The audio tape records were transcribed by a professional transcriber who issued a transcription certificate attached as Annexure H.
- The transcriptions were then compared to the recorded interviews on the audio tape recorder.
- The researcher then read through the collected data several times in order to gather the true picture of participants' thoughts and discussions and to capture the main ideas regarding the topic expressed during the interview process.

Step 2: Organising data into meaningful units

- The texted information was broken down into smaller parts without losing its essence by frequently listening to the audio recordings and reading through the field notes to ensure that the correct information was captured in meaningful units.
- The meaningful units were colour coded.
- Similar ideas/patterns from the gathered information were broken down into smaller parts without losing its vitality and developed as meaningful units.

Step 3: Condensation of meaningful units

- The researcher further shortened the text information into condensed meaningful units ensuring that the main meaning was retained. These units were further shortened without losing the essence of the information.

- The researcher continuously listened to the audio tapes and read the field notes to capture the correct information.

Step 4: Coding of data

- The condensed meaningful units were further reduced into sub-parts and labelled.
- The labels assisted the researcher to find patterns and similarities in the collected data and to develop codes.
- The researcher further obtained the services of an independent co-coder to assist with co-coding of the collected data. A meeting was held with the co-coder to discuss and reached consensus on the coded data. The codes for the meaning units were then created. Confidentiality agreement was signed between the researcher and co coder which is attached as Annexure I together with the coding certificate .

Step 5: Developing categories

- The coded information that was interconnected was further broken down, then grouped and developed into categories.
- The categories were further sub-divided into sub-categories, which were affiliated to each other.

Step 6: Developing sub-categories

- A collective name developed from grouping interrelated patterns and sub-categories, which contain significant and unrevealed information.
- It is important to note that qualitative content analysis is not a linear process. Thus, identifying and condensing meaning units, coding and categorising them are done several times until the researcher is satisfied that the analysis reflects the core content of the verbatim transcripts and field notes.

3.8 TRUSTWORTHINESS OF THE STUDY

Rigour refers to adherence to high standards when conducting research throughout all the phases to enhances the accuracy in the findings (Tappen 2016:171). Using the appropriate research method to address the research questions would ensure the quality and integrity of the research process (Tappen 2016:171). These aspects were addressed in sections 2.3 and 2.4. In addition to the rigour of the study, the researcher needed to ensure the trustworthiness of the findings (Grove et al 2015:392). Various strategies could be used to determine the trustworthiness of qualitative research. These include member checking, reflective processes, peer debriefing, external auditing and prolonged periods of engagement. The criteria of trustworthiness that were applied were credibility, prolonged engagement, member checking, dependability, confirmability, transferability and authenticity as proposed by Brink et al (2017:172).

3.8.1 Credibility

Credibility is defined as the confidence in the truth-value of the research findings during data analysis and interpretation of results (Polit & Beck 2017:586). The readers should have confidence and faith in the data presented as a true reflection of the research participants' views, experiences and beliefs (Moule & Goodman 2014:191). According to Brink et al (2017:172), techniques such as prolonged engagement, peer debriefing, member checks, referral adequacy and negative case analysis could be used to establish confidence in the truth of the research findings. The techniques applied are discussed below.

3.8.1.1 Prolonged engagement

According to Brink et al (2017:172), prolonged engagement is defined as spending quality time in the field to have a better understanding of the research setting and culture, to build a trusting relationship with the research participants and to create a conducive environment before interviews are conducted. In relation to this study the researcher was residing in the field during data collection and took extensive periods to ensure that data could be trusted and paid attention to the accurateness of data interpretation. The researcher continuously reviewed the audio tapes and field notes in an attempt to report on the findings as truthfully as possible.

3.8.1.2 Peer debriefing

Peer debriefing is a strategy that refers to a session where the researcher has to use peers to determine that the research findings are truthful. Expert colleagues who have background information about the study and who could review each step of the research process together with the researcher are called upon (Brink et al 2017:172). This strategy was followed by having discussions with the supervisor about the data and having a co-coder who signed a confidentiality agreement in order to analyse the data.

3.8.1.3 Member checking

The researcher used member checking to ensure the accuracy of the research findings and to confirm credibility by providing constant feedback about the analysed data and interpretation to research participants. This helped to rectify the mistakes and gather additional information (Brink et al 2017:172; Moule & Goodman 2014:91). The transcribed and analysed data were given back to the research participants to verify whether the analysed data were a true reflection of what was discussed during the interviews. The participants confirmed that the transcripts were a true reflection of the interviews conducted.

3.8.1.4 Referral adequacy

Referral adequacy refers to a process whereby the researcher ensured that all the information and material used in the research process were available and kept in confidence unless required to establish the accuracy of findings and credibility (Brink et al 2017:172). The research data will be kept on the computer in electronic format protected by a username and password. The research data were only shared with the supervisor and a co-coder who signed the confidentiality agreement. Field notes, the interview guide, audiotapes, consent forms for research participants, permission to conduct research would be kept in the locked-up filling cabinet for five years as hard copies in the researcher's office.

3.8.2 Transferability

Transferability refers to the extent to which research findings could be applied to another context or to other research participants or research settings, especially when data saturation was reached, and the representative sample was achieved (Creswell 2014:202).

In this qualitative contextual study transferability is subject to the readers of the research report. The researcher made known the research design followed and the context under which the study was conducted.

3.8.3 Dependability

Dependability is defined as the stability of the information over a period of time to ensure consistency of data and set conditions. This means that if the same study were to be repeated under the same conditions or criteria set using the same participants, the same information would be gathered from the participants. Dependability goes hand in hand with the credibility of the research study. The methods applied to enhance credibility such as prolonged engagement, member checking, peer debriefing and referral adequacy directly impacts on dependability (Polit & Beck 2017:586). In relation to this study, dependability was established through having an audit trail where the relevant documents and audio tapes were kept for possible auditing purposes. These included raw data, transcriptions, field notes or personal notes.

3.8.4 Confirmability

Confirmability refers to the impartiality and fair-mindedness of analysing the research findings based on truthful facts of the research process in terms of accuracy, relevance or meaning. These criteria were ascertained when the researcher remained focussed on conducting the study without manipulating the research process during data collection, sampling, data analysis and interpretations of findings and having an audit trail (Brink et al 2017:172). The research findings and interpretations of data were analysed to represent the genuine views and experiences of the research participants and not the researcher's assumptions or opinions. The confirmability of the study was achieved by

implementing an audit trail so that the data could be tracked back to their sources. The audit trail is documented in Table 3.3.

Table 3.3 Summary of audit trail in the study

Research trail	Documents
Unisa Research Ethical of the Health Studies Department Committee	Ethical clearance certificate HSHDC/897/2019 (Annexure A) 5 February 2019
Permission requested to conduct research and collect data at the primary health care (PHC) clinics in the northern and southern sub-district of the CoE	Letter requesting permission (Annexure B)
The National Health Research Database	(NHRD) had issued a permission certificate with registration number GP201907038 (Annexure C)
Ekurhuleni Health District Research Committee and CoE management	Ekurhuleni Health District Research obtained permission (Annexure D) 11 July 2019
CoE Management	Ekurhuleni Health District Research obtained permission (Annexure D) 11 July 2019
Researcher's information for participant	Participant information leaflet and consent form (Annexure E)
Researcher's interview research questions	Interview guide (Annexure F)
Transcription notes	Transcriptions notes (Annexure G)
Transcriber's certificate	Transcriber certificate (Annexure H)
Independent coder	Coding certificate and confidentiality Agreement (Annexure I)
Language editing	Language editor certificate (Annexure J)
Turnitin report	Originality turnitin report (Annexure K)

3.8.5 Authenticity

Authenticity refers to the extent to which researchers portray a range of realities in a fair and truthful manner. The following techniques could be utilised, namely listening to audiotapes several times, reading through the field notes and prolonging the engagement of the researcher in data collection and analysis (Polit & Beck 2017:586). The criteria were established through using a reflective journal and establishing rapport with the participants., The focus was on the relevance to the topic studied and described the participants' views and experiences as accurately as possible. The research methods were applied as appropriately and honestly as possible.

3.9 ETHICAL CONSIDERATIONS

Ethical considerations refer to the ethical codes and regulations that include the procedures that had to be adhered to professionally, legally and socially when conducting biomedical and behavioural research. Ethical considerations ensure that human rights were protected, informed consent was understood, institutional review comprehended, the balance between benefits and risks of the research study were examined (Grove et al 2015:95).

3.9.1 Ethical clearance process

According to Grove et al (2015:505), the Institutional Ethics Review Board, is a committee which ascertained that the developed research proposals were reviewed ethically and guaranteed that the research participants' rights and their interests were protected through adhering to the professional, legal and social principles when conducting the research study. The required permission was requested from various authorities and the necessary documents were submitted. The ethical clearance certificate from Unisa Research Ethics Committee of the Department of Health Studies following submission of the developed proposal, granted the researcher permission to conduct the research study (Annexure A). An application with the ethical clearance certificate was submitted and a permission certificate with registration number GP201907038 was issued by NHRD (Annexure C). The researcher applied to the Ekurhuleni Health District Research Committee Management (Annexure B), submitting the ethical clearance certificate from UNISA, the research proposal and certificate from NHRD. Permission was also granted to conduct research in the CoE (Annexure D). The letters requesting permission to conduct the study were cascaded to nursing service managers responsible and accountable in the PHC clinics of the CoE where the research participants were allowed to participate in the study. The nursing service managers informed facility managers about the study and acted as gatekeepers to the participants.

3.9.2 Ethical principles

Ethical principles refer to moral norms and values related to conducting biomedical and behavioural research (Moule & Goodman 2014:457). Brink et al (2017:34) recognised three significant ethical principles which apply to the ethical procedures in protecting both

the researcher and research participants. The three ethical principles were respect for persons, beneficence and justice.

3.9.2.1 Principle of respect for persons

The ethical principle includes respect for persons related to human beings who have the right to freedom. It is stipulated that people should be treated as liberal agents who are capable of making their own decisions without being coerced (Brink et al 2017:35). Participants should be free to withdraw at any stage of the research process and may request an explanation or clarification regarding the study. They can make a choice whether to participate or not in the study (Grove et al 2015:98). This choice is explained in the informed consent, which was described as an agreement between the researcher and the participants who decided to participate once they understood all the important information related to the study (Grove et al 2015:505). In this study information included the purpose of the study, research objectives, duration of an interview and indications of participation. An explanation on ethical considerations was given, focussing on confidentiality, privacy, anonymity, right to withdraw, potential risks or benefits of participation and ethical approval of the research study. The data collection process and analysis and the manner in which the research procedures would be conducted would be kept safe (Annexure E). The participants signed the informed consent only after they had read and understood what the study entailed, after that the data collection could commence.

Pseudonyms were used to protect the identity of the participants when reporting on the findings in this study, journals and research conferences. This action ensured that no one would be able to connect the participants to the responses provided except the researcher and the study supervisor. Research responses would be reviewed by the supervisor responsible for ensuring that the research was conducted ethically including the audiotapes transcribed. All data were kept on locked computers and protected by a password and records will be stored in the filling cabinet under lock and key for a period of five years. In this study, the appointments were made with the participants, which were respected and the researcher arrived on time. When the participants were still busy with other activities like consulting with patients, the researcher waited for the consultation to be completed.

3.9.2.2 Protecting the rights of the institution

The institutional review boards refer to the group of individuals within an institution who congregate to assess or analyse the proposed and ongoing studies with respect to ethical considerations (Polit & Beck 2017:730) The relevant institutions that granted permission to conduct research in the PHC clinics of the CoE were Unisa Research Ethical Committee (Annexure A), National Health Research Department (Annexure C), Ekurhuleni Research Health District Committee and the CoE Management (Annexure D), as discussed in section 2.7.1. The rights of the institutions were respected and adhered to as expected. The interviews were conducted at the time when they would not infringe on the normal work activities of the clinic.

3.9.2.3 Principle of beneficence

Brink et al (2017:35) described the principle of beneficence as the right to protect the research participants from discomfort and harm whether physically, psychologically, emotionally, economically, socially or legally. The risks must be estimated and kept at a minimum level and measured against the potential benefits for the participants. The well-being of the participants was taken into consideration as research was conducted.

The researcher ensured that the potential benefits of the study were attained by the professional nurses, management and patients or clients according to the formulated research objectives of the study. The potential benefits were a contribution towards quality improvement on DSM in South Africa and enabled professional nurses together with management to streamline and address the challenges of DSM in the PHC clinics. The professional nurses would be able to provide quality care to patients or clients.

To protect the participants and institutions from possible harm, the interviews were conducted at a time that would not infringe on the normal work activities of the clinic. The researcher took all the necessary precautionary measures to protect the participant's clinic staff and PHC clinics from being infected with the Corona virus including social distancing, sanitising as well as wearing personal protective clothing as discussed in Annexure E. In addition, those participants who were anxious during the interviews were reassured that they are protected against any psychological harm. Their participation in

the study was explained as being voluntary, and that they could withdraw at any time should they so wish.

3.9.2.4 Principle of justice

According to Brink et al (2017:36), the principle of justice is defined as the right of the research subjects to be selected fairly to participate in the research study and to be treated with respect. The principles involved in the research methods and procedures were fair and just. The research participants were fairly selected through purposeful sampling and according to the inclusion criteria. The principle of justice was further respected by considering the timelines set for the interviews and keeping to the agreements made with the participants as proposed by Brink et al (2017:36). In relation to this study, the participants were fairly selected, and the researcher was punctual. Privacy and confidentiality were maintained as their names will be replaced with pseudonyms and used throughout the research presentations as mentioned in 2.7.2.1. The collected data would be kept safe under lock and key as hard copies and electronically in a computer with a password and username, as discussed in Annexure E. No other person would be able to recognise their responses except the researcher and study supervisor.

3.9.3 Scientific integrity

Scientific integrity is cited as the process of adhering to the truthful, sincere and translucent strategies or principles whilst conducting the research study, following all the steps of the research process and the correct procedures when providing feedback to the relevant stakeholders in order to prevent bias or forging the study (De Winter 2014:29). In relation to this research study conducted, the research proposal was developed and assessed by the relevant authorities that granted permission to continue conducting the study as indicated in the section 3.9.1 under the ethical clearance process where the Institutional Ethics Review Board was discussed. The research process adhered meticulously to the ethical principles in terms of data collection and analysis, trustworthiness strategies, the report of the findings and acknowledging any sources consulted. Sources were carefully paraphrased to avoid plagiarism and the study was checked using a plagiarism programme (Annexure H).

3.10 SUMMARY

This chapter described the research design, methodology, research setting, the population, sampling and sample size. It dealt with the data collection and analysis, measures of trustworthiness and ethical considerations. The following chapter 4 presents the findings and the data analysis in depth.

CHAPTER 4

PRESENTATION OF FINDINGS

4.1 INTRODUCTION

This chapter focused on the data collection, data analysis, presentation of findings, and interpretation, supported by the literature review. The demographic profile of the research participants is also presented in this chapter.

The research findings are presented, following a category and sub-category approach. according to Erlingsson and Brysiewicz (2017:94) taking into account the current literature reports and participants' experiences.

4.2 PARTICIPANTS' PROFILE

The study included only 10 participants, owing to data saturation. The participants were all professional nurses working in a PHC setting for an average period of eight years since registration with the South African Nursing Council. only 50% of the participants had undergone training in DSM.

Table 4.1 Participants' profile

Participant number	Age	Designation	Number of years working in the PHC clinic	Training on DSM
1	35	Professional Nurse	6 years	Yes
2	59	Chief Professional Nurse (facility manager)	8 years	Yes
3	38	Professional Nurse	3 years	No
4	35	Chief Professional Nurse (facility manager)	10 years	Yes
5	53	Chief Professional Nurse (facility manager)	15 years	Yes

Participant number	Age	Designation	Number of years working in the PHC clinic	Training on DSM
6	41	Chief Professional Nurse (facility manager)	9 years	No
7	49	Chief Professional Nurse (facility manager)	15 years	Yes
8	44	Professional Nurse	5 years	No
9	49	Chief Professional Nurse (facility manager)	10 years	No
10	39	Professional Nurse	4 years	No

4.3 DATA ANALYSIS

Data analysis in qualitative research is a non-numerical process of reducing and organising data in order to gain an understanding, determine significant meanings and patterns (Brink et al 2017:180). According to Moule and Goodman (2014:406), data analysis is an ongoing reflective and iterative process happening within data collection.

In this study, the researcher applied the six steps of Erlingsson and Brysiewicz (2017:94) to analyse the qualitative content data. This promotes analysing data with an emphasis on identifying the categories and sub-categories that recur within the textual data. After transcription by a professional transcriber, the independent coder who entered into a confidentiality aggreement with the researcher co-coded the collected data and arranged a consensus meeting with the researcher to discuss the categories and sub-categories formulated on the research findings.

The analysis considered the WHO theoretical framework and the Ekurhuleni SOPs for DSM as well as the research questions, which are included in the presentation of the findings.

4.4 DATA PRESENTATIONS AND FINDINGS

4.4.1 Research findings

The data collected revealed that there are challenges associated with DSM in the PHC clinics.

The following categories emerged from data collection and analysis:

- Non-adherence to the SOPs for DSM
- Human resources challenges
- Inadequate management support
- Compromised patient care

Subsequent to the category development, the sub-categories of the study findings were identified, which will be presented below.

4.4.2 Presentation and discussion of the study findings

Presentation and discussion of the study findings are as follows:

Table 4.2 Categories and sub-categories

Categories	Sub-categories
4.4.2.1 Non-adherence to the DSM SOP	4.4.2.1.1 Poor stock management
	4.4.2.1.2 Procurement process not managed well
	4.4.2.1.3 Poor stock distribution and receiving
	4.4.2.1.4 Inadequate documentation and poor record keeping of drugs
	4.4.2.1.5 Insufficient storage and organisation of drugs in the medicine storeroom
	4.4.2.1.6 Insufficient security system
	4.4.2.1.7 Drug shortages and stock outs
4.4.2.2 Human resource challenges	4.4.2.2.1 Inadequate staffing
	4.4.2.2.2 Altered job description
	4.4.2.2.3 Lack of empowerment of professional nurses and facility managers
	4.4.2.2.4 Dual responsibilities

Categories	Sub-categories
	4.4.2.2.5 Lack of responsibility and accountability to manage the medicine stock
	4.4.2.2.6 The professional nurses were psychologically and emotionally depleted
	4.4.2.2.7 Time management
4.4.2.3 Inadequate management support	4.4.2.3.1 Lack of support from pharmacy and PHC managers
4.4.2.4 Compromised patient care	4.4.2.4.1 Patients are turned away

4.4.2.1 Category: Non-adherence to drug supply management (DSM) standard operating procedures (SOPs)

The SOPs outline key areas such as proper stock management, procurement processes, medicine stock distribution and storage that need to be complied with for proper DSM within the district. The study found non-adherence to the DSM SOPs as reflected by the following themes:

4.4.2.1.1 Poor stock management

SOP requirement: Drug stock on hand to be verified before placing the new orders.

The researcher found that the drugs were not managed in accordance with the DSM training guidelines, which require checking of stock on hand before placing new orders as well as stock rotation to promote first-in first-out principles in order to minimise the expiry of drugs before use (Mashego et al 2017b:9).

The participants shared their challenges resulting in poor stock management.

> "Sometimes you don't even check the stock right you are supposed to actually go through the stock that you have in stock. Pharmacy also has its own challenges; they do give you expired times because they want to get rid of it." (Participant 4)

> "Sometimes they don't give you the stock that you ordered but they written there that they gave you the stock. The money is lost from the stock that is not controlled." (Participant 3)

Bheekie and Bradley (2016:242) state that pharmacy workforce shortages and service delivery challenges are the aggravating factors to poor stock management as professional nurses were not allocated time to maintain good quality medicine stock, prevent the losses of medication through theft or expiration of stock, have good storage infrastructure and maintain accurate record keeping. These measures require a designated person to work in the pharmacy room and who has the time to perform the duties.

Ogbodu et al (2019:555) reported that poor stock management remains a challenge in the primary health clinics of the Vhembe district due to structural as well as human resource challenges.

The interventions proposed by some participants was that a designated person should be tasked to manage the stock for three months and that the professional nurses could rotate to ensure proper stock management. A pharmacist assistant should be employed for each and every facility to handle medicine management. Professional nurses working in the medicine room should be allocated time to manage the stock and should not have to work with consulting patients as well.

4.4.2.1.2 Procurement processes not well managed

SOP requirement: PHC clinics should place orders at least twice per month following the ordering schedule, using the correct requisition and order forms from different medical supplies depot (MSD). Prior ordering of medicine and supplies, physical count of stock should be performed and ordered according to minimum and maximum values. The outstanding orders need to be followed up and stock cards or computer system updated prior to placing an order (Mashego et al 2017b:9).

The clinics were found not to be complying with the drug procurement processes as the participants reported the following challenges, which caused procurement processes not to be followed:

> “I don’t have the time to comply with the ordering schedules. It’s not an easy, it’s challenging somebody will be sick you cannot be doing this or there will be a meeting.” (Participant 2)

Another challenge cited by the participants was:

> "You take someone out of consultation room and put them at the dispensary without the proper training." (Participant 3)

Munedzimwe (2018:34), in a study conducted in one province, confirmed the participant's experiences. She reported that due to the heavy workload and limited skills in procurement inaccurate estimations and errors in ordering followed. The result could be drug shortages or stock outs. Zuma and Modiba (2019:106) also confirm that procurement processes were not adequately followed in the district's health services due to excessive workload and limited procurement skills.

4.4.2.1.3 Poor stock distribution and receiving.

SOP requirement: All the medicine and supplies should be received timeously within 48 to 72 hours and discrepancies should be identified and reported within 24 hours.

Participants reported that the health facilities are failing to receive and distribute medicine stock as expected, as there is no time or dedicated personnel to perform the activity.

> "It needs human resource and a designated person, hence I'm saying that if you don't have a pharmacist assistant because drug supply speaks to pharmacy and pharmacist, you don't have the pharmacist assistant, you are likely to have a disaster there." (Participant 5)

> "Sometimes you are held up with your own work, they demand certain things that you must do at a certain time. You are in a hurry; you just need to do whatever it is that you can, so you end up having to receive the stock on paper only." (Participant 4)

Matema (2020:9) also found that the distribution and receiving of medicine stock and supplies were compromised due to infrastructure challenges, inadequate storage space and an unskilled health work force. Hence, medication could not be received appropriately and had to be kept in boxes and stacked on the floor. Effective distribution practices require checking of the delivered medicine stock, maintaining a constant supply of

medicines, ensuring efficient and good conditions of storage facilities, doing good recording of the medicine stock balance on hand and the stock usage. Effective reporting and supervision from the supplier to the consumer is also required.

4.4.2.1.4 Inadequate documentation of drugs and poor record keeping

SOP requirement: It is stipulated that all stock control cards and the electronic medical monitoring system should be updated at the time of transaction when the stock is received and issued during the physical count and removal.

Participants reported that the transactions of the medicine and supplies are not recorded on the stock card and the stock on hand does not balance with the stock card.

> "We just take, we don't minus, then the next person takes, by the time you go and count the drugs, they are short, they don't balance." So you end up now not being able to capture all this information because when you are alone you are also in a hurry to give." (Participant 8)

> "Stock movement is not entered on the stock card; it may not even be entered in the computer itself. Then your stock control is just completely off, you." (Participant 6)

Kuupiel, Tlou, Bawontuo, Drain and Mashaba-Thompson (2019:5) in the study conducted in the Upper East Region clinics of Ghana, supported the participants' views that inadequate documentation and poor record keeping of the stock movement on the usage, receipt, issuing, removal and physical count of each and every product in the medicine storeroom were important for future planning of medicines supplies, shortages and stock outs, which could result in stock losses and fruitless expenditure.

4.4.2.1.5 Insufficient storage and organisation of drugs in the medicine storeroom

SOP requirement: It is specified that all storage areas should be spacious enough to ensure that the medicines and supplies are arranged in an orderly manner with proper stock rotation. The stock should be protected from extreme temperatures, light, dust, pests and humidity. All medications should be stored in the dosage forms, adhering to

the principles of first expire first out (FEFO) also first in first out (FIFO) and in alphabetical order using generic names. Stock should be kept on the shelves or pallets but not on the floor. The medicine storeroom should be large enough to accommodate all the drugs and supplies. The pharmacy room should be well organised and kept in a good condition without extreme temperatures or humidity and should also be well ventilated. The medicine storeroom should always be separated from the dispensing area and medications should be taken out every morning to the dispensing areas.

> "Sometimes you receive the stock, you just use whatever that is in front of you, you don't use the FIFO strategy, you won't be able to comply to the FIFO, the FEFO and so forth. Your medication is going to expire." "The clinic does not have enough space hence sometimes we unpack the medicine on the floor." (Participant 2).

> "At times you put the medication on the floor, that's not where it is supposed to be placed." (Participant 4)

Munedzimwe (2018:36) confirmed that drug storage and medicine storeroom challenges exist. The proper storage and organisation of medicine and supplies are essential to protect the drugs from deterioration and contamination. If the drugs were to be damaged, expired or stolen this would result in drug shortages and stock outs. Ogbodu et al (2019:553) also cited insufficient storage and organisation of the medicines as a challenge that contributes to drug shortages. Matema (2020:8) also supports the fact that drugs should be stored appropriately to avoid wastage and loss of effectiveness.

Mokgathla and Kadama (2017:452) confirmed the participants' experiences in the study conducted in North-West that PHC Clinics had limited storage space and insufficient shelves to keep all the necessary medicine stock and supplies together with the buffer stock. The PHC clinics were far from the medical supplies' depot, which affected distribution and proper storage as well as the organisation of medicine stock.

The interventions proposed by the participants for non-adherence to DSM SOPs were the following: A designated person should be allocated for a period of three months and the professional nurses should rotate to ensure proper stock management. The pharmacist assistant should be employed for each and every facility for medicine

management. Professional nurses working in the medicine room should be assigned to do only that and not need to work with consulting patients.

4.4.2.1.6 Insufficient security system.

SOP requirement: It is prescribed that the medicine storeroom should always be kept under lock and key to control the movement of stock. The facility manager or the designated professional nurse should keep the medicine storeroom keys where there is no pharmacist or pharmacist assistant.

Participants reported that it was difficult to keep the medicine room under lock and key at all times because there was no one designated to control the pharmacy room.

> "Once I issue the key to the first one, she goes and she orders and I mean those are human beings, obviously even if you put measures in place of signing for the key and so forth, they know how to break those rules because of they just want to do what they want to do, so it comes down to the fact that if five people went in there, who do you blame." (Participant 4)

Crowley and Stellenberg (2015:87) reported that PHC clinics have inadequate security systems as the medicine storerooms in most clinics were accessible even to non-professional staff. Matema (2020:9) also supports the view that infrastructural challenges like the lack of appropriate security and storage space were the main causes of the unavailability and stock outs of medication resulting from theft and uncontrolled access to the medicine storeroom in the PHC clinics.

4.4.2.1.7 Drug shortages and stock outs

SOP requirement: It is expected that the facilities should record stock outs and shortages to identify the problem and initiate the corrective action and judgement (Mashego et al 2017b:11).

Participants reported that they sometimes experience drug shortages and stock outs in the PHC clinics.

> "You find that sometimes you don't have enough drugs, so you end up running short of drugs. So you will find that we have a lot of items out of stock." (Participant 7)

Stop Stockout (2017:13) reported that the shortage of drugs is a countrywide problem with at least five provinces affected. The challenges were related to supplier problems and erratic ordering patterns from the health facilities. Munedzimwe (2018:4) confirmed the participants' experiences that the shortages and stock outs of essential medicines is a global and common challenge affecting low-income countries and PHC clinics. These challenges emanated from manufacturers, buyers and complex processes of supply chain management and are related to procurement and distribution systems. Medicine shortages were straining the health systems, health care providers and affecting patients causing disease progression. There were also financial implications.

4.4.2.2 Human resource challenges

The study identified human resource challenges in the PHC clinics, the challenges related to professional nurses as well as the non-availability of pharmacist assistants to manage the medicine room and drug supply as reflected in the following themes.

4.4.2.2.1 Inadequate staffing

SOP requirement: There must be a designated person (a pharmacist assistant or professional nurses) to handle DSM in the PHC clinic.

The study found that in the CoE out of 80 primary health facilities, 33 health facilities did not have a fulltime pharmacist assistant resulting in professional nurses having to manage drug supply.

The participants expressed their concerns regarding the professional nurses having to manage drug supply.

> "You have to strip one professional nurse, put her into the pharmacy area, it makes it difficult for other members to do the services properly, because now you've

> stripped off one person and of which that person they were relying on." (Participant 10)

> "So in a way, everyone gets to be frustrated by the fact that there is just no staff for pharmacy to carry out this and implement this SOP properly." (Participant 5)

Mokagwe et al (2020:4) reported that inadequate staffing and a shortage of health workers have detrimental effects on the health care system and is among the reasons for non-compliance with quality standards at PHC clinics. The negative effects of this situation were experienced particularly when one or two of the staff members went on leave or attended training sessions. Gray et al (2016:4) confirmed the shortage of professional nurses in South Africa and the unfair distribution of available health workforce between the private and the public sector.

The participants expressed that pharmacists or pharmacist assistants are needed in all the PHC clinics to manage DSM service, as the professional nurses are not coping with the DSM function.

> "If there would be a pharmacist assistant, we know that you just order, he/she is there all the time, then is easy for them to (inaudible) take out medication as needed." (Participant 5)

> "Ideally I would love to have the pharmacy assistant in the clinic because we really not coping." (Participant 1)

Crowley and Stellenberg (2015:87) state that the function of DSM is a pharmaceutical staff function, but due to the shortage of pharmacist or pharmacist assistants, nurses are responsible for DSM function. She recommends that pharmacist assistants should be employed to manage drug supply in the primary health facilities.

The experiences of the participants were confirmed by Gray et al (2016:4), namely that South Africa has a huge shortage of pharmacy personnel because in 2014 only 13 364 were registered with the SAPC but only 4 516 were employed in the public sector to render the pharmaceutical services. The WHO (2018:10) also reported that there was fewer than one pharmaceutical staff member per 1 000 of the population in South Africa.

4.4.2.2.2 Altered job description

SOP requirement: The professional nurses are authorised to conduct DSM in the PHC clinics under District Health Services where there is no pharmacist or pharmacist assistant to manage the medicine storeroom.

Participants (professional nurses) reported that it was not their responsibility to manage the medicine and supplies. As a coping strategy the responsibility of DSM is at times allocated to the clerk, extended public works programme general workers and cleaners to work in the medicine storeroom. One participant voiced that it was not in their job description to manage drugs and supplies.

> "I felt I'm nurse, I'm not a pharmacist. My day-to-day responsibilities are patient care." (Participant 1)

> "EPWPs, they are well trained when it comes to pharmacy, so she is the one who mostly we rely on most of the days." (Participant 10)

> "Could you imagine asking the cleaner who actually had to clean every two hours to assist with pharmacy that was not possible, because they had a constant." (Participant 9)

According to Bobbins, Burton and Fogarty (2020:1), there was a shortage of pharmacists within the PHC clinics resulting in task shifting of pharmaceutical services to a pharmacist assistant or a professional nurse, thus the professional nurses were experiencing altered job descriptions which expanded the roles of the professional nurse.

4.4.2.2.3 Lack of empowerment of professional nurses and facility managers

SOP requirement: Professional nurses allocated the task of DSM should be trained on DSM.

The study found that 50 % of the professional nurses and facility managers interviewed were not trained on DSM as required before being assigned to DSM.

> "The facility did not have any professional nurse who had done drug supply management course. So at the end of the day, whoever was allocated there, we were all trying to do our best. But one of the challenge that I had experienced at the moment, none of the nurses wanted to go there." (Participant 6)

> "We were not trained but the SOP was just given to us." (Participant 10)

Matema (2020:8) supports the view that professional nurses had to be capacitated to perform DSM, as the inadequately trained personnel contributed towards medicine shortages and stock outs.

4.4.2.2.4 Dual responsibilities

SOP requirement: It is recommended that where there was no pharmacist assistant, the professional nurses working in the PHC clinics, had to perform their core nursing functions of providing client or patient care and managing DSM.

Participants reported that they had to perform their own job description of client or patient care and in addition work on DSM in the medicine storeroom. The participants reported that during reporting time managers wanted the statistics of the clients or patients that had been attended to.

> "Today things are okay staff complement is fine, tomorrow I'm in the consulting room, I'm working there, I'm pushing the queue, I mean for example my job stated that I must supervise the personnel in the facility, in the pharmacy, now how do I then supervise myself in the pharmacy." (Participant 6)

> "Each and one of the health professional nurses had the service that they run so balancing the required workload that was needed at the pharmacy you still need to consult patients you need" and "at times you need to prioritise you don't even know what to prioritise.so it's been difficult and when you supposed to do stock visibility solutions (SVS), you patients, you didn't know which one to put first." (Participant 1)

The Gauteng Department of Health (2013:6) confirmed the participants' experiences, where the SOP permitted that in the District Health Services where there were no

pharmacists or pharmacist assistant rendering the service could be replaced with the facility manager or professional nurse. A shortage of pharmacy personnel affected the PHC clinics' management of medicine, and was cited as being among the reasons for non-compliance with quality standards (Mokagwe et al 2020:3). Crowley and Stellenberg (2015:89) confirmed that the professional nurses would assess, diagnose, prescribe and dispense treatment for the client or patient as indicated in the job description and also manage medicines and supplies for the PHC clinics.

4.4.2.2.5 Lack of responsibility and accountability to manage the medicine stock

The professional nurses were not taking responsibility and accountability for the medicine storeroom and the missing drugs as they had to attend to clients or patients as per their job description.

> "The nurse did not want to do the job, she tells you I have my full-time job, I could not be stuck in the pharmacy" I should prioritise my work." "So you must order, you must receive, you must dispense. So it is a challenge yes so at the end of the day. You don't know what happened to the drugs?" (Participant 9)

Munedzimwe (2018:4) confirms that non-pharmaceutical health workers may not adhere to the authorised SOP on medicine stock management as they view this as not being their primary function.

4.4.2.2.6 The professional nurses were psychologically and emotionally depleted

The professional nurses were frustrated and lacked interest in the management of medicine stocks and supplies.

> "So in a way, everyone got to be frustrated by the fact that there was just no staff for pharmacy to carry out this and implement this SOP properly." (Participant 7)

The Health Systems Trusts (2015:2) reported that interrupted supply chain management; shortage of pharmacists and medicine shortages and stock outs have strained the health care professionals emotionally and intellectually, especially professional nurses. They had to spend more time explaining to the clients or patients about drug shortages, stock

outs, and thinking of alternative drugs to be dispensed. They also had to consider the adverse reactions of the medicines might have on the clients, or patients.

4.4.2.2.7 Time management

There was no time allocated for the professional nurse to work in the medicine storeroom. Participants verbalised that there was no time assigned to professional nurses to work in the pharmacy room.

> "Time is a challenge because of doing two jobs. We once requested that at least I have time allocated maybe in the afternoon somebody would see my service while I concentrated on the pharmacy." (Participant 8)

4.4.2.3 Inadequate management support

The study found that the professional nurses felt that both the pharmaceutical and PHC managers did not support them and they experienced the following challenges.

The professional nurses reported that both pharmaceutical and PHC managers are not supportive in the DSM function.

> "And I think even the support you get from maybe our supervisors, especially in the pharmacy they don't get to understand that you are not a pharmacist and sometimes you are held up with your own work." (Participant 3)

> "That's why I'm saying we need a support structure of some sort and sometimes when people come, pharmacist or whoever who wants to check whatever in the stock room." (Participant 5)

Mokagwe et al (2020:3) reported that one of the reasons for non-compliance with quality standards is senior management's lack of support as they do not understand and/or attempt to resolve the challenges that health professionals face in the primary health facilities. Furthermore, Ogbodu et al (2019:555) state that adequate training and supervision were essential factors for effective and efficient performance of the health system towards ensuring that district health services had an impact on the health workers

in the PHC clinics to adhere to the recommended SOPs for medicine and supply management.

4.4.2.4 Compromised patient care

The study reports compromised patient care as reflected by the following theme.

4.4.2.4.1 Patients are turned away

Clients or patients are turned away from the PHC clinic because the professional nurses cannot cope with the workload. Participants reported that due to the extensive workload they cannot cope to manage both the patients and the DSM.

> "If I go into the pharmacy and collect the medication the patient will then have to be turned away." (Participant 6)

> "Moving between patient care and drug supply management result in keeping the patient waiting unnecessarily so, I mean the patient does not have to suffer for whatever the internal issues we have." (Participant 3)

Kuwawenaruwa, Tediosi, Wyss, Wiedenmayer and Metta (2020:5) state that the fact that the health establishment does not have the adequate workforce and physical resources to manage medicine stock and attend to clients or patients may lead to clients or patients being turned away without medications or left unattended. When clients or patients are turned away, it may result in disease progression and the health facility being underutilised.

4.5 OVERVIEW OF RESEARCH FINDINGS

Chapter 4 presented a discussion on the professional nurses' challenges regarding drug-supply-management in PHC clinics. The findings were supported by research documented in the literature. The categories were identified and discussions on non-adherence to the SOP for DSM, human resources challenges, inadequate management support and compromised patient care. The professional nurses described their experiences regarding implementation of the SOP DSM.

4.6 SUMMARY

In this chapter, the researcher provided a detailed and extensive description pertaining to the challenges experienced by the professional nurses when implementing the DSM SOPs. Chapter 5 will discuss the conclusions, recommendations and limitations of the study.

CHAPTER 5

CONCLUSIONS, RECOMMENDATIONS AND STUDY LIMITATIONS

5.1 INTRODUCTION

In the previous chapter, the researcher discussed the findings integrated with the relevant literature. In this chapter, the researcher presents the conclusions, recommendations and study limitations.

5.2 RESEARCH DESIGN

A descriptive exploratory contextual qualitative research design was followed in this study because the researcher intended to gain more information about the challenges experienced by professional nurses regarding the implementation of the SOPs of DSM. The researcher sought to explore and understand the context of professional nurses' experiences and the meaning attached to the challenges they had when implementing the SOPs for DSM.

5.3 RESEARCH PURPOSE

The purpose of the study was to explore the challenges experienced by professional nurses in the implementation of the DSM SOPs in the CoE primary health clinics.

5.4 RESEARCH OBJECTIVES

The research objectives were to:

- describe professional nurses' challenges regarding the implementation of the DSM SOPs in the CoE PHC clinics
- make recommendations to promote the implementation of the DSM SOPs

5.5 RESEARCH QUESTION

A grand tour research question was asked during the participant interviews with the intention to identify the challenges of DSM and to make recommendations regarding the implementation of DSM SOPs. The request was:

- Kindly share with me the challenges experienced when implementing the SOPs with regard to DSM in your PHC clinic.

5.6 STUDY CONCLUSION

The study findings confirmed that there are challenges associated with DSM in the CoE, which include challenges associated with the non-compliance with the approved standards operating procedures for DSM, human resource challenges and compromised patient care.

The researcher's conclusions on each of the categories identified will be explained below.

5.6.1 Non-adherence to the drug supply management (DSM) standard operating procedures (SOPs)

Based on the observations during site visits and information gained during the interviews, the researcher believes that the following aspects contribute to non-adherence to the SOPs:

- Inconsistent provision of training for the professional nurses charged with the responsibility to manage drug supply at the clinic. This practice results in the designated nurses not understanding procurement, ordering, stock management as well as medicine room management requirements for effective DSM.
- Inadequate management support and monitoring of the implementation of the DSM SOPs. The majority of the designated professional nurses reported that they were not being supported by management as well as pharmacy managers when executing their allocated function. This lack of support also involves poor monitoring and evaluating whether the prescribed standards are adhered to in the primary health facilities.

- The poor infrastructure of some of the PHC clinics such as inadequate medicine storage space meant that drugs were kept on the floor unpacked, which could affect the potency and efficacy of the medications. It also meant that the medicine could become toxic and therefore produce adverse reactions when administered to patients, as reported by the professional nurses.
- Inadequate documentation on the stock cards and poor record keeping or understocking of medications contributed to shortages or the unavailability of drugs. This led to fruitless expenditure since expired medications were overstocked.

5.6.2 Human resource challenges

- The clinics nurses were overwhelmed by the additional responsibility to manage drug supply, and therefore neglected the DSM function in favour of their core function which is to provide nursing care.
- Poor staff morale caused by work overload.
- Shortage of pharmacist assistants and pharmacists in the PHC clinics has a negative impact on the DSM.
- Designation of non-health professionals to handle drug management has the potential to result in compromised security of the drugs as well as the inappropriate use of drugs by the clerks and cleaners allocated to manage medicine rooms due to the non-availability of nurses and pharmacy personnel.

5.6.3 Inadequate management support

- The inability of both pharmaceutical and PHC managers to provide the necessary professional support has led to improper stock management, which has lead to drug shortages and stock outs. This has impacted negatively on our patients, the health care systems and health care professionals.

5.6.4 Compromised patient care

Failure to implement the DSM SOPs resulted in the provision of sub-optimal care as patients would, at times, not receive the full list of medications prescribed to them

because the clinic ran out of stock. This situation was the result of delayed ordering of medicines by the clinic personnel and consequently clients or patients had to be turned away without being attended to or receiving medication.

5.7 STUDY RECOMMENDATIONS

The following recommendations were based on the findings of the study. The researcher made the recommendations to the South African Department of Health, Gauteng Department of Health, Ekurhuleni District Health Office Facility Management and DSM designated professional nurses as well as for further research to be conducted in DSM.

5.7.1 South African National Department of Health (NDoH)

The NDoH

- should develop and disseminate policies and guidelines on DSM to the professional nurses where there is no pharmacist or pharmacist assistant available
- should included DSM in the curriculum of the nursing profession because these professionals are responsible for assessing patients, formulating a diagnosis, prescribing and dispensing medicines

5.7.2 Gauteng Department of Health

The department should

- ensure that there is funding for pharmacists or pharmacist assistants posts to manage DSM in all PHC clinics
- design appropriate training programmes that could cover the different components of DSM for human resource development
- ascertain that the pharmacist assistants are working under the direct or indirect supervision of the pharmacists in the PHC clinics
- assess whether all PHC clinics maintain the status of an ideal clinic as the infrastructure of the PHC clinic should meet the set standard and the pharmaceutical services are taken into cognisance

- formulate service level agreements between the training institution and pharmacies for placement of practice or community service

5.7.3 Ekurhuleni District Health Office

The health office should

- ensure that the vacant posts for pharmacists or pharmacist assistants in all the PHC clinics are funded and filled
- develop in-service training programmes on DSM SOPs
- provide training that is skills based so that health care workers can contribute towards effective health care delivery at the functional level
- ensure that PHC clinics are consistently monitored in terms of DSM and adherence to DSM SOPs
- assess the PHC clinics to see that they match the status of an ideal clinic and ensure that there is a budget to improve the infrastructure of the PHC clinic
- develop training programmes on the Nursing Acts and Omissions for provision of quality patient care

5.7.4 Health facility managers

The managers should

- motivate for employment of at least one post basic pharmacist assistant to manage drug supply within the PHC clinic
- promote effective DSM through service excellence awards for best managed medicine room in the PHC clinics
- conduct monthly supervisory visits on DSM and check that DSM SOPs are adhered to by monitoring and following up if challenges are identified and feedback should be provided to the staff
- develop the improvement plans to remedy the challenges that were identified
- ensure that at least quarterly in-service training on DSM is conducted to capacitate professional nurses on the components of DSM, the importance of documentation and record keeping to facilitate adequate skills on DSM

- allocate the professional nurses on rotation to manage the medicine room for an uninterrupted period of three months without having to also consult with clients or patients

5.7.5 Drug supply management (DSM) by designated professional nurses

The professional nurses should develop a clinic peer support system for DSM doing the following:

- Creating a rooster for medicine room management that includes stock ordering and receiving as per a schedule.
- Attending DSM in-service training and providing feedback.

5.8 FURTHER RESEARCH

The researcher recommends that future research can be conducted on the following aspects:

- Experiences of pharmacist assistants placed in PHC facilities.
- Development of DSM models for PHC settings.

5.9 STUDY LIMITATIONS

The following aspects are acknowledged as the limitations of the study.

- The study was conducted in the two sub-districts out of the three sub-districts of the CoE until data saturation was reached. The third sub-district in which the researcher is employed was excluded to minimise bias.
- The study was based on the experiences of the professional nurses and did not include the pharmacist responsible for DSM in the district as the focus was on the nurses' experiences of DSM.

5.10 CONCLUSION

Chapter 5 brought this research to an end and included the conclusions, recommendations and study limitations. The purpose of the study had been met. The study had demonstrated the importance of effective DSM and compliance with the approved SOP. The identified challenges required various stakeholders' participation and support for the professional nurses to be able to render quality nursing services and drug supply to the clients or patients visiting PHC clinics. The researcher believes that when these challenges are addressed, there would be improved staff morale as well as client or patient satisfaction in the CoE.

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WHO see World Health Organization

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ANNEXURES

ANNEXURE A: Ethical Clearance Certificate from the Department of Health Studies, Unisa

UNISA university of south africa

RESEARCH ETHICS COMMITTEE: DEPARTMENT OF HEALTH STUDIES
REC-012714-039 (NHERC)

5 February 2019

Dear Eleanor Mflathelwa Dube

Decision: Approval

HSHDC/897/2019
Student: Eleanor Mflathelwa Dube

Student No.:6431968
Supervisor: Dr H de Swardt
Qualification: D Litt et Phil
Joint Supervisor: -

Name: Eleanor Mflathelwa Dube

Proposal: Professional nurse's challenges regarding drug supply management in Primary healthcare clinics

Qualification: MPCHS94

Risk Level: Medium Risk

Thank you for the application for research ethics approval from the Research Ethics Committee: Department of Health Studies, for the above mentioned research. Final approval is granted from 5 February 2019 to 5 February 2021

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Research Ethics Committee: Department of Health Studies on. 5 February 2019

The proposed research may now commence with the proviso that:

1) *The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*

2) *Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Research Ethics Review Committee, Department of Health Studies. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*

RECEIVED
2019 -02- 06
Executive Dean
College of Human Sciences

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.

3) *The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.*

4) *You are required to submit an annual report by 30 January of each year that that he study is active. Reports should be submitted to the administrator HSREC@unisa.ac..az Should the reports not be forthcoming the ethical permission might be revoked until such time as the reports are presented.*

Note:
The reference numbers [top middle and right corner of this communiqué] should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the Research Ethics Committee: Department of Health Studies.

Kind regards,

Prof JE Maritz
CHAIRPERSON
maritje@unisa.ac.za

Prof A Phillips
DEAN OF COLLEGE OF HUMAN SCIENCES

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
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ANNEXURE B: Request for permission to conduct the study

113E Corner Prince George and Kingsway Avenue
Brakpan
1540
29 October 2018

Dr Keleman
Ekurhuleni Health District Research Team
PO Box
Cutlin Centre
Germiston

Dear Sir/Madam

Permission requested to conduct research and collect data at the primary health care (PHC) clinics in the northern sub-district of the City of Ekurhuleni on the implementation of standard operation procedure (SOP) with regard to drug supply management (DSM)

I herewith wish to apply for a permission to conduct research study and collect data at the abovementioned district as part to fulfil the requirement of Masters' in Nursing Science. I have registered with UNISA and student number 6431968.

The title of the study is:

PROFESSIONAL NURSES' CHALLENGES REGARDING IMPLEMENTATION OF DRUG SUPPLY MANAGEMENT IN PHC CLINICS OF THE CITY OF EKURHULENI

The purpose of the study will be to gain an understanding of the professional nurses have with implementation of Standard Operating Procedure (SOP) of Drug Supply Management (DSM) in the primary health care setting, of the City of Ekurhuleni.

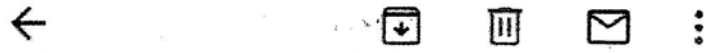
The research method will be a qualitative, descriptive and explorative design conducted for all the professional nurses working in the PHC clinics of City of Ekurhuleni district who are responsible for DSM where no pharmacists or pharmacist assistants are present.

Your consideration will be appreciated.

Yours faithfully

Eleanor Mflathelwa Dube
Cell: 082 419 5965
Tel no: 011 799 8141

ANNEXURE C: NRHD report with the GP number



Good day Eleanor Mflathelwa Dube

This is an automated email sent to you to confirm that we have received your research proposal submission (GP_201907_038). Please do not reply to this email.

Please monitor your application on a weekly basis for feedback from your Provincial Health Research Committee.
The turnaround time to receive a response should be 6-8 weeks. If you have not heard from the PHRC in this time, please contact your relevant PHRC using the contact details on https://nhrd.hst.org.za/Home/Resources
You can view the status of your application at any time by visiting the NHRD website at http://nhrd.hst.org.za

Kind regards
NHRD Support Team

Disclaimer and confidentiality note:

ANNEXURE D: Permission obtained from the Ekurhuleni Health District and City of Ekurhuleni to conduct research

City of Ekurhuleni

GAUTENG PROVINCE

EKURHULENI HEALTH DISTRICT RESEARCH PERMISSION

Research Project Title: Professional nurse's challenges regarding drug supply management in Primary healthcare clinics.

NHRD No:

Research Project Number: 11/07/2019-03

Name of Researcher(s): Mrs Eleanor Dube

Division/Institution/Company: University of South Africa

Date of review by the EHDRC: 11 July 2019

DECISION TAKEN BY THE EKURHULENI HEALTH DISTRICT RESEARCH COMMITTEE (EHDRC)

- This document certifies that the above research project has been reviewed by the EHDRC and permission is granted for the researcher(s) to commence with the intended research project.
- Facilities approved for the research: all PHC clinics in North, East, South in City of Ekurhuleni.
- Participants' rights and confidentiality must be maintained throughout the study period and when disseminating the findings.
- No resources (financial, material and human resources) from the health facilities will be used for the study. Neither the district nor the health facilities will incur any additional cost for the study.
- The study will comply with Publicly Financed Research and Development Act 2008 (Act 51 of 2008) and its related regulations.

- The EHDRC must be informed in writing before publication or presentation of research findings and a copy of the report/publications/presentation must be submitted to the EHDRC
- The district must be acknowledged in all the reports/publications generated from the research.
- The researcher will be expected to provide the EHDRC with
  - Six monthly progress updates including any adverse events
  - The final study report in electronic format
  - Present the final research findings at the annual Ekurhuleni research conference if possible.
- The EDHRC reserves the right to withdraw the approval, if any of the conditions mentioned above have being breached
- The research committee wishes the researcher(s) the best of success.

DR. T. SEPUYA

DEPUTY CHAIRPERSON: CITY OF EKURHULENI

Dated: 11/7/2019

Dr. R. Hellerman

CHAIRPERSON: GAUTENG DEPARTMENT OF HEALTH (EKURHULENI HEALTH DISTRICT)

Dated: 11 July 2019.

ANNEXURE E: Participant data information with the consent form

Ethics clearance reference number: HSHDC/897/2019
Research permission reference number: GP201907038

Title: PROFESSIONAL NURSES' CHALLENGES REGARDING DRUG-SUPPLY-MANAGEMENT IN PRIMARY HEALTH CLINICS OF THE CITY OF EKURHULENI

Dear prospective participant

My name is Eleanor Mflathelwa Dube and I am conducting research study with Dr HC (Rina) de Swardt, a senior lecturer in the college of Human Science towards a Master's degree in Nursing Science at the University of South Africa. You are cordially invited to participate in a study titled: Professional nurses' challenges regarding DSM in primary health care clinics of the City of Ekurhuleni.

What is the purpose of the study?

I am conducting the research study to gain an understanding of the challenges professional nurses have with implementation of the standard operating procedures (SOP) of DSM in a Primary Health Care (PHC) setting. This information will assist the researcher to identify gaps related to the implementation of the SOP on DSM and to propose interventions that could support to professional nurses with this procedure. Consequently, professional nurses might be empowered and in turn the quality of client or patient service rendered.

Why am I being invited to participate?

The reason why you are invited to participate in this research study, is because the researcher beliefs that you will provide first-hand information about the challenges you experience regarding DSM in PHC clinic. The researcher intended to interview 25 professional nurses or until no new information is found.

What is nature of my participation in this study?

The study involves sharing your experiences regarding the challenges regarding(of) DSM. The interview will last for approximately 30- 45 minutes at a time convenient for you and the clinic.

Can I withdraw from this study even after having agreed to participate?

Participating in this study is voluntary and you are under no obligation to consent to participation. If you decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason.

What are the potential benefits of taking part in this research study?

There are direct possible potential benefits for participants, however, data provided by the participants would assist the researcher in achieving the aim set out in research study. Further participating in the study will assist the researcher in the contribution to the body of knowledge directly leading to nurse's empowerment on DSM. The process will contribute to the improvement of DSM in the PCH clinics. The quality of client care will be rendered by professional nurses and premature deaths of clients prevented. The relevant personnel the pharmacists or pharmacist assistants whose DSM is their core function will be employed.

Are there any negative consequences for me if I participate in the research project?

The anticipated negative harms or challenges associated with the participation in the research study could be the spread of Corona Virus. The precautionary measures that will be applied to prevent spread of Corona Virus to participants would be:

- Wash hands with soap and water or sanitise hands prior commencing with an interview in the Primary Health Care Clinic.
- The equipment's like cell phones wiped with a clean hand paper containing sanitizer.

- The environment where interview will be conducted will be cleaned by the general workers and sanitizer applied to wipe the surfaces.
- Windows will be opened for cross ventilation.
- The social distance of 1.5 up to 2 m between the researcher and participants will be maintained.
- The researcher and participant will be wearing surgical masks and the shield applied from the forehead as they are direct contacts.
- Greeting using handshake will not be done.
- If both the researcher and participants conditionally are not well physically, the interview will be postponed.

Another challenge might be your time which the researcher requests from you to set aside for interviews for approximately 30–45 minutes. The information provided will be kept confidential and there is no need to write your name, surname and home during an interview process. Everything would be kept anonymous. All the information received, will be used for research purposes and the records together with the audio tapes will be submitted to Unisa for safe keeping thereafter will be destroyed according to the University policy on the data collected for research purposes. If the is injury or psychological harm to the potential participants, will referred for counselling.

Will the information that I convey to the researcher and my identity be kept confidential?

The personal information like your name, surname and home address will not be requested to during an interview process or will not be in a recorder. No one except the researcher and identified members of the research team will know about your participation in this research. Your name will not be recorded anywhere, and no one will be to connect you to the answers you have provided. The answers that you have provided, will be issued a code number or a false name and will be referred to in this way in the data, any publications or other research reporting methods such as research conference.

Your answers will be reviewed by the people responsible for ensuring that the research is conducted ethically including the audiovisuals, transcriber together with members of

the Research Ethics Review Committee. The records which can identify you will be kept by the people assessing the study unless permission is given for other people to see the records.

The data will be kept anonymous and will be used for other purposes such as research report, journal articles and during the research conferences. Your name and identity will always be kept confidential and private.

How will the researcher(s) protect the security of the data?

The hardcopies of your answers will be stored by the researcher for a period of five years in a locked cupboard or filling cabinet at the university for future research or academic purposes, electronic information will be kept on a protected computer with a password. The future use of the stored data will be subject to further Research Ethics Review and approval if applicable.

After five years the records of data collected from you will be destroyed as follows:

- Hard copies will be shredded.
- Electronic copies will be permanently deleted from the electronic devices.

Will I receive payment or any incentives for participating in the study?

There are no payments or incentives for participating in the research study as participation is voluntary. Furthermore, there are no expected costs which will be incurred by participating in the research study

Has the study received ethics approval?

The study has received a written approval from the Research Ethics Review Committee of the College of Human Sciences, Unisa. A copy of approval can be obtained from the researcher if you need it.

How will I be informed of the findings /results of the research?

If you would like to be informed about the research findings, please contact Eleanor Mflathelwa Dube on 082 419 5965 or Eleanor.Dube@ekurhuleni.gov.za or website URL. Please contact the researcher on the contact details mentioned above when you require any other information regarding the study.

If you require any other information or want to contact the researcher about any aspect of the study, please contact Eleanor Mflathelwa Dube on 082 419 5965 or Eleanor.Dube@ekurhuleni.gov.za

For any concerns about the way in which the research study has been conducted, you may contact Dr. H.C de Swardt Tel:012 429 4506 or zumas@unisa.ac.za. and Contact research ethics chairperson of the General Ethics Review Committee, Prof EL Kempen on 011 471 2241 or kempeel@unisa.ac.za for any ethical concerns.

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

Thank you

EM Dube
Eleanor Mflathelwa Dube

CONSENT TO PARTICIPATE IN THE RESEARCH STUDY:

I……. (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits anticipated negative, harms and inconvenience of participation.

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

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

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

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

I agree to the recording of the specific data collection method.

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

Participant: Name and surname……. (Please print)

Participant: Signature…… Date……

Researcher: Name and surname……..…… (Please print)

Researcher: Signature…… Date……

ANNEXURE F: Interview guide

A. The biographic data of the participant:

- Please tell me your age, designation and for how long have been working in the PHC clinics.
- Kindly indicate to me whether you are trained or not on drug supply management.

B. Interview questions related to the topic of the research study to be conducted.

The interview guide is the significant research tool utilised to collect and collate responses of the participant. Please be informed that privacy and confidentiality will be highly maintained throughout by the researcher and the university. The questions are semi-structured.

The grand tour question used for all the participants is as follows:

“Kindly share with me the challenges experienced when implementing Drug Supply Management, the Standard Operating Procedure (SOP) in you Primary Health Care (PHC) clinic?”

Possible probing questions

1. According to your level of understanding, what does a concept SOP mean to you?
2. As you have been working in the medicine storeroom, how would you explain the concept drug supply management (DSM) according to your understanding?
3. Please tell me how you view your responsibility towards adhering to SOP regarding DSM.
4. What challenges have you experienced when implementing DSM SOP as you have been working in the medicine stor room?
5. What interventions can be proposed to support the professional nurses when implementing DSM SOP in the PHC clinics?
6. How can we improve the implementation of DSM SOP in the PHC clinics?

Explanations of the acronyms

SOP: Standard operating procedures refers to a set of written instructions or steps which must be followed in order to complete a specific job safely, with no dangerous impact on the environment, and in such a way that maximises operational and production requirements (WHO 2015).

DSM: Drug supply management is explained as the medicine management system where various practices, processes and policies related to selection, procurement, distribution of drugs and resources needed are utilised to ensure a continuous supply of medicines and other relevant supplies at the primary health care setting (Mashego, Maputla, Dlamini, Kinuthia & Van Rooyen 2017b:2).

PHC: Primary health care is described as an essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every development in the spirit of self-reliance and self-determination (University of Cape Town 2018).

ANNEXURE G: Example of transcription document

Eleanor Dube Recording 10:

Facilitator: Okay sister XXXXX. Thank you for accommodating me to your clinic, I know we are at tea but thanks a million times. I was so worried that there is no clinic head but now that you are here and you have worked in the medicine room. I'm so happy and at least we have gone through the participation information sheet and you have already signed the consent, thank you for that. Otherwise ,before we do anything we need to set some ground rules. First and foremost one, the cellphone, normally we put it on airplane mode …

Respondent: Silent … (inaudible)

Facilitator: Ja mode. Okay you don't have it here, thank you for that. So at least the doors we have closed to avoid some disturbances ja. And another important thing, don't be surprised we are using the gadgets neh, for recording all the information that we are going to discuss neh, and let's try and discuss everything in English so that it is authentic and the supervisor you know can have a better understanding of whatever we doing neh. Remember we also spoke about the negative consequences in the participation form sheet neh, where we take precautionary measures against COVID. Like as we are wearing the mask, we have sanitised our hands, we no longer doing handshakes and we have maintained the social metre distance. And then another thing to reinforce, confidentiality, meaning that your name, your clinic will never be revealed when we present the study neh. So feel free, comfortable, be open to communication neh. I'm going to ask you several questions, you know just answer openly, spontaneously, lets apply our mind. And did I tell you that you are the last clinic that I'm interviewing today neh?

Respondent: Yes.

Facilitator: So the last clinic must always shine isn't it?

Respondent: We will see, it depends on the questions you asking.

Facilitator: And then if there's a question that you don't understand, feel free to ask that question so that I rephrase the question.

Respondent: No problem

Facilitator: No, thank you Khosi. First and foremost we are living in the COVID era, how do you feel about COVID?

Respondent: With COVID a lot of things have been happening, iyoo, especially health system, with us in the health system. A lot of things have been happening because now is …, for us is work being added and the challenges of shortage of staff and now we had to sit down, implement new changes in whatever that we were doing before, and we have to …, now have to restructure our working environment again to say how are we going to cope with COVID and also not forgetting the other diseases that we were dealing with before COVID. So it has been a challenge but here we are it's done.

Facilitator: It's done and you have survived.

Respondent: We have survived we are living with COVID, that one we cannot deny it, it is here to stay.

Facilitator: We living in the world of COVID now, I'm happy that you are restricting you know, so that you can have better coping mechanisms …

Respondent: We had to restructure a lot of things because there are targets that we are having almost …, each and every clinic I think they do have …, they have the targets that they have to meet weekly, so those targets at some point they were affected because of COVID, now we had to restructure our minds to say okay now we have this pandemic, how are we going to restructure working with targets and also not neglecting the COVID part.

Facilitator: That's why they've actually introduced the new APC guidelines, the AGL …

Respondent: Yes the AGL …

Facilitator: Which is also talking to COVID. Okay Khosi let's go back to our research questions. Please indicate to me your age, your designation and for how long have you been working in the PHC clinics?

Respondent: My age I'm 39 years old, I've been working …, I'm a professional nurse. I've been working here since 2016, I think this is my fourth year, coming from George Mukhari, I worked in George Mukhari for plus/minus five years at George Mukhari. Then 2016 I started working in Ekurhuleni under PHC.

Facilitator: Meaning that have you trained in Pretoria?

Respondent: Yes I trained in Pretoria.

Facilitator: Okay that's good. And then kindly indicate to me were you trained on Drug Supply Management?

Respondent: We were not trained but the SOP was given to us …

Facilitator: So there was no training?

Respondent: There was no specific training that we went under but SOP was given. So we went through the SOP.

Facilitator: Meaning that you didn't attend any short course?

Respondent: No short course.

Facilitator: The only thing you were issued an SOP …

Respondent: The only thing that I did when I came here is the dispensing course.

Facilitator: Oh you have done the dispensing course.

Respondent: The dispensing course I did with MEDUNSA …

Facilitator: With MENDUSA okay but not Drug Supply Management?

Respondent: Not Drug Supply Management.

Facilitator: So when you did dispensing are you aware that dispensing is part of the components of Drug Supply Management?

Respondent: Yes I'm aware but at the same time, I think when you enter PHC facilities, you expecting that maybe there will be a two weeks training as they are usually doing with other courses like EPI and other courses, you know they usually have these two weeks short courses that you attend to manage a certain area …

Facilitator: Service ja …

Respondent: So with pharmacy I haven't attended any short course under that. It was just the dispensing course that I did.

Facilitator: Okay, so if I understood you well, you were just given SOP and it was said implement?

Respondent: Yes, but the manager read …, sat down with us, the whole staff and read the SOP guidelines and then we had to attach the signatures that …

Facilitator: That you have gone through the SOP …, but not the training?

Respondent: Not the training.

Facilitator: Okay, now thank you for that information. Okay Khosi let me ask you, kindly share with me the challenges you have experienced when implementing the SOP with regard to Drug Supply Management in your clinic here?

Respondent: The challenges here is, the mostly that I would highlight …

Facilitator: You have to highlight all of them.

Respondent: The number (1) core of it, I would say it's staff shortage …

Facilitator: Staff shortage?

Respondent: Yes, because why am I going that way, it's because now if you have to strip one professional nurse, put her into the pharmacy area, it makes it difficult now for other members to do the services properly, because now you've stripped off one person and of which that person we were relying on. So when it comes to pharmacy, that is the huge challenge because (1) one professional nurse needs to be in the pharmacy, since we don't have a pharmacy assistant or a pharmacist. So that one is a huge challenge for us and only to find that yes there's a person who is assisting in the pharmacy, our pharmacist left. Somebody who is there, assisting the

professional nurse, you find that the challenges that are there, you would find *ukuthi* the same sister that you are taking to do certain services with patients, now that sister needs to go pharmacy the EPWP the one who is working there fulltime. And that is a challenge because now you find ukuthi sister most of the things, the sister that she put there, now she needs to understand each and every system that is put there and most of the things that are working in pharmacy is electronical systems. So you find that most of the day she's just there, focussing on pharmacy. So now it becomes a challenge because now we have to minus one person.

Facilitator: I hear what you're saying, so it means you end up having pressure …

Respondent: Yes …

Facilitator: If you cannot cope with patient care and at the same time the sister is in the pharmacy …

Respondent: Yes …

Facilitator: And then tell me more about this EPWP?

Respondent: EPWP's, they are well trained, the one that we having all that I can say she is all trained when it comes to pharmacy because she's been assisted by Mmapule, Mmapule is a pharmacy assistant from Katlehong North and she's also assisted by our pharmacist. Our pharmacist is Mmapitsi. So Mmapitsi is an overall supervisor of our pharmacy. So she's the one who mostly we rely on most of the days. Is not that we're working alone on the pharmacy but there are people that are assisting us. And so if we can't cope with certain load of work, we know that we can Mmapule or Mmapitsi will handle that if maybe the EPWP cannot handle that …

Facilitator: Is not coping, okay. So when you say they've trained her, did she undergo some sort of training or it was sort of on the job training, training, showing her this is how we do things in the pharmacy room.

Respondent: On that one I cannot exactly say whether did she undergo a formal training or not because when I came here she was already doing that, that work.

Facilitator: Oh when you started working here?

Respondent: Yes when I started working here, so I cannot specifically say *gore* maybe she has some formal training but I think with the period that she's doing this job, I think she does have some formal …

Facilitator: (inaudible) okay …

Respondent: Everything is always in control …

Facilitator: Oh she controls, but when you say the sisters leave the service to go to the pharmacy room, they can end up spending the day …?

Respondent: Yes because there are, on Thursdays I just forgot what they are calling it. There's a report on Thursday that is being submitted, that needs to be done by the professional nurse

together with the EPWP, so the EPWP cannot do that report alone. Even though she can know the report, but she needs a person who's going to supervise her to do that. So she's always with the sister to do that report. So and that report on its own is a massive work, that I can tell you, so …, is a massive work. So you find that every Thursday we need to take this person out …

Facilitator: Out of the service?

Respondent: Yes and on top of that, still mostly we do our ordering on Thursdays, so she needs to cover also that …

Facilitator: Ordering …

Respondent: Yes is the ordering of everything that is needed in the pharmacy. So you find that now we are stripping one person every Thursday.

Facilitator: Every Thursday?

Respondent: Yes.

Facilitator: Okay I picked up that, workload, stripping one person you know ja. What other challenges can you share with me?

Respondent: Other challenges with us, as I'm saying is, if the EPWP person is not there in the pharmacy, it also becomes a challenge, because now there's this person now who needs to count these drugs now and then is no longer there, do you understand, so maybe if she's sick or take some leave of some sort …, now it also becomes a challenge for us because now we ended up using two quire book so that everything you take you just write it down, you just write the quantity, you just write the batch numbers, so that when she comes back she knows ukuthi okay in that room they've taken 1,2,3 …, in that room they've taken 1,2,3 and then she needs to minus. So it …, those are the challenges that we are facing because now we cannot put the sister …, the whole week yes, we can't now because she's also have dedicated work that she needs to do. So as long as we are stripping her on the Thursdays, that's fine, that one we can accommodate. But now we can't strip her for the whole week, it's impossible for us.

Facilitator: So it becomes …, physical counting becomes a challenge?

Respondent: Yes it becomes a challenge and also the time.

Facilitator: Okay so you end up taking out the drugs from the medicine room, document them on that two quire …

Respondent: And then when she comes back, she will be the one now seeing *gore* okay we've taken forasafit, that room and then the batch number and then she will start now minusing all those medicine that we've taken …

Facilitator: Just for …

Respondent: So this becomes a challenge because if maybe let's say somebody comes and then just in the midst of …, somebody comes then there's no EPWP working there and we doing that, and of which that's a wrong way of doing things. So it becomes a challenge.

Facilitator: It becomes a challenge because you find that drugs may not balance …

Respondent: Yes, they might not balance at all …

Facilitator: Because everybody cannot write, because others would say no I will write in the afternoon.

Respondent: Yes, and then you forget yes …

Facilitator: Yes.

Respondent: That's another challenge that we are having. If especially if she's not around …

Facilitator: Okay, so what else that also comes into your mind? Anything that comes into your mind?

Respondent: That I'm aware of …, I think that's the only ones.

Facilitator: And then any other challenges of drug shortages?

Respondent: Yes, the drug shortages, usually they notify us if maybe there will be a certain drug that will be …

Facilitator: Who notifies you?

Respondent: Is Nigel if I'm not mistaken, Germiston …

Facilitator: The supplier?

Respondent: Yes, Germiston Depot they are the ones who usually write emails to the managers and then they will notify that be careful this drug is running out …, so those ones, I think you do get some info …

Facilitator: Oh you get some information regarding …?

Respondent: Yes, regarding the shortage of a certain drug, we do get information on that one. Like previously I think is the FDC was the one that was running short and then they did inform us.

Facilitator: Okay the current one, the one with TDN?

Respondent: Yes, so they did inform us that be careful, this drug is …, and then in that …, then you know that you can tell every sister that with this drug there's gonna be a shortage and then now they minimise (inaudible)

Facilitator: How do they minimise?

Respondent: Usually would give two months especially with chronic, two to three months with chronics. So now if there's a shortage we only give one month.

Facilitator: Okay …

Respondent: To balance.

Facilitator: Okay, no I'm happy with that. What else would you like to tell me about the challenges?

Respondent: I'm not sure whether that will go under your research but another problem that we have here, it's the backing up system …

Facilitator: Backing up system?

Respondent: Yes, with our backing up system, it's not working very well, because if there's no electricity, then there's a problem.

Facilitator: Do you mean the cold chain …

Respondent: Yes, concerning the cold chain now …, so it becomes a challenge when there's no electricity, so most of the time it does need us to take medication to other places so that it's stored in a safe and proper way but it does give us a challenge because our backing system is not working properly. Apparently, currently is under construction, they are still busy with it. It was …, I think it was last month they stole the generator battery …

Facilitator: Around here?

Respondent: Yes. So now it becomes a challenge because if there's no electricity there's no backing up system.

Facilitator: Because that is a serious challenge because you talking to vaccines, I mean vaccines we also regard them as part of drugs. So if there's no backing up system and there's no electricity, it means that the efficacy and the potency of the drugs are going to be affected …, so at the end of the day we will giving children water and then we end up having the upward of measles, an outbreak of measles.

Respondent: That's another challenge. But I think because they are trying to fix it maybe sooner, it will be sorted.

Facilitator: And then how do they stop the tsotsis from not repeating and stealing the battery again?

Respondent: That's another thing because when they come and assess the area, they found out that our generators are just there, there is no protective or …

Facilitator: Oh they were not protected, so there's no fence guardian around.

Respondent: So now that's what they said I think they should be doing now to put the fence around so that people can't get easy access to that.

Facilitator: Okay let's leave the challenges for a while neh. Now that you have said at least the facility manager sat down with you, trying to explain the SOP, the content all that, what did you understand by the concept Standard Operating Procedure?

Respondent: Eish, with the concept all I can say is that …

Facilitator: The Standard Operating Procedure, the facility manager, the one that was trying to explain, that were given by the pharmacies …, that this is a SOP that you need to follow?

Respondent: With the SOP that we're supposed to follow, apparently it is much …, it is much better if it's done by one person and that person will definitely understand step by step what to do there. So now that we are …, we are not given that fully fully understanding of it, so it becomes a challenge for us, because you only find that the only things that you just go there and do is just to make sure that if they come they don't find these wrongs and these wrongs. Do you understand? So rightfully, people maybe who can say yes the SOP they understand it more than us, I think they are pharmacists and pharmacy assistants. Not directly to us because with us is …, it becomes a challenge because is an extra mural activity for us.

Facilitator: Okay can I put it in simple terms. What do you mean, if one would say to you just define an SOP?

Respondent: An SOP is the procedures that you need to undertake before you can do a certain thing. Those …, that's how SOP's work. So those are the procedures that you need follow before you can do a certain thing.

Facilitator: So will it be correct for me to say, to me when I look at the term or the concept SOP is more like a recipe book. You want to bake a cake; it tells you how do you bake. Remember you are following steps …?

Respondent: Yes, we following steps that …

Facilitator: To ensure that the task is done

Respondent: Yes, is done accordingly, yes is true what you are saying.

Facilitator: So in simple terms, so that you don't look at it in future and say because when you look, each and every condition …, if I may, it has got its own SOP …?

Respondent: Yes ….

Facilitator: How to take the temperature, the very infrared thermometers, there's an SOP that if you want to take this temperature, do this, this, that, that, that. These are the steps that needs to be followed?

Respondent: Yes, with the SOP of the pharmacy area, at …, it becomes a little bit challenging …, why am I saying that because is not something that you do every day. Yes. So with me, if I'm

doing PMTCT, is what I do every day, I don't even need a book there, because I know how should I go now, you understand, but with the pharmacy SOP's, you need to really go back and look oh I was supposed to do 1,2,3 and then you understand. So it becomes a little bit of a challenge yes, so that is why it needs somebody who is well trained in that specific area and who knows what to do.

Facilitator: Okay I hear what you're saying, that it needs a pharmacy. And then what would Drug Supply Management mean to you?

Respondent: Drug Supply …, I think Drug Supply for me it can only mean the in and out of drugs ….

Facilitator: Okay …

Respondent: The balancing of drugs, the storage of drugs, I think …

Facilitator: Ja partly what you have mentioned, those are the responsibilities, like when you say to me the sister goes to the pharmacy room, especially on Thursdays, because my question would be, what are the responsibilities of a professional nurse in the medicine room. Yes …, actually another question reads that, is coming but you have already started. So in simple terms, to me Drug Supply Management would be how to manage the medicine as a whole …

Respondent: Yes, at pharmacy …

Facilitator: In the pharmacy, neh?

Respondent: Yes.

Facilitator: So other responsibilities you have mentioned physical count, you have mentioned ordering, what other responsibilities are there in the medicine room that need to be performed?

Respondent: Is all about checking …, do they balance, you check, you also check that the ones that are expiring, how far are they expiring, and what must be done after they've reached that expiry date.

Facilitator: Have you got drugs that expire?

Respondent: No …

Facilitator: You don't have …

Respondent: With pharmacy no.

Facilitator: Okay, that's good because that affects the clinic budget, remember they tick the budget from the clinic to pay for the drugs …

Respondent: No that one we don't experience.

Facilitator: Yes, what else is done?

Respondent: Management of cold chain, checking temperature …?

Facilitator: Yes, that's important. Now that you have mentioned the backing up system, because cold chain needs to be maintained, yes, what else are you thinking of?

Respondent: Direct person to handle the keys ….

Facilitator: Yes, control. Who is the direct person here, or the sister or the EPWP?

Respondent: We had given the task to the EPWP but she works with the sister, most of the time you find the sister is busy and can't be controlling the key. So we have given the task to the EPWP …, supervised by the sister.

Facilitator: Okay. Remember you have ordered …

Respondent: Oh receiving of stock. Yes, receiving of stock, the sister is there to receive and count. The EPWP receives stocks and then the sister is there to count and pack.

Facilitator: But do they manage to receive the stock within 72 hours?

Respondent: I cannot give you a direct answer on that one, what I know is that when we've ordered Thursday, this Thursday, let me just make an example …, if we order this Thursday then the next Thursday the stock is coming. So we order two weeks in a month, every two weeks, that's how we order. So if we order this Thursday, then the following Thursday we are receiving. That's how …

Facilitator: You know why I'm asking that question, because now I'm going deeper to gather more challenges. Remember if you have received the stock neh, they say report the discrepancies within 72 hours, 24 to 72 hours. If 72 hours elapses, the supplier can deny and say …

Respondent: I gave you …

Facilitator: You see, because you know as I was busy …, other people are telling me that the supplier you know provides them or delivers short dated medication that is about the expire, you have mentioned also that neh, and then if you have not checked within 72 hours, usually they don't want to take it back, because that is what they call discrepancy, because if this drug expires immediately, they are going to affect the budget which becomes a problem.

Respondent: Yes.

Facilitator: What comes into your mind again? The responsibilities? And you have mentioned it partly …, when you said you go into the storeroom, you take the treatment, but you record on the two quire book and then the EPWP will take the two quire book and go and record on the (inaudible) stock card.

Respondent: Yes …

Facilitator: Which is an important thing because remember with our profession they say if something is not documented, is not done, because the challenge would be …, how do you account for that stock …, can you see that

Respondent: Yes …

Facilitator: They might even assume maybe there's pilferage, somebody is stealing the stock …

Respondent: Stealing the medication ….

Facilitator: You see, yes. Okay you know the challenges you know, because that is my title, they keep on you know coming out …, *ukuthi,* okay if you think of any other challenge, please mention that to me, neh? But I would go to interventions. Like all the challenges that you have mentioned, what interventions can be proposed to support the implementation of an SOP?

Respondent: Eish, is human resources, we need human resources more than anything else here.

Facilitator: What do you mean by human resources?

Respondent: Maybe if they can employ somebody who will directly deal with pharmacy and who is fully qualified for it …

Facilitator: Okay …

Respondent: Somebody who knows the ins and outs of pharmacy more than any …

Facilitator: Okay …

Respondent: Yes, if maybe they can employ somebody like that, it would be easier for us to carry on with other duties, again that would be much easier, because if you check …, let's say if you compare, because when I started working here, I was lucky enough to get clinics that do have pharmacy assistants. You know it was very easy in those clinics, everything would be running very smooth and be like they work so nice here. And when now being employed in a clinic where there's no pharmacy assistant, then now you start oh there's a challenge …

Facilitator: Feeling the pinch …

Respondent: Now you feel like that side (inaudible) everything was smoothly running but here there are some stumbling blocks there and there. For me, I, yes that's the experience that I got because since …, I once worked in Wanneburg, Wannenburg does have a pharmacy assistant. So things they were just running smoothly.

Facilitator: You were concentrating on your work?

Respondent: Yes, on your 100% patient care …, so there was nothing that is going to distract you, from the pharmacy I didn't do 1,2,3 now I have to leave and rush there you know.

Facilitator: Okay, so meaning that sisters here have got a dual responsibility, patient care and pharmacy work neh, which makes the workload to be very expensive?

Respondent: Yes …

Facilitator: And do you know the sad part of it, not even well trained, not even trained on Drug Supply Management, as you say the SOP was just introduced …, then you had …, you've got to find it you know, that how does it work. Okay that was the first one intervention, staffing if I understood you well that …, let's employ the pharmacy assistant or the pharmacist, so that we can concentrate on our work.

Respondent: Yes …

Facilitator: Iyooh, but there's a world of COVID that we are living in now, and right now we didn't even get increment …

Respondent: Yes is true, is true, is the reality that we seeing outside …, but it becomes very challenging for the current people who are running those services …, it becomes a challenge honestly because now, yes you can say we shouldn't put one person to be in the pharmacy full time, let maybe, people would say let every sister rotate so that everyone has a clue what is happening there. With us it becomes very very tough because we only have five sisters in a clinic.

Facilitator: So is not easy to rotate in the pharmacy …

Respondent: Is not even easy to rotate in the pharmacy because already each sister had his/her own stream …, so is not like there's a sister maybe that I can say oh this one doesn't have any extra duties aside, no …, you find that the sisters doing API is also doing what is this programme, YF …, the youth programme and you find that she's also doing infection control. So it becomes overwhelming. So now you can't say okay now rotate pharmacy …, you understand that is why most of the time we would like to stick to one person, just handle that …, maybe one day when they give us staff, now we can start rotating and doing 1,2,3 …

Facilitator: So rotation is not easy in the pharmacy ...?

Respondent: Is not easy …

Facilitator: Okay, so you need to employ the pharmacist, rotation is not easy … What else can be done …, is a qualitative study, we need to draw. What else that you're thinking of?

Respondent: I'm not sure concerning the shortage as I've been speaking, if maybe they can …, if we can't get any pharmacy assistant or …, maybe if we can …, if they can add someone to assist the one who is currently there …

Facilitator: Do you mean the professional nurse, the EPWP?

Respondent: Even if maybe we can get the …, another EPWP, it will be less work for her, you see maybe things they can balance more productively because if the sister is there, with the EPWP, she ends up spending the whole day there do you understand. So if maybe she can get somebody who can assist, who can close this professional gap. Then the professional sister will just come, just to oversee, yes, not to do everything. I think that might help if we talking of …, if our government does not have money …

Facilitator: Ja that's where I was actually going to because (inaudible) …

Respondent: Every (inaudible) of that, I thought maybe if they can put two EPWP's then I think there will be more productivity there because now the sister would be just coming to oversee …

Facilitator: Okay. No I'm happy for that. Any other mechanisms of improvement, besides all the challenges? Because we are professional nurses, patients are here, we need the drugs?

Respondent: I'm not sure whether is it allowed but just my suggestion also would be that since other clinics they do have pharmacy assistants, doesn't it that all clinics does not have. So why is it not possible that these people can rotate or can rotate …

Facilitator: Of the pharmacist assistant …

Respondent: In these clinics, let's say the one who is working at KNC maybe this month she works in Motsamai, next month she works in another clinic, next month she works in another clinic. I think that will also assist with the running of pharmacy. I think that one will even be more …

Facilitator: Okay …

Respondent: rotating because EPWP, because the EPWP will be there full time and then if she comes monthly or weekly, to just oversee things that things are running smoothly and then she goes to another clinic and then that other week she is in another clinic. I think that will also work, since we talking of …

Facilitator: There's no (inaudible). Okay. No I'm happy Khosi about all the information, thank you, you have spoken your mind, I'm happy for that. Is there anything that you thinking of?

Respondent: No …

Facilitator: You think you have exhausted all the challenges?

Respondent: Yes, I think so …

Facilitator: And the recommendations that can be done?

Respondent: Yes, is not easy to just recommend.

Facilitator: No you try, maybe that recommendation can be implemented somewhere. I mean looking at the pharmacist, rotating the clinics, is a recommendation, the necessary recommendation which can work better if you look at it. There are pharmacist assistants, either they will rotate weekly as you have mentioned or monthly and there's an EPWP that side.

Respondent: Yes …

Facilitator: It can sort of improve the situation, don't doubt it …

Respondent: Yes …

Facilitator: And yes is a loud cry, everybody needs a pharmacist, or pharmacist assistant because they understand the SOP better than professional nurses, and it becomes worse if you were never trained, on Drug Supply Management.

Respondent: Yes, it becomes even worse, worse, worse

Facilitator: Because when you talk about training on dispensing, dispensing is that part, which is a component of Drug Supply Management you see. So we've got seven components, the order is a component. How is the space of your pharmacy room, the size?

Respondent: With the space, I think our size, I think our pharmacy is very small compared to other pharmacies that I've seen. I think this one is very small because at some point, medication tends to stay in boxes …, so you find that now we can't have a space to accommodate one …

Facilitator: To unpack …

Respondent: So you only, you just have to put them in that box, they will stay in the box. But in other clinics they don't have such …, as challenges, everything is in the shelves.

Facilitator: Okay that's why I actually you about receiving that, do the sisters manage to receive the stock within 72 hours, because when you receive the stock, remember you must arrange it, so meaning that organisation and arrangement of the medication is a problem because of the space, that is not large enough to accommodate all the drugs. Is another challenge can you see that?

Respondent: Ja …

Facilitator: And I was already closing …, can you see. So from that, large space of the pharmacy room, at least you should be able to organise your stuff, per accordingly. Remember somewhere we were trying to mention FIFO, FEFO method, so those are the principles that need to be implemented, looking at the short dated medications and looking at the medications without expiry date, so that at the end of the day we don't have the expired stock in our pharmacy room, and record keeping, plays a bigger role …

Respondent: Yes, it plays a bigger role.

Facilitator: Because we have to account …, if there's nothing documented how do you account?

Respondent: Ja everything needs to be recorded because if there's nothing written and the stock will not balance …

Facilitator: Yes, is true. I don't know if there's any other thing that I'm missing out, we've mentioned the cold chain, the generators, the challenges yes …, and then you said everything in the stock room is kept under lock and key and the keys are kept by the EPWP, you have you know delegated that task to him/her because she is always that side …

Respondent: Yes.

Facilitator: Okay, I don’t know if I’m missing out anything?

Respondent: No …

Facilitator: Anything coming to your mind?

Respondent: No I think you have outlined everything.

Facilitator: Okay Khosi, thank you so much for everything neh.

Respondent: Okay.

END

ANNEXURE H: Transcriber certificate

TRANSCRIBER'S CERTIFICATE

I Mamahloko Mary-Anne Makgoka, ID Number: 621125 1145 089 hereby declare under oath that I, have fully and to the best of my ability, in as far as it is audible, transcribed the recordings of the Drug Supply Management research project which were recorded by Ms Eleanor Dube.

The sound quality was generally VERY good some, in isolated incidents the respondent and/or facilitator was faint.

PLEASE NOTE:

1. The sound quality was VERY good, very few instances where the sound quality was distorted.

2. Names not spelt for the record are transcribed phonetically.

TRANSCRIBER

ANNEXURE I: Co-coding certificate and confidentiality agreement

RESEARCH DATA ANALYSIS REPORT

FOR: ELEANOR MFLATHELWA DUBE

STUDENT NUMBER: 6431968

DATE: 2 June 2021

STUDY:

PROFESSIONAL NURSES' CHALLENGES REGARDING THE IMPLEMENTATION OF THE SOP OF DRSM IN A PHC SETTING OF THE CITY OF EKURHULENI

INDEPENDENT CODER: Annatjie van der Wath

Method: Data were analysed using open coding steps of qualitative data analysis.

Qualitative data analysis is defined as an active iterative process where the researcher deliberately looks at the data and in depth to become familiar with it. Qualitative content analysis method refers to the systematic manner to convert a substantial amount of interview information into an orderly and brief summary of the key results (Erlingsson & Brysiewicz, 2017: 94). Content analysis is a reflective process whereby the raw data are transcribed and analysed to form categories or themes. The verbatim transcripts were repeatable read, divided into meaning units, further condensed, formulated into codes that are transformed into categories and themes (Erlingsson & Brysiewicz, 2017: 95). The researcher was highly involved and engaged with data through listening to audio tapes and reading the transcribed data to internalise the content in order to generate codes, categories and themes.

Saturation of data was achieved related to the major themes – The researcher conducted 10 interviews

Dr Annatjie van der Wath (M Cur, Ph D)

Qualitative Data Analysis

This serves to confirm that Annatjie van der Wath has co-coded the following qualitative data: 10 interviews for the study:

PROFESSIONAL NURSES' CHALLENGES REGARDING THE IMPLEMENTATION OF THE SOP OF DRSM IN A PHC SETTING OF THE CITY OF EKURHULENI

I declare that the candidate and I have reached consensus on the major themes and sub/ categories as reflected in the findings during a consensus discussion.

Annatjie van der Wath (M Cur, Ph D)

ANNEXURE

CONFIDENTIALITY AGREEMENT FOR ELEANOR MFLATHELWA DUBE

STUDENT NUMBER: 6431968

DATE: 2 June 2021

STUDY: PROFESSIONAL NURSES' CHALLENGES REGARDING THE IMPLEMENTATION OF THE SOP OF DRSM IN A PHC SETTING OF THE CITY OF EKURHULENI

I understand that all material I am asked to analyse is confidential.
I understand that the contents can only be discussed with the researcher.
I will not keep any copies of the information nor allow third parties to access them.
I will delete all relevant files from my computer after the student has graduated

Signature: A Eadwath
Name: Annatjie van der Wath
Date: 2 June 2021

Researcher's signature: E M Dube
Researcher's name: Eleanor
Date: 03 June 2021

ANNEXURE J: Language editing certificate

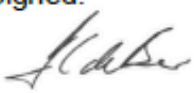
TO WHOM IT MAY CONCERN

7 June 2021

This is to certify that I, Ilze Holtzhausen de Beer, language edited the dissertation "Professional nurses' challenges regarding drug supply management in the primary health care clinics" by Eleanor Mflathelwa Dube submitted in accordance with the requirements for the degree Master of Arts in Nursing Science at the University of South Africa.

The onus is, however, on the student to make the suggested changes, attend to the references and queries. Please note that I do not accept responsibility for content errors or plagiarism.

Signed:

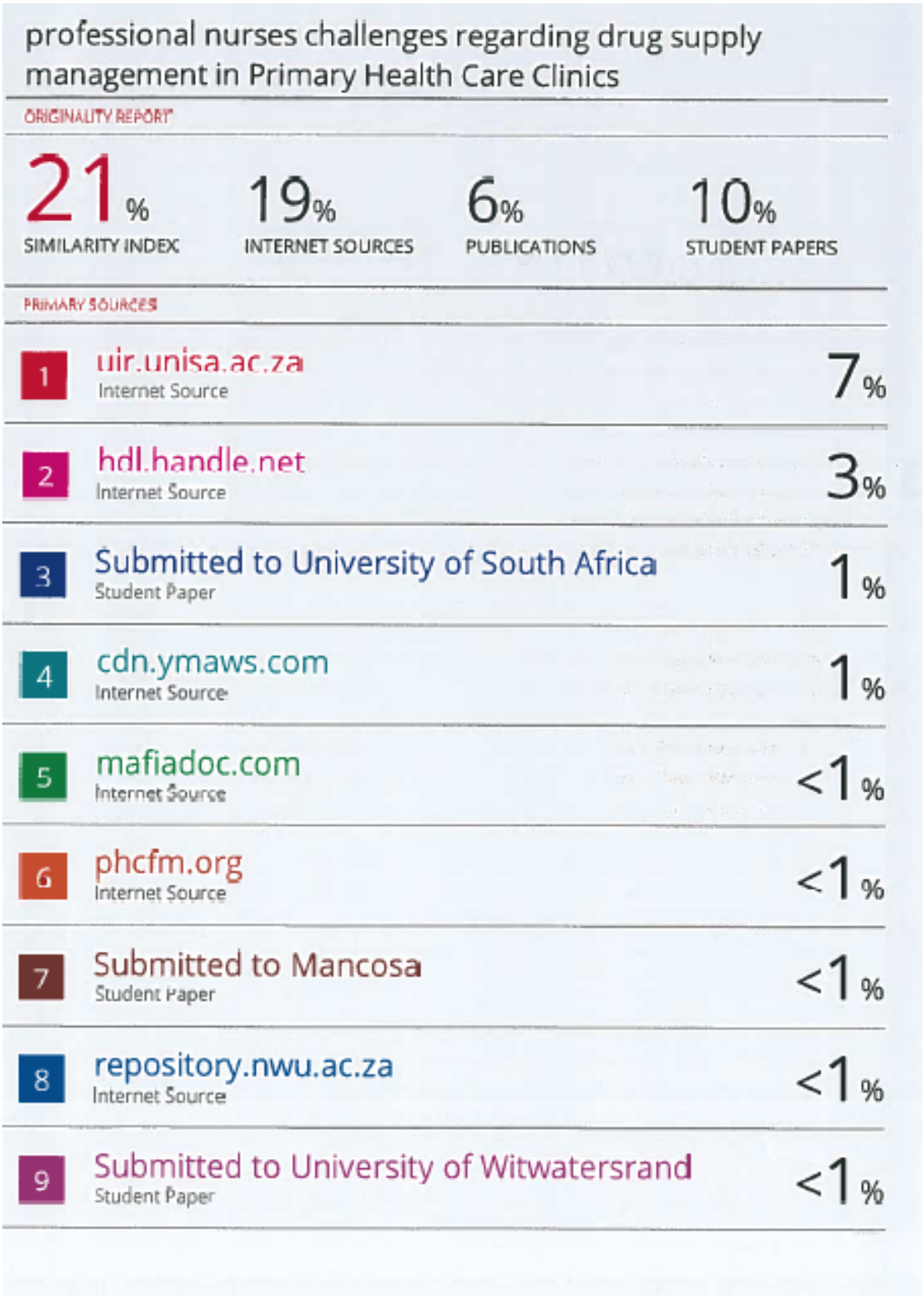


IC Holtzhausen de Beer
dbeeric@gmail.com

Rina Coetzer (piet.rinacoetzer@outlook.com) is signed in

Member of Professional Editors' Group (PEG)

ANNEXURE K: Originality turnitin report



professional nurses challenges regarding drug supply management in Primary Health Care Clinics

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