THE EFFECT OF NURSE SHORTAGES ON HEALTHCARE AT A PUBLIC HOSPITAL IN KWAZULU-NATAL

by

Sandhya Nankoo van Wyk

A thesis submitted in fulfilment of the requirements for a Degree of Master of Business and Information Administration in the Faculty of Business and Management Sciences at the Cape Peninsula University of Technology

Supervisor: Professor Visvanathan Naicker

Cape Town

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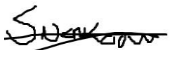
DECLARATION

I hereby declare that the work (described) in this thesis is my original work, and has not previously been submitted either in part, or in its entirety, for a degree at any other university. This thesis will be submitted in fulfilment for the Degree of Master of Business and Information Administration in the Faculty of Business and Management Sciences at the Cape Peninsula University of Technology. I further declare that this work does not in any way infringe or violate the rights of others, as all the sources cited or quoted by me are indicated and acknowledged by means of a comprehensive list of references.

Signed:  **Date:** 31 August 2023

DEDICATION

This study is dedicated to nursing personnel at public hospitals who sacrifice their family and personal time for their patients by doing their best despite the overwhelming workloads and other challenges they face due to nurse shortages.

ACKNOWLEDGEMENTS

I thank GOD for giving me the strength, knowledge, wisdom and keeping me in good health and giving me the ability to complete this study.

I acknowledge all the respondents who dedicated their time to contribute to this study.
A big thank you to the Health and Welfare Sector Education and Training Authority (HWSETA) for providing financial assistance to carry out this study.

"It is the supreme art of the teacher to awaken joy in creative expression and knowledge." Albert Einstein

My sincere gratitude and appreciation is extended to Professor Visvanathan Naicker for his continued guidance, insights, encouragement and for keeping me on track and for the constant motivation to complete my studies: Thank you very much!

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ABSTRACT

Nurse shortages is a global problem leading to many challenges within hospitals which ultimately impact on the delivery of healthcare. South Africa is experiencing a debilitating shortage of nurse professionals particularly in the public health sector. As a result, the high workload on the existing nurse workforce has had an effect on the provision of quality health care for patients. The main aim of this study was to discover the effect of nurse shortages on healthcare at a public hospital with the objectives of understanding the reasons for nurse shortages, to assess challenges nurses face as a result of staff shortages and to assess how this influences the delivery of health care.

This study adopted a qualitative design with an exploratory descriptive approach with twenty respondents forming part of this study through purposive sampling. Data was collected from five wards at a public hospital in KZN. In-depth face-to-face interviews were conducted which consisted of interviewing five operational nurse managers and fifteen registered nurses.

The findings revealed that there were four major reasons for nurse shortages at a public hospital. These are budget and resources, staff development, working environment, and managerial support. The study found that the delivery of healthcare was impacted negatively due to staff shortages. Nurses faced daily job and personal challenges due to the shortage which had an impact on their ability to deliver good health care to patients. Collegial support and prioritisation were the two coping mechanisms that respondents implemented on their own to get through their daily challenges in order to provide good health care.

Keywords: nurse shortage, patient, registered nurse, operational nurse manager, public hospital, healthcare

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

DoH	DEPARTMENT OF HEALTH
WHO	WORLD HEALTH ORGANISITAION
SDGs	SUSTAINABLE DEVELOPMENT GOALS
UN	UNITED NATIONS
HCWs	HEALTH CARE WORKERS
NHQIP	THE NATIONAL HEALTH QUALITY IMPROVEMENT PLAN
RNs	REGISTERED NURSES
ONMs	OPERATIONAL NURSE MANAGERS
PNs	PROFESSIONAL NURSES
POS	PERCEIVED ORGANISATIONAL SUPPORT
EAP	EMPLOYEE ASSISTANCE PROGRAMME
JDC	JOB DEMAND CONTROL
WLB	WORK-LIFE BALANCE
SCM	SPILLOVER CROSSOVER MODEL
SANC	SOUTH AFRICAN NURSING COUNCIL
UNDP	UNITED NATIONS DEVELOPMENT PROGRAMME
UHC	UNIVERSAL HEALTH COVERAGE
HDGs	HEALTH DEVELOPMENT GOALS
ICU	INTENSIVE CARE UNIT
NICU	NEONATAL INTENSIVE CARE UNIT
WISN	WORKLOAD INDICATORS OF STAFFING NEED
IO	INFORMATION OFFICER

TABLE OF CONTENTS

CHAPTER ONE
INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

“A nation’s greatness is measured by how it treats its weakest members.” (Mahatma Gandhi - Presidential health compact, 2019). The quote by Mahatma Gandhi reinforces that the vulnerable must be treated well, especially when it comes to quality and affordable healthcare services.

Access to healthcare services is a basic human right as outlined in section 27 of the South African constitution, “No one may be refused emergency medical treatment” (South Africa, 1996). Indicating that the government must take reasonable action by utilising their resources to fulfil this basic human right for all South Africans. Further to this, ranking third out of 17 Sustainable Development Goals (SDGs) established by the United Nations (UN) in 2015, is good health and wellbeing for all, ensuring healthy lives and the promotion of well-being for all at all ages. The World Health Organisation (WHO, 2006) further states that health professionals are at the forefront in improving access and quality of healthcare for the population. The above indicates that the South African constitution, SDG 3 and WHO drive the point of the importance of access to healthcare services for all.

Joseph & Joseph (2016) defines a healthcare worker as one who delivers care to the sick and ailing, providing essential services that promote health and prevent diseases. According to WHO (2022), it is imperative that the third SDG can be achieved by optimising health professionals' skills and ensuring sufficient healthcare workers. This will strengthen the healthcare system in order to cope with the demand, as the growing older population and their health needs are becoming a world-wide concern for governments and health systems (Allen, 2020).

In the South African context, The National Department of Health (2019) reveals in a consensus report of the South African Lancet National Commission, that South Africa has

made great progress since the end of apartheid in 1994 in improving the overall health and well-being of the population. However, the government still has challenges providing high-quality health care. These challenges include an increased burden of disease outbreak, unequal healthcare between community, public and private health sectors that are faced with inadequate human resources, poor finances, poor management and governance where leadership and accountability is lacking (The National Department of Health, 2019).

The National Department of Health (2019) further highlights that there are challenges in the South African healthcare system which all have a negative effect on the delivery of healthcare. One such challenge is staff shortages which impact the delivery of quality healthcare. Fonn, Ray & Blaauw (2011) confirm that staff shortages particularly in the nursing profession is problematic in sub-Saharan African health systems. Africa is said to have an uneven nurse to patient ratio, there is less than one health worker per 1000 population compared to 10:1000 in Europe, (Fonn et al., 2011). These ratios clearly indicate a serious problem with staff shortages, especially in the nursing profession. According to Bloomer & Bench (2020) nurse turnover, recruitment, and retention issues associated with appropriately skilled and qualified nurses are a common issue, with demand exceeding supply especially in the public healthcare sector. Indicating that there are not enough nursing staff to take care of the patients which often lead to negative outcome for the patients such as late medication dispense, medication errors, patient falls, poor infection control.

This study will therefore take an in-depth look at the effect of nurse shortages on healthcare in a public health care setting. The next section will consider the statement of the research problem.

1.2 Statement of the research problem

In a report on improving health worker performance, Dieleman & Harnmeijer (2006) state that the lack of nurses leads to poor performance and inappropriate care, which contribute to reduced health outcomes for the patient. The initial findings of this report uncovered

that poor performance was closely linked to nursing staff not being sufficient in numbers. Heywood (2014) backs the statement of the findings made by Dieleman & Harnmeijer by noting that nurse staff shortages are among one of the main challenges facing healthcare sectors globally. Nurse shortages directly impact patients as the patient could be mistreated due to inappropriate care provided by the nurses because nurses are under strain of uneven workloads brought on by nurse shortages. Heywood (2014) reports that there is a severe shortage of skilled nurses in the public healthcare sector compared to the private sector in South Africa.

In an interview with a spokesperson for the National Education, Health and Allied Workers' Union (Nehawu), Jeranji (2021) reported that nurses make up the largest part of health care personnel, offering a broad spectrum of care in preventing diseases, promoting health, curing diseases and rehabilitative services and that the shortages in the nursing profession will directly and negatively influence the delivery of quality healthcare, because there are less nurses and more patients.

According to Courtright & Kerlin (2014) demand for critical care is growing, partly in response to an ageing population's increasing healthcare needs. Yet the responsibilities of nurses are being pushed to the limit mainly because there are less nurses unable to cope with the influx of patients. A similar judgment is made by Bloomer & Bench (2020) who state that the global challenges heighten the need for acute care and great pressure is being placed on the limited nurses and healthcare systems as a whole. It is evident that the delivery of quality care services in the public healthcare sector is being jeopardised and is dependent on the competence of the existing nursing staff who are employed and who need to work around the clock often with limited resources in the public healthcare sector which often makes the delivery of good healthcare even more difficult. Moreover, inadequately staffed and resourced units in hospitals have been linked to poor quality patient care (Courtright & Kerlin, 2014).

Nurse shortages place a significant burden on the healthcare system in South Africa. The nurse shortages issue has been addressed by authors in previous research papers

(Dieleman & Harnmeijer, 2006; Courtright et al., 2014; Heywood, 2014; Bloomer & Bench, 2020) but it does not specifically address the implications that nurse shortages has on the public healthcare system and the effect it has on the existing staff. Data acquired from this study will be used to inform the healthcare sector and to enhance the body of knowledge for quality healthcare. In the following section, the rationale and significance of this study is discussed.

1.3 Rationale and significance of study

The National Health Quality Improvement Plan (NHQIP) highlights and tackles some of the challenges that the South African healthcare system faces, both in public and private sectors, staff shortages being amongst these challenges. The NHQIP highlighted quality improvement strategies with emphasis on training healthcare workers to develop best practices and outlined the importance of commitment that is needed from all stakeholders involved, from the highest levels of government, the national health system down to the healthcare workers themselves in order to ensure delivery of quality healthcare services for South Africans. The statement made above speaks volumes in terms of encouraging the responsibility and commitment of strategies from all stakeholders involved in healthcare so that immediate action can be taken to remedy the nurse shortage problem that plagues the public healthcare sector (NHQIP, 2021).

It is evident from the research problem statement and from the NHQIP that the South African healthcare system is slowly weakening due to various challenges that healthcare workers face. Nurse shortages threatens the smooth functionality of a healthcare system as there is not enough nurses to deal with the exceeding number of patients, which has a poor effect on the delivery of healthcare. This is found mainly in the South African public hospital setting, since the majority of South Africans turn to public healthcare due to its affordability. This therefore prompted the need for this study to assess the effects of nurse shortages in the public healthcare sector. Nurse shortages have to be remedied in order to enhance better healthcare delivery for patients.

The findings from this study will provide an understanding of the main reasons that leads to shortages as well as to determine the effect of shortages on the existing nurse workforce and how these impact the delivery of healthcare to patients.

1.4 Research questions

1.4.1 What are the reasons for nurse shortages in a public hospital?

1.4.2 What effect do staff shortages have on the existing nursing staff

1.4.3 How does this impact their ability to provide good health care

1.5 Research aim

The aim of the study attempted to discover the effect of nurse shortages on healthcare at a public hospital.

1.6 Research objectives

1.6.1 To discover the reasons for nurse shortages in a public hospital

1.6.2 To assess what challenges nurses face because of staff shortages and how this influences the delivery of health care.

1.6.3 To assess if there are coping mechanisms in place to assist with the challenges in providing good health care as a result of the shortage.

The following section illustrates how the research questions, objectives and propositions were linked.

1.6.1 Linking research questions, objectives and propositions

The research questions, objectives and proposition of this study were linked to form the basis of the problem statement, as displayed in Table 1.1.

Table 1.1: Links between the secondary research questions, objectives, and proposition

Research questions		**Linking objectives**		**Linking proposition**	
RSQ 1	What are the reasons for nurse shortages in a public hospital?	OBJ 1	To discover the reasons for nurse shortages in a public hospital	P1	Nursing shortage is on the rise and determining the cause of the problem will help the healthcare sector improve its retention strategies thereby limiting staff shortages thus improving healthcare
RSQ 2	What effect do staff shortages have on the existing nursing staff?	OBJ 2	To assess what challenges nurses face as a result of staff shortages and how this influences the delivery of health care	P2	Staff shortages cause daily challenges for nurses such as personal (stress, burnout, fatigue) and professional challenges that impact the delivery of healthcare
Research questions		**Linking objectives**		**Linking proposition**	
RSQ 3	How does this impact their ability to provide good healthcare.	OBJ 3	To assess if there are coping mechanisms in place to assist with the challenges in providing good healthcare as a result of the shortage	P3	Strategies can be created to help nurses deal with challenges they encounter as a result of staff shortages; this will have a positive effect on the existing nursing staff thus leading them to provide good healthcare

Source: Researcher's own work

Table 1.1 displays the links between the research questions, objectives and proposition for this study. Column one displays the research questions, column two displays the objectives, and in column three it is clear how the research questions are linked to the proposition. The next section provides detail about the preliminary literature review that was conducted for this study.

1.7 Preliminary literature review

This section focuses on the preliminary literature gathered to create the background of this study. Chapter Two will cover a broader discussion on the theoretical frameworks applied to this study and Chapter Three will provide a structured literature review.

This study investigated the effect of nurse shortages in healthcare at a public hospital in the KwaZulu-Natal (KZN) Province. Therefore, it was imperative for the researcher to discover the reasoning behind the nurse shortage and to investigate some of the challenges faced by the existing nurse workforce due to the staff shortages in order to understand the effect these shortages had in public healthcare. The challenges needed to be identified and addressed in order for the existing staff to be able to cope with the shortages and gain back their motivation in order to deliver quality healthcare for patients. Thus, various theories and models were considered for this study such as; Transactional Model of Stress and Coping, The Hertzberg Two-Factor Theory, The Spillover-Crossover Model and Lewin's Three-Step Model for Change. The conceptual framework and theories and models which support and bring together the literature for this study will be explored in greater detail in Chapter Two of this study.

Following evidence of the deteriorating quality of health services provided to South Africans, South African President Cyril Ramaphosa formed the Presidential Health Compact which aimed to raise the quality of healthcare for the benefit of the population, through nine fundamental pillars of the health system, which, when dysfunctional leads to a path of collapse (Presidential health compact, 2019). Pillar one, which is of significance to this study, addresses the Human Resources for health operational plan which is critical to working towards building adequate numbers of well-distributed health care workers (HCWs) with the right skill mix, of a high standard, resulting in improved coverage of essential services, and an overall improvement in key health outcomes (Presidential Health Compact, 2019).

The above statement highlights the importance of a well distributed skilled nursing workforce required for the delivery of essential healthcare services which is immediately

beneficial to patients as they experience a better health outcome. The opposite effect occurs when nurses are short in numbers and there are less hospital resources such as medical equipment and supplies. Since nurses are considered to be frontline in healthcare and providing care to all types of patients, the supply of nurses should be at optimum levels at all times. When hospitals especially in the public domain face severe nurse shortages it becomes an immediate concern as the public hospitals in South Africa often treat and take care of the majority of the population. Therefore, the reasons for nurse shortages and the effect it has on healthcare has to be investigated and understood in order to formulate better strategies for the hospital management and the National Department of Health to remedy the problem.

Nurse shortages continue to rise especially in the public healthcare sector where there is a greater need for nurses because of the increased number of patients. There are various reasons contributing to nurse shortages. Dieleman & Harnmeijer (2006) identify various factors influencing nursing staff shortages:

- personal and lifestyle factors such as living conditions and individual behaviours;
- job related factors such as working conditions, work safety and job demand;
- workplace related factors such as human resources, policy and planning;
- job satisfaction such as remuneration package, management style and leadership and career advancement.

WHO (2018) is of the view that a skilled, motivated and supported health workforce is essential to providing consistent and quality healthcare to patients. However, nurses want to provide the best care to their patients, but the systems and environments they work in make this impossible. As a result, nurses have to endure a considerable deficiency in both the quantity and quality of their workforce. This suggests that the delivery of quality health care can be jeopardised due to the availability of nurses, which is lacking in South Africa due to the nursing shortage. The public hospitals also struggle with lack of medical resources such as equipment and medical consumables which also contribute to creating a poor working environment for nurses. This may be another reason for nurses leaving

as they have to work under such conditions and their patients are at risk because they cannot provide the best level of care due to the lack of these resources.

According to Rowe, Savigny, Lanata, & Victora (2005) the quality of healthcare delivery in hospitals depend on the available human resource mix and their motivation. In healthcare, the level of motivation is defined as the desire to do well and is an important factor in determining quality. Motivation within the workforce is associated with a happier workforce that experiences less staff turnover and burnout and an increased performance and retention rate (Deci, Olafsen & Ryan, 2017) which leads to a higher quality of healthcare delivery due to nurses being sufficient in numbers (WHO, 2006).

Making sure that there is adequate remuneration can improve nurse retention, but it is not enough. Staff retention is strongly influenced by other positive factors, such as improved interest, enjoyment, and satisfaction in the working environment (Merriel, Dembo, Hussein, et al., 2021). In order to promote better healthcare delivery and retain nurses, an increasing number of interventions are being developed to enhance their motivation. Among these interventions are financial incentives tied to performance targets, as well as nonfinancial incentives like career development, a good work environment, easy access to work resources or tools to enable work efficiency, (Borghi, Lohmann, Dale, Meheus, Goudge, Oboirien & Kuwawenaruwa, 2018). Therefore, it is imperative that hospital management become aware and understand the reasoning behind the nurse shortages as well as the challenges that the existing nursing workforce face in order to devise appropriate strategies that will not only help retain the workforce but also assist with their challenges which indirectly will motivate them to continue delivering the best healthcare they can under their current circumstances.

1.8 Definition of terms

Nurse - A nurse cares for individuals, families, and communities enabling them to recover optimal health and quality of life.

Registered Nurses - A registered nurse is a licensed healthcare professional who specialises in a specific area of care. They may supervise other healthcare staff, including student nurses, licensed practical nurses, unlicensed staff, and less-experienced registered nurses.

Operational Nurse Managers - Operational nurse managers manage and are accountable for all nursing staff within the unit including making sure that the quality of nursing care to patients is up to standard. The Operational nurse managers are also responsible for the resources associated with health care delivery in the unit.

Patient care - Patient care encompasses prevention, treatment, and management of illnesses as well as preserving physical and mental health offered by a healthcare professional.

Staff shortage - inadequate number of qualified individuals in a particular occupation to meet the work demand.

Staff attitude - Staff can either have a positive or negative attitude about their work or towards their co-workers, management or the company as a whole. Staff attitude is formed by the way a staff member thinks about a particular situation or person which influences their behaviour towards that particular situation or person.

The methodology used in this study is presented in the next section.

1.9 Research Methodology

Methodology is defined as a procedure through which researchers need to conduct their research (Sileyew, 2019). This process includes the research design, data collection process and data analysis method.

This study adopted a qualitative design with an exploratory descriptive approach. A qualitative study amongst nurses was conducted to discover the effect of nurse shortages

at a public hospital. The qualitative approach was undertaken with in-depth face to face interviews in order to ensure a comprehensive data collection and analysis (Sekaran, 2010). Thus, in-depth face to face interviews were conducted with registered nurse in order to understand the challenges they experienced. Interviews were also conducted with Operational Nurse Managers to understand how they dealt with nurse shortages in their unit and to uncover how the shortages affected the delivery of healthcare.

Qualitative research is used to gain an in-depth understanding of the underlying reasons and motivations of research (Malhotra, 2015). Delport & Fouche (2005) explains that the qualitative approach seeks a first-hand, holistic understanding of the phenomena of interest. Often, qualitative research has the goal of gaining preliminary insights into the study's research problem, which can be enough for decision-making in some situations if focus groups or in-depth interviews yield consistent results (Hair, Celsi, Oritinau & Bush, 2013).

Therefore, the qualitative research approach was used in this study in order to seek a holistic understanding about the effect of nurse shortages on healthcare at a public hospital. Qualitative research will help understand the reasons for nurse shortages and the implications the shortage has on healthcare, which may reveal unexpected findings and reactions from the nurse workforce which can help the researcher decide on the best recommendations or strategies to aid the research problem.

The sample consisted of participants working in the KZN public hospital under study. The sample population was representative of the two different levels of ranked staff being Operational Nurse Managers and Registered Nurses. A sample of 20 staff members, representative of five Operational Nurse Managers and 15 Registered Nurses from five critical care wards were interviewed by the researcher.

This study used a qualitative method. Structured interview questions were administered to registered nurses and operational nurse managers within the Intensive Care Unit (ICU), Neonatal Intensive Care Unit (NICU), paediatric ward, medical ward and surgical ward.

For this study, a narrative analysis of the recorded interviews was applied. The approval to conduct the study is discussed next.

1.10 Ethical considerations

The approval to conduct this study was granted and supported by the National Department of Health on 15 November 2021. Ethics approval for the study was granted by the faculty's Research Ethics Committee (FREC) on 16 November 2021 (Certificate No. 2021 FBMSREC 078) as presented in Annexure C.

Permission to conduct the research at the KZN hospital was obtained from the CEO and management team of the hospital. The permission was granted in the form of an acceptance letter signed by the hospital's CEO dated 23 August 2022. Permission to interview nursing staff was sought from the necessary department heads in the form of an attached permission letter as presented in Annexure A. The respondents were notified about the interview procedure and that probing questions may be asked to further investigate their responses.

An interview permission form was provided to the nurses on the day of the interview. The consent form included a request for permission to audio-record nurses during the interviews. Before participants signed the consent to participate, it was explained by the researcher that there were no incentives for participating in the study. They were informed that participation was voluntary, and subjects were free to withdraw at any time and there were no negative consequences on their part. The researcher emphasised that the respondents' comments will be treated confidentially and respondents will remain anonymous. The limitation of the research is discussed in the next section.

1.11 Limitations of research

The study was limited to explore nurse shortages leading to poor healthcare at a public hospital in KZN South Africa only. The sample was restricted to Registered Nurses and Operational Nurse Managers in the ICU, NICU, Paediatric, medical and surgical wards only. The next section provides an overview of the research instrument used in this study.

1.12 Data collection instrument

In this study, the researcher used a qualitative method to collect data. The qualitative method is a type of scientific research investigation following a predetermined procedure to answer a question, collecting evidence and producing unexpected findings (Denzin & Lincoln, 2005). Interviews were conducted with Registered nurses and Operational Nurse managers to provide rich descriptive text documenting how they experienced nurse shortages providing information about the "human" side of the nurse shortage issue. A structured interview schedule was utilised by the researcher in this instance and each interview was recorded with a smartphone so that the researcher was able to apply a narrative analysis of the data. The supporting document which outlined the permission obtained to conduct this study at the KZN hospital was also presented to the participants of this study before the interview took place.

1.12.1 The interview

Structured in-depth 'in-person' interviews were conducted with twenty respondents from five wards at the public hospital. The interview was directed to Registered Nurses and Operational Nurse Managers from each ward and the researcher recorded each interview.

1.12.2 Research instrument

The one-on-one in-depth interview was conducted using an interview schedule to answer the research questions. The researcher developed an interview schedule by incorporating a set of questions relevant to the research questions of this research. Section A of the interview schedule focused on the biographical data of the participant. Section B delved into the current staff ratios of the wards, section C focused on the daily challenges at work due to the nurse staff shortages and section D uncovered if there were any coping mechanisms in place to cope with the challenges faced as a result of the nurse shortages in providing good healthcare.

1.13 Validity and reliability

To ensure reliability and validity of the questions asked in the interview stage, the researcher ensured that the interview questions were designed according to the required data and that the respondents were able to understand the interview questions. A pilot test was a way to ensure that the interview questions were understood and aligned with the data that was needed for the study. The pilot testing of this study is discussed in the next section.

1.14 Pilot testing

Prior to the data collection process, the researcher conducted a pilot test to ensure the validity and reliability and the understanding of the interview questions. The pilot study was conducted at a public hospital in the Western Cape Province which was convenient for the researcher and helped the researcher understand a bit more about how critical care units operate and the work responsibilities of registered nurses and operational nurse managers. The pilot testing assisted the researcher in ensuring that the interview questions were clear. After the pilot testing was concluded, the researcher was able to make small adjustments to the interview questions as it became apparent that a few questions were not needed as it just lengthened the interview process. The respondents are dealing with critically ill patients, so it was important to get the interview questions as short and precise as possible. The design of the interview questions for the study will be discussed further in Chapter Four, which explains in detail the methodology undertaken for this study. The next section discusses the delimitations of this study.

1.15 Delimitation of study

This study considered registered nurses and operational nurse managers only from one public hospital in KZN South Africa. The population and sampling method used in this study is listed in the next section.

1.16 Population characteristics

A population is an identifiable group of elements that are either in a form of people, products or organisations that are of interest to the researcher and important to the

research (Hair, et al., 2013). Furthermore, it refers to a whole group of people, events, or things that the researcher wishes to investigate and make suggestions about. An element or unit is considered to be a single member of the population (Sekaran & Bougie, 2011). The element/unit of analysis for this study is selected nurses from a public hospital in KZN. In the study, the sample size was created on the guideline for sample size decision-making (Sekaran & Bougie, 2011). It was also created on precision and confidence in determining the sample size. Precision refers to how close the estimates are to the true population characteristic which determines the sampling weight and consequently sample size. Sekaran & Bougie (2011) further suggest that confidence indicates how convinced we are that our estimates will definitely hold true for the population, subsequently, the researcher is confident that estimates of the population, created on the sample statistic, will hold true.

The researcher chose a hospital in Durban KwaZulu-Natal to conduct the study and the population was determined by the departments that faced the most nurse shortage strain over the past few years. The researcher, therefore, chose to focus on the registered nurses and operational nurse managers who work in the critical care wards such as ICU, NICU, paediatric, surgical and medical wards to get a broader view on the effect nurse shortages have at these crucial departments.

1.17 Sampling method

A sample is defined by Sekaran & Bougie (2011) as a subset of the population. A sample may represent some, but not all elements of a population. Probability sampling is when the elements of a population have knowledge of being chosen as subjects in a sample (Sekaran & Bougie, 2011). In non-probability sampling not all population members have an equal chance of participating in the study therefore, findings cannot be generalised to the population (Sekaran & Bougie, 2011). Participants in this qualitative study were selected using non-probability sampling (Saunders, Lewis & Thornhill, 2009). Purposive sampling is an example of non-probability sampling in which the researcher selects participants who were best suited to answer the study question (Saunders et al., 2009). In this study, purposive sampling was applied, and the researcher chose registered

nurses and operational nurse managers from a public hospital in KZN that was best suited for the interviews. The interviews were conducted using a semi-structured interview schedule. The next section reveals how the data from the interviews were captured.

1.18 Data capturing

The information from the twenty qualitative interviews were recorded by the researcher using a voice recorder and smartphone. The audio files were downloaded and named according to a number sequence and the recorded data was then transcribed onto a Microsoft word document. The following section will discuss how the captured data for this study was analysed.

1.19 Data analysis

The qualitative analysis of data that was collected through semi-structured interviews was analysed using content analysis and NVivo.

1.20 Outline of the research study

This study consists of six chapters. The details of the research chapters are listed as follows:

Chapter One: Introduction of the study

This chapter introduces the study and problem statement. It also describes the research objectives and research questions, research methodology, literature review, limitations of the study and the significance of the study followed by the summary of the chapter.

Chapter Two: Models and theories

Chapter Two provides an overview of the conceptual framework and discusses the theories and models in context to this study followed by a summary of the chapter.

Chapter Three: Literature review

This chapter discusses the literature for the study and concludes with a summary of the chapter.

Chapter Four: Methodology

Chapter Four explains the methodology with an introduction, description of the research process and design, followed by the data collection process, population and sampling, the research instrument, data analysis and lastly a summary of the chapter.

Chapter Five: Research results and findings

This chapter presents the research results and findings with an introduction, a discussion of the results and findings, and a summary.

Chapter Six: Conclusion and recommendations

Chapter Six provides the conclusion of the study as well as the recommendations and suggestions for future research.

1.21 Summary of this chapter

This chapter provided the background and introduction for the research study. The aim and objectives were outlined. The next chapter will outline the models, theories and frameworks for the study.

CHAPTER TWO
MODELS, THEORIES AND FRAMEWORK

2.1 Introduction

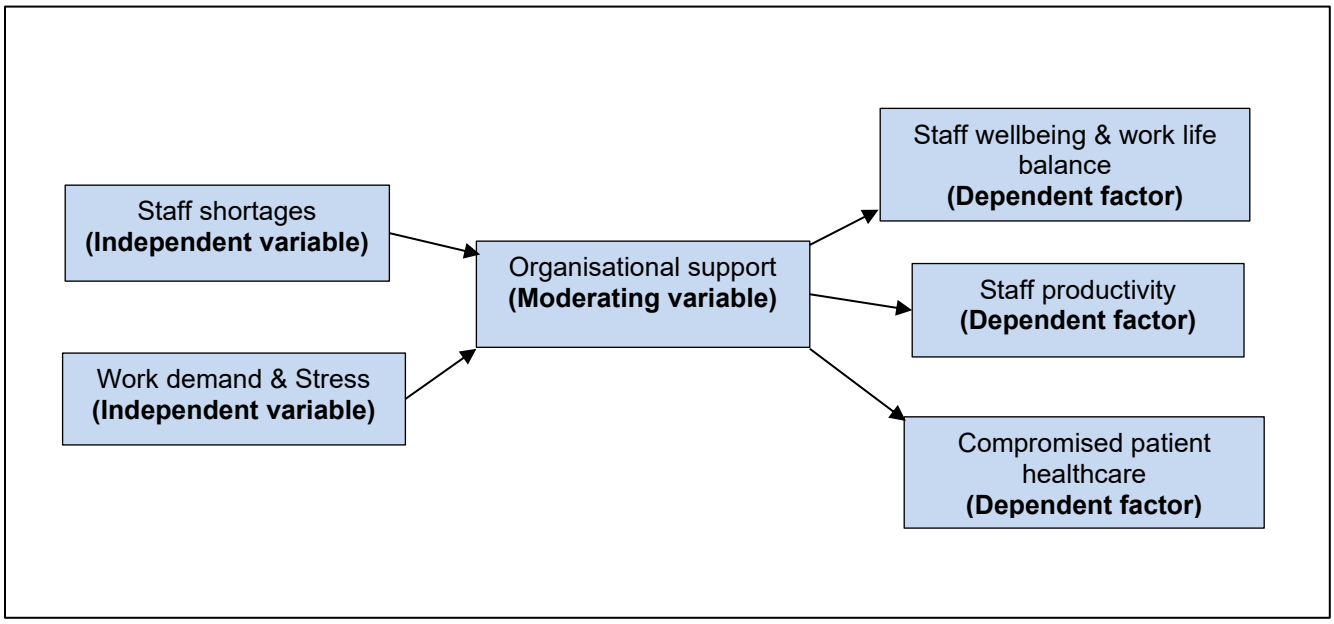
Swaen & George (2022) describes conceptual framework as identifying the expected relationship between variables, which help define the research objectives process and mapping out how these objectives come together to draw logical conclusions. According to Imenda (2014) the conceptual framework can be considered as the final lens for viewing an identified issue's deductive resolution of a problem. The conceptual framework is thus considered to be an essential step in the research process.

The conceptual framework was created by collecting and reading relevant literature while compiling the literature review to help understand the research problem. The conceptual framework for this study is represented in Figure 2.1, which displays in detail the researcher's conceptualisation of the relationship between the research study variables. According to Bhandari (2022) variables are characteristics that can take on different values, which researchers often use in studies to test cause-and-effect relationships.

The independent variable is the cause, the dependent variable is the effect, and the moderating variable influences the relationship between a dependent variable and an independent variable (Zach, 2021). An intermediate variable, also known as a moderating variable, is described by Cherry (2023) as the factors that play a role in the relationship between the dependent and independent variables.

As noted in Figure 2.1 the perceived relationships between the dependent and independent variables are illustrated. The variables for this study originated from research conducted for the literature review. These variables include organisational support, staff shortages, job demand and stress, nurse productivity, staff well-being and morale, and compromised patient healthcare. Each variable in the conceptual framework is supported by theoretical underpinnings and discussed in detail which is presented in the following discussion.

Figure 2.1: Researcher's Conceptual Overview



Source: Researcher's own work

2.2 Variables and theoretical underpinnings in the conceptual framework

2.2.1 Organisational support

Organisational support is important to employees as they spend their time and put in a lot of effort in their workplaces. In return, they have certain expectations from their organisations like salaries and job security (Mihalache, 2021). According to the Organisational Support Theory, employees form a general perception of how their organisation values their work and cares about their well-being, which is termed as perceived organisational support (POS) (Kurtessis, Eisenberger, Ford, Buffardi, Stewart & Adis, 2017). Employees have expectations from their employers, especially since they dedicate time and effort to doing their daily jobs often under challenging circumstances.

The researcher believes that because staff shortages have been an ongoing problem at the researched hospital, organisational support should be at its peak by providing good leadership and management to help with relief and finding active solution strategies for staff shortages. It is presumed that the nursing staff at the researched hospital expect support from their leaders in recognition, compensation for overtime, fair pay and

emotional support. The Organisational Support Theory is helpful in understanding the nurses perceived organisational support of the researched hospital while facing staff shortages. The next section will explore the Organisational Support Theory in relation to the organisational support variable.

2.2.1.1 Organisational Support Theory

The Organisational Support Theory proposes that employees understand organisational support from their workplace in caring for their welfare as well as an appreciation for their work contributions (Eisenberger, Huntington, Hutchison & Sowa, 1986). The theory states that employees perceive their organisation to have a disposition to view them favourably or unfavourably which reflects in the treatment it provides them (Eisenberger, et al., 1986).

Perceived organisational support or (POS) is defined by Dr Eisenberger as the extent to which the employees believe and trust in their organisation, that it is doing its best to ensure the success of the entire team. Drawing on Social Exchange Theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960) the Organisational Support Theory holds that by providing sufficient resources to employees, POS is felt among employees and a sense of obligation to help the organisation to reach its goals (Caesens & Stinglhamber, 2020). Additionally, the Organisational Support Theory assumes that POS fulfils important employee socioemotional needs at the workplace such as the need for affiliation with peers and colleagues, which leads to employee self-enhancement which acts as a basis for explaining why a high POS leads to beneficial outcomes for both organisations and their employees (Eisenberger & Stinglhamber, 2011).

Rhodes & Eisenberger (2002) maintains that employees develop POS to meet needs for approval, esteem and affiliation and for the benefit of increased work effort. POS increases employees' felt obligation to help the organisation reach its objectives. Therefore, employees display a form of commitment to their organisation and have an expectation that by going the extra mile and performing well in their jobs, that they will be rewarded. Behavioural outcomes of POS include increases in employee performance and

a decrease in negative behaviours such as absenteeism and turnover (Rhodes & Eisenberger, 2002; Shore & Shore, 1995).

POS is strongly driven by coherent leadership, good HR practices, desirable job conditions and fair treatment. Though research consistently shows these factors are strongly related to POS, little has been written on how to enhance POS (Eisenberger & Stinglhamber, 2011). To fill this gap, Eisenberger, Malone & Presson (2016) released research on how to optimise POS. The research also focuses on the relationship between supervisors and subordinates. For the purpose of explaining this theory in relation to this study, supervisors are referred to as the operational nurse managers (ONMs) and the subordinates are the registered nurses (RNs). The eight key tactics of POS labelled A – H are discussed below:

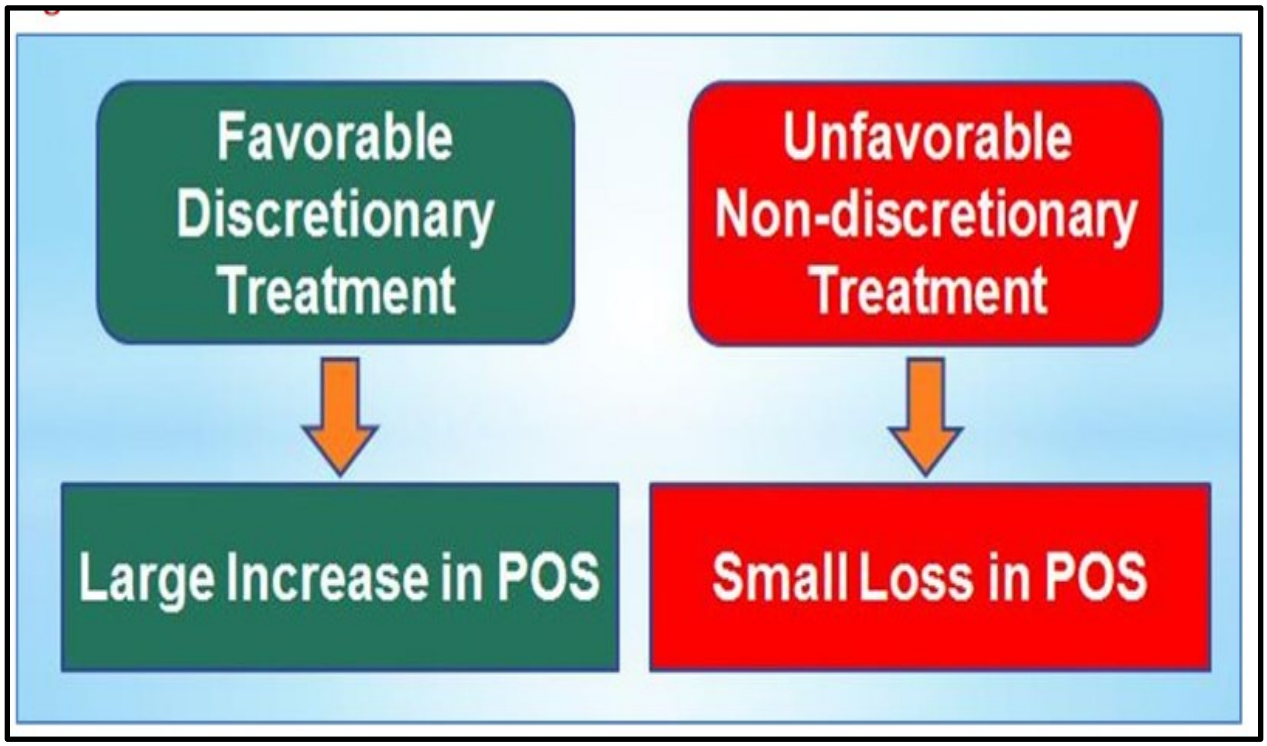
a) Implement supportive workforce services

Research conducted by Eisenberger, Cummings, Armeli & Lynch (1997) revealed that when employees received favourable job conditions, POS was stronger if employees believed the organisation had high control over the job conditions (Eisenberger et al., 1997). Favourable treatment received by employees from an organisation can be of various kinds, such as recognition for good work, opportunities for promotion and job security. However, such treatment only sometimes translates into high POS.

Employees understand that benefits received from the organisation are not only concerned with their welfare but can also arise from various other motives within the organisation (Eisenberger, Malone & Presson, 2016). POS can be enhanced by effectively conveying that favourable treatment on the part of the organisation is voluntary. Contrarily, unfavourable treatment by the organisation can reduce POS (Eisenberger, Malone & Presson, 2016).

The relation between favourable and unfavourable discretionary treatment is Illustrated in Figure 2.2:

Figure 2.2: Favourable and unfavourable non-discretionary treatment



Source: Eisenberger, Malone & Presson, (2016)

If the nursing staff in the researched hospital believes, for instance, their work provides excellent employee benefits such as education and training opportunities, overtime, and good working environment, then the nurse workforce understands that the many favourable HR benefits at their workplace are primarily voluntary, contributing to a high POS. However, if their workplace is forced to provide increases in pay or employee benefits based on a competitive job market, government regulations or public pressure, then POS will be minimised. If the nurses are not informed of the factors contributing to the unfavourable non-discretionary treatment, they may assume that their workplace has taken advantage of them.

If nurses are not receiving sufficient resources to do their job, are not being paid overtime or not being provided extra support in the form of hiring more staff complement due to the organisation's financial challenges, then the nurses may believe that the hospital values the economic side of the business at the expense of their workmanship. Nurses will not be able to perform their daily jobs efficiently, which is providing good healthcare to

patients. As a result, POS might significantly decline, and nursing staff end up feeling used and demotivated in the process, as they are expected to perform well in their daily jobs without sufficient resources or recognition.

Effective communication between the workplace and the nurse workforce becomes crucial at this stage so that the nursing staff can be aware of what is happening in their workplace and be guided on how to adapt and work in their environment. Another example of how the hospital can show in a discretionary way that they value their nurse's workmanship and care for their well-being, is by introducing an employee assistance program (EAP).

An employee assistance programme (EAP), according to Simpson (2020) is a confidential service that enables an organisation to help staff with personal or workplace issues that might be impacting their performance, well-being, mental or physical health; the employee can feel comfortable to discuss all issues and receive support on the matters affecting them most. Research involving case studies revealed that EAP services often improve occupational, social and psychological functioning (Jacobson, Jones & Bowers, 2011).

Employees feel valued and trust the organisation which helps to improve employee retention while also offering an excellent tool for attracting new talent (Simpson, 2020). Therefore, EAP services can be considered an effective supportive workforce service tactic implemented to increase POS at the researched hospital. Over and above EAP services, fair and consistent treatment of employees is just as important. The next optimisation tactic that will be discussed in the next section, is fair and equitable monitoring and the enforcement of management practices.

b) Be fair and equitable in the making, monitoring and enforcement of all management practices

According to Moorman, Blakely & Niehoff (1998) fair organisational practices and policies have a significant impact on POS because they are seen to be under the control of the organisation and integral to the long-term interests of the employees. Dowd (2021) believes that fair and consistent treatment of employees in the workplace builds trust, enhances morale and loyalty, and increases productivity. Strategies for achieving workplace fairness include articulated expectations of fairness, well-written policies, commitment to equitable practices, and unbiased, consistent enforcement of rules (Dowd, 2021). In this way, organisations can treat their employees fairly and equitably, conveying a sense of concern for their well-being. As shown by a great deal of evidence, Rhodes & Eisenberger (2002) postulate that fair treatment amongst employees is the strongest driver of POS.

The presence and acknowledgement of fair policies and procedures should influence nurses' perceptions of their workplace fairness and, as a result, serve to enhance their POS. Another optimisation tactic is that of rewards and recognition, which is required for high performance. Appropriately rewarding achievable goals will be discussed in the next section.

c) Set achievable goals and reward appropriately

Awarding employees with the appropriate recognition and rewards for a high-performance achievement is considered a driver of POS; when rewards and recognition for high performance are appropriately provided, organisations naturally create an environment where employees can expect to gain rewards for high performance (Eisenberger et al., 2016). Figure 2.3 reveals the relationship between rewarding achievable performance, differentiating high achievers and the impact these drivers have on the outcome of POS.

Figure 2.3: Rewarding achievable performance and differentiating high achievers

Source: Eisenberger, Malone & Presson, (2016)

In any business, employee recognition plays an important part in driving performance and meeting business goals. It is therefore vital for business leaders to devise employee recognition programmes to make employees feel valued and appreciated whilst they are achieving their goals (Rowe, 2022). Similarly recognition programmes can be implemented in the various medical wards to keep nurses feeling valued and appreciated which can keep them feeling motivated and thus contributing positively towards the delivery of good patient care. Research conducted by Stajkovic & Luthans (2001) suggests that rewards and recognition may be more effective when used together than separately. However, rewards and recognition should be based on reasonable expectations (Eisenberger et al., 2016). Therefore, when setting achievable goals Dameron (2020) advises goal setting to be relevant, exact, weighable, achievable, recognised and defined, keeping the big picture in mind. Similarly, the Operational Nurse Managers can set achievable goals for their nursing staff, allowing for recognition and reward which can optimise nurses POS. Another important optimisation tactic to consider is employee benefits which is discussed below.

d) Offer worker benefits that support your workforce needs

The research conducted by Lambert (2000) found that the perceived usefulness of work-life and family-life balance was viewed as a positive benefit by employees and was positively associated with POS. Therefore, organisations can increase POS by assessing and trying to accommodate the specific needs of their employees. Any other form of compensation that is provided to employees in addition to their monthly salaries or weekly wages are considered to be employee benefits. Employee benefits provide a bit extra to keep workers motivated and happy. Therefore, managers should consider a quality compensation package as an important tool or strategy in attracting and retaining employees (Walker, 2022).

According to a benefits survey report researched by Charaba (2022) some of the most popular employee benefits that employees found to be most important to them is health, disability and life insurance, retirement benefits, paid leave and family leave, education and professional benefits and housing subsidies. The organisation can convey concern with employees' welfare by customising benefits to meet the needs of employees as they enter the different stages of their career and life, this may advance POS (Eisenberger et al., 2016).

Management at the researched hospital has a duty towards their staff to provide them with or enhance decent benefits that help balance their family and work responsibilities. The management team can consider conducting an employee benefits survey to distinguish the most common benefits that are urgently needed. The approach taken will also enhance positive POS amongst the nursing workforce. Management support of supervisors to foster POS amongst subordinates is another tactic used to increase employee POS which is discussed below.

e) Support supervisors so they will foster POS in their subordinates

When subordinates feel supported by their supervisor's the level of POS is increased and they voluntary engage in behaviours that contribute positively to the organisation (Shanock & Eisenberger, 2006). A supervisor in the context of this research is seen as

the operational nurse manager (ONM) and the subordinates are the registered nurses (RNs). Therefore, if hospital management provide the necessary support for the ONMs, then the ONM's POS increases, which filters down to their RNs.

The management staff at the researched hospital has the responsibility to constantly engage, motivate and be supportive towards ONMs as this encourages positive POS which can have a positive impact not only on them but on their subordinates as well. The sixth key tactic is training subordinates to be supportive. This tactic is discussed in the next section.

f) Train subordinates to be supportive

Herrity (2023) postulates that employees with relevant and consistent training can help improve performance and efficiency. The findings of Herrity (2023) in relation to consistent training improving performance and efficiency, indicate the value of training employees and the contribution it has to supporting their supervisors in terms of achieving goals thus creating a virtuous cycle of support between employee and supervisor and ultimately a positive POS. Therefore, it is important for the management team at the researched hospital to consider tailor-made training programmes that will enhance knowledge and job skills at every level of nursing from operational nurse managers to registered nurses and auxiliary nurses. This will create a balanced working environment and an inclusive team that achieves goals together.

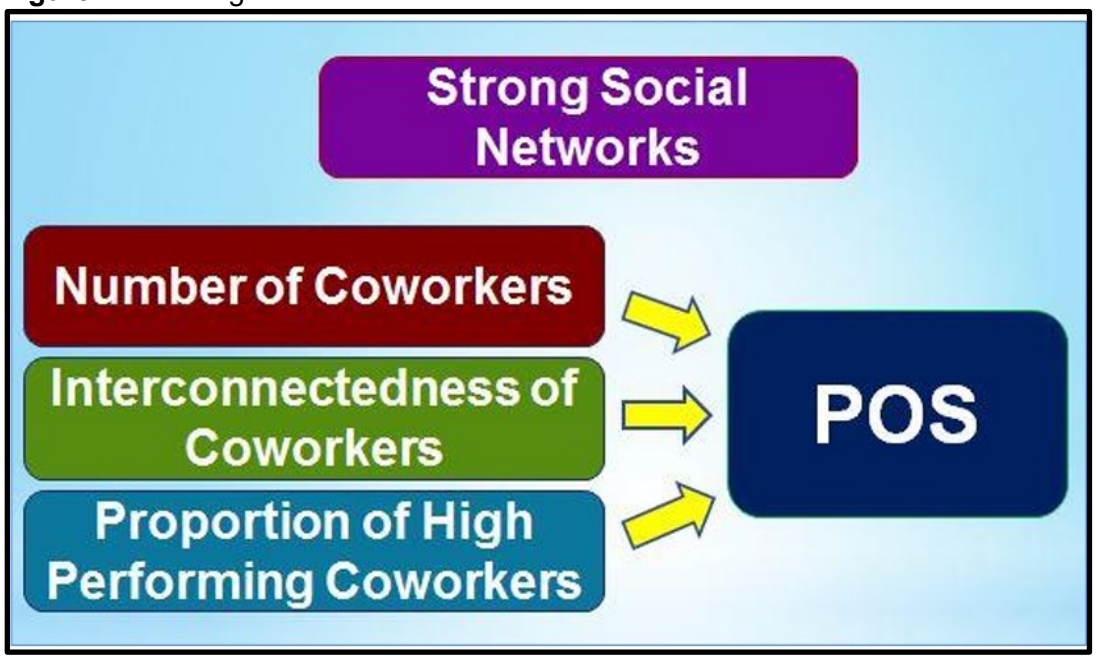
Training is considered as an effective platform for nurses to increase their knowledge and boost their job skills to become more productive in their workplace. Another way for nurses to grow their knowledge is through social networks within their organisation, the next key tactic is promoting strong social networks which is discussed in the next section.

g) Promote strong social networks

Merrell (2015) believes that social networks in the workplace have numerous advantages such as engaging and building relationships, employees' ability to communicate effectively beyond email or phone, encourage self-development, learning and discovery,

create, elevate and stimulate organisational culture. According to Hayton, Carnabuci & Eisenberger (2012) several aspects of an employee's network contribute to POS as illustrated in Figure 2.4 which are: (1) the number of co-workers in the network; (2) the number of mutual contacts in the network; and (3) the proportion of high-performing co-workers in the network. POS can be enhanced through activities that promote workplace social networks such as mentoring, team projects and informal social gatherings (Eisenberger et al., 2016).

Figure 2.4: Strong social networks



Source: Eisenberger, Malone & Presson (2016)

The Human Resource division at the researched hospital could consider implementing a social networking system for employees to share their knowledge and workplace experiences. Employees are able to relate to one another on this platform and can offer their support, guidance and advice to one another. This in turn makes the work tasks manageable and effective solutions or ideas can be exchanged to solve or cope with certain work problems. The last key tactic is encouraging organisational support prior to the start of employment which is discussed in the next section below.

h) Show organisational support from the very beginning

According to Zheng, Wu, Eisenberger, Shore, Tetrick & Buffardi (2013) new employees with high anticipated organisational support continue to show high POS as employees establish more effective relationships within the organisation. Therefore, it is important in the manner in which the interview process is carried out as it demonstrates the organisation's positive valuation of potential employees (Smither, Millsap, Stoffey, Reilly & Pearlman, 1993). By acting in a friendly and respectful manner the interviewer can make the applicant feel at ease, thus promoting anticipated organisational support.

Many employers have not yet fully understood the importance of creating and maintaining favourable relationships with employees as this helps alleviate absenteeism, enhances dedication to organisational objectives and increases performance (Eisenberger et al., 2016). The Organisational theory demonstrates that it is crucial for organisations to recognise employees as valuable sources of human capital. The eight HR tactics discussed is a part of the Organisational theory and encourages employees to perceive that the organisation values their contributions and cares for their well-being. POS enhances employees' positive beliefs and attitudes about the organisation which serves as a benefit for the employer (Eisenberger et al., 2016). The Organisational Support theory was therefore not found suitable as the benefits of the theory lay more with the employer than the employee and it is centred around the psychological processes constituting the basis for producing Perceived Organisational Support. Furthermore, the Organisational Support Theory does not take into account real time interactions between the organisation and its employees.

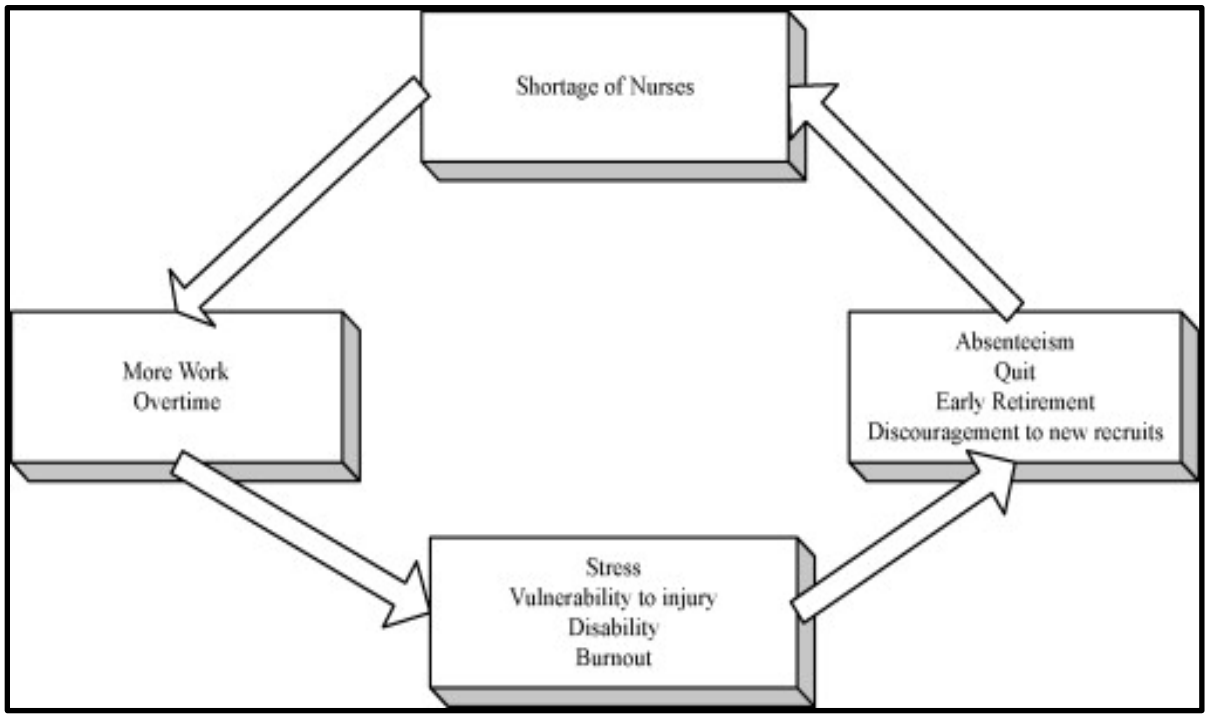
The next section discusses staff shortages which is an important independent variable in this research.

2.2.2 Staff shortages

One of the most prominent issues in healthcare entities is the severe shortage of nursing staff, which leads to dangerous patient care practices and outcomes. The definition of a shortage varies but can be defined by Oliver & Care (2019) as a gap between the number

of nurses required (demand) and the future number who are available to work (supply). According to Winter, Schreyögg & Thiel (2020) environmental and organisational factors significantly relate to staff shortages. Research conducted by Tamata & Mohammadnezhad (2022) revealed that some of the main factors contributing to nursing shortages were the lack of social support, work overload and low-level job satisfaction. Rajbhandary & Basu (2010) postulates that a highly stressful work environment 'burns out' experienced nurses and deters potentially new recruits, which creates the never-ending cycle of nurse shortages as depicted in Figure 2.5.

Figure 2.5: The cycle of shortages in nursing supply



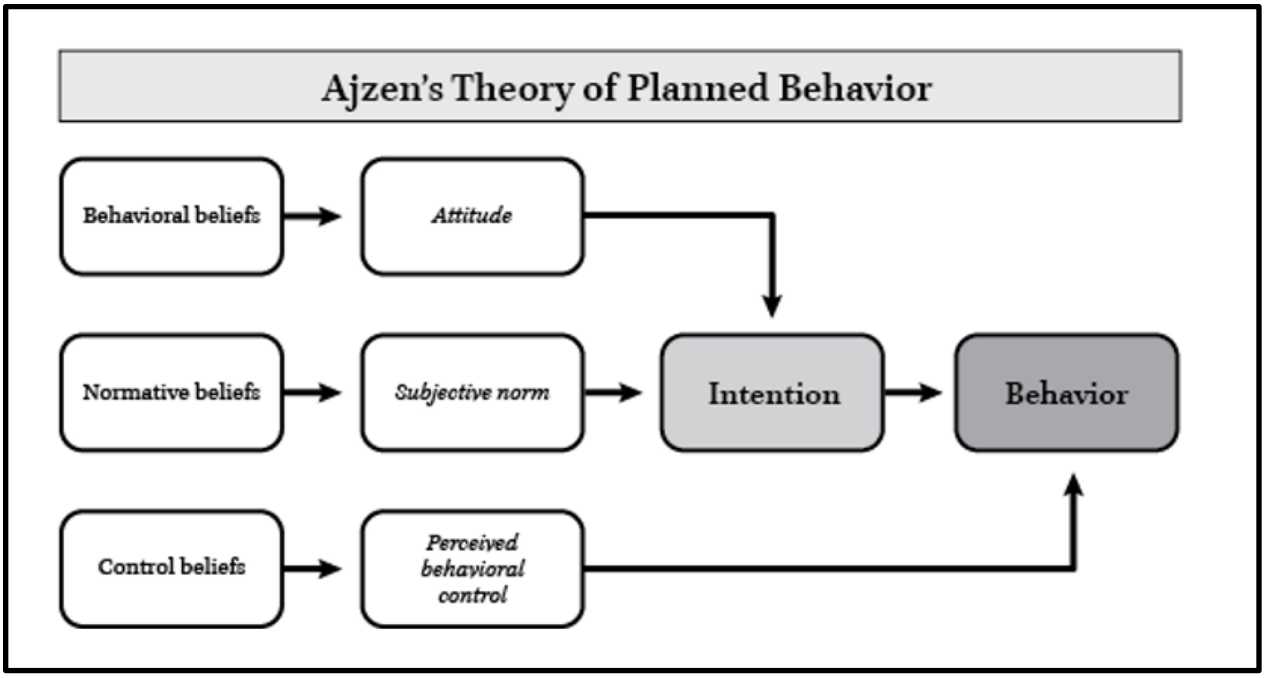
Source: Rajbhandary & Basu (2010)

The Theory of Planned Behaviour is helpful when understanding nurses behaviour related to staff shortages and examining if staff shortages impact their decision to be absent or ultimately quit their jobs. The next section discusses the Theory of Planned Behaviour.

2.2.2.1 Theory of Planned Behaviour

The Theory of Planned Behaviour (Ajzen, 1991) refers to an individual's intention to engage in a behaviour at a specific time and place. The theory was intended to explain all behaviours over which self-control can be exerted. Understanding these beliefs and the intentions they produce can provide clues on how to impact behaviour change. The researcher is of the view that environmental and organisational factors influence the cause of nurse shortages. Of significance is that the shortages have an impact on the existing staff, which creates more work for those who stay. This creates a stressful work environment which can cause stress and illness that leads to behaviour change in the form of absenteeism or quitting their jobs altogether which aggravates the nurse shortage resulting in a vicious cycle of nurse shortages. Therefore, understanding the behaviour of existing staff due to the impact of staff shortages will help create strategies that can help improve the environment, thereby influencing their behaviour to a positive one and limiting staff shortages and improving healthcare at the researched hospital. Figure 2.6 shows the process of how the Theory of Planned Behaviour is set out.

Figure 2.6: Ajzen's Theory of Planned Behaviour



Source: Ajzen & Fishbein (1980)

However, whilst the Theory of Planned Behaviour can help study a wide range of behaviour amongst the existing nursing staff, there is some controversy about rationality, because sometimes humans act emotionally, not rationally (Sansom, 2022). Authors Fishbein & Ajzen (2011) argue that the intentions of an individual to behave in an irrational manner may be formed by holding irrational, unreasonable, untrue or any other types of beliefs.

Therefore, the theory was not found suitable as predicting the behaviour of the nurses is a complicated task by the fact that their attitudes and intentions are dynamic and they can act emotionally in the form of anxiety, fatigue or moods created by the strain of shortages. These types of emotions are not taken into consideration in the Theory of Planned Behaviour.

The next section discusses work demand and stress because the literature reviewed has indicated that this independent variable has an influence over the never-ending cycle of nurse shortages.

2.2.3 Work demand and stress

A job demand is an action that requires ongoing physical or psychological effort or skill and consumes certain physiological and/or psychological costs (Bakker & Demerouti, 2007). Work demand is considered a common source of work-related stress. The researcher postulates that due to nursing shortages, the existing staff often work in demanding jobs with limited resources which brings about work stress which has an effect on their health either physically or emotionally and this leads to health issues causing sickness which leads to absenteeism that further impacts the organisation and worsens the problem of staff shortages. This also has an impact on the staff's well-being, morale and productivity which ultimately impacts providing exemplary patient healthcare. The researcher is of the view that Nurse Operational Managers are proactive in monitoring and managing workload levels as the researcher observed that OPMs would have daily meetings with their staff and would also assess staff levels for the day. If the staff levels were too low, the OPM would arrange to get additional nurses from other wards or from

a nursing agency. The OPM would also look at the work schedule for the ward and rotate the existing nursing staff evenly for the day ensuring that each nurse has equal workloads and are able to take their breaks. Monitoring and managing workloads can help with stress management and possibly implementing coping mechanisms to reduce stress in order to improve occupational health, safety and productivity.

García-Herreroa, Mariscala, Gutiérrez & Ritzel (2013) notes that high demands in workload together with low work resources and support are associated with poor healthcare delivery (e.g. psychological, physical) and also organisational impacts for example reduced job satisfaction, and sickness leading to employee absence. Nurses are already under pressure because of limited medical resources plus the uneven workload brought on by nurse shortages. These challenges prevent the existing nurse workforce from delivering the best possible care for their patients often taking a physical and mental toll on the nurses as the demand is high with many patients needing urgent care but the resources and support to provide the care is very low, which ultimately effects not only the quality of patient care that is delivered but also has an effect on the existing nurse workforce leading to burnout, fatigue and absenteeism.

In the domain of occupational stress, the workload is equated with job demand, which is considered to be a psychosocial hazard contributing to the development of stress, related illness or injury (MacDonald, 2003). The Job Demand Control (JDC) Model gives the view that workload causes work-related stress. The JDC Model and the Transactional Model of Stress and Coping is discussed in relation to this variable in the next section.

2.2.3.1 The Job Demand Control Model

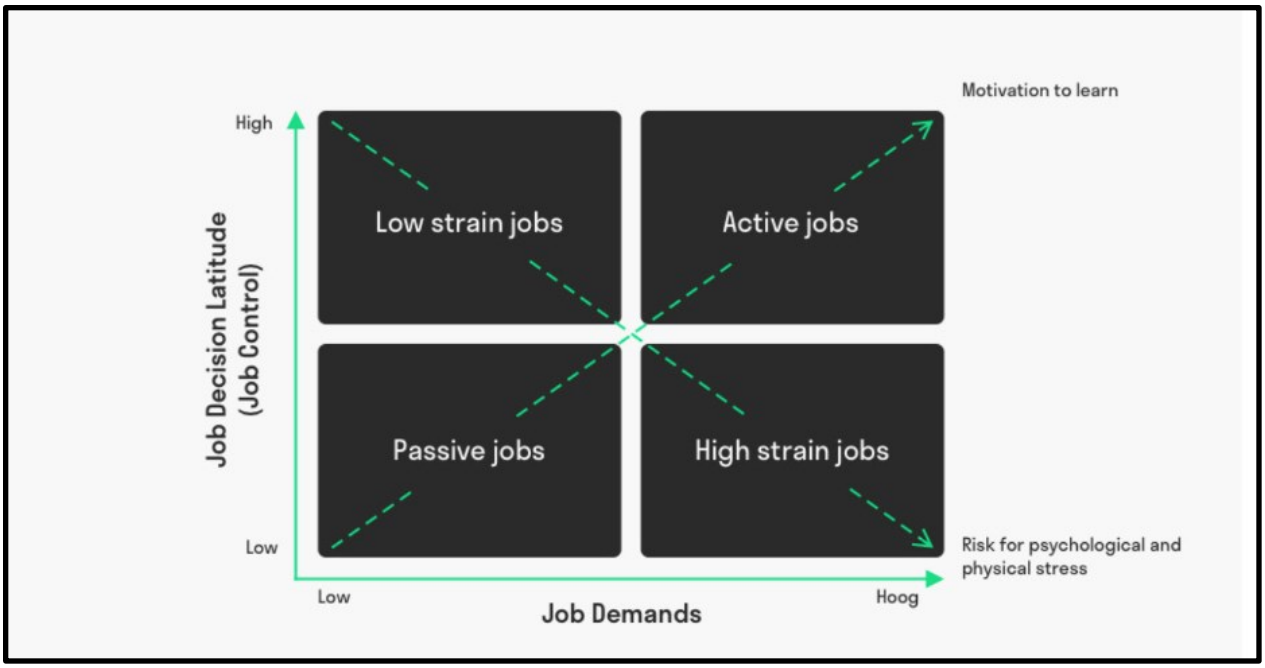
Developed in 1979, the Job Demand Control Model by Robert Karasek became one of the best-known models with regard to workload and work-related stress. The model illustrated in Figure 2.7 postulates that the primary sources of stress in our work lives lay within two basic job characteristics; psychological job demands and job decision latitude (Dowling 2020). The Transactional Model of Stress and Coping, proposed by Lazarus & Folkman (1984) contended that a person's ability to cope and adjust to challenges and

problems is a consequence of transactions that occur between a person and their environment.

Employees' stress and well-being are two concerning topics for organisational practitioners as well as researchers globally (Gameiro, Chambel & Carvalho, 2020). The Job Demand Control Model (JDC) helps understand the relationships between job characteristics and their impact on the employee's well-being, burnout, health, and performance (Gameiro et al., 2020). According to Karasek (2011) the model can help to demonstrate important issues relevant for social policy discussions of occupational health and safety. Karasek (2011) describes two variables as height of strain (demand), which represent the psychological stressors in the work environment that include work rate, availability, time pressure, effort and difficulty. The second variable relates to decision latitude (control), which concerns the freedom that an employee has to control and organise his own work, this means the control that employees have over their duties and how they want to perform them. It consists of both competence and decision-making authority.

According to Dowling (2020), when job demands are high and job decision latitude is high, the employee is in an active high-learning phase. When job demands are high and job decision latitude is low the employee is in a period of high strain.

Figure 2.7: Job Demand Control (JDC) Model



Source: Karasek (1979)

The JDC Model is helpful in highlighting the importance that demands and control have to employees' well-being and, in particular, the reinforced role that control has not only in preventing ill-being but also in promoting well-being.

The positive outcome of a balanced job demand and control is reduced stress, improved concentration which leads to nurses being able to deliver good healthcare to patients. The negative outcomes of high job demand and low control brings about strain which leads to confusion, lack of focus, burnout and stress which leads to errors and eventually absenteeism which contributes to the vicious cycle of staff shortages. The job demand control model however, is not precise about which aspects of psychological demands, or decision latitude, are most important in the model, and for what categories of workers. Although the theory would be helpful in highlighting the importance demand and control have on the nurse's well-being, the theory was not found suitable because it is not precise about which aspects of psychological demands, or decision latitude, are most important in the model, and for what categories of workers, which are considered important factors to assess demand and control of the nursing staff.

The next section will discuss the Transactional Model of Stress and Coping.

2.2.3.2 Transactional Model of Stress and Coping

According to the Transactional Model, the amount of stress people experience is based on their assessment of the stressors (called primary appraisal), and their assessment of the resources they have to cope with the stressors (called secondary appraisal) (Sanderson, 2022).

Lazarus & Folkman (1984), believe that stress is a relative concept of a complex and dynamic interaction between an individual and the environment. The Transactional model of stress and coping argues that the experience of stress is ultimately a system of appraisal, response and adaptation as outlined in Figure 2.8 on the next page.

According to Frings (2017), The Transactional Model of Stress and Coping proposes that stress is experienced as an appraisal (an evaluation) of the situation we find ourselves in. Specifically, the Transactional Model suggests we go through two stages of appraisal before feeling and responding to stress.

When a person is exposed to a stressor, the first stage of stress is the primary appraisal. In this stage, the person internally determines the severity of the stressor. If at this stage the stressors are perceived threatening, a secondary appraisal is performed, in which the person evaluates own resources to deal with stress (Glanz & Rimer, 2008). According to Frings (2017) in the secondary appraisal, the person has to decide if they have the ability to cope with the situation by examining the balance of situational demands (such as risk, uncertainty, difficulty etc) and the perceived resources (including things such as social support, expertise etc). If at this point the demands outweigh the resources and the person experiences negative stress, it is at this point important to engage in coping strategies (Frings, 2017). Similarly, nurses need to take the necessary steps to determine the severity of their stress which is brought on by the shortage of staff. An example of a stressor for nurses could be uneven workloads. The nurse will then need to identify with

the problem and if they can cope with the uneven workloads. If not, then they would need to implement coping strategies that will help them manage their workloads better.

Figure 2.8: Steps taken in the Transactional Model of Stress and Coping

Source: Frings (2017)

2.2.3.2.1 Coping strategies

Lazarus & Folkman (1984) define coping as individuals' constantly changing cognitive and behavioural efforts to manage specific external and internal demands appraised as taxing or exceeding their resources. Problem-focused and emotion-focused coping were distinguished, as basic responses aimed at managing or altering the problem causing the distress and regulating emotional responses to the problem, respectively (Lazarus & Folkman, 1984).

Lazarus (1996) admitted that the distinction between problem versus emotion-focused coping led to an oversimple conception of the way coping works. Compas et al. (2001) noted that a single coping strategy may be focused both on the problem and emotions, for example, making a plan not only guides problem-solving but also calms emotion. Venting not only escalates negative emotion but also interferes with implementing instrumental actions.

Lazarus and Folk-man's Transactional Model is used as a basis for describing stress brought upon the nursing workforce because of their stressful environment caused by

overworking due to nurse shortages. The authors propose specific strategies to reduce stress and maximise coping in a tough working environment. Understanding the Transactional Model can help the nursing workforce if they can find the time and space to reflect on how they are feeling and why. Frings (2017) recommends a few ways in which can help cope with a stressful situation:

1. Recognise that stress is a state caused by an interaction of the situation and your response to it.
2. Examine how accurate your primary appraisals are – do you really need to see the situation as self-relevant?
3. Identify the resources and demands systematically - this may help shift your secondary appraisals.
4. Look at your coping strategies – are you engaging in problem or emotional based strategies (or, a bit of both?). Ask yourself if they are (a) appropriate and (b) adaptive. Sometimes, taking a step back from things gives you a chance to cope more creatively, and in a more adaptive way.

This model is considered suitable to this study as it helps the nursing workforce recognise and examine stress in their workplace and encourages them to adopt coping mechanisms by themselves which will immediately help them to cope in any stressful work situation. Work demand and stress has an impact on nurses' wellbeing and work-life balance, which has been discovered in the literature research done for this study. The next section will discuss staff wellbeing and work-life balance and the theoretical underpinnings for wellbeing and work-life balance.

2.2.4 Staff wellbeing and work-life balance

A good work-life balance (WLB) is essential for employers as it is for employees. If employees have an uneven balance the chances of them simply burning out are far higher which will be echoed throughout their work (Teo, 2022). WLB efforts are irrelevant without a focus on well-being. That is why corporations are the entry point to creating a healthier world, and this has benefits for the company (Crump, 2017). Thus, WLB is vital for

individuals' wellbeing, organisation's overall performance and a functioning society (Grady, McCarthy, Darcy & Kirrane, 2008). Most people struggle to find a balance between work and family at some point in their lives. Family and work are considered delicate balancing acts. Clark (2000) maintains that competing demands of work and family life cause conflict and negatively affect the wellness of workers. This behaviour has been associated with several dysfunctional outcomes—strained familial relationships, inefficiency at work, and poor physical and mental health (Heissman, 2022). Grady et al. (2008) and Burke (2000) argue that corporations and executives need to recognise the importance of WLB, and its influence on employees, and organisations' productivity and performance.

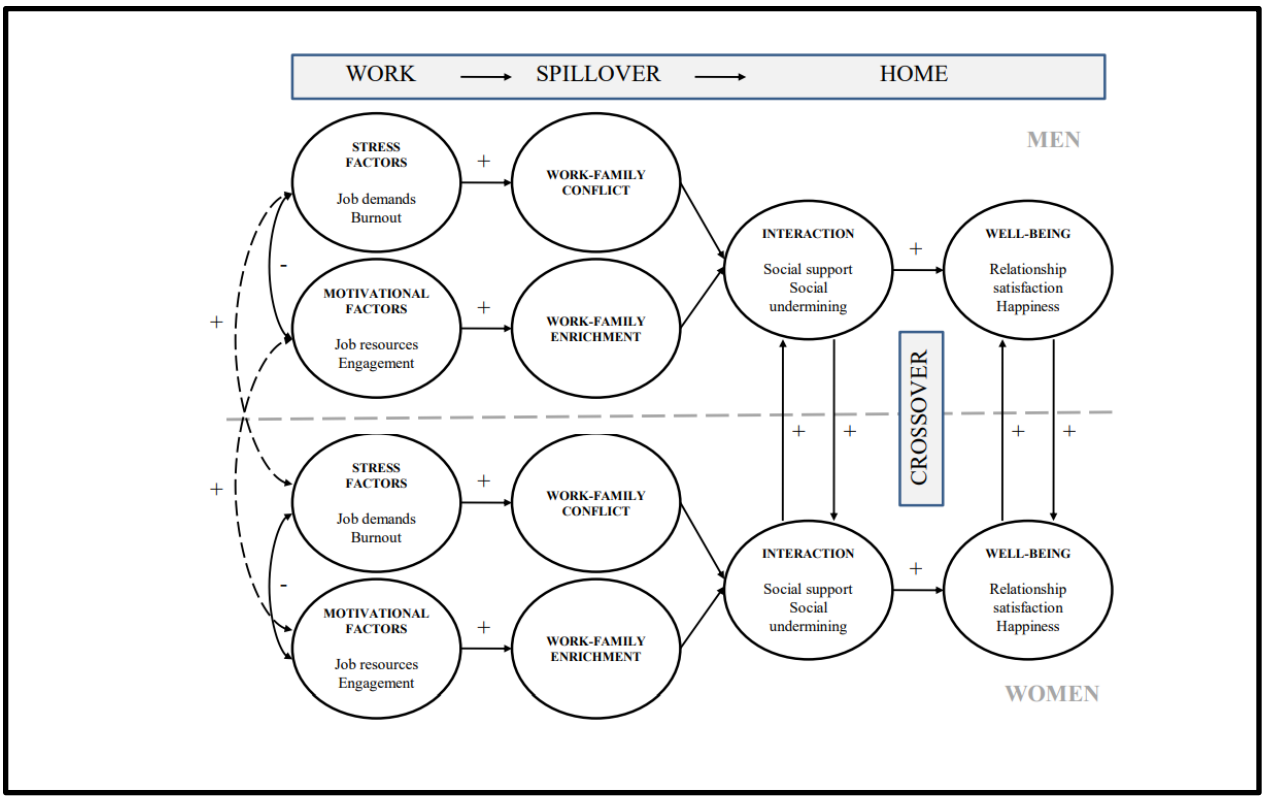
The researcher is of the view that nurse shortages and the excessive workload that it creates for the existing staff which often leads to them working longer shifts and eventually burning out does have an impact on their professional lives and more so in their personal life, especially where families are concerned leading to strained family relationships. Spillover best describes the transmission of states of well-being from one domain of life to another, for instance, work-life to family life (Westman, 2002). Bakker, Demerouti & Burke (2009) describes the Spillover-Crossover Model as a process that takes place at the intra-individual level, thus within one person but across different domains of their life. Thus, the use of this model will be useful to understand how stress and fatigue of work life crosses over and has an impact on family life. The next section explores the Spillover-Crossover Model and the Boundary Border Theory in relation to nurse staff wellbeing and work-life balance.

2.2.4.1 The Spillover-Crossover Model

Zheng, Molineux, Mirshekary & Scarparo (2015) believes that because individuals benefit from having better health and wellbeing when they have WLB, it in turn, impacts positively on organisational productivity and performance. The Spillover-Crossover Model (SCM), can be useful to help explain the impact of the work domain spilling over to the family domain so the employee and organisations can constantly work towards keeping the main life domains balanced.

The SCM as seen in Figure 2.9 combines the spillover and crossover literatures and proposes that work-related experiences first spill over to the home domain, and then cross over to the partner through social interaction (Bakker & Demerouti, 2013).

Figure 2.9: The Spillover–Crossover Model



Source: Bakker & Demerouti (2013)

Spillover refers to the transmission of experiences between different areas or domains (i.e., from work to home), crossover refers to transmission within the same area/domain. The SCM Model brings together the employees' main life domains which are work and family (Bakker & Demerouti, 2013).

Similarly, nurses may experience a strain-based work-family conflict when confronted with their work domain in the form of staff shortages at the workplace due to the workload increase. An overworked and fatigued nurse may forget to administer medication to a

patient or give a detailed description when handing over before their shift ends, and this may lead them to continue worrying about it during the evening at home.

In contrast, Westman (2002) describes crossover as involved transmission across individuals, whereby demands and their consequent strain cross over between closely related persons. Frequent exposure to a burned-out partner may increase one's levels of burnout (Bakker & Demerouti, 2013 & Westman, 2002). Thus, in crossover, job strain experienced by an individual may lead to strain being experienced by the individual's partner at home (Westman, 2002). Job demands are aspects of work that cost effort, like workload and mental demands. Confrontation with job demands is therefore straining and may even lead to a state of exhaustion or burnout. For example, the nurses may feel chronically fatigued due to job demand and become pessimistic about the meaning of work, such feelings and attitudes crosses over to the partner during conversations at home.

While spillover is an intra-individual transmission of stressors or strain, crossover is an inter-individual transmission of stressors or strain. Crossover of work-related experiences implies spillover happens first (Bakker & Demerouti, 2013). However, the crossover approach adds another level of analysis to previous approaches by adding the inter-individual level, specifically the dyad, as an additional focus of study (Westman, 2002). Greenhaus & Powell (2006) reveal that positive spillover and crossover is possible although the focus in most work-family studies has primarily been on negative spillover research. The Spillover-Crossover Model is useful to understand the impact of the work domain spilling over to the family domain so the nursing staff and hospital management can constantly work towards keeping the main life domains balanced. As a result, this theory was found suitable to this study.

2.2.4.2 The Boundary and Border Theory

The Boundary and Border Theory are both cognitive theories that have similar assumptions (Clark, 2000). According to Zerubavel (1996) the Boundary theory is a common cognitive theory of social grouping that concentrates on results like the meaning

people give to work and home as well as the simplicity and rate of conversion between domains. The Border Theory is dedicated to the domains of family and work only (Desrochers & Sargent, 2012). Clark (2000) postulates that the result of interest in the Border Theory is mostly about balance of work-family with role conflict at minimum. Furthermore, the difference in description covers time, people and place which are tangible divides as well as psychological groups linked to family and work (Clark, 2000). However, the Boundary and Border Theory is known to create blurred lines between work and family which the nursing staff may experience if there is too much work-family integration in their lives. This can occur if arrangements such as working remotely using mobile technologies tend to keep work constantly accessible to the individual. Therefore, the Boundary and Border Theory was not found suitable for this research. The next section discusses staff productivity which is another important variable in this study's conceptual framework.

2.2.5 Staff Productivity

Hanaysha (2016) describes employee productivity as an assessment of the efficiency of a worker or group of workers. It is critical in enhancing, strengthening, and sustaining a business's overall success (Kuhnen & Tymula, 2012). Sharma & Sharma (2014) believes that higher productivity leads to favourable economic growth, large profitability and better social progress. Productivity is considered an important factor in any organisation, it is even more important in the healthcare sector. Chevers (2022) states that nursing productivity is a critical element and long-term investments, new partnerships, and innovative practices are essential if health organisations are to enhance the performance of nurses in a value-based care environment.

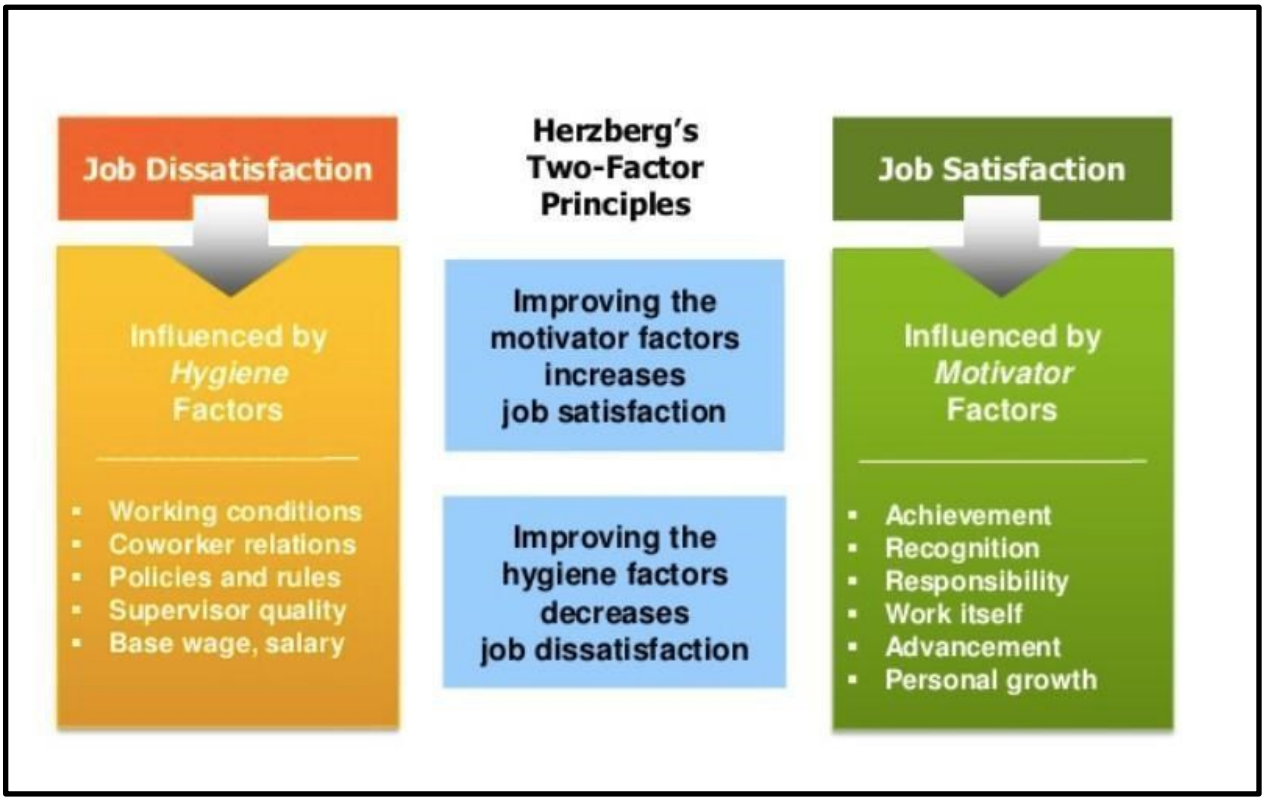
Healthcare workplaces should be designed to encourage productivity automatically. Nurses are the key professionals in healthcare sectors; their job attitudes are closely associated with patient health outcomes and safety (Ko, 2013). In organisations where nurses are productive delivering quality nursing care with positive attitudes toward their jobs, turnover and healthcare costs are reduced (Shusha, 2014).

For these reasons, hospitals should understand factors associated with nurses' job productivity and keep nurses motivated to do their work. Nurses cannot be expected to be highly productive in an environment where there are limited resources that holds them back from producing the best healthcare for their patients. The Hertzberg theory is helpful in showing that the workforce is capable of working many times harder and smarter than they usually do. Motivation can therefore boost performance massively. The next section explores the Hertzberg Two-Factor Theory in relation to the staff productivity variable.

2.2.5.1 The Hertzberg Two-Factor Theory

The Hertzberg Two-Factor Theory is a psychological theory. Herzberg stated that the presence of motivators ensured employee satisfaction, while job dissatisfaction arose from a lack of hygiene factors (Voss, 2021). Fredrick Herzberg was a psychologist who found it interesting to observe the behavioural patterns of people when doing their daily jobs. He found that when the attitude of such people in the working environment differs, it has a direct effect on the achievement of the job goal and employer/employee job satisfaction. This means that the right balance in the working environment plus the attitude of the worker equals to a completely satisfactory job (Kurt, 2021). The Hertzberg Two-Factor Motivation Theory explains that there are separate sets of mutually exclusive factors in the workplace that either cause job satisfaction or dissatisfaction (Herzberg, 1966). These two factors described by Herzberg are, motivators and hygiene factors, both of which are critical to motivation: motivators encourage job satisfaction and hygiene factors prevent job dissatisfaction (Kurt, 2021). The Herzberg Two-Factor Theory is presented in Figure 2.10 with a brief description of the constituted factors.

Figure 2.10: Herzberg's Two-Factor Theory



Source: Lumen (2022)

Extrinsic motivators typically decrease motivation when they are absent because of the employees' expectations, whereas intrinsic motivators increase motivation when present. Some examples of extrinsic motivators include remuneration, employee benefits which are expected from the employee, motivation will not increase when they are in place, but they will cause employee dissatisfaction if they are not present. Examples of intrinsic motivators could be challenging work or growth potential which can be considered a source of additional motivation if they are available (Lumen, 2022). This suggests that an individual will not be satisfied with their job if you remove what is bothering them or change their environment. In order to apply Herzberg's Theory in the workplace, one must also examine the hygiene factors. As stated above, hygiene factors do not contribute to workplace satisfaction but must be present in order to prevent workplace dissatisfaction. The researcher is of the view that the nursing management team in the researched hospital provides a good working environment for the nurses and support them with resources such as equipment, fair policies that govern things like overtime, fair salary,

leave days - all of which sparks positive attitudes, a motivated workforce and in turn increased productivity of the nursing staff. The Hertzberg Theory will be helpful in exploring job satisfaction and productivity of the existing nurse workforce at a public hospital whilst working under pressure due to staff shortages. Therefore, Herzberg's Theory of Motivation has been identified as the most appropriate theory that can help increase the level of job satisfaction, resulting in a better output of delivering quality healthcare for patients. The next section discusses the last dependent variable factor which is compromised patient healthcare.

2.2.6 Compromised patient healthcare

According to Ehsani, Cheraghi, Nejati, Salari, Esmaeilpoor & Nejad (2013), patient safety is a key concept in the healthcare sector and an important component in the provision of quality healthcare services. It is well known that working with unsafe nurse-patient ratios and chronic understaffing negatively impact patient outcomes (Sasso, Bagnasco, Catania, Zanini, Aleo & Watson, 2019). Nurse shortages can also lead to medical errors such as dissatisfied patients and higher mortality rates, which will only increase dissatisfaction among nurses in their careers (Avanal, 2022) indicating that patient safety can be compromised due to nurse shortages. Medical errors such as medication errors are the most prevalent errors that threaten health and are a global problem (Nikpeyma & Holamnejad, 2009). The same view corresponds to that of Eshani et al. (2013), who feel that medication errors are among the most prevalent health errors threatening patients' safety and are regarded as an index for determining patients' safety in hospitals. According to research conducted by Wood & Johnson (2002) prevalent medication errors include administration at inappropriate times, committing errors in the prescription of medicine, overprescribing, failure to follow the proper prescription, error in drug concentration, and giving medicine to the wrong patient due to improper identification of patients. This leads to endangering the health of a patient.

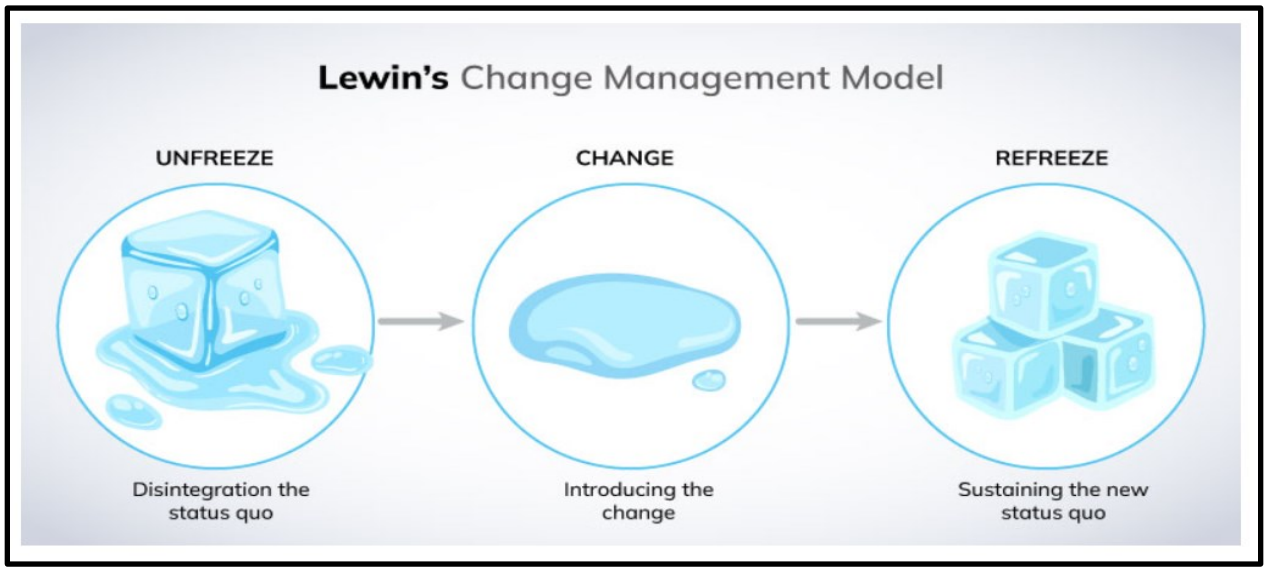
Taking the above into consideration, the researcher believes that because of nurse shortages at the researched hospital, existing nurses may be overworked causing them to forget or not have the capacity to attend to more than one patient at a time. This could

lead to medical errors such as incorrect administering of medication, not having the capacity to frequently turn patients on the bed in ICU units leading to the patient developing bed sores, and in worst-case scenario not being able to resuscitate a patient in time causing mortality. The Theory of Lewin highlighted three main steps as shown in figure 2.11, including unfreezing, change and refreeze. According to Garon (2017) unfreezing was associated with identifying and defining a problem, change - moving to analyse and clarify the alternatives and refreezing to implement and evaluate the ideas (Garon, 2017). The next section discusses the Theory of Lewin in detail.

2.2.6.1 Lewin's Three-Step Model for Change

Lewin developed a model in the 1940s, which is regarded as the cornerstone for understanding organisational change. Lewin broke down the change process in three stages which he then compared to a melting block of ice: unfreezing, change to a different shape and refreeze again (Channell, 2021). The three stages of change are Unfreeze, Change and Refreeze which is outlined in Lewin's model as depicted below:

Figure 2.11: Lewin's Three-Step Model for Change



Source: Miller (2022)

According to Raza (2019) Lewin developed the 3 Step Model of Change in order to evaluate two areas:

- The change process in organisational environments
- How the status-quo could be challenged to realise effective changes

Phase one: Unfreeze

The first phase of the process involves everything required for someone to become ready and willing to make a change. This state when they are not yet committed or certain is called unfreezing (Aktas, 2021). During this stage, effective change communication plays a vital role in getting the desired team member buy-in and support of the people in the change management (Malik, 2021).

According to Malik (2021) the following activities under the 'unfreeze' stage is considered to help the workforce embrace change better:

- Conduct a needs analysis by surveying your organisation to understand the current loopholes in the business processes
- Obtain organisational buy-in
- Create a strategic change vision and change strategy
- Communicate in a compelling way about why change has to occur
- Address employee concerns with honesty and transparency

Phase 2: Change

According to Raza (2019) once the status quo is unfrozen, one may begin to implement your change with effective communication flow and leadership. The following actionable tasks are considered by Malik (2022) in order to keep uncertainty of employees to a minimum.

- Ensure a continuous flow of information to obtain the support of your team members
- Organise change management workshops and sessions for change management exercises

- Empower employees to deal with the change proactively
- Generate easy wins as visible results will motivate your team

Phase 3: Refreeze

The final stage as per Lewin's Model is to refreeze the change. The term refreeze contextually implies that the transition needs to solidify within the organisation and should be stabilised within the organisational culture (Miller, 2022). At this stage, there should still be support available from leaders to help the team internalise the new way of doing things (Channell, 2021). Without appropriate steps that sustain and reinforce the change, the previously dominant behaviour tends to reassert itself, thus both formal and informal mechanisms need to be implemented to freeze in these new changes (Raza, 2019). Malik (2022) suggests the following activities for leaders to help support the change:

- Identify and reward early adopters and change champions
- Collect employee feedback regularly
- Offer on-demand employee training and support
- Explore digital adoption platforms such as Whatfix to be your partner in change with intuitive features such as interactive walkthroughs, customizable pop ups, and multi-format self-help content.

With the need to streamline resources and provide quality and safe healthcare due to the impact of nurse shortages, nurses need to focus on a rapid cycle approach to lead and sustain quality healthcare improvement for patients at the bedside. Managers and leaders have to intervene and help with making positive changes as nurses are overworked due to staff shortages causing compromised patient healthcare. Lewin's Three-Step Model Change Management Theory is highlighted to help easily transform and improve care of the patient. The theory was found to be suitable for this study as it can also be helpful with reducing nursing turnover. Through the 3-step approach, leaders and managers can clarify the reasons for why nurses want to change their jobs, get some time to think over the benefits and threats of change, and implement a new approach. The researcher believes that by following this approach the issue of compromised patient care can be

managed quickly. The next section compares the theoretical content that was described above.

Table 2.1: Comparison of theoretical models and theories

Model	Advantages	Disadvantages	Gap	Suitability
Organisational Support Theory	Well supported psychological theory that explains employer and employee relationship based on social exchange and the employee's belief of how their organisation values their contribution and wellbeing which is centred around Perceived Organisational Support (POS).	This theory is mainly centred around POS and traditional working relationships. The occupational landscape has changed with more non-traditional relationships forming and technological advancements. Psychological processes constitute the basis for producing Perceived Organisational Support.	Job conditions (such as aspects of training, job discretion, role stressors, relations in the workplace), seem to have an impact. These job characteristics overlap with the concept of stress, especially considering recent expanded models that go beyond job demand and job control-based models.	The organisational support theory was not found suitable as the benefits of the theory lay more with the employer than the employee and it is centred around the psychological processes constituting the basis for producing Perceived Organisational Support. Furthermore, the Organisational Support Theory does not consider real time interactions between the organisation and its employees.
The Job Demand Control Model by Robert Karasek	Helps understand the relationships between job characteristics and their impact on the employee's well-being, burnout, health, and performance in the form of a Demand and Control Model.	Difficult to be precise about which aspects of psychological demands, or decision latitude, are most important in the model, and for what categories of workers.	As we are more exposed to the strains of the global economy, new measures at macro levels are needed to test the lack of local control and increased intensity of work activity—making the general form of the Demand/Control Model relevant in the future.	Although the theory would be helpful in highlighting the importance demand and control have on the nurse's well-being, the theory was not found suitable because it is not precise about which aspects of psychological demands, or decision latitude, are most important in the model, and for what categories of workers, which are considered important factors to assess demand and control of the

				nursing staff.
Transactional Model of Stress and Coping	Emphasises the individual's role in interpreting what the stressor situation means to them from their perspective rather than from another person, allowing more variability in the human stress response and helps explain why different individuals respond in different ways to the same stressors. The model proposes different methods for managing psychological responses to stressors and has consequently enhanced understanding of the importance of stress-management strategies.	The model is difficult to test through experimental research because of its subjective nature and psychologists doubt that we actually need to appraise something.	Very simplistic model- should also account for the social, bio and environmental factors.	This model is considered suitable to this study as it helps the nursing workforce recognise and examine stress in their workplace and encourages them to adopt coping mechanisms by themselves which will immediately help them to cope in any stressful work situation. Work demand and stress has an impact on the nurses wellbeing and work-life balance, which has been discovered in the literature research done for this study.
Spillover-Crossover Model	SCM is useful to help explain the impact of the work domain spilling over to the family domain so the employee and organisations can constantly work towards keeping the main life domains balanced, basically bringing together the employees' main life domains: work and family.	Majority of the studies have focused on negative spillover-crossover processes and not positive spillover-crossover processes.	There is a gap present to examine whether there are alternative ways to capture spillover in a more direct, objective way. There is a need to distinguish whether there are differences between positive and negative spillover-crossover processes.	The Spillover-Crossover Model is useful to understand the impact of the work domain spilling over to the family domain so the nursing staff and hospital management can constantly work towards keeping the main life domains balanced, therefore the theory was found suitable to this study.
The Boundary and Border Theory	Both theories are cognitive in nature focusing on addressing the integration and blurring of	Blurred lines between work and family that workers can experience if there is too much work-family	Intervention research that tests different transition strategies is likely to be helpful.	The Boundary and Border Theory is known to create blurred lines between work and family which the

	boundaries in work and family life. These theories contribute to the study of work and family linkages by describing the conditions under which work-family integration is likely to improve or diminish the individuals' well-being. Both address how people construct, maintain, negotiate and cross boundaries or borders, between work and family (Clark, 2000).	integration in their lives, which can occur if arrangements such as working at home and using mobile technologies tend to keep work constantly accessible (Chesley, Moen, & Shore, 2001; Galinsky & Kim, 2000)		nursing staff may experience if there is too much work-family integration in their lives, which can occur if arrangements such as working remotely using mobile technologies tend to keep work constantly accessible to the individual. Therefore, the Boundary and Border Theory was found not suitable for this research.
Hertzberg Two - Factor Theory	Herzberg believes that most people (and students) are capable of working many times harder and smarter than they usually do. Motivation can therefore boost performance massively.	Hertzberg's Two-Factor Theory has been criticised for failing to distinguish between physical and psychological aspects; it also fails to express the degrees of satisfaction and dissatisfaction as a measure instead of using numbers. Another criticism levelled against it is that it makes assumptions that every individual will react in the same way in a similar situation, (Golshan, Kaswuri, Agashahi, Amin & Ismail 2011).	The Two-Factor Theory overlooks situational variables. Research conducted by Herzberg stressed upon satisfaction and ignored productivity.	The Hertzberg Theory will be helpful in exploring job satisfaction and productivity of the existing nurse workforce at a public hospital whilst working under pressure due to staff shortages. Therefore, Herzberg's Theory of Motivation has been identified as the most appropriate theory that can help increase the level of job satisfaction, resulting in a better output of delivering quality healthcare for patients.
Lewin's Three-Step Model for Change	Lewin's Change Management Theory is easy to understand and can be implemented in any business. It follows three easy steps. It is a proactive approach to	A major disadvantage of this model is the refreezing stage. It requires a lot of time to freeze and settle down with the new changes. As the changes continue to take	There is a gap for the model to be improved to lend itself to quick or short-term change initiatives.	Lewin's Three-Step Model Change Management Theory is highlighted to help easily transform and improve care of the patient. The theory was found to be suitable for this

	change management. This change management theory follows an efficient method which does not impact on business continuity. Any on-going business can easily implement this model and make the required changes.	place in a challenging environment, the organisation may not have the time to get used to the modifications.		study as it can also be helpful with reducing nursing turnover. Through the 3-step approach, leaders and managers can clarify the reasons for why nurses want to change their jobs, get some time to think over the benefits and threats of change, and implement a new approach. The researcher believes that by following this approach the issue of compromised patient care can be managed quickly.

Source: Researcher's own work

2.2.7 Summary of this chapter

This chapter discussed the theoretical frameworks validating and grounding this study with existing models and theories. Various relevant models pertaining to this study as well as relevant theories were discussed with the aim to link this study to existing literature. The next chapter will discuss the literature review which was influenced by the models and theories in this chapter.

CHAPTER THREE
LITERATURE REVIEW

3.1 Introduction

A literature review as defined by Maggio, Sewell & Artino (2016) as a synthetic review and summary of what is known and unknown regarding the topic of a scholarly body of work. The literature review plays an important role in this study as it will provide a foundation of knowledge on the topic and context to the research problem.

A healthcare system is defined by WHO (2003) as a system that comprises all organisations and institutions, including the people and resources involved in delivering health care to individuals. In healthcare the definition of shortages is described by WHO as lower than the minimum number of doctors and nurses per head of population required to achieve population health targets (WHO, 2016). A declining nurse workforce is the biggest challenge facing health care, as nurses are considered indispensable in protecting and preserving the health of the individuals. The lack of nurses represents the largest healthcare professional shortage which is a concerning factor as there is a growing need for healthcare due to disease burden. The COVID-19 pandemic for example has created an urgent need for health systems to put resources behind nurse staffing and workforce development (Glicksman, 2022).

According to Morris (2022) there is a high impact on working environments, patient outcomes, and the long-term health of nurses as a result of nurse shortages. The nurse shortage increases stress and fatigue among the existing nurse workforce which has direct implications on patient healthcare. Research conducted by Haddad, Annamaraju, Tammy & Butler (2022) confirmed the main challenges of nursing shortages was that it lead to the delivery of substandard healthcare such as medication errors, higher morbidity and mortality rates. In hospitals with high patient-to-nurse ratios, nurses experience burnout, dissatisfaction, and the patients experienced higher mortality and failure-to-rescue rates than in facilities with lower patient-to-nurse ratios (Haddad et al., 2022). This

indicates that nurse shortages have an immediate and often dire impact on the delivery of healthcare to patients as the patient's life is at risk.

The Democratic Nursing Organisation of South Africa (DENOSA) believes that in most cases, a lack of consistent staffing norms contributes to the stress and anxiety of the existing nurses leading to burn-out which may worsen preventable conditions on patients (DENOSA, 2012).

It is clear from the above that there is a negative impact on patient outcomes due to nurse staffing shortages. High nurse-to-patient ratios can lead to medication errors that contribute to higher morbidity and mortality rates and ultimately failing to deliver quality healthcare to patients. The nurse shortages impact on the existing nursing workforce. Due to the heavy workloads, the existing nursing staff experience stress, fatigue, burnout and health issues which have direct implications on their ability to provide their patients with optimal care. The reasons for nurse shortages is often overlooked, and it may help to understand the reasons behind these shortages so that it can be addressed and strategies can be put in place to lessen nurse shortages. Similarly, by uncovering and understanding some of the major challenges existing nursing staff experience due to nurse shortages, hospital management can take the necessary action to ensure that the existing nursing staff get the support and resources such as medical equipment and additional nurses to deliver a good standard of healthcare to patients.

Based on reviewed literature outlined in this chapter, the researcher was able to develop the main research question and main research objective for this study. The main research objectives of this study were to discover the reasons for nurse shortages, to assess what challenges the existing nurses face as a result of staff shortages and how this influences the delivery of health care and to discover what coping mechanisms are in place to assist with the challenges in providing good healthcare as a result of the shortage. The main research objectives support the main research questions which are: What are the reasons for critical nurse shortages in public hospitals; what effect do staff shortages have on the existing nursing staff; how does this impact their ability to provide good healthcare?

As illustrated in Table 3.1, the research questions, objectives and proposition of this study were all linked to form the basis of this study and is supported by the literature review. As informed through the literature review in this chapter, the researcher was able to develop the questionnaire content, supported by the three research questions and objectives, as shown in Table 3.1.

Table 3.1: Links between the secondary research questions, objectives, and proposition

Research questions		**Linking objectives**		**Linking proposition**		**Final questionnaire**
						Section A: Biographical Information was included to collect the baseline demographics of the population.
RS Q 1	What are the reasons for nurse shortages in a Public hospital?	**OBJ 1**	To discover the reasons for nurse shortages in a public hospital.	**P1**	Nursing shortage is on the rise, and determining the cause of the problem will help the healthcare sector improve its retention strategies thereby limiting staff shortages, thus improving healthcare.	**Section B: Theme 1: Current nurse staffing levels** - This section delved into the current nurse-to-patient ratio in the unit to determine the level of shortages and what were the main reasons causing the nurse shortage.
RS Q 2	What effect do staff shortages have on the existing nursing staff?	**OBJ 2**	To assess what challenges nurses face as a result of staff shortages and how this influences the delivery of health care.	**P2**	Staff shortages cause daily challenges for nurses such as personal (stress, burnout, fatigue) and professional, understanding and addressing these challenges will help provide relief to staff so they can focus on providing good healthcare.	**Section C: Theme 2: Daily Challenges at work -** This section specifically asked the nursing staff to provide their experience of daily challenges at work due to nurse shortages.

RS Q 3	How does this impact their ability to provide good healthcare?	**OBJ 3**	To assess if there are coping mechanisms in place to assist with the challenges in providing good healthcare as a result of the shortage.	**P3**	Strategies can be created to help nurses cope with challenges they encounter as a result of staff shortages, this will have a positive effect on the existing staff thus leading them to provide good healthcare.	**Section D: Theme 3: Providing good health care -** This section uncovered if there are any coping mechanisms in place to assist in coping with the challenges in providing good healthcare.

Source: Researcher's own work

This chapter will focus on the literature that further explores the effect of nurse shortages on healthcare and will identify and discuss important information related to nursing shortages and how this leads to the delivery of poor healthcare. The first section provides a brief overview of nursing shortages as a worldwide problem and provides background information on the South African healthcare system.

3.2 Global nursing shortage challenges

Globally, health challenges are changing and becoming increasingly complex due to an ageing population with a chronic disease burden, such as cardiovascular, hypertension, diabetes and mental health conditions (Douglas, 2011). A health workforce must be of sufficient capacity to meet the population's health needs. Nurses are a critical part of healthcare and make up the largest section of the health profession (Haddad, Annamaraju, Tammy & Butler, 2022). Nurses and midwives represent more than 50% of the current HCW shortage across the globe, of which the largest needs-based shortages of nurses and midwives are in Southeast Asia and Africa (WHO, 2022). These statistics are concerning, alluding to the fact that healthcare systems are under strain because an integral part of the health profession is in short supply. Buchan, Duffield, and Jordan (2015) agree that nursing shortages are currently experienced worldwide and are likely to get worse without remedial policy interventions.

Critical staff shortages of nurses continue to be a worldwide problem due to the high nursing turnover rate which is linked to personal or organisational challenges. Fatigue, stress and burnout due to uneven workloads may impact negatively on the nurse's ability to deliver good healthcare and this can cause nurses to leave their profession. Similarly, if there is no proper leadership or management involvement with the day-to-day optimal functioning of the ward, nurses may decide to leave. On the other hand, there are personal challenges which include career growth, finances and family. If nurses do not feel a sense of fulfilment in these important areas of their personal life and find the balance between work and family, they will eventually decide to leave their job either to search for a more flexible and fulfilling post or leave the profession altogether.

According to Ang (2002) staff are considered the foundation of any organisation and are the primary vehicle for organisational change. It is no less the same in the health environment. Hongoro (2004) states that the health workforce is vital to the core functionality of a health system, yet it tends to be overlooked as a key element of upgrading health systems. Hongoro's statement implies that Healthcare workers (HCWs) form an essential role in the functionality of a good quality healthcare system, and it would only be logical to take care of them by addressing their concerns and investing in them.

The United Nations Development Programme (UNDP) believes that nurses are knowledgeable, skilled and motivated which is critical for reaching national goals. Therefore, strengthening nurses is fundamental to building a more resilient and sustainable health system. It is worth noting that WHO (2016) also confirms that Health systems can only function at the highest attainable standard and is dependent on nurses' availability, accessibility, acceptability, and quality. Therefore, it is important for hospital management to be more involved in understanding the challenges of the existing workforce due to the nurse shortages. Hospital Management can help with these challenges in order to keep the existing nurse workforce motivated so that they can deliver good healthcare.

When factors such as shortages and inequitable distribution of skilled health workers are present, it can slow down efforts to achieve Universal Health Coverage (UHC) and health development goals (HDGs) (WHO, 2016).

Quality healthcare is thus compromised by factors such as nurse shortages indicating that if nurses are not sufficient in their numbers it could lead to patients receiving incorrect treatments or medication or not being able to check on the patient which leads to poor healthcare and is often to the detriment of a patient. Therefore, Anand & Bärnighausen (2012) note that effective healthcare delivery is dependent on having an ample number of skilled nurses, also ensuring that they have the required means and motivation to perform their assigned functions well. The next section describes the South African Healthcare system.

3.3 The South African Healthcare System

The South African healthcare system has progressed since the post-apartheid years, yet there is overwhelming evidence in media reports that suggest that the quality of healthcare is slowly deteriorating with many South Africans having to face the brunt of a strained healthcare system. It is worth noting that feedback received from a High-Level Panel report on the assessment of key legislation and the acceleration of fundamental change (2017), revealed that the scope of South African healthcare services to meet the needs of its citizens was impaired by many factors which affected direct patient care. Factors such as critical staff shortages and inadequate training lead to poor attitudes of nursing staff and this, in turn, has an effect on their output which is to provide quality healthcare to individuals (National Department of Health, 2020). Nurses are key to ensure a well-functioning healthcare system, yet they have many challenges to deal with from having to respond immediately to disease outbreaks and emergencies, to the lack of training and often being understaffed and overworked.

The outbreak of COVID-19 in March 2020 placed further strain on the South African healthcare system in addition to the existing challenges in healthcare service delivery and clearly exposed the weaknesses and vulnerabilities of the South African health system.

A research paper released by, Andel, Tedone, Shen and Arvan (2022) which covered the Safety implications of different forms of understaffing among nurses during the pandemic, revealed that inadequate staffing in health care is a long-standing issue, especially within the nursing profession with the safety consequences of understaffing likely being exacerbated by the COVID-19 pandemic (Andel et al., 2022).

Research conducted by Mbunge (2020) confirmed this by stating that the country faces many challenges in healthcare service delivery one of which is the unequal distribution of resources (including health facilities, healthcare workers, inadequate production, and inadequate recruitment), especially in rural areas, for both the public and private health care sector. Health problems in South Africa are worsened by the uneven distribution of health professionals between the private and even more so in the public sectors, coupled with unequal distribution of public sector health professionals among the provinces, (Barron & Padarath, 2017).

The delivery of healthcare mostly in public health facilities in South Africa is already struggling to provide good healthcare because health professionals such as nurses are low in numbers, and this could have negative repercussions for the patients treatment and their journey to recovery.

3.3.1 Public Healthcare in South Africa

Healthcare in South Africa is administered by the National Department of Health consisting of a two-tiered healthcare system - public healthcare and private healthcare. Around 80% of the population uses public healthcare, with the wealthiest 20% opting for private healthcare (Buswell, 2023). Although the public sector is responsible for the well-being of 82% of the population, it accounts for only 40% of the total health expenditure in South Africa (Pillay, 2009).

The public sector is clearly overburdened with fewer resources, which has an impact on providing appropriate health care especially since the majority of the population turns to public healthcare because of affordability. The exacerbation of staffing problems in public

hospitals occurs in a population that is already plagued by long-term understaffing. Lasater, Aiken, Sloane, Reneau, Alexander & McHugh (2020) believe that this additional pressure causes more strain on both health care workers and patient safety suggesting that staff shortages can have alarming implications on the level of patient care provided in the public health care sector. Furthermore, existing nursing workforce is also up against fewer hospital resources and equipment together with the increased workload due to the staff shortage, there is more room for medical errors to occur and patient healthcare compromised. Therefore, this study was chosen to be carried out at a public hospital. The selected hospital is the perfect example of where a lack of nurse resources exist and it is therefore important to unpack the nursing profession in South Africa.

3.4 The Nursing profession in South Africa

The nursing profession is a fundamental component of the health care system in South Africa and represents more than 50% of the total professional human resources (Koen, Niehaus & Smit, 2020). Nursing in South Africa is regulated by the South African Nursing Council (SANC). SANC is the body entrusted to set and maintain standards of nursing education and practice in the Republic of South Africa (SANC, 2021). There are three main types of nurses in South Africa. Registered nurses, Enrolled nurses, and enrolled nursing auxiliaries. Registered nurses (RNs) also known as professional nurses (PNs) are responsible for the supervision of enrolled nurses and nursing auxiliaries (Brilliant Academic, 2021). Enrolled nurses carry out limited nursing care while enrolled nursing auxiliaries carry out basic operations and offer general care (Davidson, 2023). The nursing profession is responsible for providing many duties in healthcare. According to the Western Cape Government (2019), nursing duties include the following:

- performing physical examinations and administering care for patients,
- providing health education and counselling,
- interpreting patient information and administering medication,
- performing administrative duties working in collaboration with other health professionals such as doctors monitoring healthcare trends and contributing to improved practices.

This study will assess Registered nurses (RNs) as they supervise the nursing team within the ward often dealing with nurse shortages first hand and Operational Nurse Managers (ONM's) who are responsible for the daily operations and functioning of the entire department. This includes HR matters and ensuring that the ward is properly staffed with the optimum nurse to patient ratio to ensure each patient receives the best possible care. Therefore, nurse to patient ratios is an important factor in understanding the impact of the nurse shortages.

3.4.1 Nurse to patient ratios

According to the views of Winter, Schreyögg & Thiel (2020) most research on hospital staff shortages focuses on staffing ratios, predominantly related to nurses. The implicit idea is that staffing ratios are the main result of and can therefore be estimated by staffing shortages. High patient-to-nurse ratios have been shown to negatively affect patient outcomes (Winter et al., 2020).

The nurse-patient ratio is generally described as the ratio that more directly impacts upon nurses as well as patients as it describes the number of patients each nurse has to care for at any specific point in time (DENOSA, 2021). The latest nurse-to-patient ratio in South Africa was reported by the National Department of Health in the 2030 Human Resources for Health report which stated that in total, there are nearly 503 health workers for every 100 000 public sector users. The density for all nurses combined is 282 per 100 000. According to SANC as indicated in Figure 3.1, in 2020 there was one nurse (registered, enrolled or auxiliary nurse) for every 213 patients in hospital in both the public and private sectors (SANC, 2020).

Figure 3.1: Population per Qualified Nurse per province

Population per Qualified Nurse (in the same province)

Province	Registered	Enrolled	Auxiliaries	Total
Limpopo	435:1	1135:1	592:1	**205:1**
North West	381:1	1390:1	948:1	**227:1**
Mpumalanga	541:1	1804:1	1255:1	**313:1**
Gauteng	385:1	1010:1	925:1	**214:1**
Free State	354:1	1416:1	1051:1	**223:1**
KwaZulu Natal	325:1	543:1	917:1	**166:1**
Northern Cape	543:1	3438:1	1380:1	**350:1**
Western Cape	385:1	1174:1	944:1	**222:1**
Eastern Cape	405:1	1259:1	994:1	**234:1**
TOTAL	387:1	977:1	915:1	**213:1**

Source: SANC (2020)

The nurse-to-patient ratio is high in South Africa. This is evidenced by a survey conducted by SANC, wherein the provincial distribution of nursing manpower versus the population of South Africa shows that there is one nurse for every 218 patients (SANC, 2020).

DENOSA's position on South Africa's nurse-to-patient ratios is that regulated staffing norms that are consistent with the demand for healthcare services should be prescribed by relevant stakeholders in the healthcare sector including nurses themselves and that Nurse-patient ratios in South Africa should be contextually regulated taking into consideration the disease burden and the number of nurses available in the country (DENOSA, 2012).

Optimum nurse staffing ratios means a higher quality of care for all patients as nurses are much more focused and able to dedicate their full attention to the health care needs of the patient, for example giving the right doses of medication at the right time or regularly turning patients in critical care wards so that they do not develop bed sores. This leads to the patient being able to heal and recover faster if they are receiving the appropriate healthcare. According to Haddad et al. (2022), appropriate staffing levels will decrease

errors in healthcare, increase patient satisfaction, and improve nurse retention rates. A similar judgment appears to have been reached by Sharma & Rani (2020) who further state that appropriate nurse staffing helps to achieve clinical and economic improvements in patient care. Other improvements include enhanced patient satisfaction, reduction in medication errors, less incidences of patient fall, increased pressure care thereby reducing pressure ulcers of patients in critical care wards, healthcare-associated infections, patient mortality, hospital readmission and duration of stay, patient care cost, nurses' fatigue, and burnout (Sharma & Rani, 2020). The above suggests that patient outcomes are more favourable in hospitals with better nurse staffing where optimum nurse-to-patient ratios are met. Good patient outcomes are not the only positive as a result of optimum nurse-to-patient ratios, the delivery of healthcare is also positively impacted plus the nursing staff themselves are motivated and not fatigued or burned out because of short staffing levels.

Working with unsafe nurse-patient ratios and long-term understaffing are implications of nurse shortages in the healthcare sector which negatively impact patient outcomes, and also contribute towards multiple poor outcomes amongst staff in their jobs, such as the inability to provide efficient healthcare (Sasso, 2019).

3.5 The implications of nurse shortages in healthcare

The main care goals in healthcare are the preservation and promotion of health (Tol, Mohebbi & Gazi, 2010). The ability of a country to meet its healthcare goals depends largely on the knowledge, skills, motivation, and deployment of the people responsible for delivering health services (WHO, 2010). Progress toward Universal Health Coverage requires strong health systems and health workers who are educated and empowered to provide the health services that populations need (WHO, 2022). Nurses are critical components to attaining UHC however, South Africa is far from advancing towards UHC as basic health labour market factors such as nurse staff shortages and inadequate training, have become obstacles that affect the delivery of quality healthcare for South Africans. The high nurse-to-patient ratio brings about a strain on the existing nursing workforce because of staff shortages which ultimately means that patient care, and

providing good health and well-being which is linked to sustainable development goal three as adopted by the United Nations in 2015, has been compromised, slowing down progress made towards UHC. Nurse shortages indicate difficulty in delivering quality healthcare to patients. Patient care and safety is one of the main concepts in the field of healthcare provision and a key factor in maintaining the quality of healthcare services (Dietz, Borasio, Schneider & Jox, 2010).

Staff shortages in the South African Healthcare System are ongoing. Mukwevho (2022) reports that South Africa is battling an extreme nursing shortage, a job that is supposed to be done by six nurses is being done by a single nurse in a ward of 30 patients which makes the healthcare system unsafe and lacking in quality. The exceptional nurse campaign (2021) revealed that nurse shortages can be traced back to decisions regarding the training of nurses, made in 1995. The shortages then became publicised as reported by Oosthuizen & Phil (2012) who's analysis of newspaper reporting on nursing in South Africa revealed that the profession was in distress further revealing that during the period of 2005 to 2009, most of the analysed reports reflected on aspects of nursing, such as heavy workloads due to shortages. A few years on and the problem of nurse shortages having a debilitating effect on healthcare still persists with many nurses unable to further their skills training either because training resources is not easily available, lack of finances or not enough time to train because of the work overload due to nurse shortages.

The Witness (2016) reported on the staff shortages experienced in the South African healthcare system, particularly amongst the nursing staff. In the same article, a statement by North-West University nursing professor and South African Nursing Council (SANC) education committee chairperson Abel Pienaar stated that nurses make up the largest group of healthcare workers in South Africa. His statement quoted a 2015 report by Wits University, which revealed that over 60% of nurses admitted they felt too tired to work while on duty. The Witness (2016) reported that tiredness could be linked to the 70% of South African nurses who admitted to 'moonlighting' or working overtime due to a massive skills shortage in this under-resourced sector and explained that overwork leads to fatigue and fatigue leads to a greater chance of mistakes. Excessive overtime has been shown

to impact negatively on patient care and increase the risk of ‘compassion fatigue’ which includes desensitisation and loss of empathy (Witness, 2016).

The shortage of health workers especially among the nursing community in South Africa has been extensively revealed in the media and has been described as a ticking time bomb. The shortages started long before the pandemic and has led to nurses working in the public health sector faced with almost double the workloads (Mukwevho, 2022). The Daily Maverick (2021) reported that the president of the Young Nurses Indaba, Lerato Mthunzi, stated that because of working conditions, burnout and the “brain drain”, many have left the profession or the country for better working conditions abroad, putting pressure on those who remain. It was also stated that general wards have ratios of about 20 to 30 patients to one registered nurse and assistant, as opposed to the norm of around five to one, shifting the focus from quality care to just managing (Daily Maverick, 2021). The article also revealed that addressing the challenges in the nursing training sector as quickly as possible would also help mitigate the growing shortage. A response from the South African Health Department on these issues indicated that their focus in these matters is on developing nursing education and practice nationally to cope with the demands and ensure alignment to nursing workforce planning (Daily Maverick, 2021).

In rich detail, articles from The Witness and Daily Maverick have described that nurses work under stressful and challenging conditions which lead to higher unachievable target demands. Therefore, there is an urgent need to address nursing shortages and the impact it has on healthcare as nurses make up the health workforce responsible for the core functioning and delivery of good quality healthcare. The next section investigates the implications of nurse shortages on existing staff.

3.6 The implications of nurse shortages on the existing staff

Nursing shortages bring about many challenges for the existing workforce. Short-staffing compromises patient care and impacts nurses’ well-being, leading to adverse outcomes such as burnout, increased stress, workplace violence, absenteeism, job dissatisfaction or leaving their position or the professional altogether (Douglas 2011, & Shin, Park & Bae,

2018). DENOSA (2012) further notes that the inconsistent staffing norms place stress and anxiety on nurses leading to burn-out and may worsen preventable conditions on patients, thus the implications of nurse shortages on the existing nurse workforce need to be addressed in order to keep the delivery of patient care consistent. The common implications of nurse shortages on the existing staff are fatigue, stress and burnout, de-motivation, and absenteeism of existing nursing staff which are discussed below.

3.6.1 Fatigue of existing nursing staff

Fatigue is medically described as a condition, which is characterised by reduced ability to work as well as reduced performance that follows a period of mental or physical activity (Stedman, 1920). Which means that fatigue reduces a person's energy, focus, and ability to complete tasks. Ongoing fatigue eventually affects the quality of life and state of mind. Due to the staff shortages, the existing nurse force often have reduced energy and poor focus in their daily jobs because of their increased workloads. The poor focus of a nurse can be detrimental to the health of a patient leading to deterioration in their health or demise.

Zhan, Zhao, Yuan, Liu, Zheng, Zhou & Yu (2020), is of the view that fatigue that is related to the work of nursing staff has been recognised as a threat to their health but is also negatively associated with patients' safety and quality of care received. Nurses are at high risk of fatigue due to stressful work environments with heavy workloads and non-standard work schedules (Cho & Steege, 2021). Staffing shortages and insufficient resources have also been highlighted by the American Nurses Association as common causes of nurse fatigue causing various health problems, such as diabetes, cardiovascular disease and work-related injuries. It is believed that working night shifts or extended shifts, insufficient rest periods between shifts, and lack of breaks while working have been consistently related to increased nurse fatigue in hospital settings (Cho & Steege, 2021).

The effects of nurse fatigue can be devastating on the overall health and wellbeing of nurses and in turn have life-threatening consequences for the patients as the nurse is tired and unable to focus on caring for the patient.

Minimising nurse fatigue by scheduling, sleep, and self-care is crucially important for existing nursing staff (ANA, 2017). Therefore, fatigue management strategies are considered to be crucial in order to protect the health of both nurses and patients. The next section discusses stress and burnout which is experienced by existing staff due to staff shortages.

3.6.2 Stress and burnout of existing nursing staff

Employee stress and burnout commonly lead to health-related problems that result in significant consequences for the organisation (Milliken, Clements & Tillman, 2007). Burnout may arise because of work overload, a lack of resources to get the job done efficiently, employee conflict and the absence of support (Maslach, Jackson & Leiter, 1997). Burnout includes 3 key aspects as identified by Maslach (2003):

1. Emotional Exhaustion (EE): the state of being physically and emotionally exhausted by work stress, which is characterised by low energy, fatigue, depression, hopelessness, and helplessness.
2. Depersonalisation (DP): the interpersonal aspect of burnout that manifests in unfeeling, negative behaviours toward others, and detachment from caring and instructions.
3. Low Personal Accomplishment (PA): the state of negatively evaluating oneself as being incompetent, unsuccessful, and inadequate; consequently, employees exhibit low levels of contribution to their work.

The three aspects described above are disconcerting for the health and wellbeing of the nurses and most importantly the delivery of healthcare. If nurses exhibit low levels of contribution to their work, it often means compromised care for the patient.

Mudallal, Othman & Hassan (2017) found that manifestations of burnout include reductions in physical and psychological energy, stress, headache, fatigue, and depression. These manifestations ultimately lead to an increase in absenteeism and turnover rates of the nurse workforce and consequently have negative implications on the quality of care given to the patient (Mudallal et al., 2017).

Hair (2014) supports the view of Mudallal et al. (2017) by reporting that when nurses confront inadequate staffing and the resulting stress, they take a leave of absence or leave their positions altogether. It is clear that work stress and burnout remain significant concerns in nursing, affecting both individuals and healthcare organisations. Strategies developed by management to deal with stress and burnout are imperative in order to decrease absenteeism, curb turnover rates and most of all maintain quality of healthcare. Absenteeism which is a common occurrence among the existing staff due to the implications of nurse shortages is discussed below.

3.6.3 Absenteeism of existing nursing staff

Absenteeism has been one of the most common causes of staff shortage in a healthcare setting which significantly affect the delivery of quality healthcare services (Alreshidi, Alaseeri & Garcia, 2019). Increased absenteeism of nurses affects the quality of healthcare delivery and also the productivity of the health institution (Mudaly, 2009). The authors also believe that nurses become absent from work because of personal, professional and organisational conditions (Alreshidi et al., 2019; Mudaly, 2009).

The conditions mentioned by the authors above are considered to be important factors of a nurses life, if there is any unhappiness, upset or stress in one area of their life then it automatically impacts another area of their life. For example, being overworked in their job often overlaps and impacts their personal life because there is no time available for family time or personal time - not having time to rest resulting in health problems or sleep deprivation causing issues with focus and concentration at work. According to Mmamma, Mothiba & Nancy (2015), in South Africa, absenteeism among nurses is one of the factors

causing increased workload that has an impact on job satisfaction and eventually results in nurse turnover.

Absenteeism directly impacts nurses remaining on duty, resulting in them postponing their leave and/or changing the off-duty days in an attempt to cover for the shortage and the increased workload because of the unavailability of relevant nurses who at the time are absent (Rantanen & Tuominen, 2011). Despite the existing nurses attempts to cover the shortages by overextending themselves and working off-duty days or postponing their leave, the cycle of absenteeism continues as the same nurse would eventually suffer from fatigue and burn out leading to more absent days down the line. In addition, absenteeism causes an unhealthy working environment among nurses remaining on duty because they experience psychological stress which affects how they execute their professional expectations (Mbombi, Mothiba, Malema & Malatji, 2018).

From the above, it is clear that absenteeism results in a workload increase for the existing nurse workforce who remain on duty. This uneven workload brings about stress, fatigue, and lack of concentration of nurses which ultimately has a negative effect on patient care. Many patients might experience prolonged hospitalisation or neglect as a result of the high workload and low morale of the nurses remaining on duty. The existing nursing staff has to cope with uneven workloads as a result of nursing shortages which is discussed below.

3.6.4 Uneven workloads amongst existing nursing staff

When a nursing shortage occurs, the workload increases for those who remain on the job. Nurses are experiencing higher workloads than ever before. Carayon & Gurses (2005) identifies four top reasons for higher workloads: (1) increased demand for nurses, (2) inadequate supply of nurses, (3) reduced staffing and increased overtime, and (4) reduction in patient length of stay indicating that there are more patients coming into hospitals and not enough nursing staff to take care of them. The existing nurses end up working overtime to care for patients under the burden of nurse shortages, and often do

not consider the consequences it has on their own health which leads to their absenteeism down the line thus contributing to the nurse shortage problem.

According to Berry and Curry (2012) when patient needs vary significantly, staffing is more difficult to predict and can result in an increased workload for nurses because staffing may fail to match patient needs and unequivocal nursing overload negatively affects patient outcomes. Carayon & Gurses (2005) believe that high workload as a result of nurse shortages is a key job stressor of nurses in a variety of care settings, such as ICUs and can lead to distress (e.g., cynicism, anger, and emotional exhaustion). Therefore, there is an urgent need for management to address uneven workloads and maintaining safe staffing levels. For example, making sure that there is sufficient qualified staff to meet patient's needs, nursing workload measures can be considered. Carayon & Gurses, (2005) identified that nursing workload measures can be categorised into four levels: (1) unit level, (2) job level, (3) patient level, and (4) situation level. The situation- and patient-level workloads are embedded in the job-level workload, and the job-level workload is embedded in the unit-level workload. In this way the authors determined that the type and amount of workload of nurses is partly determined by the type of unit and specialty (e.g., intensive care unit (ICU) nurse versus general floor nurse). The job-level workload concept is a relatively easy exercise to carry out by operational nurse managers in assisting them to maintain the daily staffing levels needed in their wards.

Another useful tool to assess workloads and give direction on staffing needs in order to ensure that optimal healthcare services are provided even when faced with nurse shortages is the Workload Indicators of Staffing Need (WISN), which is discussed in detail below.

3.6.4.1 Workload indicators of staffing need

The South African Health report 2018 revealed that South Africa ranks among the top five countries in the African region in terms of density of HCWs namely, physicians, nursing and midwifery personnel per 1 000 population. However, there are several reports of acute staff shortages in the public health sector in general, and in rural and underserved

areas in particular, (SAHR, 2018). These staff shortages indicate a strong need for some kind of intervention to assess the workforce situation as most developing and developed countries are facing an increasing need for trained healthcare facilities such as hospitals, emergency departments, and other health services centres, (Doosty, Maleki and Yarmohammadian, 2019). Therefore, it is imperative that health systems begin to estimate the number of human resources needed for the short-, medium- and long-term health needs in order to plan and deliver optimal healthcare.

The Workload Indicators of Staffing Need (WISN) method developed by WHO is a tool that is used to assess workload pressures on health workers in health facilities and determines the number of each category of health worker needed to cope with the facility workload. This tool is a software tool for recording, analysing, and reporting data related to staffing status and needs at health facilities applicable to healthcare facilities in the public, private and non-governmental organisations (NGOs) sectors (WHO, 2010).

In 2017 the South African National Department of Health (NDoH) reported a positive aspect of them, setting a strategic goal of developing and implementing health workforce staffing norms and standards for health facilities, using the Workload Indicators of Staffing Need (WISN) method (NDoH, 2017). A case report conducted by Mabunda, Gupta, Chitha & Mtshali, (2021) investigated that the WISN tool was not installed in all facilities or district offices in South Africa but largely centred on provincial offices. WISN coordinators from each of these provinces were offered five days of training by WHO health systems experts. They began implementing the tool and the post implementation revealed that the recommended skills mix and HRH projections calculated using WISN were found to be unaffordable. Figure 3.2 taken from Mabunda et al. (2021) shows the WISN determined posts per district requires additional funds way above what the province could afford. The results, therefore, served to inform the gaps and skills mix needed in primary care to provide evidence for decision making but not the strategies to recruit or retain them (Mabunda et al., 2021).

Figure 3.2: WISN methods applied to a primary care setting in a South African Province

District	A: Number of Existing Posts *	B: Cost of Funded Posts (Rands)	C: WISN Determined Posts (B)	D: Cost of WISN Determination (Rands)
A	1513	574,016,100	2238	857,548,846
B	1888	775,264,389	2473	1,066,158,090
C	1693	641,221,482	2283	909,994,718
D	1803	684,681,481	2344	893,342,355
E	558	196,278,766	664	233,467,294
F	1504	579,318,958	2069	824,212,879
G	2231	901,029,019	2999	1,264,667,454
H	1135	411,370,294	1673	614,871,176
Total	12,325	4,763,180,488	16,743	6,664,262,812

Variance 1: C—A = 4418. Variance 2: D—B (Rands) = 1,901,082,324. Available budget (Rands) = 1,322,722,157. * These are funded posts but not necessarily filled.

Source: Mabunda et al. (2021)

The health workforce is one of the system-level elements that enable quality in UHC. It is important that the health workforce is ready to provide health care that is effective, efficient, people-centred, safe and timely. It is also important for the workforce to have a system of support, supervision and resources to achieve these healthcare goals. Thus, the WISN method is beneficial to hospitals and their healthcare staff, specifically nurses as they would be able to receive the necessary support and resources needed to provide efficient health care which leads to a happy and motivated workforce. When a workforce lacks support and the essential resources to deliver efficient service, especially in healthcare, this can have negative implications on staff such as demotivation, another factor that effects the existing workforce due to nurse shortages.

3.6.5 De-motivation of existing nursing staff

Hedges (2014) states that the lack of motivation causes a major loss in productivity and the best way to root out a morale problem is to consider these common reasons people lack motivation in their jobs. Micromanagement, lack of progress, job insecurity, no confidence in company leadership, poor communication, lack of company resources and unpleasant coworkers are some of the common reasons people lack motivation in their jobs (Hedges, 2014).

According to Ogbeivor (2021) lack of motivation does not only have a serious impact on the health and wellbeing of workers, quality of care and service delivery but it is also costly to organisations. Some of the main causes of de-motivation include work stress, being overworked, feeling undervalued, lack of adequate resources at work, as well as poor working environment (Ogbeivor, 2021).

The World Health Organisation highlighted work motivation as one of the factors important for resolving problems with recruiting and retaining staff in the healthcare sector (WHO, 2016). Although nurse shortages are a worldwide challenge, work motivation can be a good factor in retaining staff in the healthcare sector which provides opportunity for management staff to encourage work motivation strategies to be implemented. The next section will discuss reasons for nurse shortages.

3.7 Reasons for nurse shortages

Nurses leaving their jobs and the profession are an issue of global concern, with supply-demand gaps for nurses reported to be widening (Halter, Boiko, Pelone, Beighton, Harris, Gale, Gourlay & Drennan, 2017). Globally, countries are faced with health system problems, especially in the public health care sector, which is often due to not getting paid enough, limited overtime pay, nurses not being happy with their working environments due to basic shortages of medical equipment, supplies, support staff which has an effect on their ability to deliver the best health care to the patients.

Healthcare systems in Africa have, over the years, suffered from man-made issues which cut across institutional, human resources, financial, technical and political developments (Oleribe, Momoh, Uzochukwu, et al., 2019). However, nurses leave in numbers which leads to severe staffing shortages, impacting the quality of patient care. Ayalew, Workineh, Semachew, Woldgiorgies, Kerie, Gedamu, & Zeleke (2021) agree and state that staffing problems bring about the loss of competent and qualified nurses and as a result of such events, the shortage of nurses has created a healthcare concern, especially in developing countries adversely affecting the quality of patient care provided by the nurses (Ayalew et al., 2021).

Not only do the nurse shortages have implications on patient care it also puts a strain on the existing workforce. There is a need to examine the factors of why nurses are leaving in order to come up with suitable retention strategies that will curb mass shortages. The question now becomes what are some of the driving factors that contribute to nurses leaving their jobs?

Drennan & Ross (2019) state that shortages occur when demand for nurses outstrips the numbers of nurses available for employment and one of the factor's influencing demand is the economy. Other authors Chan, Tam, Lung, Wong & Chau (2013) have discovered that there are also individual and organisational determinants related to the intention of nurses leaving, creating nurse shortages. In a research article by Andrews & Dziegielewski (2005) authors believe that the individual determinants include factors such as educational attainment, stress, burnout, job satisfaction and health. Organisational determinants have centred on poor management and the lack of supervision and leadership (Andrews & Dziegielewski, 2005).

Based on research studies done by Msomi (2017), four categories of factors contributing to staff leaving were highlighted which echo the same sentiment as the other authors above. These factors were namely personal factors, organisation-wide factors, work environment and job-related factors. These categories were also confirmed by Drennan & Ross (2019) who break down these four most common categories influential in the decision-making process of nurse staff leaving, contributing to nurse shortages:

1. Individual: skills and interests, career plans, family and financial responsibilities,
2. Job characteristics: remuneration and other financial benefits (e.g. health insurance, pension), hours and pattern of working, type and volume of work, physical and/or emotional intensity of work,
3. Organisation: clinical and employer reputation, type (e.g. private, public), size of organisation, size of specialties within an organisation, infrastructure to support employees (e.g. child care facilities, meal and social facilities), access to professional and career development activities and/or funding for these,

4. Location: urban, sub-urban, rural, proximity to family and/or other services such as schools for children.

Ayalew et al. (2021) list similar factors that contribute to nurses leaving including increased workloads, low remuneration and job rewards, little chance of promotion, and the lack of recognition. The factors appear to be prevalent as studies conducted by Gutsan, Patton, Willis & Coustasse (2018) discovered that in most African countries, the shortage of nurses is influenced by a lack of sufficient training especially for new recruits. Nall (2021) disagrees with this view and suggests that burnout and staff shortages are the top two reasons why nurses leave their jobs. Staff shortages increase workloads on the existing nursing workforce which causes stress and anxiety for the existing nurse workforce who try to do it all, and this eventually can impact patient care. Some nurses get tired of it and choose to leave the profession altogether (Nall, 2021).

Another interesting view on the reasons for nurse shortages came from the nurses themselves, in a blog article published on nurse.org that surveyed 1500 nurses about how they felt about the real reasons behind the nursing shortage. It showed that 80% of the respondents said that their units were inadequately staffed leading to unsafe staffing ratios. This leads to a never-ending cycle of shortages: nurses find themselves constantly having to face unsafe staffing ratios, so they decide to leave the bedside, this results in even fewer nurses available to care for patients, so the downward cycle continues (Gaines, 2022). Furthermore, among all the multiple determinants of nurses leaving, job dissatisfaction and nurse stress were identified as major factors. Coomber & Louise (2007) identified stress and leadership as the main components that have the strongest impact on job dissatisfaction among nurses and turnover whilst education and remuneration were found to be inconsistent. Stress and leadership were identified as the best predictors of lack of satisfaction and intention to leave.

Nurses choose to leave the profession due to the reasons listed above which the authors of various studies have richly described which simply adds to nursing turnover, thus affecting staffing ratios that ultimately impact on the delivery of quality healthcare.

Drawing from the research work conducted by Chan (2013) the intention of a nurse to leave a job or their profession is related directly to a nurse's job satisfaction. The next section takes a look at the role of motivation, a contributing factor for nurses leaving and the delivery of better quality of health care for patients.

3.8 Job motivation in health care

Chan (2013) uncovered that the intention to leave was primarily influenced by job satisfaction, which was determined by income, career advancement, opportunity, workload, stress, and satisfaction with management. Job satisfaction is the primary indicator influencing the likelihood an individual will remain with their job and is therefore the most significant factor in turnover (Hairr, 2014). Job motivation is essential for enhancing the nurses role in proving the quality of caring for an individual and community health (Oshvandi, Zamanzadeh, Ahmadi, Fathi-Azar, Anthony & Harris, 2008). According to Cherry (2023) motivation involves the driving force behind human actions and guides and maintains goal-oriented behaviours. In the context of a healthcare system, strengthening motivation can be considered as one of the driving forces that can help nurses potentially contribute towards delivering a better quality of healthcare with a positive attitude towards their patients.

Borghi, Lohmann, Dale et al. (2018) believe that the ability of a health system to deliver quality healthcare among the current workforce is partly dependent on healthcare workers' motivation. Whereas the lack of Nursing Job Motivation has a negative effect on the health and safety of patients (Oshvandi et al., 2008). One of the strategic objectives mentioned in the Western Cape Government Health: Annual Report (2018) was the improvement of the quality of care and that the availability of competent and caring staff was important. Thus, the biggest challenge facing people management is the re-energising of staff (Western Cape Government Health: Annual report, 2018). The success of productivity improvement strategy is dependent on employee commitment, job satisfaction, skills, and motivation (Alshallah, 2004). Therefore, nurses' job motivation should be strengthened

Job motivation is highlighted by the authors above as being one of the essential building blocks behind productivity and re-energising the nursing workforce that enables the delivery of good health services. A happy healthcare team is likely to be more energised and the infectious attitude can translate into a better work environment, in turn forging stronger teamwork amongst nursing staff and working together to manage the workloads and deliver efficient healthcare to patients. Therefore, it is important to understand the factors that motivate nurses.

3.9 Factors that motivate nurses

The importance of investing in health workforce motivation was stated in the Global Conference on Primary Health Care 2018 report (WHO, 2018). One of the critical declarations made in this report by the Heads of State, Government and ministers who participated at this Global Conference was to envisage health care services that are high quality, safe, accessible and affordable for everyone in every corner of the country, provided with compassion, respect and dignity by a skilled motivated and committed healthcare workforce (WHO, 2018).

According to Jaskiewicz, Dwyer & Tulenko (2012), health workers will be motivated and express job satisfaction if they feel that they are effective at their jobs and performing well. Factors contributing to their motivation include career development, adequate remuneration and employee benefits. If these factors are not met this would lead to poor attitudes in the workplace and towards patients (Jaskiewicz et al., 2012).

Shusha (2014) believes that turnover and healthcare costs are reduced in organisations where nurses deliver quality nursing care with positive attitudes toward their jobs. It is therefore important to keep nurses happy and motivated by understanding the factors that motivate them, so that they can conduct their daily jobs with efficiency and pride which means that the entire health system can benefit with the end result being the delivery of quality health care and better attitudes towards patients. Poorly motivated nursing staff will obviously have the opposite effect. This is why strong human resource

mechanisms need to be in place to make sure that the right motivational factors are at the right levels to keep health workers satisfied.

It is important to develop motivation strategies that allow employees to develop their careers, ensure adequate compensation and recognition, and foster positive work environments, including supportive supervision (Manongi, Marchant & Bygbjerg, 2006). Supportive supervision could also be a key component in making sure that workloads amongst the nurse staff are manageable so that the existing workforce are able to cope and still deliver efficient healthcare even with the nurse shortage.

3.10 Summary of this chapter

The reviewed literature provided a background on the South African healthcare system in order to understand the research setting. The chapter further explored the factors contributing to staff shortages and the effect this had on healthcare. The implications of nurse shortages on the existing staff were also discussed in detail linking Workload Indicators of Staffing Need (WISN) a tool strongly recommended to be used to assess workload pressures on health workers in health facilities further determining the number of each category of health worker needed to cope with the facility workload. The next chapter presents the research methodology that was implemented in this study.

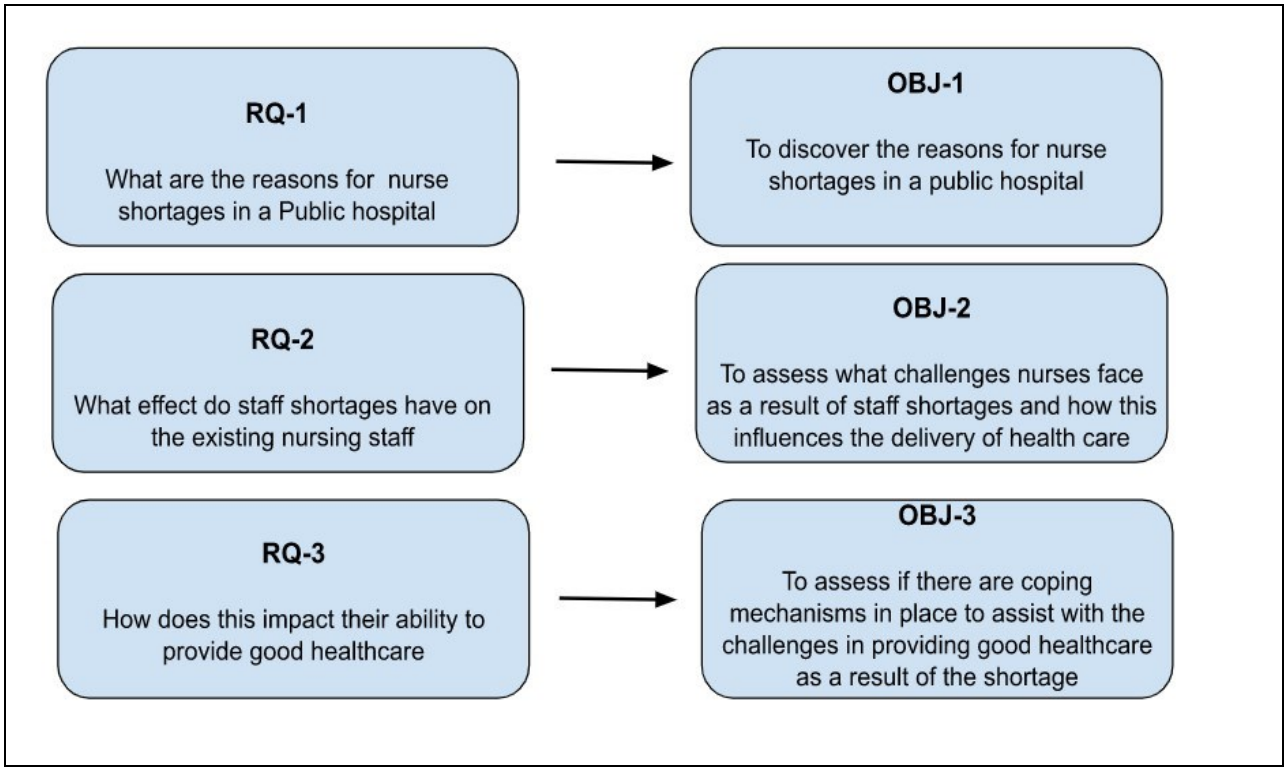
CHAPTER 4
RESEARCH METHODOLOGY

4.1 Introduction

In the previous chapter the literature review highlighted the importance that appropriate nurse staffing has on the patient's safety and the job performance of nurses. The purpose of this chapter is to discuss the research methodology and design undertaken in this study.

According to Pandey & Pandey (2015) the purpose of a research study is to discover answers to questions through applying scientific procedure. Research methodology refers to the methods used to pursue knowledge or evidence for practice (Burns, Gray & Groves, 2013). However, it is important to note that Evans, Gruba and Zobel (2011) caution that it is essential to continuously assess whether the research methods chosen for the study are relevant to the aims of the study and would produce the desired results. In this regard, the aim and objectives of this study are highlighted below to ensure reflection and alignment with the research methodology. Thus, the research methodology will discuss the main research questions and objectives and will also include the population, sampling methods, ethical considerations, data collection instruments and data analysis techniques. Figure 4.1 illustrates how the researcher linked the research questions to research objectives forming the prime focus of the research, which is to assess the effect of nurse shortages on healthcare at a public hospital in KwaZulu-Natal.

Figure 4.1: Illustration of the research questions and objectives relevant to the study



Source: Researcher's own work

The true goal of research is to seek answers to previously unanswered questions contributing to the body of knowledge in a particular discipline (Goddard & Melville, 2001). The research methodology, according to Lewin & Somekh (2005) is the collection of methods or rules applied to research and both the principles, theories, and values that support the research approach. The research methodology and design chosen for this study is discussed next.

4.2 Research Methodology

Research methods lay the foundation for the research. Traditionally, academic researchers often approach research studies through two distinct paradigms, positivistic and phenomenological, also known as quantitative and qualitative (Collis & Hussey, 2013). According to Dumay (2008) the positivistic and phenomenological approach plays a significant role in determining the data-gathering process, especially the methods used in the research. Thus, it is essential to understand the differences between qualitative and quantitative research methods to distinguish which way is deemed most suitable for

this study. An analogy of qualitative and quantitative research is represented in Figure 4.2, which helps understand the differences between each approach.

Figure 4.2: Comparison of qualitative & quantitative methodology

CHARACTERISTICS	QUALITATIVE	QUANTITATIVE
Objective/Purpose	To gain an understanding of underlying reasons and motivations. To uncover prevalent trends in thought and opinion.	To quantify data and generalise results from a sample to the population of interest. To measure the incidence of various views and opinions in a chosen model.
Sample	Usually, a small number of respondents.	Usually, many cases represent the population of interest.
Data collection	Qualitative data include open-ended questions, interviews, observation and field notes.	Quantitative data is based on precise measurements using structured and validated data collection instruments.
Data analysis	Identifies patterns, features or themes.	Identifies statistical relationships.
Outcome	Narrative report with contextual description and direct quotations from respondents.	Statistical report with correlation, comparisons of means and statistical significance of findings.

Source: Johnson & Christensen (2012)

Figure 4.2 reveals that the study adopted a qualitative approach as this approach provides data about real-life people and situations and assisted the researcher to uncover prevalent trends in thinking amongst a small number of respondents using open-ended questions, interviews and observation through the identification of themes and finally providing a descriptive narrative report (De Vaus, 2014). Johnson & Christensen (2012) describes the qualitative research approach as unique in that the approach collects data using words and pictures by the researcher who serves as an instrument himself, making it well-suited for providing factual and descriptive information. Thus, the qualitative data collected will be used to explain how staff feel about nurse shortages, the daily challenges they face as a result of these shortages and how this directly impacts healthcare.

4.2.1 Qualitative research methodology

Qualitative research methodology views human thinking and behaviour in a social context and covers a wide range of events to understand and appreciate them thoroughly (Daniel, 2016). Qualitative research is a systematic inquiry into social phenomena in natural settings (Teherani, Martimianakis, Stenfors-Hayes, Wadhwa & Varpio, 2015). In this study, qualitative research methodology was used to discover the effect of nurse shortages on healthcare at a public hospital by understanding the experience and behaviours of the nurse workforce due to the impact of nurse shortages and what implications it has on healthcare. The next section discusses the rationale for using qualitative research methodology.

4.2.2 Rationale for using qualitative research methodology

Goulding (2002) claims that the choice of methodology should be based on the views, interest and beliefs of the researcher. Buchanan & Bryman (2007) believe that other significant factors, such as epistemological concerns, must also be considered when choosing a research methodology. According to Teherani et al. (2015) qualitative research focuses on the events that transpire and on the outcomes of those events from the perspectives of those involved. In this study, the researcher used qualitative research to understand the implications nurse shortages have on healthcare and by learning what challenges nurses experienced during staff shortage and how it effects their ability to provide good healthcare.

The researcher tried to account for what caused these shortages had what had been occurring during these staff shortages to have an impact on healthcare and wished to analyse the information and draw conclusions. Therefore, semi-structured interview questions were used during the research process; this enabled the researcher to get an in-depth insight into the nursing staff's experiences due to nurse shortages and the effect it has on healthcare. Data was collected during the interview to answer the research questions and enable the researcher to reach the objectives of this study.

An exploratory approach was utilised which is common in qualitative studies. Exploratory research is considered flexible, cost-effective, and open-ended (George, 2021). Exploratory research was used to identify the research problem, formulate propositions and conduct further research. Bhattacherjee (2021) describes a proposition in qualitative research as a tentative and conjectural relationship between constructs that is stated in a declarative form. Because propositions are associations between abstract constructs, they cannot be tested directly. Instead, they are tested indirectly by examining the relationship between corresponding measures (variables) of those constructs.

The propositions for this study, as represented in Table 4.1 was developed before the data collection process. The proposition guided the formulation of interview questions before the data collection process was implemented.

Table 4.1: Links between the research questions, objectives, and proposition

Research questions		**Linking objectives**		**Linking proposition**	
RSQ 1	What are the reasons for nurse shortages in a Public hospital?	OBJ 1	To discover the reasons for nurse shortages in a public hospital.	P1	Nursing shortage is on the rise and determining the cause of the problem will help the healthcare sector improve its retention strategies thereby limiting staff shortages thus improving healthcare.
RSQ 2	What effect do staff shortages have on the existing nursing staff?	OBJ 2	To assess what challenges nurses face as a result of staff shortages and how this influences the delivery of health care.	P2	Staff shortages cause daily challenges for nurses such as personal (stress, burnout, fatigue) and professional challenges that impact the delivery of healthcare.
RSQ 3	How does this impact their ability to provide good healthcare?	OBJ 3	To assess if there are coping mechanisms in place to assist with the challenges in providing good healthcare as a result of the shortage.	P3	Strategies can be created to help nurses deal with challenges they encounter as a result of staff shortages; this will have a positive impact on the existing staff thus leading them to provide good healthcare.

Source: Researcher's own work

The following section explores research design and discusses the research design approach used to frame this study.

4.3 Research design

A research design, also called a research strategy, is a plan to answer a set of questions (McCombes, 2022). According to Creswell (2012) research designs are the specific

procedures involved in the research process: data collection, data analysis and report writing. According to Gupta & Gupta (2022) research design outlines what, when, where how much and the method of data collection detailed in the research design containing information about the sample, data collection and instrument design. Thus, the research design is described by Mouton (1996) as an essential set of guidelines and instructions on how to get to a predetermined goal. There are four commonly used research design approaches to frame qualitative research. The researcher discusses each design approach in the next section and discusses the most appropriate design for the study.

4.3.1 Grounded Theory

The Grounded Theory is a qualitative research approach that was developed by two sociologists, Glaser & Strauss (1967). According to Terhani et al., (2015) the purpose of this approach is to develop theories grounded in the study data. The Grounded Theory method uses both an inductive and a deductive approach to theory development; constructs and concepts are grounded in the data and hypotheses are tested as they arise from the research (Morse, 2007). This research design is appropriate when little is known about a phenomenon and the aim is to produce or construct an explanatory theory that uncovers a process inherent to the substantive area of inquiry (Glaser & Strauss, 1967). Thus, the Grounded Theory was not well suited for this study.

4.3.2 Ethnography

Ethnographic studies involve the collection and analysis of data about cultural groups (Agar, 1986). The purpose of ethnography is to get a detailed understanding of the culture of a context from the point of view of the subjects. This is done through the researcher immersing themselves in that setting (Terhani et al., 2015). Ethnography has its roots in cultural anthropology, where researchers immerse themselves within a culture, often for years on end rather than relying on in-depth interviews or surveys, the researcher experiences the environment first hand, and sometimes as a participant observer (Sauro, 2015). Thus, the ethnographic research design was not well suited for this study as the process is time-consuming, it requires a well-trained researcher, and it takes a lot of time to build trust with the participants. This study is short-term in nature, and furthermore the

researcher would need to have the necessary resources and time frame to utilise the ethnography design.

4.3.3 Case study

In a case study, the focus is based on a particular unit. The case study method is not aimed at analysing cases, but rather for exploring a setting in order to define cases and to understand it (Cousin, 2005). A case study can contain either a single study or multiple studies (Yin, 2009). Thus, various cases allow exploration of research questions and theoretical evolution. However, various cases can be enormously expensive and time consuming to implement (Baxter & Jack, 2008) and the difficult part is to present the findings in a specific way so the case study is easy to understand by the reader (Gustafsson, 2017). Therefore, the case study research design was not found suitable to implement in this study.

4.3.4 Phenomenological

Phenomenological studies examine human experiences through the descriptions provided by the people involved. These experiences are called lived experiences as they occur in real life (Donalek, 2004). A phenomenological study explores what people experience and focuses on their experience of the phenomenon (Mckoy & Boyd, 2022). The establishment of a good level of rapport and empathy is critical to gaining in-depth information from the participant, especially when investigating issues where the participant has a strong personal stake (Lester, 1999). Phenomenological research describes experiences rather than to explain, and to start from a perspective free from hypotheses or preconceptions (Husserl, 1970).

Many phenomenology approaches examine the phenomenon of being, but two effective approaches that are commonly used in research are the transcendental and hermeneutic phenomenology approaches. The two approaches are discussed in the next section.

4.3.4.1 Transcendental phenomenology

In transcendental phenomenology, the researcher aims to understand the phenomenon by using experience to understand the phenomenon.

4.3.4.2 Hermeneutic phenomenology

In hermeneutic phenomenology, the researcher interprets a phenomenon's experiences and interactions.

The researcher followed a phenomenological research design approach in this study. The approach was deemed appropriate for this research because it enabled the researcher to obtain a detailed narrative of the problem and capture meaningful characteristics related to real-life events (Sandelowski, 2000). Polit & Beck (2010) postulate that descriptive designs aimed at describing the dimensions, variations and importance of phenomena result in thicker descriptions. This exploratory approach investigates the full nature of phenomena, its manifestations and its contributing factors. Exploratory-descriptive studies are conducted to investigate the problem at hand and address an issue in need of a solution by seeking the viewpoints of the people who are most affected (De Vos et al., 2011).

The researcher needed to understand the experiences of the nursing workforce with regard to nurse shortages and the effect it has on healthcare, so that appropriate strategies could be employed to improve the issue. This research design was best suited due to the nature of this research being set in a hospital environment. A comprehensive source of data was required so the researcher could get a holistic and deeper understanding of issues nurses faced due to nurse shortages and the implications it had on healthcare.

In a phenomenological study, usually between 5 and 25 interviews are conducted to gain a sufficient dataset in order to look for emerging themes using other participants to validate the data findings (Sauro, 2015). This requirement was met as the researcher used a semi-structured interview questions as a data collection method to extract data

from a total of fifteen nurses and five operational nurse managers who are most affected by this problem. The researcher interviewed a total of twenty respondents.

4.4 Research setting

The study was conducted at a public hospital in KZN, South Africa. Due to ethical reasons and those of confidentiality and anonymity, the name of the hospital had not been revealed. The hospital has inpatient and outpatient services, with 451 beds for inpatient care. Five inpatient wards were identified for the purpose of this study. These being, Intensive Care Unit (ICU), Neonatal intensive care unit (NICU), Paediatric, Surgical and Medical wards. These wards are considered to be high priority wards as patients in these wards have different types of severe illness, disease or recovering from complex surgery that requires critical care. The patients admitted to these wards range from new-born babies to children and adults with surgical or medical complications. The next section will highlight the population and sampling for this research setting.

4.5 Population and sampling

A population is a complete set of people with specified characteristics, while a sample is a subset of the population (Hulley, Cummings, Browner, Grady & Newman, 2013). According to Gupta & Gupta (2022) researchers are not able to make direct observations of every person in the population that they are studying. Instead, they collect data from a subset or group of individuals. A sampling process is facilitated by using a sampling plan in order to select participants that are a true representative of the whole group in order to avoid sampling bias (Polit & Beck, 2010).

The population for this research study was Registered Nurses (RN's) and Operational Nurse Managers (ONM's) working in selected critical care units at the public hospital under study in KwaZulu-Natal (KZN). The researcher, with help from the Deputy Nurse Manager (DNM) of the researched hospital, identified five critical care wards and 30 respondents that qualified to participate in the study, who have more than one year working experience at the KZN hospital. The 30 respondents across the five units were invited to partake in the study and the researcher followed up frequently in terms of their

availability to participate via email to the DNM as the DNM facilitated the interview invite process via email including reminders that was sent a week before the interviews.

From the 30 respondents that were expected to participate in the study, only 20 respondents were available during the interview period due to the nature of the nurse's working environment and the availability of nurses. The researcher did not want to further disturb their daily operation flow of each ward due to shortages of nurses. Semi-structured interviews were conducted with 20 respondents from five critical care wards, which consisted of five Operational Nurse Managers (one ONM per ward) and 15 Registered Nurses (3 RN's per ward). The sample population was representative of the two different levels of ranked staff - Operational Nurse Managers and Registered Nurses. For results to be generalisable, the sample must be representative of the population (Welman, Kruger and Mitchell, 2005).

There are two major sampling designs: non-probability and probability which will be discussed in the next section.

4.5.1 Probability sampling

According to Saunders, Lewis & Thornhill (2009) probability sampling occurs when elements or sampling units are selected by chance. This means that all population subsets have a known non-zero chance of being selected. Probability sampling involves randomly selecting a sample or a part of the population that will be researched through a random selection process, like a drawing (Nikolopoulou, 2022). The disadvantage is that it may be difficult to get a list of the entire population from the organisation or place of research due to ethical or privacy concerns, or a full list may not exist for the drawing process. It can be expensive and time-consuming for the researcher to obtain and compile the entire population list for the study.

4.5.2 Non-probability sampling

According to Galloway (2005) in a non-probability sample, some members of the population, compared to other members, have a greater but unknown chance of selection.

Non-probability sampling uses non-random criteria like the availability, geographical proximity, or expert knowledge of the individuals being researched to answer a research question (Nikolopoulou, 2022). Non-probability sampling help researchers select units from a population they are interested in studying. This study utilised non-probability sampling as the criteria for the selection process including availability of the respondents as well as their knowledge and exposure to the problem which is being researched. Therefore, it is necessary to examine the four main types of non-probability sampling that is commonly used in research. The next section explores the different types of non-probability sampling methods and the most appropriate type of non-probability sample.

4.5.2.1 Convenience Sampling

Researchers select their sample based solely on convenience especially when time is a constraint. Minimal effort goes into selecting the sample. Many researchers prefer convenience sampling as there are few rules to follow allowing the researcher to generate large samples in short periods deeming it a more affordable sampling method, as there is little cost involved as no travel or extensive planning is necessary (Simkus, 2023).

4.5.2.2 Purposive sampling

Purposive sampling is a technique widely used in qualitative research to identify and select information-rich cases for the most effective use of limited resources (Patton, 2014). According to Kelly, Bourgeault, & Dingwall (2010) this involves using select respondents that are most likely to yield appropriate and valuable information. For this study, the researcher chose purposive sampling to select participants who are likely to be exposed to the effects of nurse shortages within their unit, as it added value to the research by identifying specific participants that were required and relevant for the research.

4.5.2.3 Snowball sampling

A snowball sampling method is mostly used by the researcher when it is difficult to reach the population under study, or when there is no existing database or alternate sampling frame to help find them. To conduct a snowball sample, the researcher interviews one

person who is willing to participate in the research and asks them to introduce other willing participants for the research (Nikolopoulou, 2022).

4.5.2.4 self-selection

In self-selection sampling, volunteers are usually invited to participate through advertisements asking those who meet the requirements to sign up (Mogashane, 2015). Volunteers are recruited until a predetermined sample size is reached. The researcher will need to publicise the need for subjects and check the suitability of each subject and either invite or reject them (Nikolopoulou, 2022).

4.5.2.5 Purposive sampling for interviews

Purposive sampling, which is a non-probability sampling technique of collecting data, was selected to be used in this study for the following reasons:

- The selected respondents worked at the KZN public hospital being used for this research study.
- The respondents were permanent workers and not substitute/stand-in or part-time workers from an agency.
- The selected respondents worked in wards for more than a year and were likely to have been exposed to the effect of nurse shortages in their daily jobs and the impact it has on healthcare.
- The respondents were willing and available to participate in this study.

Utilising a purposive sampling method ensured that the most relevant respondents were chosen for the study; the researcher chose experienced Operational Nurse Managers and Registered Nurses who agreed to participate in this study. The Operational Nurse Managers were in charge of the daily management of their units including staff management, budgetary decisions, recruitment and training of nurses etc. The Registered Nurses were in charge of patient care and the supervision of auxiliary nurses.

4.6 Criteria for the selection of the sample

The sample size was representative of five Operational Nurse Managers and fifteen Registered Nurses across the five inpatient units. The respondents worked in the critical care units at the public hospital in KZN which were:

- Intensive Care Unit (ICU)
- Neonatal intensive care unit (NICU)
- Paediatric Ward
- Surgical Ward
- Medical Ward

4.6.1 Inclusion Criteria

The inclusion criteria for this sample was permanently employed Operational Nurse Manager and Registered Nurses that had more than one year working experience in their current position at the KZN hospital.

4.6.2 Exclusion Criteria

The exclusion criteria for the study was Operational Nurse Manager and Registered Nurses having less than a year's working experience at the KZN hospital, as well as any agency staff or temporary staff.

Due to the operational nature of the hospital, the researcher had to interview the Registered Nurses on duty that were available at the time of the data collection process, as some Registered Nurses had taken leave instead of overtime or were absent from work. The sample size maintained was manageable for the researcher to coordinate the interviews so that it falls within the respondent’s lunch or tea break so as to not disrupt care for their patients and where there is guaranteed staff rotation, so the patient is covered by another Registered Nurse or Operational Nurse Manager during the interview process.

Morse & Niehaus (2009) observe that whether the methodologies are quantitative or qualitative, sampling methods are intended to maximise efficiency and validity. The next section discusses the method implemented to collect the data and the validity and reliability of the data.

4.7 Data collection method

According to Lazar, Feng & Hochheiser (2017) once data sources have been identified, protocols for how to use them to collect the data need to be established. Data collection methods can be divided into two categories - primary and secondary data collection methods. According to Dudovskiy (2018) primary data is the type of data that has not been around before; it is unique findings of the actual research study, while secondary data about a particular research area is published in abundance and found in materials such as newspapers, magazines, published books, journals and online portals.

For the primary data collection method, this study implemented a one-on-one in-depth interview. The researcher used a semi-structured interview schedule that worked as a guide for the interview, which the interviewees could also use to prepare for the interview. A total of twenty interviews were conducted; five operational nurse managers and fifteen registered nurses were interviewed. The researcher spent time consolidating research about the main research problem to gain a better understanding and background of the phenomenon under study to be able to construct the right questions to obtain the unique findings. The next section provides information on the construction of the semi-structured interview questions and details of the various sections of the interview schedule.

4.7.1 Interview schedule construction

The researcher constructed the semi-structured interview schedule based on the following:

- The interview questions were in English as the staff were predominantly English speaking.

- Based on the themes emerging from the literature review and the study objectives, the researcher developed a set of questions to collect unique information from the respondents.
- The questions were open-ended which needed to be answered by the respondents to enable the researcher to get a holistic view of the problem of nurse shortages and the effect it has on healthcare.
- Each question was simply worded making it easy for respondents to understand.
- The researcher's supervisor and the statistician checked the interview questions to ensure alignment with the study.

The researcher divided the interview questions into the following sections:

- Page 1 part 1: Provided the respondent with a brief introduction about the research's purpose, explaining the research's anonymity and thanking them for their willingness to participate in the study.
- Part 2: Consent slip which explained the anonymity and confidentiality of the study, permission for the interview to be audio recorded and transcribed and that no financial gain was given to participate in the study as well as the right to withdraw participation from the study at any time and will not be penalised or prejudiced.
- Section A: Biographical Information - this section asked respondents to select their age, gender, ethnic group, the number of years of working experience in nursing and the number of years they have been working in their current position. Biographical information was included to collect the baseline demographics of the population.
- Section B: Theme 1: Current nurse staffing levels - This section delved into the current nurse-to-patient ratio in the unit and the main factors causing the shortage.
- Section C: Theme 2: Daily Challenges at work - This section specifically asked the nursing staff to provide their experience of daily challenges at work due to nurse shortages.

- Section D: Theme 3: Providing good health care - This section uncovered if there are any coping mechanisms in place to assist in coping with the challenges in providing good healthcare.

4.8 Validity and Reliability

Middleton (2019) describes reliability and validity as a process used to evaluate the quality of research. They indicate how well a method, technique or test measure something. Reliability is about the consistency of a measure, and validity is about the accuracy of a measure.

According to Sathiyaseelan (2015) the credibility of a research instrument depends on its validity and reliability, whether standardised or developed by the researcher; the validity and reliability has to be established before it is used. Similarly, Piot, Bartos, Ghys, Walker & Schwartländer (2001) postulate that the reliability of a research instrument relates to the consistency, dependability and ability of an instrument to accurately measure and reflect the elements under investigation.

The researcher compared the constructed interview questions with the objectives of this study to ensure validity. The interview questions were also submitted to an independent statistician for validation. Furthermore, the researcher pre-tested the interview questions in a pilot study with a selection of registered nurses and nurse managers outside of the sample for this study to increase the validity and reliability for the future study.

The research design for this study was deemed appropriate for these reasons, and the data analysis was performed in line with ethical standards and without bias.

4.9 Pilot study

According to Connelly (2008), a pilot study is not just a small exploratory study but is designed to guide the future study. The researcher conducted a pilot study to test the interview questions that would be used in the main research investigation. The pilot study was conducted in an ICU unit at a public hospital in Western Cape, Cape Town. The

hospital was chosen because it was convenient and close to the researcher for travelling purposes. The researcher sought permission via email from the Senior Manager Head of Nursing Services at this hospital to conduct the pilot study. During the pilot study, the researcher had to liaise with the Deputy Assistant Nurse (DAN) of the ICU unit at the public hospital in Cape Town to arrange the test interviews with two Registered Nurses and two Operational Nurse Managers. The pilot interview assisted in assessing the reliability and validity of the interview guide, and suitability of the interview schedule (Burns, Gray & Grove, 2013).

During the pilot study, the following was highlighted and assisted the researcher to plan for the data collection:

- Hospital security and access: The researcher learned that security was stringent at hospitals, and it was essential to have the permission letter in hand and allow enough time for security checks to get the necessary accreditation to access the building and medical wards. This was an important learning as the researcher implemented the same procedure with the security at the hospital where the main study was conducted.

- Staffing and interview times: The researcher understood how these wards are staffed and managed. Each ward had an Operational nurse manager (ONM) who reported directly to the Deputy Assistant Nurse. The ONM manages the day-to-day functions of the ward and most importantly has to manage any staffing issues and resources for the ward. The researcher learnt that ONMs work normal office hours, from 08h00 to 16h30 and Registered Nurses worked shifts. These timings proved to be useful to the researcher when conducting the interviews for the main study. The best was to report to site at 7am to get past security and prepare to start the interviewing process from 07h30.

- Interview environment: The researcher was able to assess the environment in which the interviews were administered. Due to the nature of the RN's job, the

researcher had to respectfully conduct the interview at the RN's workstation at the ICU unit so that the care for the patient was not compromised in any way. The interviews at the RNs working stations proved to be disruptive as there was consistent background noise due to the machinery used on the patients which interfered with the recording process. There were also short pauses in the interview processes when the phone rang or sometimes the patient or Doctors would need the RN. The researcher did not want to compromise the patient's safety and health and the RN's were allowed to leave for that time. The researcher found that the RN undertaking the interview in a private break room with less distractions could express herself more. This proved to be valuable for the main research as the researcher discovered that respondents are more likely to freely express themselves when they are in a private place that makes them feel comfortable and are away from other colleagues.

- Health and safety protocols: The researcher and research assistant (RA) had to wear masks and regularly sanitise and wash hands upon entering the ICU wards as the nurses' station is situated within close proximity to the patients and the researcher did not want to compromise the health of the patient nor put added stress on the medical team. The same health protocol had to be followed in the main study.

- Testing the interview questions: The administration of the test interviews helped determine if the respondents clearly understood the questions. It also helped with identifying questions that were unclear, repetitive or offensive and any important information that may have been left out.

- Testing the interview administering process: The researcher allowed the research assistant to administer at least 2 test interviews to check if the RA was clear enough and how the RA engaged with the respondents. The Researcher noticed that the RA's voice did not carry through on the recordings and the background noise was overpowering and probing words were seldom used and the researcher

had to intervene to explain the question again to the respondent using the correct probing words. The researcher decided not to utilise the RA for conducting more test interviews as well as the main study interviews but rather as help with carrying equipment and recording each interview on at least 3 devices for backup: Smart phone, laptop and a voice recorder.

The pilot test study enabled the researcher to establish improved and precise interview questions to enable an efficient data collection process and to physically prepare for the main study interview process. The next section will discuss the data collection and analysis of the main study.

4.10 Data collection

Data was collected within five medical wards as indicated above in section 4.4. The researcher collected the data with the help of a research assistant. A total of twenty in-depth semi-structured interviews were conducted which consisted of interviewing five operational nurse managers and fifteen registered nurses.

4.11 Instrumentation

The research instruments are the tools that the researcher uses to collect data (Sathiyaseelan, 2015). According to Polit & Beck (2010) the choice of data collection tool or instrumentation is guided by the methodology and objectives of a study. The instrument used for this study was an in-depth structured interview schedule that assisted the interviewees to prepare for the interview. The researcher had a separate copy to use which included key probing words.

The interview schedule was an instrument applied to gain more insight about the problem required for the research completion. Kothari (2004) postulates that in-depth interviews are designed to discover underlying motives and desires and are often used in motivational research. Such interviews are held to explore needs, desires and feelings of respondents. Individual (one-on-one) interviews were conducted. Respondents felt at

ease and comfortable enough to answer the questions and express themselves. The next section explains the interview process.

4.12 Interview process

- Information regarding the wards and the availability of staff per ward was obtained from the Deputy Nurse Manager (DNM) of the hospital, after approval had been obtained from the Hospital's CEO to conduct the study.
- The researcher dealt with the DNM telephonically and via email regarding the arrangements for the research interviews. The DNM facilitated in getting the staff briefed for the interviews. This action was necessary as the researcher did not reside in the KZN Province and had to coordinate via email and telephone leading up to the interview dates.
- A copy of the cover letter and an interview schedule was sent to the DNM via email along with the confirmed dates for the interview which took place on the 25th - 28th October 2022.
- This information was circulated electronically to the Operational Nurse Managers and their Registered Nurses of each of the five wards.
- The interview process began with a three-minute introduction about the purpose of the research and explaining the anonymity of the research.
- Before the start of the interview the researcher gave the respondent a 1-page document which had to be filled out without indicating the names of individuals. This document contained demographic information which the respondent had to complete as well as sign an interview permission/consent slip which was printed on the back of the page. The researcher required this for demographic and consent purposes of this study.
- The semi-structured interviews were conducted in a comfortable, quiet environment which was administered in the Operational Nurse Managers office or the break room. This ensured complete privacy between the researcher and interviewee. It further limited background noise from medical equipment such as heart monitors and ventilators which could have resulted in nurses not fully concentrating on the interviews.

- The interview process was between 25-30 minutes for both RN's and ONM's.
- The interviews were administered by the researcher and were audio recorded by the Research Assistant using a smartphone and a voice recorder as a backup.
- During the interview process the researcher had to make use of probing words in some interviews.
- At the end of each interview, a health pack was given to each participant as a token of appreciation for participating in the study.

4.13 Data capturing

During the interview process the data from the twenty interviews was recorded using a voice recorder and a smartphone. Each recording was downloaded and named according to the sequence of the interview. Each interview file was named according to the designation of the person interviewed and the sequence of their interview such as RN001 and ONM001. These files were then shared with a certified transcriber via an app named WeTransfer. The transcriber then transcribed the data into MS word format. A Verbatim transcription was applied for the transcription process.

4.14 Data coding and analysis

Qualitative data management and analysis aim to order, structure, and give meaning to collected data (Lucas, 2021). According to Burns, Gray & Groves (2013) qualitative data refers to the process of examining and interpreting data to get meaning, gain understanding and develop knowledge. Thematic analysis is a method of analysing qualitative data which the researcher closely examines to identify common themes, ideas or patterns (Caulfield, 2019).

Data analysis for this study was done using thematic analysis to identify important themes that emerged. NVivo, a Qualitative Data Analysis (QDA) computer software tool was used to facilitate the process of coding and analysis of the data. Codes, according to Damyanov (2023) is a label assigned to a piece of data that is used to identify and give meaning to important concepts within a data set. By coding data for this study, the researcher was able to identify themes. The data groups were labelled and organised, enabling the

researcher to see the relationships between the data sets. The researcher used keywords and information commonly used throughout the data collection process to confirm themes. Three themes were discovered from the content analysis: current nurse staffing levels; daily challenges at work; and providing good healthcare. Data analysis was thus guided by the available data rather than what was previously known by the researcher.

The researcher also applied numerical codes such as RN001 or ONM002 which were used to ensure and maintain the anonymity of participants when using the data.

4.15 Data limitations

Data collection for the research study was limited to only one hospital in KZN. The researcher had to interview those who were available during the research period in order not to disturb the daily operation flow of each ward. Only registered nurses and operational nurse managers from selected wards within the hospital were interviewed. As such, the results obtained may not be reflective of the organisation as a whole.

4.16 Trustworthiness

This study used a qualitative method to collect data. According to Holloway & Wheeler (2010) when qualitative research is trustworthy, it demonstrates that the investigation was carried out with carefulness and appropriateness. Criteria outlined by Lincoln and Guba as outlined in Connelly (2016) are accepted by many qualitative researchers and thus also applied to this research.

Trustworthiness between the researcher, management team, RN's and ONM's was paramount. To build trust, the researcher used a friendly and polite approach in communicating with RN's, ONM's and the rest of the management team during the interview process. The researcher maintained an online and telephonic communication with the DNM and the DNM secretary building a good, trusting relationship which spread through to the rest of the stakeholders via the DNM in the form of management meetings and forwarding of emails from the researcher.

4.17 Ethical considerations

This study was supported and approved by the National Department of Health on 15 November 2021 (See annexure B). Ethical clearance was obtained by the researcher from The Faculty's Research Ethics Committee (FREC) on 16 November 2021 (Certificate No. 2021 FBMSREC 078) (See annexure C). Permission to carry out the research study at the hospital in KZN was approved by the CEO of the hospital in a form of a gatekeeper's acceptance letter signed by the hospital's CEO dated 23 August 2022. The following ethical principles were followed in this research:

4.17.1 Hospital requirement

The researcher had to adhere to the policies, procedures, protocols, and guidelines of the department of health for this research. The name of the hospital had to be anonymised. The findings from this research are expected to be reported back to the hospital management.

4.17.2 Participants consent and voluntary participation

Each participant was informed at the beginning of the interview that their participation in the study was voluntary, and nothing would be held against them if they had to cancel or choose not to go through with the interview. A consent form outlining this, and other conditions were given to each participant to sign. The form also included permission to audio record the interviews.

4.17.3 Participants anonymity and confidentiality

The anonymity and confidentiality were maintained for each participant. Each participant was referred to as a code number for example RN001 and ONM001. The recordings and transcripts were saved under each code number. The data collected on the smartphone device was transferred and stored on a separate password protected folder and retrieved electronically on the researcher's password protected laptop device. The electronic data stored in a separate folder will be deleted and any paper-based notes, surveys and other print material will be destroyed after the prescribed period on completion of the study.

4.17.4 Autonomy

Participants could freely decide if they wanted to use their tea break or lunch hour to do the interview. They could freely break away and leave the interview at any time if they had to urgently attend to patient commitments. This study did not pose any direct harm or threat to the participants. None of the participants felt uncomfortable or displayed any emotional breakdown. The interview did not have any direct benefits either, for example monetary compensation. Although some participants felt that the interview benefited them in a form of therapeutic relief by just talking about their challenges.

4.18 Summary of this chapter

Chapter Four presented a discussion of the research design and methodology for this study. The chapter covered discussion ranging from the research design, sampling and questionnaire design to the research method, reliability and validity, data collection, along with sampling and data analysis methods. This research study followed the Lincoln and Guba criteria of trustworthiness as outlined in Connelly (2016). The following chapter presents a discussion of the data analysis and results.

CHAPTER FIVE
RESEARCH RESULTS AND FINDINGS

5.1 Introduction

In this chapter, the researcher discusses the research results and key findings of the semi-structured interviews that were conducted with registered nurses and operational nurse managers at the researched public hospital in KZN. This study aimed to determine the effect of nurse shortages on health care. In this chapter, the researcher will analyse and interpret the data from the interviews according to the objectives of this research study, namely: To discover the reasons for nurse shortages in a public hospital; to assess what challenges nurses face as a result of staff shortages and how this influences the delivery of health care; and to assess if there are coping mechanisms in place to assist with the challenges in providing good healthcare as a result of the shortage. The data collected from the responses were analysed using the software programme NVivo. The findings of this study are presented in two sections. Section A relates to the demographic data; Section B focuses on the themes and subthemes that emerged from the collected data, which will be presented in this chapter. The next section will provide an overview of the respondent's descriptive data.

5.2 Descriptive data

The descriptive data was inclusive of 20 semi-structured interviews conducted with the respondents. Fifteen registered nurses and five operational nurse managers were interviewed. Respondents were numbered from respondent one to fifteen for the registered nurses (RN1 - RN15), and one to five for the operational nurse managers (ONM1 - ONM5). The names of all the respondents were omitted. These interviews were undertaken in a private and confidential environment to let the respondents feel comfortable and at ease through the interview process. The researcher ensured that the responses were recorded so that the meaning and significance of the comments were captured.

The instrument used was a semi-structured interview schedule that was used to collect descriptive data. The semi-structured interview schedule consisted of two major sections. Section A emphasised questions of biographical information of the respondents and section B addressed the themes that emanated from the objectives and literature of this study. Nine research questions were divided into three main areas of the study which emphasised the themes of this study.

Section A: Biographical Information - this section asked respondents to select their age, gender, ethnic group, how many years of working experience in nursing and how many years they have been working in their current position. Biographical information was included to collect the baseline demographics of the population.

Section B: Theme 1: Current nurse staffing levels - This section delved into the current nurse-to-patient ratio in the unit and the main factors causing the nurse shortage.

Section C: Theme 2: Daily challenges at work - This section specifically asked the nursing staff to provide their experience of daily challenges at work due to nurse shortages.

Section D: Theme 3: Providing good health care - This section uncovered if there are any coping mechanisms in place to assist in coping with the challenges brought on by nurse shortages in providing good healthcare.

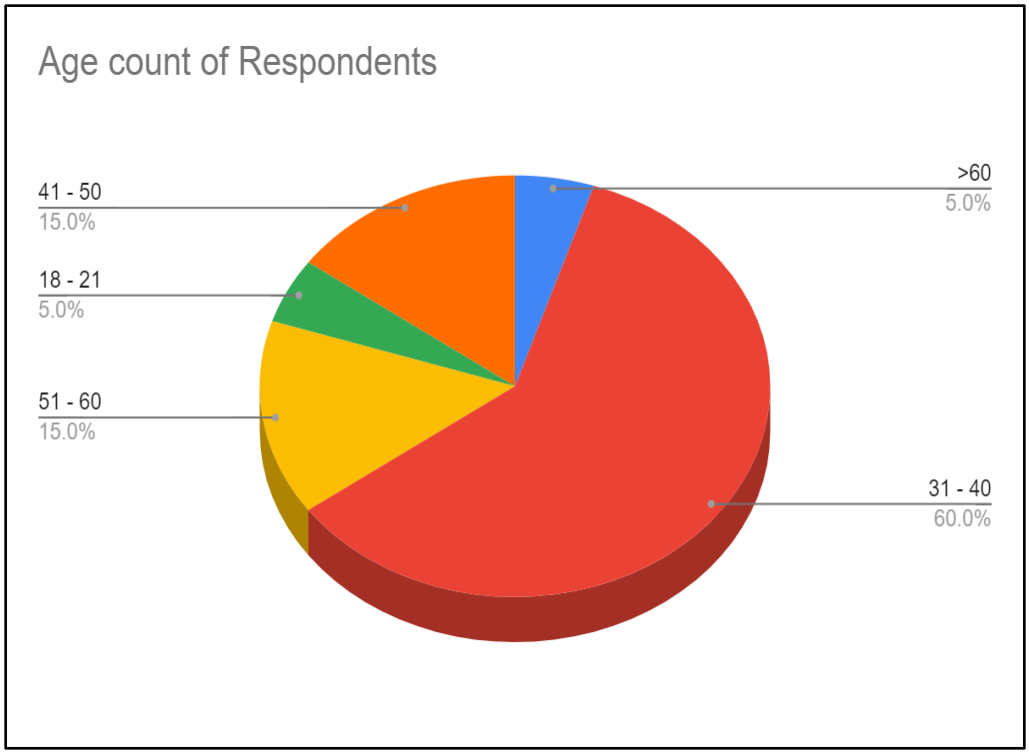
The responses and findings from each of the sections listed above will be presented. The next section will present the respondent's biographical information as set out in section A of the questionnaire.

5.3 Section A: Biographical information

5.3.1 Respondent's age profile

The respondent's age profile is indicated in Figure 5.1.

Figure 5.1: Respondent age profile



Source: Researcher's own work

Figure 5.1 illustrates the respondents' age classifications and the percentage of respondents in each age group. The results indicated that 5.0% were between the ages of 18-21 years, 60% of the respondents were between 31-40 years of age, 15% of the respondents were between the age group of 41-50 years, 15% of the respondents were in the age group of 51-60 years of age and only 5% of the respondents were more than 60 years of age. The respondents were representative of all the age categories, from youngest to oldest, which provided data results from both a young and older perspective. The next descriptive data of the respondents was their gender which is revealed in 5.2.2.

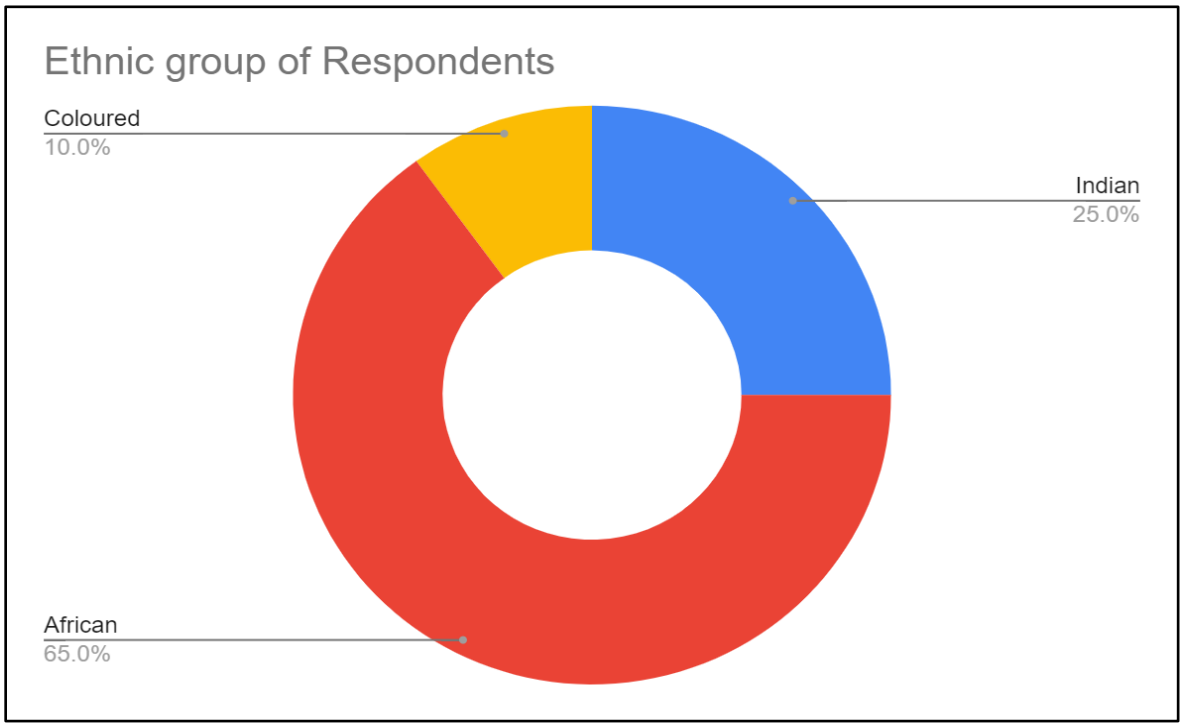
5.3.2 Respondent's gender

The respondent's gender categories were 17 females and 3 males that participated in the interviews. Most of the respondents were female. The gender balance was sufficient to allow for a balanced study. The respondent's ethnic group is presented in the next section.

5.3.3 Respondent's ethnic group

The respondent's ethnic group is represented in Figure 5.2.

Figure 5.2: Respondent's ethnic group



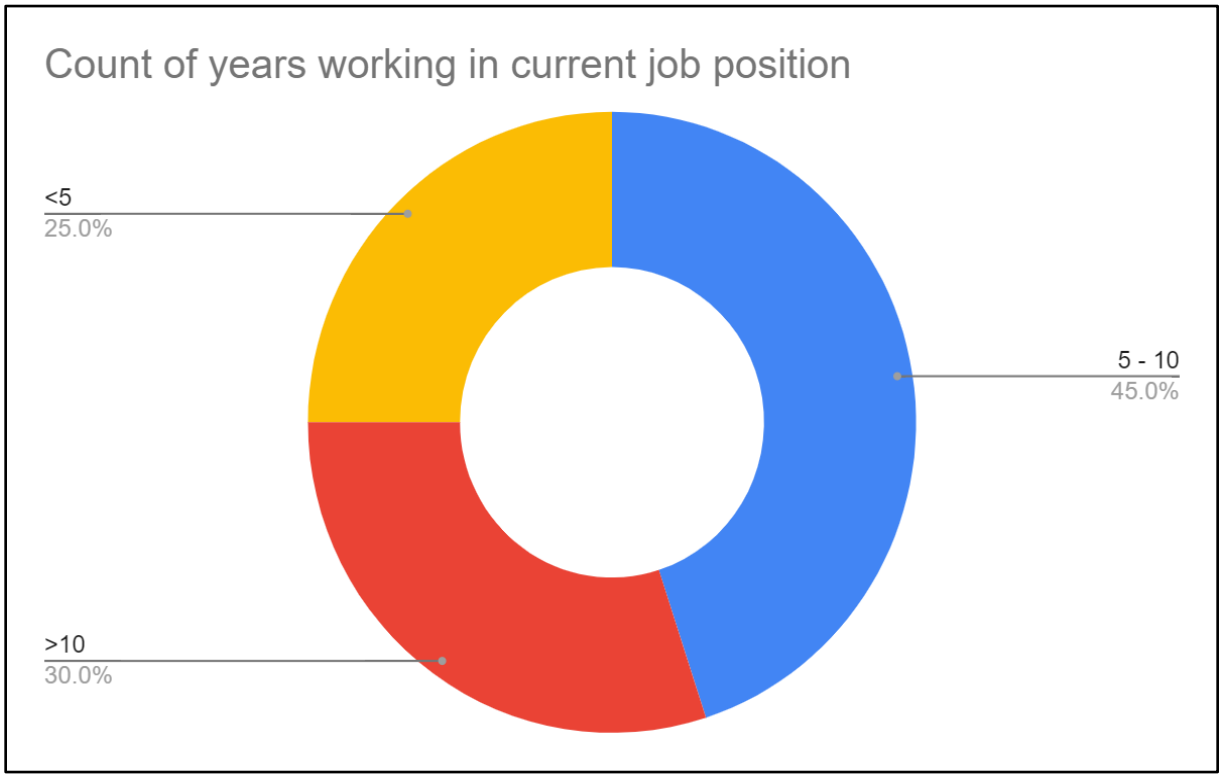
Source: Researcher's own work

Figure 5.2 illustrates the respondent's ethnic information. 10% of the respondents that were interviewed were coloured, 25% of the respondents were Indian and the majority of the respondents which made up 65% of the total respondents interviewed were of an African ethnicity. The respondents working experience in their current job position is revealed in the next section.

5.3.4 Respondent's count of years working in the current job position

The respondent's years of working in the current job position which were Registered Nurses and Operational Nurse Managers are presented in Figure 5.3.

Figure 5.3: Respondent's years of experience



Source: Researcher's own work

One of the prerequisites for participation in this study was that respondents had more than one-year working experience in their current job position in order to be able to provide information relating to the effect of nurse shortages at the researched hospital. Figure 5.3 presents the respondent's years of experience. A total of 25% of respondents had less than 5 years of working experience in their current professional roles at the hospital, 30% had more than 10 years of working experience in their current job positions and the majority which made up 45% of the respondents had 5 to 10 years of working experience. This implies that respondents had been in their job position for a while, which is a useful fact as it indicates responses from experienced workers. There is a good distribution of the respondent's years of working experience in their jobs which allowed

for balanced interpretation. The next section will discuss the presentation and interpretation of the data collected for section B of the interview schedule.

5.4 Section B - Current nurse staffing levels

In order to get a good understanding of the level of the current nurse shortages and the cause of the shortage at the researched hospital, section B of the interview schedule aimed to assess respondents on their awareness of the current nurse shortages and the possible factors causing this shortage. Table 5.1 presents the interview questions asked in this section which is related to the first objective of this research study - To discover the reasons for nurse shortages in a public hospital. The responses and findings of the respondents in relation to the objective are interpreted and analysed. The respondents' verbatim statements are included in italics.

Table 5.1: Section B - Current nurse staffing levels

How would you describe the current nurse-to-patient ratio in this ward?
Do you think there are enough nurses working in this ward? (yes/no Explain)
What do you think are the main factors contributing to the nursing shortage in this ward?

Source: Researcher's own work

5.4.1 Current nurse-to-patient ratios

The current nurse-to-patient ratio in five wards at the hospital was examined. Respondents were asked to describe the current nurse-to-patient ratio in their ward. The majority of the respondents felt that there was an uneven nurse-to-patient ratio when asked about the current staffing levels in their ward. Respondents from all the wards felt that there were not enough nurses to take care of all the patients in their wards.

> ***Respondent OPM2 - Paediatric ward:*** *"It's a maximum of 7 nurses to 28 patients. Nurses who leave are not being replaced their posts are just frozen."*

Respondent OPM5 - Medical ward: *"Today we are 8 and 7 and we have 25 patients, last week there were times when we were 7 and 6 and there were 25 patients because we were 25 bedded. This is not enough because the patients that we nurse are not only medical patients, we also have psychiatric patients."*

Respondent RN15 - Medical ward: *"The current nurse to patient ratio, I can say is on the negative side because there are fewer nurses than the patients. You will find that there are 5 nurses against 28 patients; and if the patients are sick they need our help."*

Respondent RN10 - SURGICAL ward: *"On a day we will have 6 or 7 nurses and we are a full ward, especially on a weekend with 28 beds. There are not enough nurses for those patients, amongst the 7 or 6 nurses there is a sister, only one sister. It is maybe 1 or 2 days when we have 2 sisters."*

Respondent RN3 - NICU ward: *"There is definitely less staff and more patients, sometimes 1 nurse has to nurse 3 patients, yet this is an ICU. Sometimes we have to nurse your ventilator patients and another baby on (indiscernible 47 seconds)."*

Respondent RN4 - NICU ward: *"The nursing staff is very short, normally one nurse is supposed to work with one patient. But because of staff shortage you end up having 3 patients, one nurse is to 3 patients. It gets busy but if it's not busy then you find that 1 nurse is to 1 patient which is good."*

Respondents from the five wards indicated an uneven nurse-to-patient ratio. Respondents from the NICU ward in particular indicated that there was 1 nurse to 3 or 4 patients. According to Beauman (2019) infants in NICU are often staffed at a higher level, often one nurse per patient, or at most, one nurse for two patients. The South African Nursing Council (2014) ideally recommends that Nursing personnel in critical care units

should be assigned on a 1:1 basis at all times. The nurse-to-patient ratio mentioned by the respondents was much more than the recommended level which definitely emphasised a shortage of nurses across all the wards.

In addition, two respondents from the medical and paediatric wards mentioned that there was an even greater shortage of nurses on night duty, and this can sometimes be as low as 3 nurses per 25 patients in a medical ward. Such practices are not in line with the recommendations made by the South African Nursing Council and can severely compromise the delivery of good health care to patients.

> ***Respondent OPM2 - Paediatric ward:*** *Nurse shortages are an ongoing thing, it is even worse at night because there are only 3 nurses on duty. If there is one who is absent the 2 will work without any help.*

> ***Respondent OPM5 - Medical ward:*** *At night there are only 3 nurses with the 25 patients and the psychiatric patients and we don't have security at night. We are fortunate during the day to have security and then there are admissions that come in from casualty. Sometimes we can admit 6 patients at night with only 3 nurses, it's 25 bedded and you still have to do pressure care, it's very difficult.*

Nurses were questioned on the nurse-to-staff ratio in their wards and whether enough nurses were working in their wards. The responses indicated that there are severe nurse shortages occurring in the five wards, which impact negatively on the nurse and patient. The nurse's workload increases and the quality of healthcare for the patient is decreased. According to Adams & Kennedy (2006) as workloads increase and the number of nurses per patient decreases, patients become increasingly at risk of poor healthcare. The shortage of nurses thereby leads to current nurses becoming overcommitted and under significant pressure in their daily tasks. They end up multitasking and performing different duties in order to make up for the shortage gap. The uneven ratio compromises on the delivery of quality healthcare especially in the critical care units. Therefore, hospital

management must intervene by getting to know and understand the factors influencing the nurse shortages so that they can implement possible solutions to curb the nurse shortages.

5.4.2 Factors influencing shortages of nurses

In line with the objective of this study which is to discover the reasons for nurse shortages in a public hospital, the researcher investigated the reasons for nurse shortages at the researched hospital. Having discovered that there is a nursing shortage at the researched public hospital, it was important to establish the factors influencing such a shortage. During the interview process, the respondents were asked to identify the main factors contributing to nursing shortages in their wards. The respondents identified four main factors influencing nurse shortages in their wards. These factors were budget and resources, staff development, working environment, and managerial. The next section discusses the first factor, budget and resources.

5.4.2.1 Budget and resources

The highest ranked response amongst the respondents on nursing shortages in their ward was the department budget which influenced resources in the ward and hiring of more staff. In terms of the lack of resources, nurses reported that they had inadequate resources to do their jobs and some nurses did not wish to work in a place where there were not enough resources to carry out their work effectively. Respondents also revealed that working conditions were poor due to fewer resources such as equipment. This led to staff working under pressure and in difficult working conditions. Respondents RN3 and OPM5 were of the same view that equipment was deficient as well as sub-standard whereby it was not up to date with the latest technology advancements. This was a daily struggle for nurses as technology and machinery aids with getting the job done more efficiently especially when being short staffed. Respondent OPM1 reported that the influx of foreign nationals added more strain to hospital resources and the budget.

Respondent RN3 - NICU ward: *"We don't have enough equipment, especially right*

now we have a lot of ICU and high care babies on the C bed machines and ventilators, each baby needs their own suction machine. If we have 4 suction machines in the ward and then there is one baby in low care who needs regular suctioning, you need to go to high care, borrow the machine and bring it back. You also have to clean the machine to prevent infections."

Respondent OPM2 - Paediatric ward: "*People are leaving because they want better working conditions because we are working in a place where we don't have the resources, we need to provide the nursing care to the patients we have."*

Respondent OPM1 - NICU ward: *"The issue of foreign nationals, foreign nationals come to South Africa solemnly for health services and health care. In the labour ward more than half of the patients are foreign nationals giving birth, we need some financial contribution out of them to put back in this system, because they are adding numbers which in turn affects, resources, finances. If there is a system in place, not to discriminate but to get them to contribute because they are not paying tax. There is a huge number that is not being budgeted for but is being cared for because the 14% they contribute with tax in the vat does not help us because they are not there with SARS, they are not giving anything."*

Respondent OPM5 - Medical ward: "*Most of the time we are short of medications, working equipment. Most of the time we run out of things like syringes, and it becomes so difficult, so it causes frustrations for us because we cannot do our jobs effectively and so most of the people leave."*

Furthermore, consumables such as syringes were often not in stock and needed to be borrowed from other wards or hospitals. Nurses need to think on their feet and borrow equipment from other departments or hospitals. This put further pressure on a compromised nursing staff complement and nursing care.

Nurses are better equipped to provide quality services if their work environment provides adequate conditions and resources to support them in delivering quality services (Er & Sökmen, 2018). This indicates that a lack of resources has consequences for the quality of patient care and the professional work environment for nurses. Therefore, hospital management involvement is crucial at this stage, visits with nurses and patients can be beneficial to see the implications the lack of resources has on the patient and nurse and perhaps will help with prioritising which resources urgently need to be attended to.

Respondents also conveyed that the budget deficit greatly influenced the replacement of nurses who resign, retire or leave. The respondents reported that their department will always convey that they do not have money to fill positions. Due to budget issues, many posts were frozen. The freezing of posts meant that for those nurses who resigned, retired or were transferred, their positions were not filled. The departments were forced to continue to provide optimum healthcare with residual staff, which is not enough.

Respondent OPM4 - Surgical ward: "*We do not have enough resources to work with our patients, machines and basic things are not met so others feel that even though they have studied they need to go out and seek better opportunities in a supportive environment that can provide them with the resources/tools to do their job effectively."*

Respondent OPM1 - NICU ward: "*We are currently having nurse shortages because of the budget constraints, and poor resources. People cannot do their jobs without sufficient resources, so they either retire, resign or leave the profession and they are not being replaced."*

Respondent RN14 - Medical ward: *"There is no budget to hire more nurses in our ward, we have had 3 nurses resign and they have not been replaced as yet their post just becomes frozen."*

In an interview with a spokesperson for the People's Health Movement, Jeranji (2021) reported that the health budget cuts in South Africa affect the number of health workers needed for the country to be at an optimal level, posts are frozen and qualified nurses are sitting at home without work. The comment made by the spokesperson from the People's Health Movement indicates that there is an ample number of qualified nurses that could be employed, but hospital budget cuts prevent them from being employed due to vacant posts that remain frozen while the current nursing workforce has to deal with work overload leading to stress and burnout and compromising patient healthcare. Therefore, the hospital management must consider the urgent need for more nurses, revisit their budget, and make sound decisions on how best they can hire more staff at a manageable cost that will provide relief to existing staff while enhancing patient healthcare.

Staff development and progress were listed by respondents as another factor contributing to staff shortages. This factor is discussed below.

5.4.2.2 Staff development and remuneration

Another major factor that most respondents highlighted was the fact that there was also a lack of training and development for staff. Respondent RN7 mentioned that staff development and progression were severely lacking which was an added factor as nurses wanted professional growth and were highly stifled in the current work environment. Hence, nurses pursued better opportunities and working environments elsewhere. In addition, respondents RN9 and RN13 added that the nurse's salary and remuneration were not competitive enough which further led to them leaving their current jobs and moving into the private sector. It is important for workers to receive a satisfactory wage, which plays a significant role in their job-seeking behaviour and keeps them in their current jobs (McHugh & Ma, 2014). Therefore, hospital management will need to consider not only short-term interventions of just looking at increasing wages but also other factors that can work as long-term intervention to retain staff and prevent them from leaving to work in other jobs.

Respondent RN7 - ICU ward: *"Other people just want professional growth; they are just going to learn more in the other institutions because we don't have many training and educational resources in this hospital and that is a problem."*

Respondent RN9 - ICU ward: *"Besides professional growth, staff are also leaving in search of better opportunities on the professional growth side and monetary. As the salary is low and costs of living is high and nurses can't cope with the salaries they are getting in the public sector."*

Respondent RN0013 - Medical ward: *"People are also not happy with their salary. They end up leaving for a better salary and benefits which are found in private care."*

In the nursing fraternity, it was crucial for staff to undergo continuous training and development to acquire updated skills and knowledge. According to Thomas (2021), nurses have to develop their skill set on an ongoing basis to ensure that they are delivering the highest level of care possible as medical knowledge is always changing and they have to keep abreast with the latest medical advancements for their own professional development and the benefit of their patients. It is clear that without such training as suggested by Thomas (2021), nursing care would be compromised and developmental progress would be hindered. Therefore, more attention must be paid to the education and training of nurses, and hospital management needs to constantly encourage professional development amongst nursing staff.

A stressful working environment was a factor that was identified in contributing to nurse shortages, which is discussed in the next section.

5.4.2.3 A stressful working environment

According to WHO (2010) a healthy workplace is one in which workers and managers collaborate to protect and promote the health, safety and well-being of all workers and

the sustainability of the workplace. Despite this aim to promote and foster healthy work environments, it was discovered from the respondents that the staff shortage led to existing staff overworking and not being afforded breaks in-between, which had stress and burnout implications. Respondents indicated that a stressful working environment contributes towards staff leaving as they cannot cope with the volume of work due to the nurse shortage.

Stress became a continuous battle for nurses as they navigated their daily duties under minimal staff and resources which caused them to be absent or leave their jobs completely. WHO (2022) stated that people experience work-related stress when their knowledge and abilities are challenged by work demands and pressures that are not matched to their abilities and they cannot cope. Stress occurs in different circumstances at work but is often made worse when employees feel they have little support from supervisors and colleagues, as well as little control over work processes. Similarly, the respondents felt that they could not cope with the high work demands due to the shortages of staff which created a stressful working environment. Therefore, hospital management must intervene to provide relief to the existing workforce by recruiting assistance for the overworked staff.

> ***Respondent RN15 - Medical ward:*** *"The working environment is very stressful, most of the time we experience things like shortage of resources for instance, the supplies. This makes the working environment very unsuitable, very uncomfortable and highly stressful."*

> ***Respondent OPM3 - ICU ward:*** *"When you are short staffed nobody wants to come and work in an environment that is already stressful. We do get staff who come and stay for a few months then they transfer because it is a very stressful environment because we are already short staffed."*

The last factor of nurse shortages that the respondents listed was managerial support and involvement. This factor is discussed below.

5.4.2.4 Managerial support and involvement

There were also managerial factors that influenced the reasons for staff shortage. Respondent RN10 mentioned that there was an evident lack of management support. Management did not visit the ward regularly to see the conditions and how teams were managing the shortages. They did not offer encouragement and motivation thereby contributing to the overall deteriorating condition of the wards and demotivation of the nurses.

> ***Respondent RN10 - Surgical ward:*** *"It is horrendous, what is happening in the wards, and I think what is very important is that we need to see management more so they can see our working environment and do something about it. It is very important and unfortunately you don't see them coming to visit wards."*

> ***Respondent RN3 - NICU ward:*** *"They also don't look from year to year the number of staffing they will need (forecasting) because they don't take into consideration your population, there are so many more babies coming in. The hospital is thinking of opening up more wards but it is not enough to still cater for that number of people."*

> ***Respondent RN5 - Paediatric ward:*** *"Management support is lacking, just a simple acknowledgement or visit from them can go a long way to making us feel appreciated and give us the courage to go on with our work."*

Respondent RN3 said that there was also a lack of forecasting whereby budget and staff were not being properly projected for the future given the increase in the patient population. Bastani, Bahmaei & Ravangard (2021) believe that a hospital's efficiency and effectiveness are heavily dependent on its management and resource allocation, it is

further stated by Bastani, Bahmaei & Ravangard (2021), that the lack of a capable hospital management team are one of the most important reasons for the problems in hospitals. This means that effective management will lead to better management of the hospital and its resources and staff. Therefore, hospital management needs to be exposed to the working conditions to fully understand the challenges nursing staff face so that they can provide not only effective strategies to deal with the issue at hand but also provide moral support to the nurses. As indicated, a simple acknowledgement of their services can go a long way to encouraging and making the existing nursing workforce feel appreciated.

The next section will present the interview questions, responses, and findings for section C of the interview schedule.

5.5 Section C - Daily challenges at work due to nurse shortages

To get a better understanding of how nurse shortages impacted the existing staff in their daily jobs, section C of the interview schedule was aimed at exploring the respondent's daily challenges at work due the nurse shortages in their ward. Table 5.2 presents the interview questions on their daily challenges at work due to nurse shortages. The responses and findings of the respondents are interpreted and analysed in relation to the second objective of this study.

Table 5.2: Section C - Daily challenges at work due to nurse shortages

What are some of the key challenges that you face in your job as a result of nurse shortages?
How do these challenges affect your daily job and performance?
What are some of the personal challenges you face as a result of the impact of nurse shortages?

Source: Researcher's own work

5.5.1 Job and personal challenges

In line with the second objective of this study which is to assess the challenges of nurses and how this influences the delivery of health care, the respondents reported various job

and personal challenges due to the implications of nursing shortages. Staff performance had dropped considerably because of these challenges, which meant that the delivery of good health care to patients was affected negatively. The next section discusses the respondent's daily challenges about their daily job and personal challenges. The respondents' verbatim statements are in italics.

5.5.1.1 Multitasking and overworked

Multi-tasking was the highest-ranked implication as reported by most of the respondents. The shortage of staff meant that existing staff had to compensate by overworking and servicing other departments as described by respondents OPM4, OPM5 and RN6. This resulted in tiredness and frustration, as reported by respondent RN13.

Respondent OPM4 - Surgical ward: *"There is also no cleaner at night so you have to attend to spills meaning you end up doing the cleaners job. During the day you end up being a porter because you have to take the patients to go do CT scans and ultrasound since there are no porters."*
Respondent OPM5 - Medical ward: *"We are just stretched far too thin; we are constantly multi-tasking, we've got patients that we have to see to and you're doing other people's work as well."*

Respondent RN6 - Paediatric ward: *"There are so many duties to perform daily aside from our nursing responsibilities; we end up overworking ourselves and often working longer hours because there is so much to do."*

Respondent RN13 - Medical ward: *"Sometimes we have to fill the gaps outside what we do and that is frustrating. We end up getting burned out and tired."*

It was clear that nursing staff had to multitask and perform many duties over and above their nursing duties every day. This entailed high levels of administration, admissions, medication, cleaning duties, obtaining food for patients and even porter duties over and above their core duties. The extra duties put further strain on the existing nursing staff because they took up time from the patient care duties and contributed to an increased workload. Staff were severely overworking, which meant going above and beyond their job descriptions and working hours. The overworking and pressure led to tiredness and exhaustion, thereby compromising not only patient care but also their own personal health. At least three respondents from the same ward agreed that the added pressure and overworking due to minimal staff led to high staff absenteeism in their ward.

> ***Respondent RN1 - NICU ward:*** *"We become exhausted, and it contributes a lot to absenteeism because we normally have burnout, and we don't come to work."*

> ***Respondent RN2 - NICU ward:*** *"When you work 3 days in a row and there are only five of you in a ward with twenty patients, you have to just work long hours because the ward gets busy and there is no extra help. You eventually get tired and do not come to work because you are exhausted."*

> ***Respondent RN3 - NICU ward:*** *"We are overworked, stressed out and definitely burned out. There is also a lot of frustration among the staff members due to the shortages. The frustration comes from us getting more work to do."*

Staff were highly frustrated, and their enthusiasm for work was deteriorating. Staff were naturally demotivated to work, and this affected their performance. This level of frustration was due to having to do more work than was expected. As a result, this put strain amongst the existing staff who constantly felt overworked, tired and eventually burned out causing them to be absent at work. Due to being overworked and always attending to emergencies

and other duties, the respondents also reported that they could not properly concentrate on a specific patient or a task.

> ***Respondent RN15 - Medical:*** *"Sometimes you lose concentration, and you feel depressed because you feel as though you aren't treating the patient to the best of your ability because you have so many other things to concentrate on."*

> ***Respondent RN10 - Surgical:*** *"Looking at the workload, there is so much to do that my concentration will be disturbed. Unlike if we were fully staffed I'd be able to focus on one thing and do it properly and we would be more efficient with patient care."*

Due to staff shortages, concentration levels dwindled due to ongoing disturbances and having to attend to more than one patient. Overworking and multitasking had many implications for the existing staff, such as increase in absenteeism and lowered concentration rates. There was unintentional underperformance due to too many duties and inability to deliver effective services and care.

5.5.1.2 Unable to meet deadlines

Urgent admin deadlines could not be met as the existing staff had to juggle lengthy administrative processes and fulfil their nursing. Respondents reported that paperwork was frustrating and time-consuming, and that time could be used for patient care.

> ***Respondent OPM4 - Surgical ward:*** "*When doing admissions, we've got about 11 papers to complete. Instead of attending to the patient you find yourself busy with the paperwork. If you keep attending to paperwork, the patient's care can be compromised. You still need to attend to the paperwork because at the end of the month they do nursing documentation audits."*

> ***Respondent RN1 - NICU ward:*** *"I thought to myself, I cannot handle the stress of all*

the admin paperwork when we are lacking at the bedside because our patients are our priority."

Respondent RN13 - Medical ward: *"Especially if you were getting new admissions, there is a lot of paperwork to do and we don't have any support and we need to complete this paperwork and submit it at a particular time. This is valuable time wasted especially when we have so much to do and so little time."*

It was discovered that respondents' paperwork was exhausting due to the lack of admin support. The existing nurses found themselves consumed by high volumes of paperwork to complete instead of being at the bedside of patients.

The next section examines the personal challenges staff faced due to the nurse shortage.

5.5.2 Personal challenges

5.5.2.1 Health and mental wellness

The respondents were asked what personal challenges they faced because of the nurse shortages. Most of the respondents agreed that their physical health was significantly affected. The long hours took a toll on physical organs such as the feet, back, shoulders and overall body. Respondents also suffered from headaches and prolonged fatigue. In addition, some also had developed chronic conditions such as diabetes which were brought on by overworking long hours, sometimes without taking breaks because of the shortage of staff.

Respondent RN10 - Surgical: *"Physically you find other nurses are suffering from arthritis, it is quite a challenge at the moment. As I said, we are doing 2 or 3 peoples' work instead of just doing our own work and mentally you just have to push through it, prepare yourself every day, come to work, get through the day."*

Respondent RN8 - ICU ward: *"We physically feel drained, our body aches with pain: head and neck pain, back pain and shoulder pain. Irrespective of how many nurses are on duty staff, work needs to get done."*

Respondent RN6 - Paediatric ward: *"We spend more time on our feet which leads to fatigue and my feet and legs get really sore and the body gets strained."*

Respondent RN1 - NICU ward: *"I am a full blown chronic, I had never had illnesses before but a few years in, I suffer with diabetes because I was working long hours sometimes without a break to eat and my hormones became unstable."*

Respondents also felt emotionally drained. The mental and psychological impact was severe as respondents watched their patients suffer due to insufficient staff and resources. This further affected their performance. Therefore, it is important for nurse managers to have regular conversations with their staff to show support and council, especially if a patient has lost their life. Something as simple as a weekly check-in will go a long way towards caring for the mental wellness of a nursing team.

Respondent RN14 - Medical: "It leaves you emotionally drained, physically drained because you are trying to maintain the patients' morale plus you are trying to maintain your own morale. Mentally and psychologically, it does drain us because we have to deal with a sick patient and insufficient resources to keep the patient alive and healthy."

Respondent RN9 - ICU ward: *"Sometimes you can't get the help that you need, and patients are suffering. It affects you mentally because you have got to go on and process all these things that happen during the day with so many resource shortages. I am affected emotionally a lot; my patient is my family, that is how I nurse them."*

5.5.2.2 Fatigue and Burnout

Respondents reported that prolonged fatigue led to burnout, preventing them from providing effective patient care.

> ***Respondent OPM2 - Paediatric ward:*** *"Our nurses are getting tired, there are days where they are just burned-out and you'll find that there's an impact on patient care because there's something they may have missed while treating the patient."*

> ***Respondent OPM4 - Surgical ward:*** *"Our staff is getting very tired and burned out with the daily heavy workloads. They are tired mentally and physically and they need to rest."*

> ***Respondent RN14 - Medical:*** "*You get frustrated, you get irritable, and you are tired, and it is not a pleasure getting up in the morning and coming to work. Because you know there is a mountain of work, due to shortage of staff and it is just impossible to get through it the way we would like to do it with proper nursing care."*

> ***Respondent RN7 - ICU ward: "****Personally, you even feel like I don't want to go to work today because I overworked myself the previous day. So, it is a challenge because you have to push yourself to go to work sometimes because of the burnout."*

The staff shortage leads to tiredness and burnout of existing staff due to carrying the additional workloads, as explained by the respondent RN. Respondents felt demotivated to work due to tiredness and burnout as well as due to poor working conditions. Respondents did not feel like going to work; their energy levels were down which meant that they were tired and could not cope well at work which impacted on patient care. WHO (2019) defines nurse burnout as ongoing workplace stress that lead to nurses becoming exhausted or making mistakes in their line of work.

These mistakes can lead to harmful medical outcomes for patients. Clarke (2022) states that for nurses, burnout results from a demanding job that frequently exposes them to human suffering. When nurses do not have effective support or leadership within the workplace to help them cope through these times, then it can exacerbate burnout even more. This is why hospital management must be actively involved in making sure they provide ample support in the form of wellness programmes or counselling to deal with the stressors that eventually lead to burned-out staff. The next personal challenge nursing staff face is family life and strained relationships.

5.5.2.3 Family life and strained relationships

Respondents also had to take care of their families, and hence their work did not only stop at work they had to also fulfil their role and responsibilities at home. It was clear from the respondents that there were blurred boundaries between work time and personal time with family, leading to the latter suffering due to ongoing work commitments. Respondents indicated that due to them being overworked, it bred frustration of which staff vented on each other and even their families. This led to strained relationships. Family time became lesser as respondents seemed only to go home to sleep and return to work the next day.

> ***Respondent RN2 - NICU ward:*** *"We are always tired when we get home, I have a 3-year-old that I need to take care of and spend time with, the work never ends because when you're at home you need to do the job of a mother."*

> ***Respondent RN4 - Paediatric ward:*** "*Some people also end up taking the stress home, it depends on the person's personality. Some of us leave it here and try not to think about work while others due to the situations they face, they cannot ignore the work stress. We are overworked and frustrated then we start lashing out at colleagues or family for little things."*

> ***Respondent RN9 - ICU ward:*** "*We are so work orientated, that sometimes you go home, and you are still thinking about your patient which interrupts your family time. As*

much as we try to leave our work at work, with nursing it still plays in your mind, you still think about it even when you go home which may cause some strain in your home life."

Some respondents did not have a desire to talk or interact with their families or children at home due to arriving home feeling tired and fatigued.

Respondent RN15 - Medical ward: *"Even when we're going home, we don't have the desire to talk to family, you just feel like bathing and going to bed. You don't feel like talking or doing anything at home because of the tiredness."*

Respondent RN11 - Surgical ward: *"The shortages and work overload associated with these shortages, impacts your personal life because you get home and do not want to talk or interact with family or do anything at home except rest."*

Respondent RN2 - NICU ward: *"It affects my family because every time I get home, I am tired and I am not interested in doing any work as a mother usually does for her children. I have 3 children that I have to take care of. I come home at around 7 o'clock, I don't even know whether the 12-year-old did her homework. I don't know whether the 3-year-old had food, I don't even count the 8-month-old one. When I arrive home some of the important things my husband will have started doing like cooking and making sure kids are bathed and taken care of. But it affects the relationship at home because I can't bond with them because I am so tired and drained."*

Respondent RN5 - Paediatric ward: *"I fall asleep while sitting on the sofa. The tiredness and exhaustion from overworking due to shortages affects my social life and my children. You see that your child is sick but find that they have been sick since the previous day and you didn't notice because you were too tired. This hurts a lot especially since I work with sick children, I should have picked up when my own child was sick."*

Respondent RN9 - ICU ward: *"It affects my family because when I come home, I am tired; I don't even have time to do homework with the kids. I just do some basic chores and don't have enough time to bond with the kids."*

It is clear that the nurses' interaction with their families and children was severely affected by overworking due to staff shortages. Respondents further indicated that sometimes important aspects of their children's lives and healthcare was overlooked. Children were even concerned about their parent's health and well-being which causes unnecessary stress on young children. This also affected respondents' bonding with their children.

5.6 Section D - Providing good healthcare

Section D of the interview schedule was aimed at how the nurse shortages impact on the respondent's ability to provide good healthcare. Table 5.3 presents the interview questions for this section.

Table 5.3: Section D - Interpretation and analysis

How does the current nurse shortages impact your ability to provide good healthcare?
What are the current mechanisms in place to assist you in coping with the challenges in providing good healthcare?
Can you perhaps suggest some strategies that you would like to see implemented to overcome challenges due to nursing staff shortages?

Source: Researcher's own work

In line with the third objective of this study which is to assess what mechanisms are in place to assist with coping with the challenges in providing good healthcare due to nurse shortages, respondents were asked about the current mechanisms in place to assist them in coping with the challenges in providing good healthcare.

The next section discusses the responses and findings of the respondents. The respondents' verbatim statements are in italics.

Nursing staff made adequate daily efforts and actions towards providing health care despite their uneven workloads brought on by nurse shortages. When asked about the mechanisms in place to assist in coping with the challenges in providing good healthcare as a result of nurse shortages, respondents mentioned two important coping mechanisms - collegial support and prioritisation. The coping mechanisms were developed and implemented by the staff themselves. There was no indication of hospital management providing any coping mechanisms to assist nurses. The two coping mechanisms implemented by the nurses are discussed in the next section.

5.6.1 Collegiality

Respondents indicated that there were collegial mechanisms in place. Staff helped each other by doing extra duties and ensuring all allocations were met. Despite the odds, some staff were trying their best at all times, and this was seen as encouraging. Teamwork was evident to ensure that ample efforts were made toward healthcare provision. By working as a team, staff could encourage each other, share responsibilities and lend a helping hand to each other. Support and communication were seen as important in daily efforts towards teamwork.

> ***Respondent OPM1 - NICU ward:*** *"In terms of helping each other, everybody contributes, we do allocation daily but when we are short staffed then we just try and see what we can do like extra duties."*

> ***Respondent OPM2 - Paediatric ward:*** *"Our nurses try their best under the circumstances. When we are short staffed there is a lot of team work but some nurses are so devoted, they will come all the time even though they have worked four days straight."*

> ***Respondent RN15 - Medical ward:*** *"Teamwork - we all work as a team, I think that is the only coping mechanism we have in this ward because management says they can't*

help us because there is no budget. So, it is just a matter of helping each other so that we can do our job to the best of our ability."

Respondent OPM4 - Surgical ward: *"We are working as a group most of the time. The other staff members need to give medication and we have turns to check on the patient. We all help each other."*

Respondents also reported that it was helpful sharing their experiences amongst staff. Sharing experiences served to ease their minds as they understood they were not alone. It also assisted with learning from other colleagues.

Respondent RN7 - ICU ward: *"Even sharing the experiences we have had in the past week with our colleagues makes you feel at ease when you hear that even someone else's department is having challenges. Then you start learning from others' experience and try to implement that in your department. When we share experiences, it does lower the burden and also opens up new ways of doing things."*

Respondent RN12 - Surgical ward: *"We work as a team and when we are off sometimes we arrange some gatherings so we can spend time together and share our experiences and learn from one another."*

The next coping mechanism listed by respondents was prioritising, which is discussed in the section below.

5.6.2 Prioritising

Respondents indicated that they used prioritisation to cope with the challenges in providing good healthcare. Prioritisation was done whereby the most important issues, needed to be attended to first. The patient-first approach was effective in ensuring that the patient was always the priority.

Respondent RN2 - NICU ward: *"Then we also try among ourselves, we prioritise, when you are short staffed you go to the main things you need to do then when you have time during the day you catch up on other things. It is just a matter of prioritising and keeping the patient top priority."*

Respondent OPM4 - Surgical ward: *"I always say to the nurses, once you have started the task try and give it 100% of your effort to see it to completion, prioritisation checklist is a good mechanism to keep focused and ensure that you are on track with your tasks for the day."*

Respondent OPM5 - Medical ward: *"Our nurses try their best, there is only so much we can do because at the end of the day we are also human, so we do what we can to prioritise patient care first that helps us keep sane and on track."*

For ease of reporting, the summary of the research findings is presented in a table format below, with a list of the research objectives, the research questions, and the findings for each of them.

Table 5.4: Summarised findings linked to research questions and research objectives

Research Questions	Research Objectives	Summarised findings
RQ1 - What are the reasons for nurse shortages in public hospitals?	RO1 - To discover the reasons for nurse shortages in a public hospital	The majority of the responses indicated that severe nurse shortages were occurring in the five wards which impacted negatively on the nurse and patient. The nurse's workload increased while the quality of healthcare for the patient decreased. The respondents identified four main factors influencing nurse shortages in their wards. These factors were budget and resources, staff development, working environment, and managerial.
RQ2 - What effect do staff shortages have on the existing nursing staff?	RO2 - To assess what challenges nurses face as a result of staff shortages and how this influences the delivery of health care	It was evident by the respondent's feedback that the delivery of healthcare has impacted negatively due to staff shortages. The respondents reported various job and personal challenges due to the implications of

		nursing shortages. The performance of staff had dropped considerably because of these challenges and thus it negatively impacted the delivery of health care to patients. Nurses faced daily job and personal challenges.
RQ3 - How does this impact their ability to provide good healthcare?	RO3 - To assess what mechanisms are in place to assist with coping with the challenges in providing good healthcare as the result of nurse shortages	The nursing staff made adequate daily efforts and actions towards providing good health care despite their uneven workloads brought on by nurse shortages. The two coping mechanisms which respondents reported were collegial support and prioritisation which they implemented on their own. There were no coping mechanisms provided to them from hospital management

Source: Researcher's own work

5.7 Summary of this chapter

This chapter presented an analysis of the qualitative data collected, including a discussion of the study findings. The data collected from the responses were analysed using the software programme - NVivo. The results revealed that nurse shortages occurred in all five wards. The respondents identified four main factors influencing nurse shortages in their wards. These factors were budget and resources, staff development, working environment, and managerial. Respondents indicated that they faced daily job and personal challenges due to the shortages. It was discovered that there were no coping mechanisms provided from the hospital management to cope with the challenges in providing good healthcare due to the staff shortage. Nurses themselves had to implement collegial support and prioritisation as daily mechanisms used to provide good healthcare. The next and final chapter will provide an overview of the study and discuss the recommendations and conclusions of the study.

CHAPTER SIX
CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This study aimed to discover the effect of nurse shortages on the healthcare sector. To achieve the above purpose, three research questions and three research objectives were developed. This enabled the researcher to further formulate the questions for the interviews that were administered to Registered Nurses and Nurse Managers. With the analysed data from these interviews, the researcher achieved the stated research objectives, and the research findings were presented and discussed in detail in Chapter Five. In this chapter, recommendations are proposed based on the findings from Chapter Five. The chapter will first provide a recap of the relationships between the research questions, objectives and propositions which are restated in Figure 6.1. Thereafter, the review of previous chapters will briefly be discussed in the next section before the recommendations and conclusion is provided.

6.2 Review of chapters

The study consisted of six chapters which directed readers from the research problem and the research aim in Chapter One to the fulfilment of the objectives and recommendations which are outlined in this chapter. The chapters are described as follows:

Chapter One - The chapter offered a detailed narrative on the implications of nurse shortages in healthcare stating the significance of the research, providing a framework for the study by describing the purpose of the study, the background of the study and an overview of the research problem as well as the research aim, objectives and research questions of the study.

Chapter Two - Chapter Two provided a conceptual overview for this study and discusses the models and theories in relation to the context of this research study. The models and theories discussed included Organisational Support Theory, The Job Demand and

Control Model by Robert Karasek, Transactional Model of Stress and Coping, Spillover Cross Over Model, The Boundary and Border Theory, Hertzberg Two-Factor Theory and finally Lewin's Three-Step Model for Change which was found suitable as it was a simple theory to help easily transform and improve care of the patient and assist with management involvement in reducing nursing turnover.

Chapter Three - The literature review chapter provided an overview of the South African healthcare system as well as an explanation of the duties and function of the registered nurse and operational nurse manager in order for the reader to get an understanding of the workplace setting, the duties of the nurse workforce and of how healthcare works in South Africa in order to understand the impact of nurse shortages. The literature then revealed the implications of nurse shortages on health care.

Chapter Four - Chapter Four outlined the research design which was qualitative in nature and the methodology that was utilised in this study. The research design included sampling, data collection instruments, methods, and the data analysis approach, and ethical considerations for this study. The researcher further discussed the relation and relevance between the research questions and objectives of this study and the phased approach of the data collection was also discussed in this chapter.

Chapter Five - The research results and findings of this study was presented in this chapter. The respondents' descriptive data was presented, followed by detailed results and an interpretation of the results. In this chapter, the researcher included a summary of findings and linked these findings to the various research objectives that were met.

Chapter Six - Chapter Six provided a review of the previous chapters and discusses the research conclusions. A recap of the relationship between the research questions, objectives and propositions are restated and the conclusions are drawn from the perspective of each research objective before the recommendations are made.

In the following section, the research questions, objectives and propositions will be restated in Table 6.1.

Table 6.1: Links between the secondary research questions, objectives, and proposition

Research questions		**Linking objectives**		**Linking proposition**	
RSQ 1	What are the reasons for critical nurse shortages in a Public hospital?	OBJ 1	To discover the reasons for nurse shortages in a public hospital	P1	Nursing shortage is on the rise, and determining the cause of the problem will help the healthcare sector improve its retention strategies thereby limiting staff shortages, thus improving healthcare.
RSQ 2	What are some of the challenges that nurses encounter as a result of staff shortages?	OBJ 2	To assess what challenges nurses face as a result of staff shortages and how this influences the delivery of health care.	P2	Staff shortages cause daily challenges for nurses such as personal (stress, burnout, fatigue) and professional challenges that impact the delivery of healthcare.
RSQ 3	How does this impact their ability to provide good healthcare?	OBJ 3	To assess what coping mechanisms are in place to assist with the challenges as a result of the shortage in providing good healthcare.	P3	Strategies can be created to help nurses deal with challenges they encounter as a result of staff shortages. This will have a positive impact on the existing nurse staff thus leading them to provide good healthcare.

Source: Researcher's own work

Table 6.1 displays the links between the research questions, objectives and propositions for this study. Column one displays the research questions, column two displays the objectives, and in column three it is clear how the research questions are linked to the proposition. During the data collection phase, input to the study was obtained from

interviews with respondents working at the researched public hospital in KZN. The next section will link the findings and discussions to the research questions and provide conclusions drawn from the perspective of each research objective.

6.2.1 Research question one: What are the reasons for critical nurse shortages in a public hospital?

The study concluded that there was a severe nurse shortage occurring in the five wards at the researched public hospital in KZN. It was found that the nurse shortages impacted negatively on the nurse and patients. At the same time the study found that there were four main reasons for these nurse shortages that were occurring, these reasons were identified by the registered nurses and operational nurse managers. The uncovered reasons for nurse shortages were:

- **Budget and resources:** The study revealed that department budgets had an influence on the availability of resources in their wards and also the hiring of more staff. Working conditions were poor due to fewer resources such as sub- standard equipment and low stock of basic consumable items such as syringes. The influx of foreign nationals utilising the public hospitals also contributed to the rapid depletion of resources.
- **Staff development and remuneration:** It was found that there was a lack of training and development for staff and that salary and remuneration were not competitive enough causing nurses to leave for better opportunities that offered professional growth and better remuneration.
- **Stressful working environment:** The study revealed that the existing staff were overworked and were not being afforded breaks in-between, which had stress and burnout implications. Staff could not cope with the volume of work due to the nurse shortage. Stress became a continuous battle for nurses as they navigated their daily duties under minimal staff and resources.
- **Managerial support and involvement:** The study discovered that there was a lack of support and involvement from the hospital management staff. The nurses did not get any form of recognition, encouragement or support from hospital

management. This led to disengagement and hospital management staff not being able to understand the basic needs of the existing nursing staff. This affected the ability of management to forecast and plan properly whereby budget and staff are properly projected for the future, given the increase in the patient population.

6.2.2 Research question two: What are some of the challenges that nurses encounter as a result of staff shortages?

The study revealed that various job and personal challenges were faced by the existing nursing workforce due to the implications of nursing shortages. Furthermore, the study revealed that multitasking, work overload and inability to meet deadlines were some of the job challenges that the nursing workforce highlighted and on the personal front health and mental wellness, fatigue and burnout, family life and strained relationships were revealed to be some of the personal challenges that the nursing workforce were faced with.

6.2.3 Research question three: How does this impact their ability to provide good healthcare?

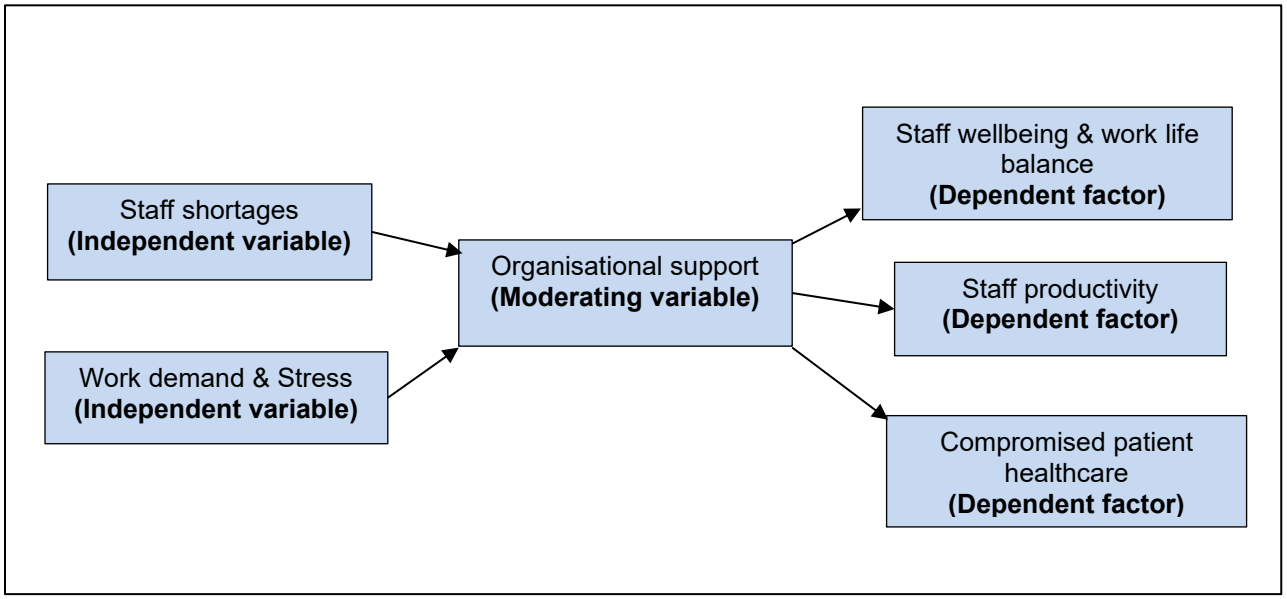
The study found that the challenges that the existing nursing staff faced due to the impact of the shortage were found to have a negative impact on their job performance which is providing good health care to their patients. It was discovered that there was no indication of hospital management providing any coping mechanisms to assist nurses. The existing workforce had to develop their own coping mechanisms in order to deal with moving past the daily challenges brought on by nurse shortages. These mechanisms that were implemented were collegial where nurses relied on teamwork, supporting each other, effective communication and sharing experiences with each other. The second mechanism was prioritisation which revealed that nurses would adopt a patient-first approach and focus on the most important tasks to be done first.

Based on the findings listed above, the research questions were answered, and subsequently the research objectives were met for each objective. The conceptual framework for the study is restated in the section below.

6.3 Conceptual framework

Figure 6.1 presents the conceptual framework which displays the perceived relationships between the dependent and independent variables in this study. The independent variables were listed as staff shortages and work demand and stress which is viewed as the cause. The dependent variables were listed as staff wellbeing and work-life balance, staff productivity and compromised patient healthcare is viewed as the effect, and the moderating variable is organisational support, and the factor that affects the relationship between the dependent variable and independent variable. Thus, the conceptual framework designed by the researcher reveals that each variable is interconnecting. Staff shortages and work demand and stress have a negative effect on the existing workforce which at the end has an impact on delivering good health care to patients. Organisational support is the key to reducing the staff shortages and work demand and stress so it does not impact negatively on healthcare.

Figure 6.1: Restating: The researcher's conceptual framework



Source: Researcher's own work

6.4 Limitations

The section below discusses the limitations of this study that was beyond the control of the researcher whilst conducting the study.

6.4.1 Sample

The study was limited to explore nurse shortages leading to poor healthcare at a public hospital in KZN South Africa only. Other provinces and private hospitals were excluded. The sample was restricted to Registered Nurses and Operational Nurse Managers in specific wards such as the NICU, ICU, paediatric, medical, and surgical wards only. Doctors, other medical staff and patients were excluded.

6.4.2 Research environment

Due to the nature of the nurses working environment as they dealt with the sickly and critically ill patients, and the availability of nurses, the researcher did not want to further disturb their daily operation flow of each ward due to shortages of nurses, so a smaller sample size of 20 nurses were interviewed.

6.4.3 Limited schedule

The researcher is employed fulltime and had to undertake the studies on a part time basis utilising annual leave and the weekends to conduct the data collection process. As a result, it was difficult to fulfil important deadlines in this study. Furthermore, loadshedding also contributed to limited time to work on the study.

The next section discusses the recommendations as informed by the findings of this study.

6.5 Recommendations

The following recommendations are made based on the objectives, information and evidence derived from this research study. These recommendations can assist in improving staffing levels and working conditions of the registered nurses. The first set of recommendations offered focus on addressing the reasons of nurse shortages.

6.5.1 Budget and resources

The findings indicated that budget and resources were a cause of the nurse shortage. Budgetary support in the form of funding was heavily needed. More budget had to be

allocated to the Health Sector. Therefore, more funding needs to be injected by the department of health into the public hospital sector so more staff can be employed and more equipment and resources can be purchased and this can positively impact on the delivery of good health care. Further recommendations are provided below.

6.5.1.1 Fill vacant posts

As indicated by respondents in chapter five, nurses were leaving their positions and their posts were being frozen due to budget constraints. It is recommended that the Department of Health should prioritise budget as this is the key for the recruitment and appointment of more nurses so that the unfreezing of posts at the public hospital can happen at a faster rate thus decreasing pressure on existing staff and improving the quality of health care delivered to patients. The filling of vacant posts should be treated by the department of health as a matter of urgency to alleviate the challenges of patient care and ensure optimal service delivery, care and improve staff welfare and wellbeing. As pointed out by Jeranji (2021) in Chapter Five, posts are frozen and qualified nurses are sitting at home without work indicating that there are enough skilled nurses waiting to be employed.

It is recommended that an information officer (IO) needs to be appointed at the public hospital, preferably a medical professional at the hospital who understands the daily operations and staffing set up of each ward. The information officer will act as a liaison between hospital staff and the Department of Health and act in the best interest of the hospital staff advocating for their urgent needs.

The IO is to focus on conducting bi-monthly check-ins with each ward at the hospital and will thereafter consolidate a report on staffing levels, incident reporting and resource requirements. The Department of Health needs to work with the public hospital IO to view reports of nurse-to-patient ratio in each ward including a review of incident reports and level of resources in order to understand the magnitude that the shortages and lack of basic resources has on healthcare. This will provide enough information to help with budget allocations per ward with the prioritisation of filling the frozen posts first. It is further

recommended that the IO will need to focus their attention on constantly following up with the department of health to release the budget for priority resources and posts.

6.5.1.2 Optimum levels of resources

According to findings in Chapter Five, respondents indicated that working conditions were poor due to fewer resources such as equipment and that the existing equipment was deficient as well as sub-standard. It is recommended that hospital management need to create and implement regular service plans for the equipment in the wards to ensure that the equipment is always operating efficiently at all times. It is recommended that Operational Nurse Managers are to communicate with their nursing teams in the ward and together prioritise what machinery equipment is most needed and develop a priority list which can be presented to the IO to put forward to the Department of Health for funding.

To ensure the availability of daily medical consumable resources such as syringes, needles, suctions and swabs etc. it is recommended that a digitised stock control system be considered that will flag minimum stock levels in record time and calculate how much stock is required to maintain optimum level, so that nurses have enough time to report the minimum level of stock to Operational Nurse Managers who will then take the necessary action to acquire more stock.

6.5.1.3 Foreign national billing system

It was also found that foreign nationals were fully utilising the South African health system and this affected resources and finances thereof. Therefore, it is recommended that there should be a billing system devised for foreign nationals. The billing system can be helpful to recover costs for at least the medical consumables.

6.5.2 Staff development and remuneration

The findings indicated that there was a lack of training and development for staff and that the salary was not competitive enough. Hence, nurses pursued better opportunities elsewhere. Recommendations are suggested for staff development and salary below.

6.5.2.1 Staff development

Staff development is regarded as an intrinsic motivator in the Hertzberg Two-Factor Motivation Theory, as explained in Chapter Two. Intrinsic motivators can be a source of additional motivation when they are available. Therefore, it is recommended that relevant training and development opportunities need to be freely accessible to staff, this will allow them to have updated skills for effective patient care and also promote growth and progression in their field.

It is recommended that Operational Nurse Managers and hospital management should always encourage continuous professional development of staff through regular in-service training, workshops, seminars, and mentoring.

6.5.2.2 Remuneration

Remuneration is regarded as an extrinsic motivator in the Hertzberg Two-Factor Motivation Theory. According to this theory, as explained in Chapter Two of this study, extrinsic motivators such as remuneration are expected, so they will not increase motivation when they are in place, but they will cause dissatisfaction when they are missing or not up to standard. This dissatisfaction could lead to nurses leaving their positions because their remuneration is not considered good enough. Therefore, it is recommended that nurse's remuneration is to be reviewed in order to ensure that their packages are competitive with those of similar professions. It is recommended that nurses be given incentives for their hard work and sacrifices made and basic overtime pay should be reinstated because money is an important commodity in the current economic epoch.

6.5.3 Stressful working environment

The findings in Chapter Five revealed that Psycho-social and emotional support for nurses was much needed due to stress, and traumatic experiences which caused a stressful working environment and eventually the burn out of staff. The recommendation for this finding is listed below.

6.5.3.1 Employee Assistance Programme (EAP)

The Employee Assistance Programme must be effectively in place for staff welfare and wellbeing needs. Staff need to be aware that EAP is available to use. Therefore, it is recommended that hospital management highlight the importance and how the Employee Assistance Program works by running an internal campaign with short video clips about the benefits and easy to use programme that is available for free to all employees. The nurses will be able to seek counsel for their personal or job difficulties that affect their work performance. The service will help provide them with tools and techniques to manage stress and burn out. The EAP will help increase productivity and encourage a positive work environment thus retaining staff.

6.5.4 Managerial support and involvement

The study discovered that there was a lack of support and involvement from the hospital management staff. As a result, management were unable to forecast and plan properly and nurses did not get any form of recognition, encouragement, or support from hospital management. The recommendations for this finding are listed below.

6.5.4.1 Hospital management support

Management needs to understand the challenges at ground level. It is therefore recommended that hospital management staff together with the Information Officer (IO) plan regular visits to the wards so that they can experience first-hand how the lack of staff and resources have an effect on the delivery of good health care to patients. This first-hand experience may give enough motivation to expend the necessary budget, resources and staff to mitigate challenges. These regular visits can also be helpful with showing gratitude of current staff efforts and their hard work and dedication.

6.5.4.2 Nurses Day and recognition awards

It is recommended that there should be a nurses day celebration to acknowledge and recognise the value of nurses in society. Hospital management can also consider hosting bimonthly awards to recognise nursing staff for all their hard work and sacrifices made. The recognition can be something as simple as having their story and image featured on

the internal portal and corridor of their ward providing inspiration and motivation for other nurses. The awardee should be rewarded with a cash prize as cash is always useful considering the current economic climate. A small bonus to the value of R5500 or more can be considered depending on budget.

6.5.4.3 Staff planning

The number of staff should be revised to meet the demands of patient care. Hospital management should plan staffing based on the trends in daily patient statistics and the severity of their health care needs.

6.5.5 Job and personal challenges

The findings revealed that various job and personal challenges were faced by the existing nursing workforce due to the implications of nursing shortages. These challenges were found to have a negative impact on their job performance which is providing good health care to their patients. The recommendations for job and personal challenges are listed below.

6.5.5.1 Job challenges

It was revealed by respondents in Chapter Five that the existing nurses found themselves consumed by high volumes of paperwork instead of being at the bedside of patients. It is recommended that long admin processes should be minimised, and paperwork should become redundant, streamlining admin processes using technology. Investing in technology will enable nurses to focus on the patient without having to be stationed at a desk to complete paperwork which takes up time. The streamlining of processes using technology will also ensure that work deadlines are met and will free up time so that nurses are able to take a proper lunch break for themselves. There is also a need for other staff positions to be filled such as porters and cleaning staff in order to alleviate the pressure of nurses having increased workloads due to unrelated duties so that they can focus more on their patients.

6.5.5.2 Personal challenges

The findings in Chapter Five revealed that long working hours took a toll on physical and mental health, prolonged fatigue which led to burnout thus impacting on family life. The recommendations are made below.

6.5.5.3 Digitised mental health and wellbeing programmes

It is recommended that the hospital management staff consider looking into a digital consulting programme that addresses mental health and wellbeing issues, providing support and advice in critical times of need. The digitised programme will be easy to use and helpful.

6.5.5.4 Meditation and physical activity

It is recommended that nurses should be informed and constantly reminded via the Employee Assistance Program (EAP) about the importance of physical activity in the form of daily exercises, meditation and balanced sleep-in reducing stress and fatigue.

6.5.5.5 Work and family balance

The Spillover-Crossover Model (SCM) as discussed in Chapter Two, is useful to help explain the impact of the work domain spilling over to the family domain so the employee and organisations can constantly work towards keeping the main life domains balanced. Therefore, it is recommended that hospital management staff and Operational Managers encourage nurses to take their leave. This will encourage nurses to make a conscious decision to achieve balance between work and family. Nurses are encouraged to schedule time to ensure that family time happens and strengthen the bond with family during this time to help promote trust, understanding, and support. It is also recommended that nurses set work-life boundaries by something as simple as turning off any work notifications on their mobile or home devices in order to focus on relaxing and enjoying family time.

6.5.6 Coping mechanisms

The findings indicated that there was no indication of hospital management providing any coping mechanisms to assist nurses, instead nurses took it upon themselves to create their own coping mechanisms to deal with shortages and still provide good healthcare. Recommendations for hospital management are listed below.

6.5.6.1 Coaching and motivation

It is recommended that Nurse Managers can include coaching and motivation into their daily team meetings with their nursing staff. That way encouragement can be given and also being approachable will make staff feel comfortable to raise issues and feel supported.

6.5.6.2 Team building

It is recommended that more team building exercises should be planned to foster team spirit and cohesion. Seeing that nurses work mainly in teams; hence team building can have a positive effect on motivation and teamwork. This will enable nurses to socialise with colleagues, which will create safe spaces to talk about their challenges as a means of venting and coping.

6.6 Relevance of the research study

The main aim of this study was to discover the effect of nurse shortages on healthcare at a public hospital. The study provides an understanding of the effect nurse shortages have on the existing staff and finally the delivery of healthcare. Under this context, this study will be useful for hospital management and the Department of Health to learn and understand the reasons, challenges and the impact that nursing shortages have on delivering good health care to patients, so that they can implement necessary strategies as recommended in section 6.5 to assist with improving staffing levels and working conditions of the existing nursing workforce to enable them to cope better and provide good healthcare. The next section presents recommendations for future research.

6.7 Future research

The current study focused on the effect of nurse shortages at one public hospital in KZN. It will be useful to get a better understanding of how staff shortages influence the quality of nursing care from all units within a few public hospitals in the country and compare it with a foreign country's public hospital. This can also help uncover various strategies being implemented which can be of help to either hospital. Further studies can also be done to assess the patient experiences of the quality of care provided by nurses under the current global nurse shortages, providing more information about the actual patient experiences, which will also help reveal the quality aspects that patients regard as most important so that the health care facility can prioritise these factors.

The next section will explain how the current study can contribute to the existing body of knowledge.

6.8 Contribution to the existing body of knowledge

The study contributes relevant insights into the reasons, challenges, and the impact that nursing shortages have on healthcare and could make a meaningful contribution around knowledge building of the reasons behind nurse shortages for hospital management and the Department of Health to have the right strategies in place in order to take quick action to lessen nurse shortages. The research was important in that it linked the nurses' everyday experiences in their work environment and the challenges that affected them due to nurse shortages. Findings indicated that budget and resources were a cause of the nurse shortage. The findings also showed that the influx of foreign nationals have put strain on medical resources and that a billing system should be devised for foreign nationals. This finding contributes to the existing body of knowledge. This study found that two coping mechanisms were developed and implemented by the staff themselves to assist in coping with the challenges in providing good healthcare as a result of nurse shortages. These mechanisms were collegiality and prioritisation. These natural and simple coping mechanisms can be shared and implemented in healthcare or any other organisation that may be faced with staff shortages.

The next section provides a brief summary and conclusion of Chapter Six.

6.9 Conclusion

The purpose of this study was to discover the effect of nurse shortages on healthcare at a public hospital. From the findings of this study, it is clear that this objective has been met. The findings revealed that the nurse's workload increased, while the quality of healthcare for the patient decreased due to four factors identified as budget and resources, staff development, working environment, and managerial implications.

Staff shortages and a lack of adequate resources restricts the existing nurse workforce from providing good healthcare to their patients. For the existing nursing workforce to remain motivated and rejuvenated through these challenges brought on by nurse shortages, a supportive environment is needed. Therefore, hospital management must work with the existing nursing workforce to provide the necessary tools and strategies for nurses to cope with the challenges so that the nurses can focus on what they do best which is providing quality healthcare to their patients.

Healthcare in South Africa is a number one public priority and nurses play a critical, central role in delivering health care. They advocate for health promotion, provide care and assist in curing people. No other health care professional can provide such a broad and far-reaching role and therefore these important extraordinary people must be provided with simple coping mechanisms at its best.

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LIST OF ANNEXURES

ANNEXURE A: PERMISSION TO CONDUCT ACADEMIC RESEARCH

Cape Peninsula University of Technology

Prof Visvanathan Naicker [PhD]

Professor: Information Communication & Technology
HOD: Business & Information Administration
Tel: +27 21 460 3113
Cell: +27 83 557 68 05
email: naickervi@cput.ac.za
Faculty of Business and Management Sciences
c/o Tennant & Hanover streets, District Six Campus
2nd Floor, Commerce Building, Cape Town, 8000
P.O. Box 652, Cape Town, South Africa, 8000

Thursday, August 4, 2022

RE: PERMISSION TO CONDUCT ACADEMIC RESEARCH AT [redacted] HOSPITAL

Dear Dr M Ndlangisa

My name is Sandhya Nankoo van Wyk, and I am currently registered as a Master's Degree student at the Cape Peninsula University of Technology. As part of my M-Tech Degree, I am required to conduct academic research that aims to solve a particular problem by gathering information, analysing data, concluding the findings of the research outcomes, and providing proposals to help solve, improve, or remove the problem.

My research study focuses on the investigation of critical nurse shortages in healthcare at a public hospital. I kindly request permission to allow me to conduct my research with selected nursing personnel at the [redacted] hospital. The information obtained from this research will be treated confidentially, and all respondents will remain anonymous.

During this study, I will report to Professor Visvanathan Naicker, who will guide me in my research at [redacted] hospital. For this research to proceed, we require a signed letter from you granting permission for me to conduct this study.

The National Department of Health supports this study. I trust this support will aid you in making a favourable decision. Attached is a signed letter by the Acting Director-General, N Crisp, at the National Health Department.

Your assistance and decision in this urgent matter are much appreciated.

Thank you
Sandhya Nankoo van Wyk

Supported: Prof Visvanathan Naicker

04 August 2022

ANNEXURE B: LETTER OF SUPPORT FROM THE NATIONAL DEPARTMENT OF HEALTH

DIRECTOR GENERAL
HEALTH
REPUBLIC OF SOUTH AFRICA
PRETORIA
Private Bag X828, PRETORIA, 0001, Dr AB Xuma Building, 1112 Voortrekker Rd, Pretoria Townlands 351-JR, Pretoria, 0187, Tel (012) 395 8000
CAPE TOWN
P.O. Box 3875, CAPE TOWN, 8000, 103 Parliament Towers, Room 615, Plein Street, CAPE TOWN, 8000 Tel (021) 461 2040 Fax (021) 461 6864

To Whom it may concern

Letter of Support: National Quality Health Implementation Plan – Research Project to be conducted in the nine provinces of South Africa

The National Department of Health supports the conduct of following nine studies that will be conducted by Masters and Doctor students based at Cape Peninsula University of Technology under the leadership of Professor Visvanathan Naicker

1. A study of Healthcare Quality and Patient safety capacity building interventions in South Africa. A national sectoral analysis.
2. Bridging the Competency Gap in Quality Patient Care Amongst Clinicians and Clinical Managers.
3. Translation of knowledge during the training into tangible improvements in the quality of care provided for Emergency Medical Services.
4. Towards High Reliability Healthcare in RSA: A Study of capacity building of non-clinical managers and leaders in South Africa.
5. Translation of knowledge from the Healthcare Quality Management training into tangible improvements in healthcare social work services.
6. The lack of strategic management of health services and its effect on quality health care.
7. A "people-centred approach" to realising health care by facilitating patient, and community participation in health attainment.
8. The effect of critical staff shortages, inadequate training, and poor attitudes of staff on health care.
9. Delivering Emergency Medical Services in resource constrained circumstances

The benefit derived from this research will inform the health sector on where and what the problematic areas are - pre and post the training around the various topics the 9 students have chosen in quality healthcare. Evidence from this research and training will further encourage a strong stewardship and leadership for high quality universal health coverage for all South Africans

DR N CRISP
ACTING DIRECTOR-GENERAL: HEALTH
DATE: 15/11/2021

ANNEXURE C: ETHICS APPROVAL

Cape Peninsula University of Technology

P.O. Box 1906 | Bellville 7535
Symphony Road Bellville 7535
South Africa
Tel: +27 21 4603291
Email: fbmsethics@cput.ac.za

Office of the Chairperson Research Ethics Committee	FACULTY: BUSINESS AND MANAGEMENT SCIENCES

The Faculty's Research Ethics Committee (FREC) on 16 November 2021, ethics APPROVAL was granted to Prof Visvanathan Naicker for a research activity at the Cape Peninsula University of Technology.

Title of project:	National Health Quality Improvement Plan in South Africa [NHQIP] Researcher (s): Prof V Naicker/ Prof R Tengeh/ Prof R Rampersad

Decision: APPROVED

Signed: Chairperson: Research Ethics Committee	17 November 2021 Date

The proposed research may now commence with the provisions that:

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

2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study requires that the researcher stops the study and immediately informs the chairperson of the relevant Faculty Ethics Committee.

3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.

4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing accompanied by a progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines, and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, notably compliance with the Bill of Rights as provided for in the Constitution of the Republic of South Africa, 1996 (the Constitution) and where applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003 and/or other legislations that is relevant.

6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.

7. No field work activities may continue after two (2) years for Masters and Doctorate researc

issue of the Ethics Certificate. Submission of a completed research ethics progress report (REC 6) will constitute an application for renewal of Ethics Research Committee approval.

Clearance Certificate No | 2021_FBMSREC 07

ANNEXURE D: ACCEPTANCE LETTER FROM THE KZN HOSPITAL

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

[redacted] HOSPITAL

OFFICE OF THE CHIEF EXECUTIVE OFFICER

[redacted]
www.kznhealth.com

Reference: *9/2/3/R*

Date: 23/08/2022

Principal Investigator:
- **S Nankoo**

PERMISSION TO CONDUCT RESEARCH AT [redacted] HOSPITAL: "AN INVESTIGATION OF CRITICAL NURSE SHORTAGES LEADING TO POOR HEALTHCARE AT A PUBLIC HOSPITAL IN KZN"

I have pleasure in informing you that permission has been granted to you by [redacted] Hospital Management to conduct the above research.

Please note the following: [redacted]

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure this office is informed before you commence your research.
4. [redacted] Hospital will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to [redacted] Hospital.

DR M NDLANGISA
CHIEF EXECUTIVE OFFICER
[redacted] HOSPITAL

GROWING KWAZULU-NATAL TOGETHER

ANNEXURE E: DATA COLLECTION PARTICIPANT CONSENT FOR INTERVIEW

Data collection Declaration by participant

By signing below, I agree to take part in a research study entitled “The effect of nurse shortages on healthcare at a public hospital in KwaZulu-Natal.”

I declare that:

1. The researcher has explained the purpose of this study.
2. I give consent for this interview to be audio recorded and transcribed
3. The researcher has explained that confidentiality and anonymity will be maintained at all times during this study.
4. I understand that taking part in this study is voluntary and that there is no financial compensation for this study.
5. I may decide to withdraw my participation from this study at any time and will not be penalised or prejudiced in any way.
6. I may ask for a break to leave the interview if I have urgent patient commitments, as the researcher feels it is in my best interests.

Signed at (place) .....…….. On (date) ……..…….. 2022.

ANNEXURE F: DECLARATION OF EDITING

NERESHNEE GOVENDER COMMUNICATIONS (PTY) LTD

REGISTRATION NUMBER: 2016/369223/07
DR NERESHNEE GOVENDER (PhD)
neresh@ngcommunications.co.za
0847022553
WRITING PRACTITIONER • EDITOR • COPYWRITER • TRAINER

PhD-Management Sciences: Marketing (gender and media); *PG DIP - Higher Education - Academic Developers (Cum laude;)* M-Tech Public Relations; B-Tech Public Relations *(Cum laude)*; B-Tech Journalism *(Cum laude)*; *N-Dip Journalism*

21/06/2023

Sandhya Nankoo van Wyk
CPUT

RE: EDITING CERTIFICATE

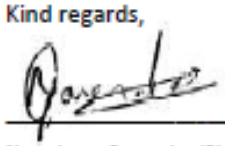
FOCUS AREA: THE EFFECT OF NURSE SHORTAGES ON HEALTHCARE AT A PUBLIC HOSPITAL IN KWAZULU-NATAL

Submitted in fulfilment of the requirements of the Faculty Business and Management Sciences, Cape Peninsula University of Technology, in partial fulfilment of the requirement for the MASTER DEGREE IN BUSINESS INFORMATION AND ADMINISTRATION

Student number: 223231118

This serves to confirm that this research has been edited for clarity, language and layout.

Kind regards,



Nereshnee Govender (PhD)

ANNEXURE G: TURNITIN ORIGINALITY REPORT

The effect of nurse shortages on healthcare at a public hospital in KwaZulu-Natal

ORIGINALITY REPORT

12%	10%	3%	7%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.ncbi.nlm.nih.gov Internet Source	1%
2	www.shrm.org Internet Source	1%
3	hdl.handle.net Internet Source	1%
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