

Perception of healthcare professionals regarding the shortage of medication at the selected hospital in the Vhembe district of Limpopo province

By

Ratshihule Thivhavhudzi Freeman

Submitted in fulfilment of the requirements

For the degree

Masters in Nursing

School of Health Sciences

At the

University of Venda

SUPERVISOR: DR A.R. TSHILOLO

CO-SUPERVISOR: DR N.S. RALIPHASWA

JANUARY 2022

DECLARATION

I, Ratshihule Thivhavhudzi Freeman, hereby declare that the title ***“Perception of healthcare professionals regarding the shortage of medication at the selected hospitals in Vhembe district of Limpopo province”*** that is submitted by me has not been submitted previously for a degree at this or any other university, that it is my work in design and execution, and that all reference material contained therein are acknowledged

Signature: 

Date: 2022\01\21

DEDICATION

This study is dedicated with love to the following people:

My late father Marubini Ronald Ratshihule

My late mother Ntavheleni Francinah Ratshihule for support may your soul rest in peace

My siblings and all my children for support and words of encouragement

ACKNOWLEDGEMENT

Above all, I thank God for life.

And I will also express my sincere gratitude to the following people:

- My supervisor Dr. Tshililo A.R and Dr. Raliphaswa N.S for guidance, encouragement, and support. Many thanks for believing that I can make it”.
- My mother, siblings, and my children for support
- Ndou S for support and encouragement
- Colleague at work for support and words of encouragement
- Special thank you to Mrs. Raulisa M. for giving me courage and support during my study.

ABSTRACT

Drug shortage is a global issue and is growing progressively. Drug shortage has become a big concern issue worldwide for healthcare providers.

Purpose

The purpose of the study was to explore and describe the perception of healthcare professionals regarding the shortage of medications at a selected hospital in the Vhembe district of Limpopo province.

Research approach and design

The researcher used a qualitative, descriptive, explorative and contextual research design. The population of this study was professional nurses, doctors, and pharmacists. The participants were selected through non-probability, purposive sampling and the sample size was determined by data saturation.

Data collection methods

An unstructured interview was used as a method of data collection and the central question directed it. The researcher did a pre-test study at a selected hospital to test the applicability of the research. Data were analysed using Tesch's method. The researcher considered measures to ensure trustworthiness.

Main findings

The findings of this study reflect other studies that were conducted worldwide, and it demonstrates that patients are affected when there is a shortage of medications.

Keywords: Healthcare, Medication, Perception, Professionals, Shortage

LIST OF ACRONYMS AND ABBREVIATIONS

ARV	=	Anti-Retro Viral
ATP	=	Active Pharmaceutical Ingredients
IMS	=	Intercontinental Marketing Service
NDoH	=	National Department of Health
SAEM	=	South African Excellence Model
TTO	=	Treatment Taken Out
USA	=	United State America
WHO	=	World Health Organization

TABLE OF CONTENT

DECLARATION.....	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
LIST OF ACRONYMS AND ABBREVIATIONS	v
TABLE OF CONTENT	vi
LIST OF FIGURES	viii
LIST OF TABLES	ix
CHAPTER 1	1
INTRODUCTION AND BACKGROUND	1
1.2 INTRODUCTION	1
1.2 BACKGROUND	2
1.2.1 Theoretical-based literature	3
1.3 Problem statement	4
1.4 Rationale of study	4
1.5 Significance of study.....	5
1.6 Purpose of study	5
1.7 Objective of study	5
1.8 Definition of term/concept	5
1.9 Summary	6
CHAPTER 2	7
LITERATURE REVIEW	7
2.1 INTRODUCTION	7
2.2 Shortage of medications	7
2.3 Effects of medication stock-out and shortage	7
2.4 Perception of healthcare professionals regarding the shortage of medications	8
2.5 Healthcare system of South Africa	9
2.5.1 The public sector	9

2.5.2 Private sector	9
2.6 Regulations	10
2.7 Summery	11
CHAPTER 3	12
RESEARCH METHODOLOGY.....	12
3.1 INTRODUCTION	12
3.2 Study design.....	12
3.3 Study setting	14
3.4 Study population and sampling.....	15
3.4.1 Population	15
3.4.2 Sampling.....	15
3.5 Data collection	17
3.5.1 Preparation for data collection.....	17
3.5.2 Pre-test	17
3.5.3 Data management and analysis	18
3.6 MEASURES TO ENSURE TRUSTWORTHINESS	18
3.6.1 Credibility/true value.....	18
3.6.2 Dependability/consistency.....	20
3.6.3 Conformability	20
3.6.4 Transferability	21
3.7 ETHICAL CONSIDERATION	21
3.7.1 Permission to conduct the study.....	21
3.7.2 Informed consent	22
3.7.3 Right of self-determination	22
3.7.4 Anonymity and confidentiality	22
3.7.5 The right to privacy.....	23
3.7.6 Avoidance of harm	23
3.7.7 Right to fair treatment.....	23
3.8 Scope of study.....	23

3.9 Summary	23
CHAPTER 4	25
RESULTS AND INTERPRETATION OF RESEARCH FINDING.....	25
4.1 INTRODUCTION	25
4.2 Characteristics of the participants	25
4.3 Presentation of study findings.....	25
4.4 Summary	36
CHAPTER 5	37
CONCLUSION, LIMITATIONS AND RECOMMENDATIONS	37
5.1 INTRODUCTION	37
5.2 Summary of research findings	37
5.2.1 Difficult experience the in the provision of patient care.....	37
5.2.2 Impact of shortage of medications.....	38
5.2.3 Factors associated with a shortage of medications	39
5.2.4 Poor motivation for study.....	39
5.3 Conclusion of study	39
5.4 Limitation of study.....	40
5.5 Recommendations.....	40
5.5.1 Recommendation to the department of health.....	40
5.5.2 Recommendation for the community	40
5.5.3 Recommendation for further research	40
5.6 Summary	41
References.....	42
ANNEXURE A: Central question of the research.....	45
ANNEXURE B: Ethical clearance from University of Venda, Ethics committee.....	46
ANNEXURE C: Letter of request to Limpopo Department of Health	47
ANNEXURE D: Permission letter from Limpopo Department of Health.....	48
ANNEXURE E: Letter of request to Vhembe district municipality.....	49
ANNEXURE F: Permission letter from Vhembe district municipality	50

ANNEXURE G: Letter request to Tshilidzini regional hospital.....	51
ANNEXURE H: Permission letter from Tshilidzini hospital	52
ANNEXURE I: Consent form	53

List of Figures

Figure 1.1 Limpopo province map	15
---------------------------------------	----

List of tables

Table 4.1 Demographic information of participants	26
Table 4.2 Theme 1 and sub-themes.....	27

CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

The mission and goal of the South Africa National Department of Health (NDoH) are to deliver a healthcare system that is consistent through improved access, quality, efficiency, equality, and sustainable healthcare (Ndzamela, 2020). According to Muller (2013), the financial ability of the country, development, industrialization, economic growth and economic prosperity, dependency on international aid, national and international trends, and the crisis have an effect on the healthcare system and the quality of the healthcare system management. Medications are one of the recourses in healthcare that can be affected by economic forces (Muller, 2013).

Healthcare policies and programs in South Africa emphasize quality care, including the South Africa Excellence Model (SAEM) which determines performance excellence in a healthcare organization. The model measures resource customer and employee satisfaction (Muller, 2013).

The availability of medications depends on the procurement of drugs, and the study conducted by Modisakeng (2020) indicated that medications procurement in South Africa's public healthcare sectors is done using opened centralized tender system. The South African National Department of Health (NDoH) will have a contract with pharmaceutical supplier companies on behalf of the provinces.

Modisakeng (2020), indicates that, once the supplier is awarded a tender by the National Department of Health, the provincial depot will then perform quantification and procurement of medications, and pharmaceuticals on behalf of the facilities that are within such a Province. The depots also have the responsibility for the warehousing and for the distribution of medications to the facilities that are within the Province (Modisakeng, 2020).

The shortage of medications is a global challenge that affects all countries. The occurrences of medications shortage and unavailability indicate that there are shortfalls in the effort to ensure accessibility of medications. Medications shortages also have a negative impact on patient health outcomes. When medications are unavailable patient therapy is delayed and this can result in patients defaulting on medications, and can lead to the loss of control of patient disease or circumstances, in terms of complications of those patients' conditions or even death (Ndzamela, 2020).

1.2 BACKGROUND

According to Soumerai and Chabner (2019), a shortage of medications threatens healthcare. The frequency of medication shortages has risen dramatically since 2005 and has now influenced healthcare in broad areas (Soumerai & Chabner, 2019). According to Soumerai and Chabner (2019), globally, about 400 generic drugs are affected, and this has forced the institutions to purchase brand-name products that are costly. This has the potential to result in outcomes that are negative for the patient and the healthcare organization's ability to respond to patients' needs (Soumerai & Chabner, 2019).

According to Phuong (2019), medication shortage was defined by the University of Utah information service as an issue with supply that affects how the pharmacies prepare and dispense a product, and this can have influences on patient care when the prescriber must choose alternative therapy because of the supply issues. The US Food and Drug Administration defined a shortage of medications as a period when the medication's demand or projected demand exceeds the supply (Phuong, 2019).

In America, drug shortage is not a new problem in hospital medicine; it seems there is some burden. Shortage of medicine affects patients and specialists acutely. Health professionals are working tirelessly to develop solutions related to the shortage of drugs. The problem of a drug shortage is long-standing, with the frequency of occurrence increasing and the negative impact they have on patients and the quality of patients is undeniable (Soumerai & Chabner, 2019).

In Australia, health expert says a growing shortage of drugs in Australia affects patients. Late in 2019, drugs administration in Australia released a report of concern related to drug shortage showing that nearly 200 medicines were in short supply three times more than before (Modisakeng, 2020).

The medications shortage is raising concern in South Africa; medications have negatively impacted healthcare professionals, doctors, nurses, and pharmacists. According to Nd zamela (2020), patients end up being violent to healthcare professionals because they are not receiving medications. This adds a burden on healthcare professionals. It affects medicine manufacturers and suppliers negatively and it causes negative emotions such as frustration, anger, anxiety, and mistrust in employees (Nd zamela, 2020).

A study conducted by Ogbodu and Mabunda (2019), indicates that medications in the Vhembe district of the Limpopo province, South Africa, are not always available. The study indicates

that there is no stock of medications in clinics and healthcare centres and that the medications needed for the population cannot be met.

1.2.1 Theoretical framework

According to Burns & Grove (2019), a theoretical framework is a foundation from which all knowledge is constructed for a research study. The theoretical framework introduces and describes the theory that explains the research. According to Brink (2016), the theoretical framework helps the researcher to organize the research, providing a context in which the research problem will be examined by the researcher, gathering of data, and data analysis. A Donabedian healthcare quality model was adopted in this research study. Three components are used to measure and evaluate the quality of care: structure, process, and outcomes approach (Ameh, 2017).

Process measures reflect the way workers deliver the desired outcome of healthcare, for example, waiting for the period for patent review, and delays in patient care.

Structure measures reflect the attributes of the service provider such as the availability of enough staff for service delivery.

Outcomes measure reflects the results of the service provided to the patient such as patient experiences during care, for example, reduced patient mortality or harm and reduced hospital-acquired infections.

Research paradigm

According to Brink (2016), a research paradigm is a method of structuring reality or how you look at natural phenomena. A research paradigm is a set of assumptions about the basic kind of entities around the world and about how these entities interact. It is about the proper methods to use when constructing and testing theories on these entities. A qualitative research approach is a naturalistic process of research because a research study is done in a natural setting and not an artificial environment (Babbie, 2011). In this research study, the participants' attitudes and behaviour toward the phenomenon under study were done in their natural environment where they work and experience shortages of medications.

1.3 Problem statement

According to Polit and Beck (2018), a problem statement expresses the dilemma that needs investigation and provides a rationale for a new inquiry. As a professional nurse working at one of the hospitals in the Vhembe district, the researcher observed a problem of shortage of medications.

When the doctor prescribes medications for the patients admitted to the hospital wards, they get the prescribed medications from the ward stock. If the medications are not available in a ward stock, the nurses collect such prescribed medication from the pharmacy or dispensary within the hospital. Discharged patients or out-patients collect medications from the dispensary. Currently, doctors prescribe medications for in-patients and out-patients, but some of the prescribed medications are not available in hospital pharmacies. The researcher observed this challenge while working as a professional nurse in one of the Vhembe district provincial hospitals. In that situation, doctors are forced to prescribe alternative medications that may not be as effective as the former prescribed medication. This negatively impacts patient care as it could lead to delays in patient recovery and prolonged patient stays in the hospital wards.

In some cases, the outpatient is given other dates to collect medications that they did not receive on discharge. This also hurts healthcare professionals as it increases their workload. Some patients even lose their lives. A study by Mojela (2019) indicates that discharged patients are often advised to buy their medications because the provincial department of health has no medications in stock. This puts healthcare professionals in a dilemma because they must explain why the patient must buy the medication when medications are supposed to be free. It also reflects the severity of the problem because it will have a serious effect on a patient with financial difficulties who cannot manage to buy the medication. Patients with financial problems who cannot afford to buy their own medications then experience complications and mortality. It is in this light that the researcher conducted a study on perceptions of healthcare professionals regarding shortages of medications at the selected hospital in the Vhembe district of the Limpopo province, South Africa.

1.4 Rationale of the study

Research about the shortage of medication has been conducted globally. However, there is still a gap between developed and developing countries on information about the shortage of medication due to a lack of recourse. There is limited literature on perceptions of healthcare professionals regarding shortages of medications at the selected hospital in the Vhembe district of the Limpopo province. Researchers have observed the need to conduct the research study to have more information available.

1.5 Significance of the study

The significance of a research study is associated with the importance of the research and its contribution to the body of knowledge (Burns & Grove, 2019). The findings of this study can increase the body of knowledge in health practice, and policies can be improved (Brink, 2016).

The research study may benefit the development of further research on the shortage of medication. Nurses, doctors, pharmacists, patients, and hospital management will benefit from getting knowledge about the lack of medication.

1.5 Purpose of the study

The purpose of the study was to explore and describe the perceptions of healthcare professionals regarding shortages of medications at the selected hospital in the Vhembe district of Limpopo.

1.7 Objectives of the study

The objectives of this study were to:

- To explore and describe the perceptions of healthcare professionals regarding the shortage of medications in the selected hospital in the Vhembe district of the Limpopo province.
- To describe the impact of perceptions of healthcare professionals regarding the shortage of medications in the selected hospital in the Vhembe district of the Limpopo province.

1.8 Research question

Research questions are in some cases, direct rewording of a statement purpose, phrased interrogatively rather than declaration (Polit & Beck 2018).

The research questions of this study were:

- What are the perceptions of healthcare professionals regarding the shortage of medications?
- How do shortages of medications impact healthcare professionals?

1.9 Definition of terms

Healthcare: Is the management, prevention, and treatment of illness, mental and physical well-being by trained professionals (Freshwater, 2012). Healthcare in this study refers to the care given to the patient.

Healthcare Professionals: Is defined by Freshwater (2012), as individuals that are trained professionally, that make efforts to maintain or restore physical, mental or emotional well-being in patients. In this study, healthcare professionals are nurses, doctors, and pharmacists.

Medications: Are substances having a known biological effect on humans (Freshwater, 2012).

Perceptions: Are conscious receptions of the impressions that can be through senses, to distinguish objects from one another, and to differentiate and recognise their qualities (Freshwater, 2012). Perceptions in this study refer to how the healthcare professional view and understand shortages of medications and the provision of quality care.

Professionals: Are defined by Freshwater (2012), as people having a profession as a permanent career. In this study, it refers to qualified employees of a certain profession such as doctors, nurses, and pharmacists.

1.9 Summary

This chapter introduced the study. It explained the background of the research problem, research objectives and definitions of main concepts of this study. It also indicated the problem statement, research purpose and research objectives. The next chapter will be on research literature review.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Brink (2016), defines a literature review as an organized and written presentation of what has been already published about the topic by other scholars. The purpose of a literature review is to convey what is currently known about the topic of interest.

2.2 Shortages of medication

The World Health Organization (2016) has reported that medications unavailability may be due to disruption that can occur at any stage of the medications' chain of supply. The medications supply chain includes stakeholders, such as the supplier of raw materials, regulators, drugs manufacturers, wholesalers, distributors, prime vendors, and healthcare system end-users (Ventola, 2020).

According to Phuong (2019), some of the disruptions that can occur in the medication chain of supply are not usually reported, such as 54% of medications shortages in 2011 that did not have any identifiable causes, as reported by the University of Utah information Service in the USA.

Medications shortages can be related to financial issues. European countries have reported due to a lack of pharmacy staff due to lack of training of responsible individuals as a contributing factor (Soumerai & Chabner, 2019). According to Soumerai and Chabner (2019), the theft of some medications by facility staff members, and a long process of medications ordering are other factors. Although these factors do vary across the different countries, they contribute to the shortage of medications.

2.3 Effects of medications shortages and stock-outs

Soumerai and Chabner (2019), report that medications shortages and stock-outs negatively affect the process of patient care. Shortages of medications can have the potential of affecting the choice of treatment, causing a delay in treatment therapy that may lead to medications resistance, errors in medications, and patient outcomes.

According to Ndzamela (2020), the unavailability of medicine is very frustrating to healthcare professionals, causing conflicts between professionals such as doctors, nurses, pharmacists, manufacturers, and medications suppliers.

2.4 Perceptions of healthcare professionals regarding the shortage of medications

Shortages of medication have a serious, profound, and widely spread negative impact on healthcare quality such as:

- **Increased labour**

Shortage of medications can be managed effectively if healthcare personnel can identify alternative products that are available or even an equivalent therapeutic agent, however, it will also need an additional workforce to make an operational adjustment that can be needed to accommodate such product changes (Ndzamela, 2020). Ndzamela (2020) adds that an additional burden is placed on the healthcare system that is already strained when medications are unavailable.

- **Medication Errors**

Medications errors can occur more frequently when there is a shortage of medications, because doctors are bound to alter prescriptions to other medications that they might not be familiar with. In cases where the doctors and nurses are responding to an emergency, precious time may be lost when they are working with unfamiliar medications, or when recalculating the dosage of medications and this may also increase the chances of overdosing the patient (Ventola, 2020).

- **Shortages Strain Professional Relationships**

A study by Ndzamela (2020) indicates that frustrations in everyone involved in healthcare such as doctors, nurses, pharmacists purchasing agents, and patients can be caused by medications unavailability and stock-outs. This indicates that medications shortages can compromise the relationships between colleagues when the frustrations related to the shortage of medications are misdirected (Ndzamela, 2020).

- **Work-related stress**

Ventola (2011) indicates that an individual's competency, organizational performance, and productivity can be affected by medications shortages. Stress was reported to be one of the contributing factors. Unavailability of medications may further stress healthcare professionals who are already burdened and frustrated by this problem, of unavailability of medications that empowers them or prevents them from efficiently performing their functions (Ventola, 2011).

2.5 Health care system of South Africa

South Africa has an estimated population of 54 956 900, the South African Healthcare system comprises both the public sector that is run by the government and the private sector that is run privately (Gray, 2014).

2.5.1 The public sector

According to Gray (2014), the South African government runs and manages the public sector. It is divided into primary, secondary, and tertiary levels. Health facilities are managed by the provincial departments of health, who are the direct employers of the workforce. The public sector provides healthcare services to about 82.5 – 84% of the population (Modisakeng, 2020).

Financing of the public sector

Public health sectors in South Africa are run by the government, and healthcare services are financed by the government through general tax revenues (Gray, 2014).

- **The procurement of medicines in a public sector**

A study conducted by Modisakeng (2020), indicates that medications procurement in the South Africa public healthcare sectors are done using an open, centralized tender system. The South African National Department of Health (NDoH) will have a contract with pharmaceutical suppliers companies on behalf of the provinces.

- **The selection of medication in the public sector**

The National Essential Medicines List Committee (NEMLC) is responsible for the selection of essential medications. The Minister of Health is responsible for the appointment of the committee. Medications are selected based on evidence such as efficacy, quality and cost (Gray, 2014).

2.5.2 Private sector

The private healthcare sector provides healthcare services privately and is run by individual practitioners with private surgeries and clinics in private hospitals that are usually located in urban areas of South Africa. The private sector made up to 8.8% of South Africa gross domestic products in 2012 (Gray, 2014). Around 17.5% of the South African population use these services and access to them depend on individual ability to pay for the service (Gray, 2014).

- **Financing of the private sector**

Private sectors in South Africa are financed by Medical aid schemes and out-of-pocket payments by individuals that can manage (Gray, 2014).

- **Regulation**

The South African Health Products Authority (SAHPRA) is the regulatory authority responsible for the regulation of health products intended for human and animal use, licensing of manufacturers, wholesalers and distributors of medications, medication devices, radiation emitting devices and radioactive nuclides and the conduction of clinical trials (South Africa, 2020).

- **Summary**

In this chapter, the researcher reviewed what is already known about shortages of medications, and has revealed that shortages of medications have many effects. Perceptions of healthcare professionals include increased labour, medication Errors, work-related stress, and strained professional relationships. After data collection and analysis, the researcher will compare the findings of this study with the literature and will then draw conclusions from the study. The next chapter will be on research methodology.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The researcher in this chapter discusses the research design, population, sampling technique data collection and analysis, measures to ensure trustworthiness, and ethical consideration. According to Brink (2016), the research method includes the approach to be taken, the method of data collection and analysis, ethical consideration, time, place, sources of data, and the method of data analysis.

This study was done with the following objectives:

- To explore and describe the perceptions of healthcare professionals regarding the shortages of medications in the selected hospital in the Vhembe district of the Limpopo province.
- To describe the impact of perceptions of healthcare professionals regarding the shortages of medications in the selected hospital in the Vhembe district of the Limpopo province.

3.2 Study design

According to Polit and Beck (2018), the study design is the plan for gathering data; it is the framework of a research method and the technique that is chosen by a researcher in a research study. According to Burn and Grove (2019), the research design is a blueprint for conducting the study that maximizes the control over the factors that can interfere with the study desired outcome. This study adopted a qualitative, explorative, descriptive, and contextual approach. The researcher selected a qualitative approach to explore and describe perceptions of healthcare professionals regarding shortages of medications at the selected hospital in the Vhembe district of the Limpopo province.

- **Qualitative**

In this study a qualitative, explorative, descriptive, and contextual design was used because people are studied in their natural settings in order to discover their social world, culture and language by living with them and learning through observations and by talking to them. The researcher will be able to identify the characteristics and the significance of the human experiences as described by the participants. These will then be interpreted by the researcher at a different level of abstraction (Creswell, 2018). According to Merriam (2009), a qualitative research process entails the understanding of the meaning that is constructed by people and

how people make sense of their own world, experiences they have in their world. In this study the method was used to gather information regarding the perception of healthcare professionals regarding the shortage of medications because it allows a researcher to gather information from individuals for the investigation (Grove & Gray, 2019). These studies have achieved this through in-depth face to face interviews of nurses, doctors and pharmacists.

- **Explorative**

An exploratory design was used for understand and gaining the insight in the phenomena under study. These designs have allowed the researcher to come up with some probing questions during the interviews. The exploratory design helped to uncover relatively unknown research areas of perceptions on shortages of medication by healthcare professionals, and the effects of shortage of medications were explored during this research study.

- **Descriptive**

In descriptive design, information about the characteristic within the study field will be gained and the purpose of it in a study is to provide a picture of the situation in its natural environment. Information was obtained by the researcher from the professional nurses, doctors, and pharmacists who experienced the impact of a shortage of medications. According to Green and Thorogood (2018), a qualitative descriptive study provides a comprehensive summary of the events in a situation. In this study the perceptions, experiences, care, understandings, views, and effects of shortages of medications have been described.

- **Contextual**

A contextual design is concerned with the study of participants when they are in their natural setting, to understand the dynamics of people in full, with the aim of gaining first hand data on how the participants go about their life daily (LoBiondo & Haber, 2017). This research study was contextual because it was done at the regional hospital in the Limpopo province, to gain knowledge about shortages of medications and their effect on professional nurses, doctors, and pharmacists working at the hospital.

3.3 Study setting

Burns and Groove (2019), describe the research setting as a location where the study was conducted. The Limpopo province has six districts, of which the Vhembe district, situated in the North-Eastern side of the province, is one. The Vhembe district shares borders with Mozambique in the East, Zimbabwe in the North, and Botswana in the North -West (Republic of South Africa, 2020). According to the South Africa Cooperative governance and traditional

affairs (2020), the Vhembe district has a total population of about 1,294,722, according to the 2011 census. The Vhembe district has eight hospitals, one of which is a regional hospital. Tshilidzini regional hospital was chosen for conducting this research study. It is the referral hospital of the other seven hospitals around it, and this makes the healthcare workers have many patients. So this research study reflects the depth of the problem as it involves patients from all eight hospitals in the Vhembe district of Limpopo. The hospital has different units such as Antenatal care, Medical, Surgical and Orthopaedic, Paediatric, and Gynaecology units, and a TB ward.

According to the South Africa Cooperative governance and traditional affairs (2020), within the Vhembe District Municipality, the number of people without any schooling decreased from 167 166 in 2009 to 92 469 in 2019. The number of people with a senior certificate or diploma increased from 25 736 to 55 648 in the same period, while the number of people with a Bachelor's degree increased from 2 669 to 26 563. Overall improvement in the level of education is visible with an increase in the number of people with a senior certificate or higher education. In terms of employment, the number of formally employed people in Vhembe amounted to 202 000 in 2018, which is about 67.20% of the total employment, while the number of people employed in the informal sector amounted to 98 800 or 32.80% of the total employment. Informal employment in Vhembe increased from 62 100 in 2008 to an estimated 98 800 in 2018 (Republic of South Africa, 2020).

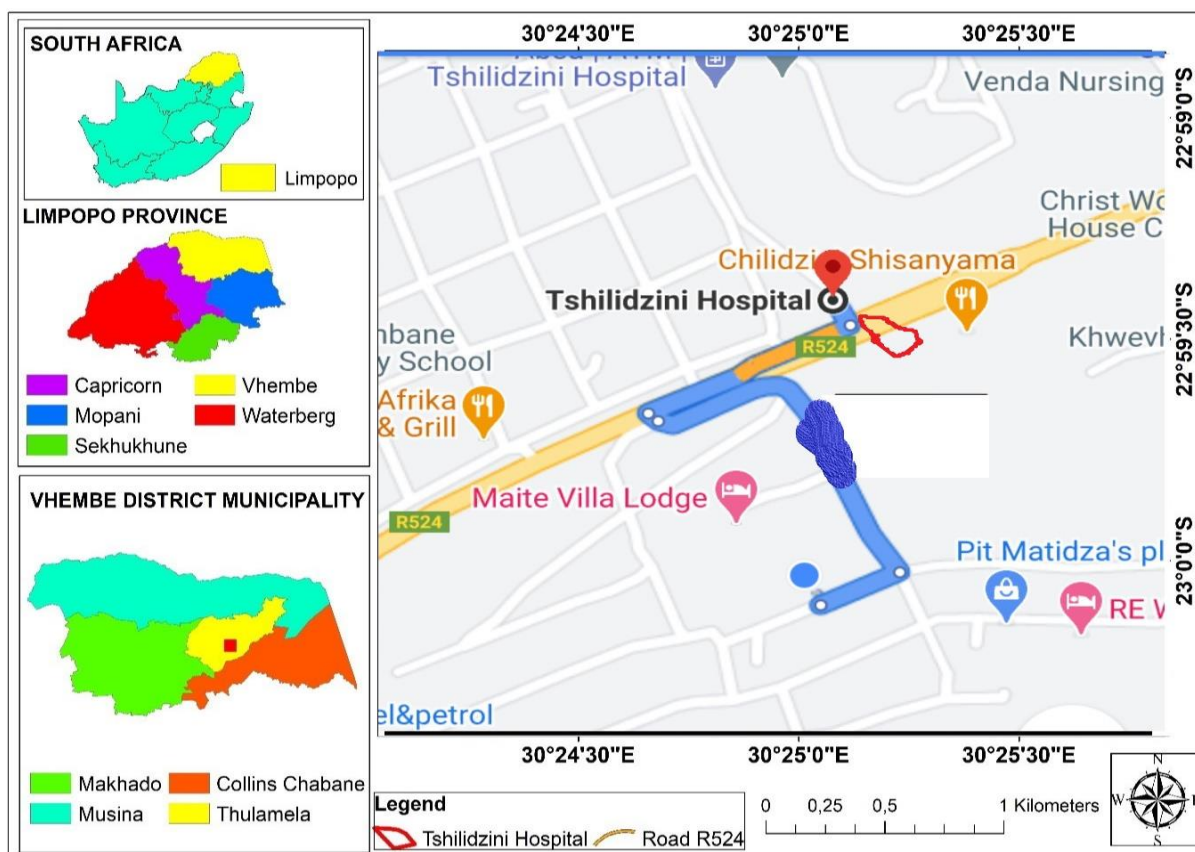


Figure 1.1: Map of Limpopo (www.googlemaps.com)

3.4 Study population and sampling

3.4.1 Population

Brink (2016) indicates that a study population is a process of selecting a portion of participants for the research study which meets certain criteria; it is the entire aggregate of cases that is in the interest of the researcher. The population of this study was all the healthcare professionals working at the regional hospital of the Vhembe district of the Limpopo province, the rationale being that they are the ones with the perceptions towards shortages of medications.

- **Target population**

According to Grove and Gray (2021), the target population is a total aggregate of cases. The target population of this study is doctors, nurses, and pharmacists that are working at the regional hospital.

3.4.2 Sampling

According to Brink (2016), sampling is the process of selecting a portion of the population in a research study. This sampling implies that not every element of the population has the opportunity of being selected (Brink, 2016). Chose the participants according to their judgment and the purpose of the research study.

- **Sampling of the hospital**

The Vhembe regional hospital was selected purposively because it is used as a referral hospital by seven hospitals within the Vhembe district of Limpopo. The hospital has patients from all the other hospitals, and healthcare workers manage many patients at the hospital. This gave the researcher an in-depth reflection of the problem as it reflected from all eight hospitals of the Vhembe district of Limpopo.

- **Sampling of participants**

In this study, the design used is a non-probability sampling, and it was chosen because doctors, professional nurses, and pharmacists are the ones with responsibility and knowledge about medications. The method used was purposive sampling so that the researcher utilizes their knowledge towards the target population and its elements by handpicking participants for inclusion in the research study. The researcher has used their own judgment when selecting the healthcare professionals to participate willingly in the study.

- **Inclusion criteria**

According to Polit and Beck (2018), inclusion criteria are the criteria in a research study that specify the population characteristics. Doctors, professional nurses, and pharmacists with three or more three years working at the Tshilidzini hospital and are who were willing to participate in the research study were chosen.

- **Sample size**

Sampling in a qualitative research study is based on needed information for a study and is the principle that guides sampling is data saturation. Sampling must occur to a point wherein no new data, no new information can be obtained, and redundancy is achieved. Five doctors, seven professional nurses, and three pharmacists were sampled in this research study, and the total number was determined by data saturation.

3.5 Data collection

According to Lobiondo and Haber (2017), data collection is the process of gathering and measuring information on targeted variables in an established systematic fashion which will

then enable to answer of relevant questions and evaluate the outcome. Unstructured interviews were used as a data collection method. These were guided by the central question, ***'May you kindly share with me your perceptions regarding shortages of medications at Tshilidzini hospital?'***. Probing questions followed for obtaining more information about the phenomenon under study.

Data was collected from all relevant participants that were willing to participate in this study. During the interview sessions, field notes were made, and an audio tape-recorder was used after the researcher was given permission.

3.5.1 Preparation for data collection

Each institution is controlled by the Board of Directors, CEO, managers, district, provincial managers, and the Department of Health. Therefore, the procedure for conducting the research was explained to the hospital board. After getting permission, the researcher approached the most convenient participants with three or more years of experience working at Tshilidzini hospital who were willing and most readily accessible. The researcher requested permission to conduct the research from the participants. The researcher requested the participant to sign a consent form (ANNEXURE E) before participating in the research. The use of a voice recording device was also being explained to the participant before the interview. To maintain privacy and confidentiality, a private room was used for the interview sessions. The participants' real names were not used when interviewing participants. Participants were interviewed for a period of at least 45 minutes.

3.5.2 Pre-test

According to De Vos (2018), a pre-test is done in order to ascertain trends to see if the relevant data can be obtained from participants by testing certain questions to investigate the feasibility of the proposed study and to detect possible flaws in the interview guide, effective communication patterns or wording and adequate time limits. A measuring instrument was compiled specifically for the study purpose. According to Moulean and Margarel (2016), a pre-test is important to identify errors. Before the actual collection of data for the study, data was collected from one doctor, one nurse, and a pharmacist at the regional hospital. The limited participants were used to test the effectiveness of the study. Mistakes were identified during the pre-test study and were corrected for research success. The reaction of the participants was observed during the pre-test to see how willing they were to participate in the research study. COVID-19 regulations measures such as the use of masks, use of sanitizer, and keeping social distance, were followed at all times.

3.5.3 Data management and analysis

Data management is a reduction in nature and involves convention data masses into smaller, manageable segments. The audiotapes and interview transcriptions were stored by the researcher in a safe place that could only be accessed by the researcher (Polit and Beck, 2018). De Vos (2018) defines data analysis as the process of bringing meaning, structure, and order to the mass of data that is collected. According to Burns and Grove (2018), data analysis is an ongoing process involving continual reflection about the data, asking analytic questions, writing memos throughout the research study, and interpreting the data.

- **Analysis phase**

The purpose of data analysis is to organize, provide structure and elicit meaning from data. Some important features are identified and described, and then themes and sub-themes are identified from the collected data (Burns & Grove, 2019). Data analysis in this study was done using the following Tesch's method (Creswell, 2003). This involves the followings steps:

- Get a sense of the whole. Read all transcriptions, perhaps jot down some ideas as they should come to mind.
- Pick one document (one interview) – the most interesting one, the shortest, the one on top of the pile. Go through it, asking yourself “what is it about?”, do not think about the substance of the information but its underlying meaning. Write thoughts in the margin.
- When you have completed these tasks for several participants, make a list of all topics. Cluster together similar topics, from these topics into columns, perhaps arrayed as major topics and leftovers.
- Abbreviate the topics as codes and write the codes next to the appropriate segments of the text. Try this preliminary organizing scheme to see if new categories and codes will emerge.
- Find the most descriptive wording for your topic and turn them into categories. Look for ways for reducing your total list of categories by grouping topics that relate to each other.
- Make the final decision on the abbreviation for each category and alphabetize these codes.
- Assemble the data material belonging to each category in one place and perform a preliminary analysis.
- If necessary, recode your existing data (Creswell, 2003).

3.6 MEASURES TO ENSURE TRUSTWORTHINESS

According to Brink (2016), trustworthiness is a demonstration that the evidence for the results reported is sound when the argument made based on the results is strong. Four constructs needed for trustworthiness in qualitative research are credibility/true value, transferability, dependability, and conformability (Lincoln & Guba 2012). Trustworthiness for the participants was achieved by using code names; the researcher kept the participants' true identities secret. Participants were interviewed by the researcher, and measures to reduce investigator bias were ensured. Participants' responses were allowed during the interviews and questions were in their language of choice to prevent them from withholding information and to make the research-rich in content. The four constructs of trustworthiness are discussed as follows:

3.6.1 Credibility / true value

According to Polit and Beck (2018), evaluation criteria for ensuring quality, integrity, and confidence in the truth of data in a qualitative research study quality. In this study the credibility was ensured as follows:

Prolong engagement

There has been a prolonged engagement of the researcher when interacting during appointments with the participants in the research study. The researcher has honoured the telephonic appointment and has spent a reasonable time with the participants. This helped the researcher establish trust, rapport, and understanding of the participant's culture, their language, and their working environment. The researcher conducted the study and stayed in the research field until data saturation. The researcher played the audiotapes back to confirm the participant's response and, noted some non-verbal communications. By using triangulation, different methods of data collection such as observations, field notes, and interviews were done. The researcher also ensured peer-debriefing when seeking opinions from peers. Research findings were discussed with the research supervisors, experts, and other lecturers to ensure credibility.

3.6.2 Dependability/ consistency

According to Lincoln and Guba (2012), dependability refers to researchers attempting to account for the change in the phenomena and around the phenomena. The use of an external independent coder to reach a consensus agreement on the categories and themes and the triangulation of the sources will increase the dependability and conformability of the study.

The establishment of dependability will consist of a dependability audit. The research method description includes guidance by supervisors, experts, peers' examinations, coding, recording procedures, utilizing notes, and literature control.

3.6.3 Conformability

According to Brink (2016), the voice of participants must reflect the data and not be biased by the researcher. A qualitative research study can be summed up by the question: "does the data collected help confirm the findings and lead to the implication?" (Moule & Goodman, 2016). This clearly indicates that conformability is linked to the question of objectivity. The researcher discusses study findings with peers and supervisors who are knowledgeable in qualitative research, the digital recorder which was used during the interviews and collected field notes was made available for supervisors to confirm findings. Conformability was insured by sending the transcripts to an independent coder for analysis protocol. The researcher guards against his ideas to ensure accuracy, relevance, and meaning. Findings were supported by comparing them with the existing literature, and an audit trail allowed conclusions drawn from an independent auditor about the collected data and data analyzed. The researcher and the research coder coded the transcripts independently before discussing themes and sub-themes and reaching an agreement.

3.5.4 Transferability

Transferability is an alternative to external validity or generalizability to other settings. Transferability refers to the degree to which the findings of the research inquiry can apply or transfer beyond the bounds of this research, therefore applicability in the other contexts (Lincoln & Guba, 2012). The strategy for the establishment of applicability is transferability. According to Lincoln and Guba (2012), this consists of nominated samples, a comparison of the sample to the data, time sampling, independent colleagues and experts, a description of the results, and direct quotations of the participants (Lincoln & Guba, 2012). Transferability in this study was insured by describing the setting richly and thoroughly, and also detailing what transpired during the interviews. Purposive sampling was used to nominate participants.

3.7 ETHICAL CONSIDERATIONS

According to Green and Thorogood (2018), ethics is a norm for conduct that distinguishes between acceptable behaviour. Ethics is a system of moral values that is concerned with the degree to which the research procedure adheres to professional, legal, and social obligations. In this study, ethical consideration focused on informed consent before conducting the study. Participants were informed about the use of a voice recorder when obtaining informed consent

and that the recordings are going to be stored for at least five years. COVID-19 regulations were followed always to limit the spread of the infection.

3.7.1 Permission to conduct the study

The study purpose was explained to the participants to ensure the study meets ethical standards (Creswell, 2018). To ensure the study reached the ethical standards for conducting the research, everything that the participants were unable to understand was explained before the study was commenced to clarify the purpose of the study. All participants were assured that they are not being forced to participate in the study, and they were asked to complete and sign the consent form as evidence that they were not forced to participate in the study. Approval to conduct the study was obtained from the University of Venda research ethics committee project no: SHS /21/PDC/13/13O9, and then requested from the Limpopo province Department of Health research committee. The request was sent to the Vhembe district Department of Health. The researcher then requested permission to conduct the research study in a selected hospital.

- **Informed consent**

According to Polit and Beck (2018), informed consent is an ethical principle that requires obtaining the voluntary participation of subjects, after informing them of possible risks and benefits. The identity and the qualifications and experience of the researcher (and co-researchers or co-workers) will be addressed to the participants. The participants were informed about the research processes during the study, this included the objectives, aims, time frame of the study, methods of data collection, potential risks, and benefits from the study. All participants signed consent forms and were given a copy of the information sheet stipulating the research project and their signed consent form which will contain the researcher's contact details and of the supervisor.

- **Right to self-determination**

The right to self-determination is based on the ethical principle of respect for people (Grove & Gray, 2019). During the study process, it was emphasized to the participants that they are free to withdraw from the study at any time. Furthermore, it was explained to the participants that the information that they will give during data collection can be used to prevent possible shortages of medications. The researcher clearly explained to the participants about the voluntary of the study so that no participant expected to get paid at the end of the study. Furthermore, the participants were made aware that research findings will be disseminated by

giving feedback through workshops to the participants, conference presentations, research day presentations, and by publication in accredited journals.

- **Anonymity and confidentiality**

Anonymity exists if the subjects' identities cannot be linked (Burns & Grove 2019). The true identities of the participants are kept secret; hence their names were used as codes or numbers to identify them during data analysis. This was done when the researcher felt it was necessary for him to seek clarity on certain aspects that may be raised by the participants when interviewed.

3.7.5 Right to privacy

According to Moule and Goodman (2016), the researcher ensures the right to privacy for the participants throughout the study. This means that the researcher ensures that whatever was discussed with the respondents remains private. It is the duty of the researcher to respect the participant's privacy by ensuring that the research reports are not presented in a way that other participants know how they performed to ensure that the privacy is maintained.

Avoidance of harm

Participants can be exposed to harm, whether in a physical or emotional manner. Harm in social sciences is likely to be of emotional nature, although physical injury cannot be ruled out (Moule & Goodman, 2016). The researcher tried not to harm the participants, and COVID-19 regulations were followed at all times to reduce the spread of the infection.

3.7.7 Right to fair treatment

The researcher respected agreements that he made with the participants, and they were treated equally and fairly (Burns & Grove, 2019). The researcher treated all participants fairly and equally during the study and he was accessible at any point during the study and afterward.

3.8 Scope of the study

The study focused on one health facility, which is Tshilidzini hospital. This means that the findings from the study cannot be generalized to all the hospitals with a shortage of medications in other regions, as it will not be fully representative of the hospitals. However, the purpose of this study is not to generalize but rather to gain a deeper understanding of issues relating to the shortage of medications in this hospital.

3.9 Summary

In this study, a qualitative, explorative, descriptive, and contextual approach was used focused on exploring and describing the perception of healthcare professionals regarding the shortage of medication at a selected hospital in the Vhembe district of the Limpopo province. The data was collected using unstructured interviews so that a detailed picture of the participants or perceptions of a topic could be gained. Audiotapes were used and field notes were used following ethical principles. The next chapter will be on results and interpretation of research findings.

CHAPTER FOUR

RESULTS AND INTERPRETATION OF THE RESEARCH FINDINGS

4.1 INTRODUCTION

The researcher in this chapter interprets and discusses the research findings. The study aims to explore and describe the perceptions of healthcare professionals regarding the shortages of medication at a selected hospital in the Vhembe district of the Limpopo province.

The collection of data was through in-depth face-to-face interviews with five doctors, seven nurses, and three pharmacists. Thus, a total of fifteen participants were interviewed during data collection. The researcher used audiotapes for information recording. To protect anonymity and confidentiality, the researcher interviewed the participants privately. COVID-19 regulations were maintained always to reduce the spread of infection. The audiotapes and data transcribed were kept safe, and can only be accessed by the researcher.

The researcher conducted unstructured interviews for at least 45 minutes with each participant. Data collection was guided by the central question, ***“May you kindly share with me your perceptions regarding shortages of medication?”*** Data analysis was done by following Tesch’s open coding steps (in Creswell, 2003).

4.2 Characteristics of the participants

Of the fifteen healthcare professionals that were interviewed, six were males (46.6%), and nine were females (53.3%). Amongst the participants, there were five doctors (33.3%), and among the doctors, three were male (60%), and two were female (40%). They were seven nurses (two males (28.5%), and five females (71.4%)). Of the three pharmacists, two were male (66.6%), and one was female (33.3%). The age group of all these professionals ranges from 24 to 57 years. All participants are qualified employees with at least three years’ experience at the hospital.

Table 4.1 Demographic information of participants

Description	Gender	Age	Profession
Participant 1	Female	47	Nurse
Participant 2	Female	29	Doctor
Participant 3	Male	55	Nurse
Participant 4	Female	53	Nurse

Participant 5	Male	29	Doctor
Participant 6	Male	47	Doctor
Participant 7	Female	27	Doctor
Participant 8	Male	59	Nurse
Participant 9	Male	48	Doctor
Participant 10	Male	32	Pharmacist
Participant 11	Male	36	Pharmacist
Participant 12	Female	47	Nurse
Participant 13	Female	37	Pharmacist
Participant 14	Female	51	Nurse
Participant 15	Female	37	Nurse

4.3 Presentation of study findings

In this study, four themes and ten sub-themes emerged. These were difficult experiences in the provision of patient care, the impact of a shortage of medications, causes of shortages of medications, and work motivation. These themes are presented with a direct quote from the participants alongside sub-themes. The ten sub-themes that emerged from the data are indicated in Table 4.2.

Table 4.2 Themes and Sub-themes

No:	Themes	Sub-themes
1	Difficult experiences in the provision of patient care	<ul style="list-style-type: none"> • Use of alternative medications • Borrowing system • Frustrations
2	Impact of shortage of medications	<ul style="list-style-type: none"> • Financial implications • Prolonged stays • Patient overflow
3	Factors associated with a shortage of medications	<ul style="list-style-type: none"> • Ordering system • Manufacturing versus population growth
4	Poor motivation for work	<ul style="list-style-type: none"> • Feelings of self-blame • Feelings of helplessness

Theme 1: Difficult experiences in the provision of patient care

During this study healthcare professionals indicated that they experienced difficulties when it came to providing optimal and quality care to the patient due to a shortage of medications in the hospital. One participant said:

When there is a shortage of medications at the hospital it doesn't look right at all because we feel like we are going backward as a department of health. Most of the time we know what the patient is struggling with and when we prescribe certain medication for the patient, we find that it is not available at the pharmacy'. (Participant 7, doctor)

The findings of this study concur with those of Nd zamela (2020), who indicates that frustrations in everyone involved in healthcare such as doctors, nurses, pharmacists purchasing agents, and patients, can be caused by medications unavailability and stock-outs. This indicates that medications shortages can compromise relationships between colleagues when the frustrations related to the shortage of medications are misdirected (Nd zamela, 2020). This shows that healthcare professionals perceive a shortage of medications as a problem that makes it difficult to render quality patient care. This was also supported by one of the participants who said:

'It is difficult to work because when the patient takes medication, it indicates the amount of period a patient will get better. So, when there is a shortage, it indicates that it will take time for the patient to get better and this can lead to unwanted outcomes. (Participant 8, nurse)

Sub-theme 1.1: Use of alternative medications

The use of alternative medications in this study is referring to the use of any alternative medications that the prescriber was not intending to use as a first-choice prescription. It can either be a generic medication or using trade-name medication. The prescriber will prescribe the medication but can change to another medication with the same function as the first-choice medication; the medication might be on the same class of medications. Thus, alternative medication is any medications that can be used to treat the patient when the intended medications are not available for example the doctor can use a brand-name drug if the generic drug is not available or use the drug in the same class of medications. when a doctor orders medication and it is not available, he can look for other medication that does the same thing as the intended medication, thus changing to a different name of a drug or changing to the other drug that might work the same way as the first intended medication. This issue was raised by the doctor during the interview in the following way:

'Coming up with an alternative, helps a bit to relieve the patient from pain or from whatever symptoms they have, but it will be the best if we have the specific medication for a specific disease because you would know that after a period of like five days you have killed that disease'. (Participant 2, doctor)

The use of alternative medications was mentioned by almost every participant during data collection, and participants said:

'You can find that ok! Is fine, you have an alternative medication but it cannot work the same way as the first-choice medication since medication cannot be the same 100%'. (Participant 2, doctor)

'We sometimes go for alternatives, let's say is a drug which is in a certain class and in that class, there are other drugs which can be used for the same condition, we advise the doctor to look for an alternative and then they go for another drug.' (Participant 11, pharmacist)

Medication errors can occur more frequently when there is a shortage of medications because doctors are bound to alter prescriptions to other medications that they might not be familiar with. In cases where the doctors and nurses are responding to an emergency, the precious time may be lost when they are working with unfamiliar medications or when recalculating the dosage of medications, and this may also increase the chances of overdosing the patient (Ventola, 2020). A shortage often causes the substitution of one drug for another that might have reduced efficacy or caused side effects in the patient. Another participant indicated that:

'Peri-peri can never test like salt; we can say it will all test sour! But it can be the same as the real one that was ordered before because they will say it looks the same but similar thing cannot do the same thing complete'. (Participant 8, nurse)

A study conducted by Hodes (2017), indicated that, even though there are different approaches that are creative for the management of medication shortages, it is always difficult to come up with a plan to manage a shortage of medication. The impact of shortages of a drug that lacks an equivalent alternative product has been documented, such as the past shortage of anesthetic drugs that have resulted in cancellations of surgery.

Sub-theme 1.2: Borrowing system

It was also revealed during interviews that healthcare professionals borrow or request medications from each other in nearby facilities when there is a shortage of medication when they are trying to attempt to compensate for unavailable medications for patient benefits

(Hodes, 2017). This is a common practice to reduce the challenge of shortage and to avoid a delayed process of ordering procedures in the facilities. A participant said the following:

'We request from another hospital; say we don't have a specific item in our hospital we call our sister hospital to find out if they have stock. If they have stock, they can share with use'. (Participant 11, pharmacist)

This was supported in a study conducted by Hodes (2017), who found that generally, healthcare providers do not usually report medication shortages following the correct official channels or reporting the shortages if they can manage to get access to top-up their supplies using the neighbouring facility. A participant said:

'Is not a good thing for us but we tried to fight to prevent a shortage of medicine. If there are no medications we try to liaise with another hospital nearby or another hospital around the province we ask them then they can give us', (Participant 13, pharmacist)

A study by Hodes (2017), indicates that borrowing is the phrase by healthcare professionals commonly, but it is not a strict and accurate description of the practice, because there is no returning of the borrowed drugs. During data collection, it was demonstrated that healthcare professionals compensate for the shortage of medication by sharing unavailable medications with each other for the benefit of the patients, as follows:

'It delays the patient because you want that drug at a certain time, but they are starting by borrowing the medication from another hospital'. (Participant 2, doctor)

According to Hodes (2017), borrowing medications from other facilities nearby is done using informal and internal networks or channels that have been established by healthcare professionals, such as what's-app groups that are used when they are dealing with stock-outs in their facilities.

Sub-theme1.3: Frustrations

Participants in this research study indicated that when there is a shortage of medications healthcare professionals sometimes do not know what to do when facing the challenge of shortages of medication so it makes them get frustrated, this was indicated as follows:

'It is a very frustrating feeling to find yourself working in a place where there is a big shortage of medications'. (Participant 11, pharmacist)

Another participant said:

'So, once we have a challenge of shortage of medication it is frustrating'. (Participant 5, doctor)

According to Ndzamela (2020), the unavailability of medicine is very frustrating to healthcare professionals, causing conflicts between professionals such as doctors, nurses, pharmacists, manufacturers, and medication suppliers. One of the participants said:

'If a medication is not available, obviously, the person who must go back and explain to the patient that the medication is not available will be the nurse who administers or the doctor who ordered that medication. So it turns out to be very difficult, even though we cannot take it personally because it is not a personal thing but we just have to try to explain exactly what we have tried to do, what we will try to do, and if there is no other way to get the medication, say for example there is the shortage from the supplier and there is nothing I can do about it, I will just tell him that I did everything I can and there is nothing I can do beyond that, is very frustrating as well I don't know. (Participant 11, pharmacist)

A study conducted by Hodes (2017), indicates that the relationships between healthcare professionals are important because the strained relationship can hamper collegial approaches to finding solutions that can be used for compensating for medications that are not available. A good professional relationship with good communication skills is significant. This was demonstrated as follows:

'These things causes conflict, between me and the doctor because when the doctor orders the medication they expect me to give it so if it is not given the first person to blame is not a dispensary, it will be me as a nurse, though I could have gone there and that person wrote, that the medication is out of stock or whatever but the doctor will always think is me who is lazy to work, I must do follow-ups for that medication'. (Participant 12, nurse)

Another participant said:

'It is not simple at all because some patient becomes frustrated and they start shouting because they don't want to buy. (Participant 7, doctor)

According to Hodes (2017), medication shortages can compromise relationships between colleagues when the frustrations related to shortages of medications are misdirected. A lack

of health products that are essential when there is also shortages of medications can increase the workload of the workers that are already stressed:

'As a doctor working without medications is frustrating, is very frustrating us because if now you want to help a patient and you don't have medications what will you do. Because you have two kinds of treatment, we have medical treatment and we have surgical treatment. So, if a patient needs a medical treatment you need a specific drug for a specific condition and if you don't have it is very bad for the patient and a bad feeling for the doctor as well and is bad for the institution'. (Participant 6, doctor)

Theme 2: Impact of shortage of medications

It was also shown during interviews that shortages of medications can lead to negative impacts on the patient, such as delayed treatment and prolonged stays in the hospital that might lead to a patient overflow in the ward. They can also have financial implications on the patient where patients end up using their money to get the treatment that is needed for their conditions:

"So, it means that the same poor community that we are serving will go and buy medication themselves, which is unfair to the community that we are serving". (Participant 5, doctor)

Ventola (2011) indicates that individuals' competency and organizations' performance and productivity can be affected by medications shortages. Stress was reported to be one of the contributing factors. Unavailability of medications may further stress healthcare professionals who are already burdened and frustrated by this problem of unavailability of medications, which unable them, or prevents them from efficiently performing their functions (Ventola, 2011).

Sub-theme 2.1: Financial Implications

Shortages of medications can lead to the use of money by both patients and the healthcare facility. When there are shortages of medications, doctors are sometimes forced to prescribe medications for patients to go and buy for themselves. It was revealed that the healthcare facility can spend money by buying medication if a patient's condition is complicated due to shortages of medications.

'This kind of situation that happens and because you are fighting for the patient, we are forced to go an extra mile. We ask the patient if we can write prescriptions and you go buy the medications from the chemist, but we are dealing with our poor community

without money sometimes you find it to be difficult for a person to go and buy the medications'. (Participant 9, doctor)

Phuong (2019) indicates that patients commonly use their out-of-pocket costs when there are shortages of medications. Shortages of medications have adverse economic and humanistic outcomes. Participants also indicate financial implications:

'We come to the option where we ask the patient if we can write a prescription for them if they want a grant so that they can buy medications because what is important is life so there are others who can afford, some try with the little they have some cannot afford. (Participant 9, doctor)

It was emphasized by another participant that:

'Because the complications of not taking those medications are severe to the patient and to the hospital because they must treat that patient with many medications than if we write a prescription and that patient gets that medication'. (Participant 13, pharmacist)

Sub-theme 2.2: Prolonged stays

The findings show that some patients are not discharged from the hospital because they did not get some of their medications. Some prolonged stays in the hospital would be avoided if there was no shortage of medications. A participant said:

'Because of shortage of medications, there will be a delay and prolong patient stay in the ward without discharge'. (Participant 1, nurse)

The participant indicated that medications are not given in time when there is a shortage of medications, and this may be due to delay of treatment when health care workers are waiting for medications to be available in the hospital.

'The problem is that when there is a shortage of medications, it leads to delay healing because patients are not going to get proper medication that has been ordered'. (Participant 1, nurse)

'That healing will be delayed as the patient will not get medication at the correct time'. (Participant 4, nurse)

Sub-theme 2.3: Patient overflow

Some overflow of patients in the ward is a result of a shortage of medications. This was indicated by some participants during the study:

'Shortage of medications don't feel right at all because we feel like we are going backward as a department of health course most of the time you find that you have the patient, and you know what the patient is struggling with, and then when you prescribe the certain medication you find that when the patient goes to the pharmacy they find that there is no that certain type of medication. So it is like you didn't give help at all to that patient because there is not that specific medication to treat that specific disease. So it is a huge challenge to us even in the wards it even prolongs the staying of the patient at the hospital unnecessarily so'. (Participant 7, doctor)

According to Denzin and Yvonas (2019), there are patients overflowing in hospitals in developing countries, mainly in the tropics and subtropics, including Africa, India, and Indonesia there are few beds and a large number of patients. Some studies demonstrated that the overflow of patients worldwide has impacted the quality of patient care negatively, and there is an increase in medical errors and patient mortality thus. This was emphasized by participant 7:

'And hence now you find that the hospital beds are flooded because they are patients who are not treated for what they come for'. (Participant 7, doctor)

According to Barba and Marco (2015), a prolonged length of stay at the hospital can indicate the quality and efficiencies of care. A prolonged stay of patients in a hospital acute ward has the potential to develop adverse events, such as mortality, morbidity, or risk of re-admission after discharge. Participants revealed that prolonged stays in hospital can have negative impacts on the patient outcome:

'We sometimes end up not giving medications to the patient in time because of shortage of medications and this usually causes complications when patients are not discharged from the hospital, they have a risk of developing some hospital-acquired infections. (Participant 15, nurse)

It was demonstrated in this study that due to prolonged or extended lengths of stays, patients suffer unnecessarily in the hospital. Klopper (2014) indicates that in the management of patients in developed countries, where the nurse-patient ratio is low, attention can only be given to only critical patients in the hospital. One participant said:

'It does not put us in a good position as nurses, and it also has a negative impact on the patients if there is no medication. In the ward, I am working in that is Male surgical

ward, you find that medications ordered by the doctor are not available and this leads to a prolonged stay of the patient at the hospital and the ward will always be full due to the patient that is discharged but they didn't go because they didn't get there medications and it also impacts the doctor when they need medications'. (Participant 3, nurse)

Theme 3: Factors associated with shortages of medications

Procurement of medicines was indicated as one of the factors associated with a shortage of medication in the hospital. This can be due to factors associated with the ordering system, manufacturing versus population growth. During the data collection period for this research study, the COVID 19 pandemic was also associated with the shortage of medications, because there were some regulations and restrictions to prevent the spread of the infection. These regulations and travel restrictions were stated to be a cause:

'When we check 2021 of course 2021 we had COVID 19 pandemic since most of the raw materials of medication are from China and China is where COVID 19 pandemic started, we started to have a lot of shortage as South Africa is a developing country. Raw materials are from China and China was closed we had more shortage of medications'. (Participant 13, pharmacist)

The availability of medications depends on the procurement of drugs, and a study conducted by Modisakeng (2020), indicates that medications procurement in South African public healthcare sectors is done using an open, centralized tender system. The South African National Department of Health (NDoH) will have a contract with pharmaceutical suppliers' companies on behalf of the provinces. One participant said:

'The course of this shortage of medications can arise from various factors. First thing first it can mean a situation where the company does not have the active pharmacological ingredient to manufacture the medication. Sometimes it can be one item going out of the tender and thus, you experience the shortage because that item went out of tender then we must do direct purchases'. (Participant 10, pharmacist)

Sub-theme 3.1: Ordering system

It was revealed the system used for ordering medication and for it to be available in the hospital is a lengthy process:

'It takes up to three months to complete, then, thus, it affects the patient and it course shortage up until you get the final order from the procurement because of the process that we have to follow. (Participant 10, pharmacist)

According to Modisakeng (2020), pharmacists reported being frustrated by the buy-out process as this process can be very long, involving considerable paperwork and taking up considerable time that could be profitably spent elsewhere. Thus, the current long and complex nature of this process caused medicine shortages in the hospitals and patient care was compromised (Modisakeng, 2020). Another challenge related to the ordering of medications is that medications cannot be direct. This was raised by a participant:

'Is a challenge and is affecting mostly public sector largely because you can't purchase medications directly from the supplier and if medications are being purchased it takes time to be delivered to the hospital'. (Participant 11, pharmacist)

The pharmacist also admitted to some of the errors related to orders that can happen and affect the availability of medications at the hospital such as:

'We must find out the reason why is not there! Sometimes is possible you forget to order. (Participant 11, pharmacist)

It was also indicated that some medication must also be motivated by the doctor for order, and it can be a problem if the doctor is not familiar with this process:

'Once the doctor motivates it also put pressure on the procurement. As a pharmacist, I cannot advocate that this medication be purchased where else I don't have proof or the real diagnoses. (Participant 10, pharmacist)

Sub-theme 3.2: Manufacturing versus population growth

The manufacturing of medication must be equivalent to the population demand of the country. Participants raised issues that are associated with the production of medications in the country such as:

'And as health professionals, we must know that as we are at Limpopo, we don't have a company that produces medications, medications are been produced at Eastern Cape, Durban and Gauteng and if the is no production on that places, of course, Limpopo we will suffer more because we are in deep rural'. (Participant 13, pharmacist)

The demand for medications in the country is higher due to a growing population that is associated with the growing number of immigrants in the country. Participants associated the presence of foreigners as a contributing factor to the shortage of medications:

'I think the cause of the shortage of medication is due to overpopulation because we are also treating foreigners who are not even in our South African budget. This leads to the overuse of medications that will then cause a shortage of medications.'
(Participant 12, nurse)

'I think that maybe there is an increase in population and our government is not creating institutions to produce medications they are just letting the population increase, and they are not looking at medications productions to be increased so that we have a lot of it.' **(Participant 8, nurse)**

The World Health Organization (2016) has reported that medications unavailability may be due to the disruption that may occur at any stage of the medications chain of supply. The chain of supply of medications includes stakeholders, such as the supplier of raw materials, regulators, drugs manufacturers, wholesalers, distributors, prime vendors, and healthcare system end-users (Ventola, 2020). Some participants point at the companies that are manufacturing medications as a cause of medication shortage and the following issues were raised:

'There are certain companies that at one point decide that this product is not making money for us they decided to stop producing it or facing it out.' **(Participant 10, pharmacist)**

Some blame the shortages of medications on the government and politically motivated issues:

'There is a lot of politics here; I think that is where it's coming from, politics.'
(Participant 7, doctor)

'Government that is leading us because most of the time they tell us that they are no money and sometimes when they allocate money for our hospital, they give us little funds.' **(Participant 3, nurse)**

Manufacturers also often use the same manufacturing equipment for many drug products, so it is difficult to increase the production of one product without causing manufacturing shortages and delays for another. Consequently, sometimes it is possible to increase drug production only by buying more equipment or contracting with other companies to produce the drug. However, this is not an easy solution, because there is often a significant lag between a supply

shortfall and a production increase at another facility. Anti-trust laws may also prevent companies from sharing manufacturing information (Ventola, 2011).

Theme 4: Poor motivation for work

It was revealed that the healthcare professional is not motivated to go to work when there is a shortage of medications, simply because they did not provide total care to the patients. Participants indicated that:

'When you are treating a patient and you find that some medications are not available, it makes you feel bad because you want to give that medication to the patient so that they can get better. (Participant 7, doctor)

According to Ventola (2011), motivation for work can be described as a driver to be the best, and it is the desire for personal growth and development that is important for personal improvement and fulfillment and it was expressed as follows:

The following sub-themes are under difficult experiences in the provision of patient care: Feelings of self-blame, and feelings of helplessness.

Sub-theme 4.1: Feelings of self-blame

Ventola (2011) indicates that medications shortages frustrate the healthcare professionals, and this can also cause unnecessary conflicts between the healthcare professionals:

'It affects me so much because I go home thinking as if I'm the one that is making patients not to get well in time'. (Participant 8, nurse)

According to Ndzamela (2020), the unavailability of medicine is very frustrating to healthcare professionals, causing conflicts between professionals such as doctors, nurses, pharmacists, manufacturers, and medications suppliers. A participant said:

'As a doctor I don't feel right about shortage of medications because we are here to treat patients and when you are treating patients and you find that some medications are not available, it makes you feel bad because you want to give that medication to the patient so that they can get better, discharged and go home, that is our joy. But when there are no medications, it draws us backward even though there is a lot of things that lead to the unavailability of medications, and we as a doctor are not part of it, but we get happy when there are medications that we give to the patient and the patient gets helped. So, in short, is that that we don't feel good when there are no medications'. (Participant 7, doctor)

The same issue was raised by another participant who said:

'When I experience such situation wherein there is a shortage of medications, I become dysfunctional because I will be willing to help the patient, but I cannot because there is a shortage of medications in the hospital to give to the patient'. (Participant 12, nurse)

Soumerai and Chabner (2019), report that medications shortages and stock-outs negatively affect the process of patient care. Shortages of medications can affect the choice of treatment, cause a delay in treatment therapy that may lead to medications resistance, and medications errors, and can affect patient outcomes.

Sub-theme 4.2: Feelings of helplessness

Participants indicated that they feel like they are not helping the patient to their best if they are not giving needed medications to the patient. Kornhaber and Wilson (2015) state that, feelings of helplessness have been reported to affect healthcare professionals' ability to provide competent quality care and have contributed to moral dilemmas and burnout. Low morale in the workforce can have a negative impact on healthcare workers. A participant said:

'It is a very frustrating feeling to find yourself working in a place where there is a big shortage of medications. because as a pharmacist our main purpose is to ensure there is the availability of medication in the hospital, so now if you are working with other people from other departments and they come to you looking for medication and there is nothing it looks as if you are not doing your job. So is very frustrating even though we are trying our best to deliver. So, when there is no medication it is very frustrating'. (Participant 11, pharmacist)

Stress-related to work is a growing concern worldwide and it can negatively affect one's competency performance and productivity in the organizations. Burdened healthcare professionals may be further stressed and frustrated by the problem of unavailability of medications which empowers them and prevents them from efficiently performing their functions (Ventola, 2011).

'We get happy when there are medications that we give to the patient and the patient gets helped'. (Participant 7, doctor)

Ventola (2011) indicates that one's competency, organizational performance, and productivity can be affected by a medications shortage. Stress was reported to be one of the contributing factors. Unavailability of medications may further stress healthcare professionals who are

already burdened and frustrated by this problem, of unavailability of medications that empowers them or prevents them from efficiently performing their functions (Ventola, 2011).

4.4 Summary

Fifteen healthcare workers, including five doctors, seven nurses, and three pharmacists were interviewed. Data were analysed following Tesch's method. Four themes and ten sub-themes emerged from the collected data. Participants verbalized the sub-themes that contributed to the described perception of health care professionals regarding the shortage of medicine at selected hospitals in the Vhembe district of the Limpopo province. The findings of this study reflect other studies that were conducted worldwide, and it demonstrates that patients are affected when there is a shortage of medications. The next chapter will be on conclusions, limitations, and recommendations.

CHAPTER FIVE

CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

5.1 INTRODUCTION

In chapter 4, the researcher interpreted and discussed the research findings on healthcare professionals' perceptions of the shortages of medication at a selected hospital in the Vhembe district of the Limpopo province. This chapter concludes the study, summarises the findings, and discusses the limitations and recommendations for further research.

The following objectives guided the study:

- To explore and describe the perceptions of healthcare professionals regarding the shortage of medications in the selected hospital in the Vhembe district of the Limpopo province.
- To describe the impact of perceptions of healthcare professionals regarding the shortage of medications in the selected hospital in the Vhembe district of the Limpopo province.

5.2 Summary of research findings

The study has shown that shortages of medications hurt the provision of quality care. The following themes have emerged during the study:

- 3 Difficult experiences in the provision of patient care
- 4 Shortage effects of medications
- 5 Factors associated with a shortage of medications
- 6 Poor motivation for work

5.2.1 Difficult experiences in the provision of patient care

The study shows that healthcare professionals experience difficulties when providing healthcare to the patient during a time when there is a shortage of medications. When there are shortages of medications in the hospital, healthcare professionals are forced to change the prescriptions and use alternative medications. Changing to alternative medications have potential risks, especially if they are not familiar with the alternative medication; they are at risks such as overdose, death, and other negative patient outcomes. When there is a shortage of medications healthcare professionals borrow some medications from other nearby facilities to compensate for unavailable stock. This process that can be carried out when there is a

shortage of medications can course workload and burden on healthcare delivery that can lead to frustrations for healthcare professionals.

5.2.2 Impact of shortages of medications

Shortages of medications can have a financial impact on the patient and the facility; the patient can end up using their money to buy medications that are not available, and the facility can spend money by treating patient complications that have resulted from the medications that were unavailable. Shortages of medications can lead to prolonging the stay of the patient at the hospital and prolonged stays of patients in the hospital can cause patient overflow in the ward. Prolonged stays of patients in the hospital can also make patients have other complications such as hospital-acquired infections, while an overflow of patients can compromise care.

5.2.3 Factors associated with a shortage of medications

The ordering system of medications has an impact on the availability of medications in the hospital, ordering, and delivery of medications is a long process and it was also demonstrated during the study that it does have an impact on the availability of medications in the hospital. The manufacturing of medications might be a problem as some raw material is not produced in South Africa.

5.2.4 Poor motivation of the worker

Shortages of medications can make healthcare workers to have feelings and helplessness because there is nothing they can do for the patients.

5.3 Limitations of the study

This study was conducted at Tshilidzini hospital, a district hospital situated in a rural area; therefore, the findings cannot be generalized to the entire Limpopo Province hospitals. However, the researcher gave a detailed description of the study to give the readers a choice to know about the study findings.

5.4 Recommendations

The researcher makes the following recommendations based on the research findings:

5.4.1 Recommendations to the Department of Health

- 3 To improve and make hospital budgets according to their population, and provide enough medications.

- 4 The Department of Health should improve medication procurement policies.
- 5 The Department can also ensure payment for the services that are rendered to the patients.
- 6 The Department should develop equivalence protocols between generic and trade name (alternative) medication.
- 7 The Department should establish policies and procedures regulating borrowing medications between facilities.

5.4.2. Recommendations for the community

- There should be community awareness of the shortage of medications.
- Visit the hospital when it is necessary or through a referral from primary healthcare.
- In-service the community about the importance of paying for hospital service.

5.4.3. Recommendations for further research

- Recommend more research related to medications shortage is conducted.
- More research related to the impact of a shortage of medications to be conducted.
- Researchers should use different methodologies to explore problems in hospitals in rural areas.

5.5 CONCLUSION

Medications shortages can affect the provision of quality patient care negatively. Participants pointed outpatients are given alternate medicines when there is a shortage of medications. Borrowing medications from the nearby facility has been a practice to reduce the shortage of drugs. Shortage of medications delays treatment leading to prolonging the stay of the patient in the hospital ward, prolonging the stay of the patient in the hospital makes the patient overflow in the hospital wards, and the patient might develop further infections.

References

Akinsola, H.A. 2005. *Research Methods in Medical and Nursing Practice*. Ibadan college press and publishers limited. Nigeria

Ameh ,A.,Kan, K., Tollman, S.M,. 2017. Relationships between structure, process, and outcome to assess the quality of integrated chronic disease management in a rural South African setting: applying a structural equation model (Access 26 July 2020)

Babbie, E.R. & Mouton, J. 2011. *The Practice of Social Science Research*, 12th edition: Cape Town. Oxford University Press. South Africa

Barba, R., Marco, J., Canora, J., Plaza, S., Juncos, S.N., Hinojosa, J., Bailon, M.M. & Zapatero, M. 2015. Prolonged length of stay in hospitalized internal medicine patients: *European Journal of Internal Medicine*, 26(10):772-775 (Accessed November 2021)

Burns, N. & Grove, S.K. 2019. *Understanding Nursing Research*, 3rd edition. Amazon Company. USA

Brink, H., Van der Walt, C. & Van Rensburg G. 2016. *Fundamentals of Research Methodology of Health Professionals*, 3th edition. Juta Company. RSA

Christensen, L.B. 2004. *Experimental Methodology*, 9th edition. Boston Pearson Education. USA

Creswell, J.W. 2018. *A Concise Introduction to Mixed Methods Research*. London: Sage publications. UK

Denzin, N. & Yvonas, S.L. 2019. Early makers of prolong hospital stay in older people. *Journal of Internal Medicine Geriatric*, 12(6):1031-1034 (Accessed November 2021).

De Vos, A.S., Strydom, H., Fouche, C. & Delport, C. 2011. *Research at Grass Roots for the Social Sciences and Human Professional*, 4th edition: Cape Town: Van Schaik. RSA

Freshwater, D. & Maslin-Prothero, S.E. 2012. *Blackwell's Nursing Dictionary*, 2nd edition. Cape Town: Juta. RSA

Gray, J.R. & Burns, N, Grove, S.K., 2017. *Understanding Nursing Research: Building an Evidenced Based Practice*, 6th edition. Elsevier Saunders: China. *Journal*

Green, G. Thorogood, N .2018. *Qualitative methods for health research*. 4thedition. London: Sage.UK

Hodes, R., Price, I., Bungane, N., Toska, E. & Cluver, L. 2017. How front-line healthcare workers respond to stock-outs of essential medicines in the Eastern Cape Province of South Africa. *South African Journal of Health Promotion*

Kornhaber, R.A. & Wilson, A. 2011. Enduring feelings of powerlessness as a burns nurse: A descriptive phenomenological inquiry. *Australian Nursing Journal*, 39(2):172-179 (Accessed

Lincoln, Y & Guba, E. 1985. *Naturalistic enquiry*. Beverley Hills, CA: Sage. USA.

LoBiondo Wood, Haber, J. & G. 2017. *Nursing Research Methods and Critical Appraisal for Evidence Based Practice*, 8th edition. Elsevier Mosby: China

Modisakeng, C., Matlala, M., Godman B. & Meye, J.C. 2020. Medicine shortages and challenges with the procurement process among public sector hospitals in South Africa. *BMC Health Services Research*. Available at: <https://doi.org/10.1186/s12913-020-05080-1> (Access 26 July 2020)

Moule, P., Goodman, M. 2016. *Nursing research an introduction*. 3rd edition. UK: Sage

Muller, M., Bezuidenhout, M. & Jooster, K. 2014. *Healthcare Service Management*, 2nd edition. Cape Town: Juta. RSA

Ndzamela, S. & Burton, S. 2020. Patient and healthcare professional's experiences of medication stock-outs and shortages at community healthcare centre in Eastern Cape. RSA

Ogbudu, O.M., Maputle, M.S. & Mabunda J. 2019. Nurses' perceptions about stock-outs of essential medications at primary health care facilities in Vhembe district South Africa.

Phuong, J.M., Penm, J., Char, B., Oldfield, L.D. & Moles, R. 2019. *The impact of medication shortage on patient outcome*. Sydney Pharmacy School Faculty of Medicine and Health. University of Sydney Australia.

Polit, D.F. & Beck, C.T. 2018. *Nursing Research, Generating Evidence for Nursing Practice*, 9th edition. Lippincott Williams & Wilkins: Philadelphia. USA

Soumerai, T.E., Kamdar, M. & Chabner, A.B. 2019. The upload crisis just another drug shortage. *Journal of Pharmacy Practice and Community Medicine*. USA

Republic of South Africa. *Department of cooperative governance and traditional affairs*: Pretoria: Government Printers. RSA. Accessed at: <http://www.cogta.za>

Ventola, C. 2011. *The Drug Shortage Crisis in the United States: Causes, Impact, and Management Strategies*. USA

World Health Organization. 2016. *Global Approaches to Addressing Shortages of Essential Medicines in Health Systems*. WHO.

ANNEXURE A: Ethical clearance certificate from the University of Venda, Research Ethics Committee

ETHICS APPROVAL CERTIFICATE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Mr TF Ratshihule

STUDENT NO:
11500663

PROJECT TITLE: Perceptions of healthcare professional regarding shortage of medication at a selected hospital in Vhembe district, Limpopo province.

PROJECT NO: SHS/21/PDC/13/1309

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr AR Tshillo	University of Venda	Supervisor
Dr NS Ralphaswa	University of Venda	Co - Supervisor
Mr TF Ratshihule	University of Venda	Investigator – Student

Type: Masters Research

Risk: Minimal risk to humans, animals or environment (Category 2)

Approval Period: September 2021 – September 2023

The Human and Clinical Trials Research Ethics Committee (HCTREC) hereby approves your project as indicated above.

General Conditions

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following:

- The project leader (principal investigator) must report in the prescribed format to the REC:
 - Annually (or as otherwise requested) on the progress of the project, and upon completion of the project.
 - Within 48hrs in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.
- Annually a number of projects may be randomly selected for an external audit.
- The approval applies strictly to the protocol as stipulated in the application form. Where any changes to the protocol be deemed necessary during the course of the project, the project leader must apply for approval of these changes at the REC. Would there be deviation from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date, a new application must be made to the REC and new approval received before or on the expiry date.
- In the interest of ethical responsibility, the REC retains the right to:
 - Request access to any information or data at any time during the course or after completion of the project.
 - To ask further questions; Seek additional information; Require further modification; or monitor the conduct of your research or the informed consent process.
 - withdraw or postpone approval if:
 - Any unethical principles or practices of the project are revealed or suspected.
 - It becomes apparent that any relevant information was withheld from the REC or that information has been false or misrepresented.
 - The required annual report and reporting of adverse events was not done timely and accurately.
 - New institutional rules, national legislation or international conventions deem it necessary.

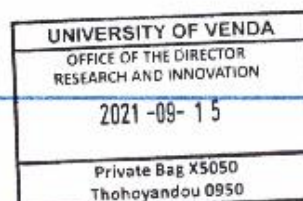
ISSUED BY:

UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: July 2021

Name of the HCTREC Chairperson of the Committee: Dr N\$ Mashau

Signature

ANNEXURE B: Letter of request to Limpopo Department of Health

P.O. Box 2020

THOHOYANDOU

0950

Department of Health

Provincial office Limpopo Province

Private Bag 9483

Polokwane

0700

Application for conducting a research project at a Tshilidzini hospital

I Ratshihule T.F, am hereby applying for permission to conduct a research project at Tshilidzini hospital which is situated in the Vhembe district of Limpopo province. The topic of my research study: **“Perceptions of healthcare professionals regarding shortages of medication at a selected hospital in the Vhembe district of the Limpopo province”**.

The aim of my research study will be to benefit the department of Health with regard to the benefits of patients when treated with the correct treatment

Yours faithfully

Ratshihule Thivhavhudzi Freeman

Email address: rashihule.free@gmail.com

Contact number: 071 6193 993

ANNEXURE C: Permission letter from Limpopo Department of Health



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

Department of Health

Ref : LP_2021-09-008
Enquires : Ms PF Mahlokwane
Tel : 015-293 6028
Email : Phoebe.Mahlokwane@dhsd.limpopo.gov.za

Ratshihule Freeman

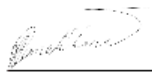
PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL FACILITIES

Your Study Topic as indicated below;

Perception of healthcare professionals regarding shortage of medication at selected hospital in Vhembe district of Limpopo province

1. Permission to conduct research study as per your research proposal is hereby Granted.
2. Kindly note the following:
 - a. Present this letter of permission to the institution supervisor/s a week before the study is conducted.
 - b. In the course of your study, there should be no action that disrupts the routine services, or incur any cost on the Department.
 - c. After completion of study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
 - d. The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
 - e. The approval is only valid for a 1-year period.
 - f. If the proposal has been amended, a new approval should be sought from the Department of Health
 - g. Kindly note that, the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated



pp Head of Department

12/10/2021

Date

Private Bag X9302 Polokwane
Fidel Castro Ruz House, 18 College Street, Polokwane 0700. Tel: 015 293 6000/12. Fax: 015 293 6211.
Website: <http://www.limpopo.gov.za>

The heartland of Southern Africa – Development is about people!

ANNEXURE D: Letter of request to the Vhembe district municipality

P.O. Box 2020

THOHOYANDOU

0950

The Manager

Tshilidzini hospital

Private Bag X924

Thohoyandou

0950

Application for conducting a research project at a Tshilidzini hospital

I Ratshihule T.F, hereby apply for permission to conduct a research project at Tshilidzini hospital which is situated in the Vhembe district of Limpopo province. The topic of my research study: **“Perceptions of healthcare professionals regarding shortages of medication at a selected hospital in the Vhembe district of the Limpopo province”**.

The aim of my research study will be to benefit the department of Health regarding the benefits of patients when treated with the correct treatment

Yours faithfully

Ratshihule Thivhavhudzi Freeman

Email address: rashihule.free@gmail.com

Contact number: 071 6193 993

ANNEXURE E: Permission letter from Vhembe district municipality



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF HEALTH
VHEMBE DISTRICT**

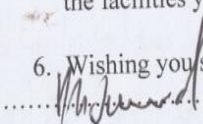
Ref: S5/6
Enq: Muvuri MME
Date: 2021-10-15

Dear Sir/Madam RATSHIHULE F.

PERMISSION TO CONDUCT A STUDY (RESEARCH):

1. The above matter refers.
2. Your correspondence dated 2021-10-15 requesting for permission to conduct a study is hereby acknowledged.
3. The approval from the Provincial office that you provided to this office serves as a reference for this approval.
4. Permission is therefore granted for the study to be conducted within Vhembe District facilities.
5. You are however advised to make the necessary arrangements with the facilities you wish to visit for your research purposes.

6. Wishing you success in your studies


DISTRICT CHIEF DIRECTOR

15/10/2021
DATE

Private Bag X5009 THOHOYANDOU 0950
OLD parliamentary Building Tel (015) 962 1000 (Health) (015) 962 4958 (Social Dev) Fax (015) 962 2274/4623
Old Parliamentary Building Tel: (015) 962 1848, (015) 962 1852, (015) 962 1754, (015) 962 1001/2/3/4/5/6 Fax (015) 9622373, (015) 962 227

The heartland of Southern Africa – development is about people!

P.O. Box 2020

THOHOYANDOU

0950

The Manager

Tshilidzini hospital

Private Bag X924

Thohoyandou

0950

Application for conducting a research project at a Tshilidzini hospital

I Ratshihule T.F, am hereby applying for permission to conduct a research project at Tshilidzini hospital which is situated in the Vhembe district of Limpopo province. The topic of my research study: **“Perceptions of healthcare professionals regarding shortages of medication at a selected hospital in the Vhembe district of the Limpopo province”**.

The aim of my research study will be to benefit the department of Health with regard to the benefits of patients when treated with the correct treatment

Yours faithfully

Ratshihule Thivhavhudzi Freeman

Email address: rashihule.free@gmail.com

Contact number: 071 6193 993

ANNEXURE G: Permission letter from Tshilidzini hospital

Restricted



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
TSHILIDZINI HOSPITAL

Ref: 8/1/1

Enquiries: Netshifhefhe L.E

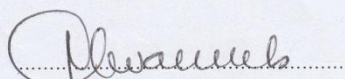
Date: 12 November 2021

Dear Mr Ratshihule T.F

Subject: Permission to conduct research on perception of healthcare professionals regarding shortage of medication at selected hospitals in Vhembe district of Limpopo province.

1. The above matter refers.
2. Your letter received on the 02nd November 2021 requesting for permission to conduct a research is hereby acknowledged.
3. Permission is therefore granted for the study to be conducted in Tshilidzini Hospital based on the approval letters you provided from the Limpopo Department of Health Head of department and Vhembe District Chief Director.

Wishing you success in your studies.


CHIEF EXECUTIVE OFFICER

2021/11/15
DATE

Private Bag x 924 SHAYANDIMA 0945
Tel : (015) 964 4200 Fax : (015) 964 1492
(015) 964 1072

The heartland of Southern Africa – development is about people!

RESEARCH ETHICS COMMITTEE

UNIVEN Informed Consent

Appendix B

LETTER OF INFORMATION

Title of the Research Study: Perception of healthcare professionals regarding the shortage of medication at selected hospitals in the Vhembe district of Limpopo province.

Principal Investigator/s/ researcher : *(Name, qualifications)*
Ratshihule Thivhavudzi Freeman, masters in nursing

Co-Investigator/s/supervisor/s : *(Name, qualifications)*
Dr. Tshililo AR
Dr. Raliphaswa NS

Brief Introduction and Purpose of the Study: The purpose of this study is to describe and explore the perceptions of healthcare professionals regarding shortages of medication at hospitals in the Vhembe district of the Limpopo province as experienced by a healthcare professional.

Outline of the Procedures : *(Responsibilities of the participant, consultation/interview/survey details, venue details, inclusion/exclusion criteria, explanation of tools and measurement outcomes, any follow-ups, any placebo or no treatment, how much time required of the participant, what is expected of participants, randomization/ group allocation).*

A qualitative explorative, descriptive, and contextual design will be part of the data collection. The purposive sampling method will be used so that the researcher will utilize his knowledge about the target population and its elements to handpick the clients to be included in the study. The health care practitioners who are willing to participate in the study will be sampled to participate through an invitation. The estimated sample size will be at least being between 15-

20 health care practitioners. A one-on-one interview will be used as a method of data collection and it will be guided by the central question of the study which will be followed by probing questions to obtain more information about the phenomenon being studied. Participants will be allowed to respond to questions in the language of their choice to prevent withholding of information and hence make the research-rich in content. All participants will sign consent forms and be given a copy of the information sheet stipulating the research project and their signed consent form which will contain the researcher's contact details and of the supervisor.

Risks or Discomforts to the Participant: *(Description of foreseeable risks or discomforts to participants if applicable e.g. Transient muscle pain, VBAI, post-needle soreness, other adverse reactions, etc.)*

Benefits : *(To the participant and to the researcher/s e.g. Publications)*

Reason/s why the Participant May Be Withdrawn from the Study: *(Non-compliance, illness, adverse reactions, etc. Need to state that there will be no adverse consequences for the participant should they choose to withdraw)*

- There will be no risk of participating in the study
- There will be no direct benefit to the participants
- Participants may withdraw at any time if they feel uncomfortable with some of the aspects in the study.
- No remuneration will be received by the participants.
- Participants will not pay anything for participating.
- The participants will be informed that any information that is life-threatening or may have a negative impact on their social, economic, and physical health will not be made available to anyone and that their names won't be mentioned anywhere during the interviews and when writing the report.

25

Remuneration : *(Will the participant receive any monetary or other types of remuneration?)*

No remuneration will be received by the participants.

Costs of the Study : *(Will the participant be expected to cover any costs towards the study?)*

- **R50 000**

Confidentiality : (Description of the extent to which confidentiality will be maintained and how will this be maintained)

Participants may withdraw at any time if they feel uncomfortable with some of the aspects of the study.

Research-related Injury : (What will happen should there be a research-related injury or adverse reaction? Will there be any compensation?)

NOT APPLICABLE IN THIS RESEARCH STUDY

Persons to Contact in the Event of Any Problems or Queries:

Supervisor: Dr. Tshililo AR email address: Rose.Tshililo@univen.ac.za

Co-Supervisor: Dr. Raliphaswa NS email address: ndidzulafhi.raliphashwa@univen.ac.za

(Dr Tshililo AR Rose.Tshililo@univen.ac.za and Dr. Raliphaswa NS Ndidzulafhi.Raliphaswa@univen.ac.za) Please contact the researcher (Tel no: 071 6193993.), my supervisor (Tel No: 064 680 8947.), or the University Research Ethics Committee Secretariat on 015 962 9058. Complaints can be reported to the Director: Research and Innovation, Prof GE Ekosse on 015 962 8313 or Georges Ivo.Ekosse@univen.ac.za

General:

Potential participants must be assured that participation is voluntary and the approximate number of participants to be included should be disclosed. A copy of the information letter should be issued to participants. The information letter and consent form must be translated and provided in the primary spoken language of the research population

CONSENT

Statement of Agreement to Participate in the Research Study:

- I.....hereby confirm that I have been informed by (**Ratshihule Thivhavhudzi freeman**), about the nature, conduct, benefits, and risks of this study - Research Ethics Clearance Number: SHS/21/PDC/13/1309
- I have also received, read, and understood the above-written information (*Participant Letter of Information*) regarding the study.

- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials, and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during this research that may relate to my participation will be made available to me.

Full Name of Participant Date Time Signature

I,

(Ratshihule Thivhavhudzi Freeman) herewith confirm that the above participant has been fully Informed about the nature, conduct, and risks of the above study.

Full Name of Researcher..... Date..... Signature.....

Full Name of Witness (If applicable) Date

Signature..... Full Name of Legal Guardian (If applicable)

.....Date..... Signature.....

Please note the following:

Research details must be provided in a clear, simple, and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level- use Flesch Reading Ease Scores on Microsoft Word), selecting a non-threatening environment for interaction and the availability of peer counseling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumbprint is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. a wrong date or spelling mistake, a new document must be completed. The incomplete original document must be kept in the participant's file and not thrown away, and copies thereof must be issued to the participant.

References:

Department of Health: 2004. *Ethics in Health Research: Principles, Structures, and Processes*

<http://www.doh.gov.za/docs/factsheets/guidelines/ethnics/>

Department of Health. 2006. *South African Good Clinical Practice Guidelines*. 2nd Ed.

Available at:

http://www.nhrec.org.za/?page_id=14

ANNEXURE I: Central question of the research

May you kindly share with me your perceptions regarding shortages of medication at Tshilidzini hospital?

ANNEXURE J: INTERVIEW TRANSCRIPT

Participant no: 13

Interview transcript

Interviewer

Afternoon

Participant

Good afternoon.

Interviewer

How are you?

Participant

I am fine, how are you?

Interviewer

I am fine, my name is Ratshihule and I am a student at University of Venda, I am doing a, so I will ask questions that I will use for my research but I will not use your name for this interview but when the research is done it will be made available for

Participant

Yes, you can continue.

Interviewer

As a pharmacist working here, how do you work when you have a shortage of medications?

Participant

Is not a good thing to us but we tried to fight to prevent shortage of medicine? In which way, if is Tshilidzini that have shortage of medications we try to liaise with district hospital or other hospital around the province we ask them then they can give us.

Interviewer

Ok, when you look at it what do you think might be the cause of shortage of medications?

Participant

When you look at maybe! Hah when we check 2021 of course 2021 we had COVID19 pandemic, since most of raw materials of medication are from China and China is where COVID 19 pandemic started, we started have a lot of shortage as South Africa and a developing country because medications raw materials are from China and China was closed we had more shortage of medications.

Interviewer

So, which mean that on such situation that you have just told me about, was the problem due to production or what?

Participant

It production

Interviewer

OK! And may you please elaborate for me?

Participant

Because during the pandemic we didn't expect to have the disease coronavirus so it caused the production of medications to hold or become very slowly

Interviewer

Ok, ok! But then, how is the working relationship between you, the nurses, and the doctor if a doctor orders certain medication and is not available?

Participant

The working relationship between nurses' doctors and the pharmacist is if it is explained to them about the cause of the shortage of medications, they can work together. What is important is that we as pharmacist explain what lead to a shortage of medications. and as a health professionals, we must know that as we are at Limpopo we don't have a company that produces medications. Medications are being produced in Eastern Cape, Durban, and Gauteng and if the is no production in that places, of course, Limpopo will suffer more because we are in deep rural.

Interviewer

You explained that the cause is related to manufacturing, like Limpopo there is no manufacturing, and the other thing I wanted to ask is that when there is a shortage of certain medication do you manage to explain to the doctor in a way that they understand?

Participant

Yes! We do explain to doctors, that we don't have the treatment and we try to request to other hospitals and we suggest to them that the patient have money they can write a prescription for the so that the patient can go and buy if they have money. They should also explain the possible complications of not taking the medications, they should just explain to the patient because if they don't explain the importance of medications we might have a problem.

Interviewer

Ok, most of the time when you give doctors such suggestions don't you think it affects the patient in another way?

Participant

Yes, it affects the patient but when we are living in a democratic country of South Africa that doesn't have money and diseases are increasing more and more, so is that even the patient themselves must take responsibility like when they did not find certain treatment from the hospital. They should try to find money because there is SASA grant that people are getting from that money they can buy medications so that they make their lives better.

Interviewer

Ok! And then the option you told me that your advice the doctor to write the prescription, is it the only available option or there are other things that you think they can use in the meantime.

Participant

In the meantime, it is the only available option because most of the shortage of medication is caused by production since raw materials are not from South Africa, so if those patients are not given prescriptions they come back to the hospital be on a state that it causes health department more money than if they were given a prescription.

Interviewer

Ok.

Participant

Because the complications of not taking those medications are severe to the patient and to the hospital because they must treat that patient with many medications than if we write a prescription and that patient gets that medication

Interviewer

From what you just told me, is there anything you will like to add that is related to the shortage of medications?

Participant

Maybe what I can add to the research when looking at the shortage of medications in hospitals or clinics is that you as a researcher you can recommend that when patients go to hospitals or clinics is better they start to must pay because the shortage of medications can be caused by not having money to buy medications as you know medications are expensive. If we can let adults not including those under six years pay at least R10 or R20 it can help the budget or revenue that can be generated by that certain hospital or clinic.

Interviewer

Thanks.

ANNEXURE K: INTERVIEW TRANSCRIPT

**Dr Catherine Hutchings
Freelance Editorial Services**

51 Bathurst Road
Kenilworth
7708
Cape Town
Western Cape
South Africa

Telephone/Fax: + 27 21 7618522
Mobile: + 27 82 9702219
E-mail: catherinehutchings@gmail.com

To whom it may concern.

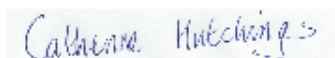
I hereby confirm that I edited Ratshihule Thivhavhudzi
Freeman's

Thesis entitled,

**Perceptions of healthcare professionals regarding the shortage of
medication at a selected hospital in the Vhembe district of the Limpopo
province, South Africa**

in January 2022.

I wish this student well in their endeavours.



Dr Catherine Hutchings

