A strategy to enhance the competencies of nursing unit managers in public hospitals of the North West Province

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Thesis accepted in fulfilment of the requirements for the degree Doctor of Philosophy in Nursing at the North-West University

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Graduation: October 2020

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ACKNOWLEDGMENTS

"…take my yoke upon you, and learn from me, for I am gentle and lowly in heart, and you find rest for your souls. For my yoke is easy and my burden is light …" (Matthew 11:29-30). From taking His yoke upon myself did I realize my dream. Thank you for blessing me with knowledgeable promoters, the blessing of the North West Department of Health for having opened the gates to the hospitals for me, participants who agreed to take part in my study, supportive family and friends and, above all, for keeping me going throughout my study.

I wish to acknowledge the following persons:

My promoter, Professor SK Coetzee. Thank you for being my promoter. Thank you for the unconditional support and encouragement, guidance, patience, love and respect that you have shown me. You were not only interested in my study, but also in my wellbeing as an individual. Thank you for the confidence you had in me. For that, I will always be grateful.

My co-promoter, Dr AJ Blignaut. Your support and guidance was outstanding. Thank you for the words of encouragement and for the patience you have shown with my interpretation of data.

Professor Suria Ellis, from the Statistical Consultancy Services Department of the North-West University (Potchefstroom Campus). Thank you for the statistical consultations on the interpretation of my data. You were always patient even if I asked for the same data set several times.

Ms Ina-Lize Venter, thank you for your assistance in language editing my thesis.

Ms Hannatjie Vorster, thank you for editing my bibliography.

Ms Petra Gainsford, thank you for the technical editing of my work.

My sisters, Martha, Dinah and Catherine. Thank you for the support and encouragement, you were my pillars of strength when the going got tough. The fact that we do not have parents did not derail me from what they taught us, that we must work very hard for everything that we would like to achieve. You were my constant reminders.

My two sons, Kgotla and Letlotlo. Thank you for allowing me to neglect you during the period of my studies. I appreciate that very much. That did not mean I loved you less, you mean everything to me, and I will always love you.

My colleague and friend from the Unit for Open Distance Learning of the North-West University (Potchefstroom Campus) Dr Petria Theron. Your words of encouragement meant so much to me.

You were always there when I needed to talk and created that space for me in your office. Thank you for keeping every piece of my work for backup and, moreover, for believing in me.

My colleagues from the School of Nursing Sciences at the North-West University (Potchefstroom Campus) Khumo Shopo and Babalwa Tau. Your inquiries about my progress kept me going. The conversations and laughter created a distraction for me when I felt overwhelmed. Thank you, sisters for being there for me.

ABSTRACT

Background: The competencies of Nursing Unit Managers (NUMs) is pivotal to the success of an organisation and the healthcare system with regard to the provision of a positive practice environment, and favourable nurse and patient outcomes. However, nurse competency research in South Africa is minimal, with the focus mainly on middle and senior nurse managers. Even on international level, nurse competency research is limited with regard to 360° (multi-source) feedback, and few have linked NUM competencies with nursing and patient outcomes, and nurse perceptions of the practice environment.

Aim: The aim of the study was to evaluate the competencies of NUMs and develop a strategy to enhance their competencies in public hospitals of the North West Province.

Method: This study applied a cross-sectional survey design in the North West Province. All hospitals classified as a large district, regional or provincial tertiary hospital (N=6) were included in the study. All medical and/or surgical units in the selected hospitals were included in the study (N=46). All-inclusive sampling was applied to the Nursing Service Managers (NSMs) (N=6; n=6), the NUMs (N=46; n =24) and nursing staff (N=750; n = 458) in the selected units. Data were collected between September and November 2017 through the use of the Nurse Manager Competency Instrument to measure NUM competence from the perspectives of NSMs, NUMs and nursing staff; The Michigan Organisational Assessment Questionnaire: Global Job Satisfaction and Job Turnover intention; Organisational Commitment Questionnaire and Compassion Practice Instrument to measure nurse outcomes; and the Practice Environment Scale of the Nurse Work Index to measure nursing staff perceptions of the practice environment. Reliability was established through Cronbach's Alpha, and validity through exploratory and confirmatory factor analysis. Descriptive and inferential data were analysed using SPSS 21.

Results: There were significant differences between competency ratings of NUMs by NSMs, nursing staff and the self-assessments of NUMs. The study further confirmed that there were associations between the NUMs' competencies and personal and nursing unit demographics, and, finally, there were correlations between the NUMs' competencies and nursing staff responses related to their outcomes, and their perception of the practice environment. A SWOT analysis was performed using data from the empirical research and literature review. This resulted in the identification of 65 strengths, 95 weaknesses, 8 opportunities and 16 threats, which were used to develop a strategy to enhance the competencies of NUMs in public hospitals of the North West Province.

Conclusions: The implementation of the strategy to enhance the competencies of NUMs in public hospitals of the North West Province may contribute to improved *knowledge and*

understanding, and the *ability to implement* management competencies and so improve the ability of NUMs to provide positive practice environments and improve nurse and patient outcomes.

Keywords: Competencies, Nursing Unit Manager, Positive Practice Environment, Nurse Outcome, Strategy, Management

OPSOMMING

Agtergrond: Die bevoegdhede van Verpleegeenheidsbestuurders (VEBs) is sentraal tot die sukses van 'n organisasie en die gesondheidsorgstelsel se voorsiening van 'n positiewe praktykomgewing, en gunstige uitkomste vir verpleegkundiges en pasiënte. In Suid-Afrika is navorsing oor die bevoegdheid van verpleegkundiges egter minimaal, met die klem hoofsaaklik op middel- en senior bestuurders. Selfs internasionale navorsing oor verpleegkundige bevoegdheid is maar beperk wat 360° (veelvuldige-bron) terugvoer betref, en daar is nog baie min gekyk na die verband tussen VEB-bevoegdhede en verpleeg- en pasiëntuitkomste, en verpleegkundiges se siening van die praktykomgewing.

Uitkoms: Die doel van die studie was om VEBs se bevoegdhede te evalueer en 'n strategie te ontwikkel om die bevoegdhede van VEBs in publieke hospitale in die Noordwesprovinsie te verbeter.

Metode: Hierdie studie het van 'n deursnee-opname in die Noordwesprovinsie gebruik gemaak. Alle groot distrikshospitale, streekshospitale, of provinsiale tersiêre hospitale (N=6) is in die studie ingesluit. Alle mediese en/of sjirurgiese eenhede in die geselekteerde hospitale is ook in die studie ingesluit (N=46). 'n Allesinsluitende steekproef is van die Verpleegdiensbestuurders (VDBs) (N=6; n=6), die VEBs (N=46; n=24) en verpleegpersoneel (N=750; n = 458) in die geselekteerde eenhede geneem. Data is tussen September en November van 2017 ingesamel. Die Nurse Manager Competency Instrument is aangewend om VEB-bevoegdheid aan die perspektiewe van VDBs, VEBs en verpleegpersoneel te meet. Die Michigan Organisational Assessment Questionnaire: Global Job Satisfaction and Job Turnover Intention is gebruik; die Organisational Commitment Questionnaire en Compassion Practice Instrument is gebruik om verpleeguitkomste te meet; en die Practice Environment Scale van die Nurse Work Index is aangewend om verpleegpersoneel se persepsies oor die praktykomgewing te meet. Betroubaarheid is met behulp van Cronbach se alpha bepaal, en geldigheid deur middel van verkennende en bevestigende faktoranalise. Beskrywende en inferensiële data is met behulp van SPSS 21 ontleed.

Resultate: Daar was beduidende verskille tussen die VEB-bevoegdheidswaardes wat deur VDBs, verpleegpersoneel, en die VEB-selfevaluerings toegeken is. Die studie het verder bevestig dat daar 'n verband is tussen VEBs se bevoegdhede en persoonlike en verpleegeenheiddemografie, en dat daar korrelasies bestaan tussen die bevoegdhede van die VEB en verpleegpersoneeluitkomste en hulle siening van die praktykomgewing. Die data van die empiriese navorsing en die literatuurstudie is gebruik om 'n SWOT-analise uit te voer. Hieruit is 65 sterkpunte en 95 swakpunte, ses geleenthede en14 bedreigings geïdentifiseer wat gebruik is

om 'n strategie te ontwikkel om die bevoegdhede van VEBs in publieke hospitale van die Noordwesprovinsie mee te verbeter.

Gevolgtrekkings: Die implementering van die strategie om die bevoegdhede van VEBs in publieke hospitale van Noordwes te verbeter, mag bydra tot dieper kennis en begrip, en tot die vermoë om bestuursbevoegdhede te implementeer wat VEBs bemagtig om positiewe praktykomgewings daar te stel en verpleeg- en pasiëntuitkomste te verbeter.

Sleutelwoorde: Bevoegdhede, Verpleegeenheidbestuurder, Positiewe Praktykomgewing, Verpleeguitkoms, Strategie, Bestuur

LIST OF ACRONYMS

AACN	American Association of Colleges of Nursing
ANA	American Nurses Association
AONE	American Organization of Nurse Executives
BSN	Bachelor of Science in Nursing
CCNs	Critical Care Nurses
CEO	Chief Executive Officer
CF	Compassion Fatigue
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CHE	Council on Higher Education
CIT	Critical Incident Technique
CMIN/DF	Discrepancy Functions
CP	Compassion Practice
CPD	Continuous Professional Development
CPI	Compassion Practice Instrument
CS	Compassion Satisfaction
CSN	Community Service Nurse
DOE	Department of Education
DOH	Department of Health
DPSA	Department of Public Service and Administration
EFA	Exploratory Factor Analysis
ETQA	Education and Training Quality Assurance
FTE	Full time employee
GFETQSF	General Further Education and Training Qualification Sub Framework

HCCI	Human Capital Competencies Inventory
HE	Higher Education
HEI	Higher Education Institution
HEQC	Higher Education Quality Committee
HEQSF	Higher Education Qualification Sub Framework
HLM	Hierarchical Linear Modelling
HREC	Health Sciences Research Ethics Committee
ICN	International Council of Nurses
KPAs	Key Performance Areas
N	Population
n	Sample population
NDoH	National Department of Health
NEIs	Nursing Education Institutions
NMCI	Nurse Manager Competency Instrument
NMCI	Nurse Manager Competency Inventory
NPO	Not for Profit Organisation
NQF	National Qualifications Framework
NSM	Nursing Service Manager
NUM	Nursing Unit Manager
NUMIQ	Nursing and Midwifery Inquiry for Quality
NWDoH	North West Department of Health
NWI	Nurse Work Index
NWI-R	Revised Nurse Work Index
NWU	North-West University
OC	Organizational Commitment

OCQ	Organizational Commitment Questionnaire
OQSF	Occupational Qualification Sub Framework
OSD	Occupation Specific Dispensation
PES-NWI-R)	Practice Environment Scale of the Nurse Work Index Revised
PHSDSBC	Public Health and Social Development Sectoral Bargaining Council
PI	Principal Investigator
PMDS:	Performance Management and Development System
PPEs	Positive Practice Environments
QA	Quality Assurance
QCTO	Quality Council for Trades and Occupations
RMSEA	Root Mean Square Error of Approximation
RN	Registered Nurse
SA	South Africa
SANC	South African Nursing Council
SAQA	South African Qualifications Authority
SCS	Statistical Consultation Services
SPSS	Statistical Package for the Social Sciences
STSD	Secondary Traumatic Stress Disorder
SWOT	Strengths, Weaknesses, Opportunities, Threats
WHO	World Health Organization

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CHAPTER 1
ORIENTATION TO THE RESEARCH STUDY

1.1 Overview of the chapter

This chapter provides an overview of the research study. The introduction, background and problem statement are highlighted, followed by the research questions, identification of the aim and objectives, and a discussion of the researcher's paradigmatic framework with regard to meta-theoretical, theoretical and methodological assumptions. A brief description of the research design and method is provided. Ethical considerations are then discussed, and the chapter concludes with an outline of the research study.

1.2 Introduction

The establishment of Positive Practice Environments (PPEs) requires strong leadership in healthcare organisations, especially at nursing unit level, which is the heart of patient care delivery and where most frontline staff work (Sherman & Pross, 2010). A PPE is defined by the International Council of Nurses (ICN) (2007) as "a setting that supports excellence and decent work. In particular, it strives to ensure health, safety and personal well-being of staff, supports quality patient care and improves the motivation, productivity and performance of individuals and organisations".

International research shows that PPEs are significantly associated with patient satisfaction, improved patient safety and quality of care, and better patient and nursing staff outcomes (Aiken *et al.,* 2011:1052; Aiken & Harper Harrison*,* 2012). South African studies show similar results. Klopper *et al*. (2012:691) found that PPEs increase job satisfaction and decrease burnout levels among critical care nurses (CCNs). This is consistent with the study by Coetzee *et al.* (2013:162), which found that more favourable practice environments and lower patient to nurse workloads were associated with more positive nursing staff outcomes, predominantly increased job satisfaction, decreased burnout, decreased intent to leave, and improved perceptions of patient safety and quality of care by nurses.

Lambrou *et al.* (2014:304) conducted a systematic review and found that, of all the characteristics of a PPE, the two aspects that had the most impact on nursing staff outcomes was "Nurse manager ability, leadership, and support for nurses" and "Nurse participation in hospital affairs". A PPE is therefore created, nurtured and sustained by competent nurse managers in collaboration with nursing staff (Duffield *et al.,* 2010:25). In the white paper on competence and competency, the American Nurses Association (ANA) (2013:3) defined competence as

performing successfully at an expected level, integrating knowledge, skills, abilities and judgement. This is consistent with the Public Service Regulations of South Africa (South Africa, 2012:8) that defines 'competence' as the blend of knowledge, skills, behaviour and aptitude that a person can apply in the work environment, which indicates the ability to meet the requirements of a specific job.

Many international studies have explored the competencies of nurse managers, and specifically highlighted the importance of competencies of nurse managers at unit level (Chase, 1994; Duffield, 1994; Kleinman, 2003; Care & Udod, 2003; De Onna, 2006; Ten Haaf, 2007; Skytt *et al.,* 2008; Chase, 2010, Furukawa & Cunha, 2011). Although there are studies in South Africa that have explored nurse managers' competencies, they focused on middle and senior managers like departmental managers and Nursing Service Managers (NSMs) (Belemu, 2000; Zechner, 2008; Pillay, 2009a), or community health centres (Greathead, 2000). No research could be found that had been conducted on the competencies of nurse managers at unit level in South Africa. Furthermore, only one study could be found that evaluated the competencies of Nursing Unit Managers (NUMs) and linked these to nursing staff and patient care outcomes (Ten Haaf, 2007). No studies could be found that linked NUM competencies to nursing staff's perceptions of the practice environment. Finally, only one study could be found that incorporated 360° (multi-source feedback or peer review) of NUM roles by NUMs, registered nurses, assistant nurses and heads of departments (Skytt *et al.,* 2008).

This study therefore aimed to evaluate the competencies of NUMs through multi-source feedback by NSMs, nursing staff, and NUM self-assessments. It also aimed to determine whether there is an association between personal and nursing unit demographics and the competencies of NUMs, as well as the relationship between the competencies of NUMs and nursing staff outcomes and perceptions of the practice environment. The overall aim of the study was to develop a strategy to enhance competencies of NUMs in public hospitals of the North West Province.

1.3 Background and rationale for the study

Management levels in the South African healthcare system, the importance of the NUM in healthcare organisations and management competence in healthcare organisations are discussed in the background and provide a rationale for the study.

1.3.1 Management levels in the South African healthcare system

The National Health Act 61 of 2003 provides a framework for a structured healthcare system in the country. The Act considers and makes provision for the obligations imposed by the Constitution of the Republic of South Africa and by other laws relating to healthcare services at

national, provincial and district/local levels. The national level is the highest level responsible for policy formulation and determining the regulatory frameworks; provincial level is the second level that implements national legislation in provinces; and the district/local level is the lowest level, responsible for the provision of services according to national regulatory frameworks. Therefore, the context of healthcare service delivery determines the level of the healthcare organisation, the types of services offered, and the staff complement that is required. Healthcare management, like general management structures, is divided into three hierarchical levels (Ciptono, 2007:306; Muller *et al.,* 2013: 21; Bradley *et al.,* 2015:411). The top or corporate level comprises the small group that is accountable for the performance of the organisation and is therefore mainly concerned with the strategic management and setting the vision and broad objectives for the organisation (DeChurch *et al.,* 2010:1070). NSMs are part of the top-level management. Middle management is responsible for the execution of the organisational strategies, plans and policies and establishes operational goals, as well as coordinating efforts to meet objectives (DeChurch *et al.,* 2010:1070; Muller *et al.,* 2013:22). Lower or operational management, sometimes called the functional level, occurs at nursing unit level. This management level is responsible for the allocation of tasks and supervision of the execution of the core business of the organisation (DeChurch *et al.,* 2010:1070; Muller *et al.,* 2013:22). NUMs are part of operational management.

1.3.2 The importance of the NUM in healthcare organisations

The NUM is responsible and accountable for the management of a nursing unit (Muller, 2009:96), which includes ensuring quality clinical nursing/midwifery care in the unit, and resource management - for example, human resources, financial resources, stocks, supplies and equipment and the management of information.

A competent NUM has the skills required for the role (Duffield, 1991a:56), knowledge to translate management policies into everyday practice (Duffield & Franks, 2001:89; Cathcart, 2014:44), the ability to link all stakeholders in the healthcare system (Mark, 1994:48; Blaauw *et al.,* 2014; Pegram *et al.,* 2014:686; Armstrong *et al.,* 2015:104; Adatara *et al.,* 2016:002) and the skill to influence the practice environment (Cziraki *et al.,* 2014:1006; Van Dyk *et al.,* 2016:533). This requires a blend of clinical skills, managerial knowledge and leadership abilities (American Organization of Nurse Executives [AONE], 2005; Kerridge, 2013:17; McKinney *et al.,* 2016:46).

Muller (2009:117) agrees that the NUM should not only be clinically competent but should also possess the necessary management and leadership competencies. Management is the process of reaching organisational goals by working with and through people and other organisational resources (Booyens, 2014:478), or a process of achieving predetermined objectives through

Human, Financial and Technical resources (Bradley *et al.,* 2015:411). Management, therefore, involves controlling processes, making decisions, and coordinating resources (Pullen, 2016:26).

Management and leadership are closely related (Bradley *et al.,* 2015:411) but, although they complement each other, they are not synonymous (Gillam & Siriwardena, 2013:254; Lau *et al.,* 2014:656; Elwell & Elikofer, 2015:312; Pullen, 2016:26). Kouzes and Posner (2012:30) view leadership as a relationship: "A relationship between those who aspire to lead and those who aspire to follow". Relationships between the leaders and followers are important in "enabling people to get extraordinary things done". The authors further identified five leadership practices, namely, "modelling the way, inspiring the shared vision, challenging the process, enabling others to act and challenging the heart". The ability to demonstrate competence in the five practices help people to trust their leaders and willingly follow them. Both management and leadership are important for different reasons, and leaders are needed more than ever because of the ever-changing and dynamic healthcare environment (Elwell & Elikofer, 2015:312). In practice, a single individual may play both management and leadership roles from within the same position (Bradley *et al.,* 2015:411). Therefore, "managers at every level of the healthcare system, including nursing unit level must thus become managers who can lead" (Gilson & Daire, 2011:71).

NUMs as managers and leaders have the potential to bridge the gap between communities and the healthcare system, coordinate care for patients with increasingly complex disease profiles in ensuring quality care, and accelerate the achievement of universal health coverage (Blaauw *et al.,* 2014; Pegram *et al.,* 2014:686; Armstrong *et al.,* 2015:104; Adatara *et al.,* 2016:002), while ensuring that patients and families receive the care they need in ways that address their concerns (Cathcart, 2014:44). NUMs represent a group of nurse managers positioned in close proximity to the work itself and to nursing staff engaged in patient care (McGuire & Kennerly, 2006:179). The competency and skill of NUMs therefore affect every aspect of patient care and staff outcomes as NUMs are largely responsible for creating practice environments in which clinical nurses are able to provide high-quality, patient-centred, holistic care (Aitamaa *et al.,* 2016:646; Van Dyk *et al.,* 2016:533).

As a representative of nursing management and healthcare service management at functional level, the NUM also has an opportunity to collaborate with the top or corporate level of management to implement initiatives that will address healthcare challenges and contribute to improved healthcare outcomes for all (Zori *et al.,* 2010:306; Cadmus & Wisniewska, 2013:673; Belasen & Belasen, 2016:1150). Muller (2009:95) states that the NUM is responsible for the achievement of objectives in the nursing unit and, by so doing, also contributes to achieving the objectives of the organisation that refers to the corporate level of management. Evidently, NUMs are an important component of healthcare service management.

1.3.3 Management competence in healthcare organisations

Educational preparation for nurse managers is regulated by the South African Nursing Council (SANC) through the Nursing Act 50 of 1978. However, the Department of Public Service and Administration (DPSA) in the Occupation Specific Dispensation (OSD) for nurses (PHSDSBC, 2007) requires only a basic R425 qualification that leads to registration as a nurse (general, psychiatry and community) and midwife or its equivalent in order to be employed in the position of NUM. Therefore, formal education and experiential competency is not a requirement for becoming a nursing unit manager. Also, important to note is that all present nursing qualifications, both basic and post basic including R425 are not aligned to the Higher Education Qualifications Sub-Framework (HEQSF) and are therefore phasing out to give way to the new HEQSF aligned qualifications. The last enrolment date for all non-HEQSF-aligned basic and post-basic qualifications was 31 December 2019. From January 2020, the new nursing qualifications will be phased in.

It is therefore understandable that the South African healthcare system is plagued by management issues. Researchers report that managers have a lack of management capacity, are ineffective and incompetent, and that this reflects the management and governance structures at all levels of the healthcare system, which is exacerbated by a general lack of accountability (Pillay, 2008; Rispel & Moolman, 2010:37; Rispel, 2016:18). However, it is healthcare providers at the functional level, those that have to implement the core business of healthcare that are in the most difficult position, as they not only lack management capacity, but also have to function in an ineffective and unsupportive management environment, with staff shortages and health system deficiencies (Rispel, 2016:17).

The focus of management at functional level has long been a topic of conversation raised even by a former Minister of Health, Doctor Aaron Motsoaledi, in a statement at the National Leaders Retreat (26/01/2010) where he alluded to poor management and the need to effect significant improvements in management and service delivery at the point of service. The National Strategic plan for Nurse Education, Training and Practice 2012/13 – 2016/17, (South Africa, 2011), also identified lack of management capacity as a key stumbling block to healthcare delivery in South Africa and recognised the importance of the NUM in overcoming the challenges facing healthcare delivery. The plan proposes that relevant competencies for NUMs be defined, including competencies in financial and resource management, care management, quality, and implementation of complex healthcare reforms.

The Presidential Health Summit (2018) also recognized that failure in leadership and management has resulted in the current health crisis. The summit, therefore, proposed that

training and education of management and leadership be strengthened, starting with undergraduate training; also that management key performance indicators be patient-centred and form part of the induction upon appointment.

Notwithstanding the importance of management in South African healthcare organisations, and the role NUMs play in the provision of healthcare services, NUM competency research has received minimal attention. Most competency research has been directed towards hospital and district managers (Belemu, 2000; Zechner, 2008; Pillay, 2009a) or community health centres (Greathead, 2000). The only studies that included the North West Province were national studies conducted by Zechner (2008) and Pillay (2009a). Other NUM research has been directed to challenges (Smal, 2013), and/or activities of NUMs (Armstrong *et al.,* 2015). In the international arena, one study incorporated multi-source feedback regarding NUM roles (Skytt *et al.,* 2008) and another (Ten Haaf, 2007) linked competencies of NUMs to staff and patient care outcomes, but no study could be found linking the competencies of NUMs to nursing staff perceptions of the practice environment.

1.4 Statement of the problem

The knowledge, skills, abilities and judgements required of a competent NUM and the contribution of the NUM towards the achievement of organisational objectives (Mark, 1994:48; Duffield & Franks, 2001:89; Cathcart, 2014:44; Adatara *et al.,* 2016:002), the establishment of a positive practice environment (Cziraki *et al.,* 2014:1006; Van Dyk *et al.,* 2016:533) and the facilitation of positive nurse and patient outcomes (Aitamaa *et al.,* 2016:646; Van Dyk *et al.,* 2016:533), highlight the importance of the NUM in the management and leadership of nursing units and healthcare organisations.

At all levels, the Government aims to effect significant improvements in management and service delivery at the point of service (functional level) through enhancing management and leadership competency (South Africa 2011; 2018). However, competency research in South Africa has only focused on the middle and senior managers (NSMs) (Belemu, 2000; Zechner, 2008; Pillay, 2009a), or community health centres (Greathead, 2000), and no research could be found that has been conducted on the competencies of nurse managers at unit level. Furthermore, only one study evaluated the competencies of NUMs and linked these with nursing staff and patient outcomes (Ten Haaf, 2007), while no studies could be found that linked NUM competencies with nursing staff perceptions of the practice environment. Finally, only one study could be found that incorporated 360° (multi-source) feedback or peer reviews of NUM competencies by heads of departments, nursing staff and by self-assessment of NUMs (Skytt *et al.,* 2008).

From this statement of the problem, the following research questions were asked:

1.5 Research questions

1. What are the competency ratings of NUMs according to NSMs, nursing staff, and NUM self-assessment?

2. Is there an association between the competencies of NUMs and personal and nursing unit demographics?

3. Is there a relationship between the competencies of NUMs and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice), and nursing staff's perceptions of the practice environment?

4. What strategy can be developed to enhance the competencies of NUMs?

1.6 Aim and objectives

The overall aim of the study was to develop a strategy to enhance competencies of NUMs in public hospitals of the North West Province. To achieve this aim, the research objectives were:

1. To evaluate NUM competency ratings according to the NSM, nursing staff and NUM self-assessment.

2. To determine an association between the NUM competencies and personal and nursing unit demographics.

3. To determine a relationship between NUM competencies and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice), and nursing staff perceptions of the practice environment.

4. To develop a strategy to enhance competencies of NUMs in public hospitals of the North West Province.

1.7 Research hypotheses

The following research hypotheses were relevant to the study:

H0 1: There is no difference between competency ratings of NUMs by NSMs, nursing staff and by self-assessment of NUMs

H0 2: There is no association between NUM competencies and personal and nursing unit demographics.

H0 3: There is no relationship between competencies of NUMs and nursing staff outcomes.

H0 4: There is no relationship between competencies of NUMs and nursing staff's perception of the practice environment.

1.8 Paradigmatic framework

De Vos *et al.* (2013:513) and Polit and Beck (2017:9) define a paradigm as a framework, viewpoint or worldview based on people's philosophies and assumptions about the social world and the nature of knowledge, and how the researcher views and interprets material about reality that guides the consequent action to be taken. Neuwenhuis (2016:52) states that a paradigm is a set of assumptions or beliefs about fundamental aspects of reality which gives rise to a particular worldview. Creswell and Creswell, (2018:5) also see a world view as a general philosophical orientation to the world and the nature of research that a researcher brings to the study. Creswell and Creswell (2018:6) identified four world views widely discussed in literature: post positivism, constructivism, transformative worldview and pragmatism. The major elements of each are presented in table 1-1 below.

Table 1-1: Four widely discussed world views

Post positivism	**Constructivism**
• Determination • Reductionism • Empirical observation and measurement • Theory verification	• Understanding • Multiple participants' meanings • Social and historical construction • Theory generation
Transformative Worldview	**Pragmatism**
• Political • Power and justice oriented • Collaborative • Change - oriented	• Consequences of actions • Problem - centered • Pluralistic • Real - world practice

Source: Creswell & Creswell (2018:6)

From the above mentioned world views, as identified by Creswell and Creswell (2018:6), the researcher chose to depart from the post positivism view as guided by the researchers' views about the social world and beliefs about fundamental aspects of reality. Post positivists hold a deterministic philosophy to research where causes determine outcomes (cause and effect); therefore, they assess for aspects that probably influence outcomes. The intent of post positivists is to reduce ideas into smaller, discreet sets to test, such as variables that comprise hypotheses

and research questions. The knowledge base that develops from a post positivism point of view is based on observation and measurement of objective reality that exists “out there” in the world. It is therefore important for post positivists to develop Numeric measures of observation and study the behaviour of individuals. Since the world is governed by specific theories and laws, these need to be tested or verified or refined so that there is a better understanding of the world (Creswell & Creswell, 2018:7).

The worldviews are expressed in the beliefs about the nature of reality or ontology, the relationship between the knower and the known - or epistemology – or, at the very least, assumptions about methodologies (Durham *et al.,* 2015:11; Neuwenhuis, 2016:52). Ponterotto (2005:130-132) identified the characteristics of post positivists as follows:

- Ontology – Accept true reality, but believe it can only be imperfectly apprehended and measured;

- Epistemology – Advocate a modified dualism/objectivism (researcher may have some influence on that being researched, but objectivity and researcher-participant independence remain important guidelines for the research process); and

- Methodology - The researcher attempts to simulate as closely as possible strict scientific methods and procedures, where the researchers’ emotional or expectant stance on the problem being studied is irrelevant.

The researcher supports the following key assumptions of the post positivism position (Creswell & Creswell, 2018:7).

- Knowledge is based on information that can never be completed, nor absolutely proven therefore, absolute truth can never be found;

- Research is undertaken to increase knowledge and make claims. After claims are made, some are accepted, some refined and some abandoned for others;

- Data, evidence and rational considerations shape knowledge, as the researcher collects information on instruments based on measures completed by participants;

- Research seeks to develop relevant, true statements that can serve to explain the situation of concern or describe the causal relationships of interest; and

- Being objective is an essential aspect of competent inquiry. For example, standards of validity and reliability are important in quantitative research.

1.8.1 Meta-theoretical assumptions

Sefotho (2015:33) defines meta-theory as the fundamental set of ideas about how phenomena of interest in a particular field should be thought about and researched. According to Klopper (2008:67), no research is devoid of value; therefore every researcher brings their views about the world to their research and this influences how they design and conduct their research. These views are not meant to be tested.

Meta-theoretical assumptions refer to the researcher's beliefs about the person as a human being (NSM, NUM and nursing staff), society (community), the discipline (nursing, nursing unit management), and the purpose of the discipline (healthcare), as well as the researcher's general orientation to the world and the nature of research (Botma *et al.,* 2010:187; Klopper, 2008:67).

1.8.1.1 Human being (person)

The phrase "Human being" (person) is sometimes used as a neutral alternative to man. A total person (whole) is a physical (biological), social, psychological, and spiritual being (Fawcett, 1995:31). The persons (human beings) in this study were the NSMs, NUMs and other categories of nursing staff that might be influenced by the context of their situations like individual experiences and perceptions, the physical and social environment, and interactions between the knower (participants) and would-be knower (researcher) (Ponterotto, 2005:130-131) that may have influenced participants' responses to the study questions. Thus, the study was conducted with great awareness of personal subjectivity, and objectivity (researcher - participant independence) was also observed. NSMs play a supervisory role towards NUMs while NUMs do the same for nursing staff and all of them are involved in the provision of nursing care. The goal of NSMs and NUMs is to create a PPE for nursing staff and patients, so as to achieve positive nursing staff and patient outcomes in public hospitals of the North West Province. This goal is achievable only when NUMs are competent managers.

1.8.1.2 Environment

The environment for this research was nursing units in public hospitals of the North West Province. This environment included human beings (NSMs, NUMs, other categories of nursing staff and patients) as well as the physical and social environment. In this environment, there might have been factors internal or external which might have hindered and/or promoted competencies of NUMs like limited resources, increased workloads and/or provision of support from top management. These factors might also hinder or promote the evaluation of NUM's competencies by NSMs and nursing staff or self-assessment by NUMs themselves. The study was therefore conducted with caution and according to the guiding principle that reality can never be perfectly

and objectively (researcher - participant independence) measured. The NUM, as the focal person in the study, is expected to be a competent manager and create a positive practice environment for nursing staff and patients, so as to improve nursing staff and patient outcomes.

1.8.1.3 Health

Health is a state of physical, psychological and social wellbeing. The health of NSMs, NUMs and nursing staff can also promote how NUM competencies are evaluated by NSMs, nursing staff, and NUMs themselves. In this research, the focus was on the competencies of NUMs. Being competent was also regarded as a healthy ability of NUMs. A healthy (competent) NUM can create PPEs that support the positive outcomes of nursing staff and patients.

1.8.1.4 Nursing

In this study, nursing encompasses the care of individuals of all ages, families, groups and communities in public hospitals of the North West Province. This also includes the prevention and promotion of health and care of the dying. It is through nursing that the health of persons are promoted. The promotion of health is facilitated in a PPE. In nursing management, nursing encompasses management strategies and administrative policies used by NUMs on behalf of, or in cooperation with nursing staff in a nursing unit. The promotion of health – which is positive nursing staff and patient outcomes – takes place in a PPE and this depends on the healthy ability (competence) of the NUM.

1.8.2 Theoretical assumptions

Botma *et al.* (2010:187) explain theoretical assumptions as a reflection of the researcher's knowledge of existing theoretical frameworks which includes models, theories, and concepts (theoretical and operational definitions). Theoretical assumptions are amenable to testing with the intention of clarifying the research problem (Klopper, 2008:67). Below, the concepts and variables applicable to this research study are defined, and the theoretical framework discussed.

1.8.2.1 Competencies

The American Nurses Association (ANA) (2013:3) in their position statement on competence and competency defined competence as performing successfully at an expected level, integrating knowledge, skills, abilities and judgement. This is consistent with the Public Service Act (103 of 1994) that defines 'competence' as the blend of knowledge, skills, behaviour and aptitude that a person can apply in the work environment, which indicates the ability to meet the requirements of a specific job. Chase (2010:14) reiterated this by defining competencies as the inborn or

developed performance skills, knowledge, attitudes or human abilities that enable one to carry out the job effectively. Chase categorised competencies into competency statements in the Nurse Manager Competency Instrument (NMCI) under Technical, Human, Conceptual, Leadership and Financial skills. In this study, competence refers to *knowledge and understanding* and the *ability to implement* competency statements as categorised in the NMCI under Technical, Human, Conceptual, Leadership and Financial skills.

1.8.2.2 Nursing Unit Manager (NUM)

The SANC, through the Nursing Act 50 of 1978, defines a NUM as a professional nurse who is trained as an administration specialist, who plans, directs, controls and organises work in a nursing service. The ANA defines a NUM as a registered nurse who manages one or more defined areas within nursing services (ANA, 2009), while Chase (2010:14) classifies them as nurse leaders who are responsible for day-to-day operations of at least one nursing unit in a hospital and to whom staff report. This individual has a line management position for patient care services, which includes patient care outcomes. For the purpose of this study, NUM refers to a professional nurse appointed or acting as a NUM in a hospital unit or ward according to the requirements of the DPSA.

1.8.2.3 Positive Practice Environment (PPE)

A PPE is defined by the International Council of Nurses (ICN) (2007) as a setting that supports excellence and decent work. In particular, it strives to ensure the health, safety and personal well-being of staff, support quality patient care, and improve the motivation, productivity and performance of individuals and organisations. Lake (2007:106S) defines a PPE as “support for nurses to function at the highest scope of clinical practice, to work efficiently in an interdisciplinary team of caregivers, and to activate resources rapidly”. In this study, a PPE subscribes to the subscales of the Practice Environment Scale of the Nurse Work Index Revised (PES-NWI-R)) (Lake, 2002) and includes a practice environment where nurses participate in hospital affairs; there are nursing foundations for quality of care; nurse managers are competent, and lead and support nurses; there is adequate staffing and resources, and good collegial nurse-physician relations.

1.8.2.4 Nurse outcome

An outcome is the results of any event or occurrence. Nurse outcomes have been reported as indicators of organisational and leadership outcomes (Cummings *et al.,* 2010:5-13; Mark *et al.,* 2003:225, 228). The authors also presented three dimensions that provide broad and comprehensive perspectives for reviewing nurse outcomes. The first is satisfaction with their

work, role and pay. This category covers nurse satisfaction with job mobility options, job security, financial reward, and time available to spend with patients. The second dimension is nurses' relationship with work. This category covers nurses' intent to stay or leave (current unit, organisation or profession), actual employee turnover, absenteeism and retention. The third category includes nurses' health and well-being. Such indicators include general health complaints, stress, anxiety, emotional exhaustion, and job tension. Nursing staff outcomes selected for the purpose of this study were job satisfaction, intention to leave, organisational commitment, and compassion practice.

1.8.2.5 Strategy

Strategy is a common concept involving the process of analysing the situation and then developing a plan (strategy) on how to outsmart your opponent (Lazenby, 2014:3). Although the concept of strategy has a military origin, it is now widely used in business as well as healthcare organisations. Louw and Venter (2014:10) define strategy as a game plan indicating the choices a manager needs to make, for example, about how to attract and meet customer needs, compete successfully, grow the organisation, and achieve performance targets. The same authors also state that strategy can be viewed as the direction and scope of an organisation over the long term. In this study, strategy means the process/plan that was followed to develop the vision and mission, to identify values and principles, and to formulate objectives and functional tactics to enhance competencies of NUMs in public hospitals of the North West Province.

1.8.2.6 Management

Management is the process of reaching organisational goals by working with and through people and other organisational resources (Booyens, 2014:478), or of achieving predetermined objectives through human, financial and technical resources (Bradley *et al.,* 2015:411). It involves controlling processes, making decisions, and coordinating resources (Pullen, 2016:26). Katz (1955:33) defined management in terms of the skills a manager must possess. As a manager directs the activities of others, performance depends on fundamental developable technical, human and conceptual skills. In this study, management is the ability of NUMs – in terms of *knowledge and understanding* and *ability to implement* Technical, Human, Conceptual, Leadership and Financial competencies together with their associated competency statements.

1.8.3 Theoretical framework

In this study two models were used as theoretical frameworks: Katz's (1955) theoretical framework of a typology of skills, as updated by Chase (1994), and Humphrey's 1960 SWOT analysis (Humphrey, 2005).

1.8.3.1 The skills of an effective administrator (manager)

Katz (1955) proposed a framework with which to view the skills of an effective administrator (manager). Harvard Business Review first published Robert Katz's "Skills of an Effective Administrator" in 1955. Although this theoretical framework has been published long ago, it is still as applicable today as it was when first published. Katz's basic premise is that a manager must possess three different skill sets, namely Technical, Human and Conceptual. An illustration of Katz' theoretical framework is outlined in Table 1-2 below.

Table 1-2: Katz's theoretical framework

Technical Skill	Understanding of a specific kind of activity, involves specialised knowledge.
Human Skill	Primarily concerned with working with people.
Conceptual Skill	Ability to see the organisation as a whole.

Source: Chase (2010:8)

A technical skill implies an understanding of and proficiency in a specific work or activity, particularly one involving methods, processes, procedures or techniques (Katz, 1955:34). A Human skill is the ability to work effectively as member of a group and to build cooperative effort within the team being led (Katz, 1955:34). Conceptual skill involves the ability to see the organisation as a whole; it includes recognising how the various functions of the organisation depend on one another and how changes in any one part affect all the others (Katz, 1955:35).

Katz (1955:33) proposed that performance depends on fundamental skills rather than personalities. Katz argued that skills are different from leadership traits or qualities. Skills imply an ability which can be developed, not necessarily inborn; and which is manifested in performance, not merely in potential. The principal criterion of skilfulness must be effective under varying conditions. Effective management rests on these developable skills which obviate the need for identifying specific traits and which may provide a useful way of looking at and understanding the management process (Katz, 1955:33). A manager directs the activities of other persons and undertakes the responsibility of achieving certain objectives through these efforts. In practice, these skills are closely related, though they vary in relative importance at different levels of responsibility (Katz, 1955:37). For example, technical skill is responsible for many of the great advances of the organisation. It is indispensable to efficient operation and has great importance to lower level management, however, human skills are essential for effective management at every level of management in the organisation. Even though lower level managers need conceptual skills, they are more essential for senior managers than technical skills (Katz, 1955:37). These skills can also assist in redefining management development

programmes, considering the placement of managers and the selection of prospective managers (Katz, 1955:37).

This framework is important for categorising the competency statements as utilised by Chase in the 1994 and 2010 studies. Chase (1994:57) utilised the following definitions to place competency statements into one of these categories:

- Any competency statement that was related to the delivery or evaluation of nursing care, that required scientific nursing knowledge and involved technology, was placed in the technical category.

- Any competency statement that involved dealing with people or management of human resources was placed in the human category.

- Any competency statement that required global thinking or the use of theory was placed in the conceptual category.

Chase (1994:57), in the process of placing competency statements into categories, found that some competency statements did not fall clearly into any of the abovementioned three categories. These competency statements encompassed leadership skills and others were related to budgeting and financial management. Thus, two additional categories of Leadership and Financial management were added.

The technical skills are very important for NUMs as they involve the use of methods, processes and procedures. The human skills assist the NUM to work as a group member and effectively lead teams. Conceptual skills assist the NUM to identify political, economic, environmental, technological and social factors and recognise how they affect the organisation as a whole. Leadership skills assist the NUM in directing the behaviour of others towards the accomplishment of a common goal or objective (Booyens, 2014:478). Financial skills enable the NUM to engage in budgeting and financial management. Although skills and competencies are not exactly synonymous, where skills are an element of competency, Chase (1994, 2010) used skills to categorise competencies and competency statements and used the two concepts interchangeably.

The first objective of the study was to evaluate the competencies of NUMs. Competencies were evaluated through a self-administered survey determining the *knowledge and understanding* inherent in competencies, as well as the *ability to implement* the competencies of NUMs on a Likert scale of 1-4. The tool comprised of three skill sets (Technical, Human and Conceptual), originally developed by Katz (1955), and an additional two skill sets (Leadership and Financial)

developed by Chase (1994) with associated competency statements for all skill sets developed by Chase. The same tool was also used to determine whether there is an association between NUM competencies and their personal and nursing demographics, as well as whether there is an association between NUM competencies and nursing staff outcomes and their perception of the practice environment.

1.8.3.2 The SWOT analysis

The SWOT analysis technique was also utilised by the researcher to develop a strategy to enhance the competencies of NUMs in public hospitals of the North West Province. Developed by Albert Humphrey in the 1960s (Humphrey, 2005), SWOT analysis is a basic, straightforward model that assesses an organisation's strengths and weaknesses as well as its potential opportunities and threats.

SWOT is an acronym for strengths, weaknesses, opportunities and threats which provide a framework for analysing these elements in an organisations' external and internal environment (Lazenby, 2014:89). Strengths relate to internal organisational factors that could be used to maximize opportunities and minimize threats to the benefit of the organisation. Strengths could relate to physical resources and assets as well as human abilities and special achievements. Weaknesses refer to internal organisational factors related to resources, abilities and service delivery that can be identified and strengthened to make the organisation less vulnerable. Opportunities include the identification and utilisation of external factors to improve strategic positioning of the healthcare organisation in terms of meeting the needs and taking competitive advantage. Threats relates to the identification of external factors that could have a negative impact on the survival or sustainability of the healthcare organisation (Muller *et al.,* 2017: 54-55).

The external environment includes everything that is outside the organisation that might affect the ability of an organisation to achieve its goals (Louw & Venter 2014:161). The internal environment includes everything inside the organisation - in this study, the nursing unit. The internal environment focuses particularly on resources and capabilities that might affect the ability of managers to pursue certain actions on which they typically have control (Louw & Venter 2014:161). The researcher identified strengths, weaknesses, opportunities and threats from the literature and the empirical phase of the study in order to develop a strategy to enhance competencies of nursing unit managers in public hospitals of the North West Province.

1.8.4 Methodological assumptions

Botma, *et al.* (2010:188) state that methodological assumptions explain what the researcher believes good scientific practice is and how the researcher investigates what he or she believes

must be known. Methodological assumptions may be implied or explicitly stated (Klopper, 2008:67). The basis for the methodological assumption proposed for this study was grounded in the post positivism paradigm, which entails the researcher's belief that all observation is theory-laden and is made within a certain frame of reference. Therefore, the researcher believes that value judgement and subjectivity cannot be taken away from observation and that all observations are made within the context of some theory (Fawcett, 1997:2).

Working within a post positivism paradigm, the researcher believes in realism, meaning that the researcher believes that reality does exist, but can never be perfectly understood. The researcher recognises objectivity as an ideal that can never be achieved, and the research was conducted with great awareness of subjectivity from study participants in terms of over or under evaluating competencies of NUMs and/or the relationship of competencies of NUMs to nursing staff outcomes or their perception of the practice environment. The researcher also believes that causal relationships can be discovered and tested through reliable research strategies such as valid and reliable surveys (Nieuwenhuis, 2016: 59-60). Therefore, the validity and reliability of research instruments were also tested.

The researcher believes that knowledge production is not only about data collection and analysis, but rather about what can be known about the world, what it means to know it, how that knowledge can be best obtained, and what that knowledge would look like once it is produced (Rolfe, 2013: 19). Therefore, the researcher believes that good science is determined by the following as identified by Rolfe (2013:18-21):

- "Investigating empirical reality"
- "Distinguishing truths from myths"
- "Producing some objective knowledge"
- "Bringing ideas that have been verified"
- "Discovering broad principles to explain what reality contains and how it works", and
- "Producing knowledge deductively or inductively".

1.9 Research design

A research design is the overall plan or framework that is developed from the research objectives or the purpose of the study, with the aim of clearly describing the procedures to be followed when conducting the study, how to handle challenges that can undermine the study evidence and the

conditions under which the data will be collected and analysed, in order to achieve greater control of validity and reliability in examining the research problem (Pierce, 2013:133; McMillan & Schumacher, 2014:28; Polit & Beck, 2017:56; Sharma, 2014:138). The research design for this study was a quantitative cross-sectional survey design, with descriptive, explanatory and contextual strategies. An in-depth description of the research design is provided in Chapter 3.

1.9.1 Context of the study

South Africa has both public and private healthcare. Public healthcare is a free national health service for all members of the population who cannot afford the cost of healthcare, and is managed across all levels of Government. Private healthcare is independently owned and managed by private individuals and companies for a profit. The context of this study was public hospitals in the North West Province, one of the nine provinces of South Africa. Public hospitals are state funded hospitals and are not for profit organisations (NPO). They offer free healthcare services to all individuals who are unable to pay for their own medical care. A background of the North West Province is discussed, followed by classification and identification of hospitals in the North West Province.

The mid-year population for the Republic of South Africa in 2015 was estimated as 55 million (South African Statistics, 2015). The greatest percentage of the South African population live in Gauteng (13.2 million people and 24% of the population), and the Northern Cape is the province with the smallest percentage of South Africans (1.19 million people and 2.2% of the population). The North-West Province is home to 3.7 million people, or 6.7% of the South African population. The majority of the province's residents are the Batswana people, who speak Setswana. Smaller groups include Afrikaans, Sesotho, and Xhosa-speaking people. English is primarily spoken as second language. The North West Province is divided into four district municipalities, namely Bojanala PlatiNUM, Dr Kenneth Kaunda, Dr Ruth Segomotsi Mompati and Ngaka Modiri Molema (South African Statistics, 2015). A map of the district municipalities of the North West Province is shown in Figure 1-1 below.

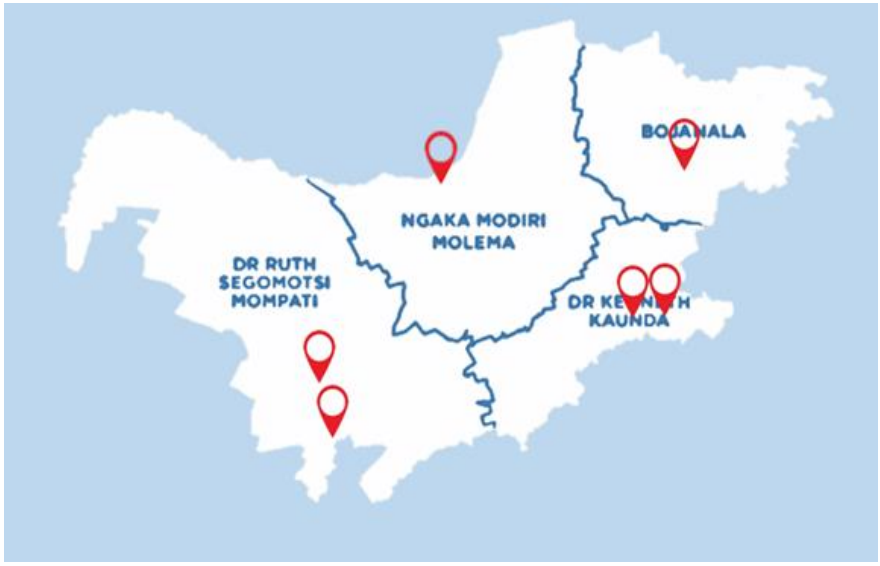

Figure 1-1: District municipalities in the North West Province

Source: www.maps of world.com

The National Health Act 61 of 2003 classifies categories of hospitals in South Africa as district, regional, tertiary, central, and specialised hospitals and these are discussed in the section that follows.

1.9.1.1 District hospitals

District hospitals are categorised into small, medium and large district hospitals, with the following Numbers of beds: small district hospital have no less than 50, and no more than 150 beds; medium sized district hospitals have more than 150 beds, but no more than 300; and large district hospitals have no less than 300 beds and no more than 600 beds.

A district hospital must serve a defined population of the health district and support primary healthcare; provide a district hospital package of care on a 24-hour basis; have general practitioners and clinical nurse practitioners, and provide services that include: primary healthcare; in-patient care, as well as emergency health services. In this study, these services include management strategies and administrative policies used by NUMs on behalf of or with nursing staff in nursing units of district hospitals in order to promote health, in the form of positive nursing staff and patient outcomes. Where practical, district hospitals must provide training for healthcare service providers. A district hospital receives outreach and support from general specialists based at regional hospitals and may only provide the following specialist services: paediatrics, obstetrics and gynaecology, internal medicine, general surgery, and family medicine (National Health Act 61 of 2003).

1.9.1.2 Regional hospitals

A regional hospital must, on a 24-hour basis, provide health services in the fields of paediatrics, obstetrics and gynaecology, internal medicine and general surgery. Regional hospitals must also provide health services in at least one of the following specialties: orthopaedic surgery, psychiatry, anaesthetics, diagnostic radiology, as well as services in trauma and emergency and short-term ventilation in a critical care unit. Regional hospitals also provide services to a defined regional population limited to provincial boundaries, and receive referrals from several district hospitals and, where practical, provide training for healthcare service providers. A regional hospital receives outreach and support from tertiary hospitals and has between 200 and 800 beds (National Health Act 61 of 2003).

1.9.1.3 Tertiary hospitals

A tertiary hospital provides specialist level services provided by regional hospitals together with the subspecialties of these specialist level services, which means that a tertiary hospital can provide orthopaedic surgery and further provide osteopathy and/or podiatrist services. Tertiary hospitals also provide intensive care services under the supervision of a specialist or specialist intensivist and training for healthcare service providers. Tertiary hospitals receive referrals from regional hospitals not limited to provincial boundaries and have between 400 and 800 beds (National Health Act 61 of 2003).

1.9.1.4 Central hospitals

A central hospital must provide tertiary hospital services, central referral services and may provide national referral services. Central hospitals provide training of healthcare providers, conduct research, receive patients referred from more than one province, and must be attached to a medical school as the main teaching platform. Central hospitals have a minimum of 1200 beds (National Health Act 61 of 2003). It is important to note that there is no central hospital in the North West Province.

1.9.1.5 Specialised hospitals

A specialised hospital provides specialised health services like psychiatric services, tuberculosis services, infectious diseases and rehabilitation services, and has a minimum of 600 beds (National Health Act 61 of 2003). Table 1-3 below outlines a list of public hospitals in the North West Province by district and sub district location.

Table 1-3: Public hospitals in the North West Province

District	Sub district	Category	Facility	No of beds	Population
Bojanala PlatiNUM	Kgetleng Rivier	Small district hospital	Koster hospital	50	4 030 235
	Madibeng	Medium district hospital	Brits hospital	215	
	Moses Kotane	Medium district hospital	Moses Kotane hospital	232	
	Rustenburg	Provincial tertiary hospital	Job Shimankana Tabane hospital	390	
				Total=887	
Dr Kenneth Kaunda	Maquassi Hills	Small district hospital	Nic Bodenstein hospital	100	2 421 082
	Matlosana	Provincial Tertiary Hospital	Klerksdorp/Tshepong Hospital Complex	1015	
	Tlokwe	Regional Hospital	Potchefstroom Hospital	335	
		Specialised Hospital	Witrand Psychiatric Hospital	982	
				Total=2432	
Ngaka Modiri Molema	Ditsobotla	Small District Hospital	General de la Rey Hospital	61	2 405 870
		Medium District Hospital	Thusong Hospital	300	
	Mafikeng	Medium District Hospital	Gelukspan Hospital	350	
		Regional Hospital	Mafikeng Provincial Hospital	492	
		Specialised Hospital	Bophelong Psychiatric Hospital	312	
	R Moiloa	Small District Hospital	Lehurutshe Hospital	105	

District	Sub district	Category	Facility	No of beds	Population
		Small District Hospital	Zeerust Hospital	84	
				Total=1704	
Dr Ruth Segomotsi Mompati	Greater Taung	Large District Hospital	Taung Hospital	468	1 374 949
	Kagisano Molopo	Small District Hospital	Ganyesa Hospital	60	
	Mamusa	Small District Hospital	Schweizer-Reneke Hospital	67	
	Naledi	Regional Hospital	Joe Morolong Hospital	120	
				Total=715	

Source: National Health Act 61 of 2003; DOH, 2012.

The above table indicates a list of all public hospitals in the North West Province according to district, sub district, category of hospital and name, the Number of beds in each hospital, and the population per district. It is from this table that large district, regional and provincial tertiary hospitals were identified.

1.10 Research method

According to Klopper (2008:69) the research method contains different steps, such as selecting a suitable population, sampling, data collection, data analysis and ensuring rigour. An in-depth description of the research method is provided in Chapter 3, Section 3.3. A brief overview is provided in Table 1-4 below.

Table 1-4: Overview of the research method

Research objective	Research approach	Population and sample	Data collection	Data analysis	Rigour
1. To evaluate the competency ratings of NUMs according to the NSM, nursing staff and NUM self-assessment	Quantitative	• All four districts of the North West Province **N=**4 **n**=4 • All large district, regional and provincial tertiary hospitals **N=**6 **n**=6 • All medical and surgical units with 24 hour care **N**=46 **n**=46 • All NSMs appointed or acting in the post for more than six months **N**=6 **n**=6 • All NUMs appointed or acting in the post for more than six months **N**=46 **n**=24 • All nursing staff, who have worked with NUM for more than six months	Survey/Questionnaire of the Nurse Manager Competency Instrument (NMCI) (Chase 1994 & 2010) (see Addendum D, E and F)	Data were analysed using the computer software (SPSS) Version 21 (SPSS Inc., 2013) and (SAS Institute Inc., 2003) **Descriptive statistics** Means, frequencies, percentages and standard deviations **Inferential statistics** • effect sizes • t-tests • ANOVA's • Spearman's rank-order correlations • Hierarchical linear modelling	Reliability of the instrument was established by Cronbach's alpha and validity through exploratory and confirmatory factor analyses

Research objective	Research approach	Population and sample	Data collection	Data analysis	Rigour
		N=750 **n**=463			
2. To determine an association between the NUMs' competencies and personal and nursing unit demographics	Quantitative	• All NSMs appointed or acting in the post for more than six months N=6 n=6 • All NUMs appointed or acting in the post for more than six months N=46 n=24 • All nursing staff, who have worked with NUM for more than six months N=750 n=463	Same data collection tool was used as above together with biographic data of NUMs and nursing unit demographics	As above	As above
3. To determine a relationship between the NUMs' competencies and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice), and nursing staff's perceptions of the practice environment	Quantitative	• All nursing staff, who have worked with NUM for more than six months **N**=750 **n**=463	• The Michigan Organisational Assessment questionnaire for Global Job Satisfaction (Cammann *et al.,* 1983) and specific aspects of the job questionnaire from the RN4CAST consortium by Sermeus *et al.* (2011)	SPSS 21 (SPSS Inc., 2013) **Descriptive statistics** Means, frequencies, percentages and standard deviations **Inferential statistics** • Spearman's rank-order correlations • effect sizes	Reliability of the instruments was established by Cronbach's alpha and validity through exploratory and confirmatory factor analyses Same reliability and validity was applied as above including

Research objective	Research approach	Population and sample	Data collection	Data analysis	Rigour
			• The Michigan Organisational Assessment questionnaire for Job Turnover Intention Cammann *et al.* (1983) Organisational Commitment questionnaire (OCQ) Mowday *et al*. (1979) Compassion Practice Instrument Coetzee *et al*. (2020) Practice Environment Scale of the Nurse Work Index (PES-NWI-R)) Lake (2002) (see Addendum F)	• t-tests • ANOVA's	exploratory factor analysis for OCQ
4. To develop a strategy to enhance competencies of NUMs in public hospitals of the North West Province	Strategy development	Data obtained from the empirical data and the literature review	Empirical data (Objective 1-3) and literature review (Chapter 2) was used to conduct a SWOT analysis	Deductive and inductive reasoning	Truth value, applicability, consistency and neutrality

1.11 Ethical considerations

McMillan and Schumacher (2014:129) define ethics as a general concern with beliefs about what is right or wrong, and research ethics as focused on what is morally proper and improper when engaged with participants or accessing archival data. This is consistent with a definition of ethics in the context of research by Saunders *et al.* (2016:239), which refers to the standards of behaviour that guide conduct in relation to the rights of those who become the subjects of research or are affected by it. The ethical considerations for this study are aligned and discussed together with the ethical principles provided by the Department of Health (DoH) (2015). The three broad ethical principles are: 1) beneficence and non-maleficence, 2) respect for persons (dignity and autonomy) and 3) distributive justice (equality).

1.11.1 The principle of beneficence

The principle of beneficence or non-maleficence can be described as doing good and above all, preventing harm, which may be physical, psychological, spiritual, social, economic or legal or any combination of the six (Grove *et al.,* 2015:106-109). The researcher has a responsibility to conduct research that will protect participants from discomfort and harm while bringing about the greatest possible benefits and minimising all risks involved in the research. The researcher should also make sure that the research benefits both participants and society in general. If the researcher cannot do this, then it is unlikely to be ethical (DoH, 2015:14; Grove *et al.,* 2015:106-109).

1.11.1.1 Freedom from exploitation

The researcher has the responsibility to ensure that participants are not placed in disadvantaged positions, are not exposed to situations for which they are unprepared, and are not exploited on the bases of race, age, religion, gender, class or sexual orientation. Participants should also not be exploited through expectation of reciprocity, like tokens of appreciation and sharing research results (Creswell & Creswell, 2018:94). In this study, the researcher ensured freedom from exploitation by assuring participants that participation in the study was voluntary. The researcher also informed participants that they would not be paid for taking part in the study but would only receive a pen as a token of appreciation.

1.11.1.2 Risk/benefit ratio

The goal of the study was to maximise potential benefits and minimise potential risks. The benefits refer to the positive value the research will provide. Risks refer to the possibility that

participants may be harmed during the research. A desirable ratio is one where, at minimum, the potential risk of harm to a participant is outweighed by the likelihood of benefit, the knowledge to be gained from the research may hold for participants or society (Grove *et al.,* 2015:120; DoH, 2015:16). Giving feedback of the study to participating hospitals will provide indirect benefits to participants and the organisation as a whole. Feedback could also provide direct benefits like an opportunity for self-evaluation, although no feedback was given to individuals.

The study was classified as a minimal risk study, as multi-source feedback on the competencies of NUMs could make them feel vulnerable as data from NSMs and nursing staff in the units was linked to individual NUMs. This risk was minimised by providing a unique code, only known to the researcher to each hospital and nursing unit/ward. Furthermore, the researcher assured participants that no information shared with the researcher during the study would be used against them or their respective hospitals/nursing units/wards in any way. Participants were also assured that the information would be kept confidential and that no link could be made to the NUM or their respective hospitals/nursing units/wards.

1.11.2 The principle of respect for persons

The principle of respect for persons refers to the researcher's acknowledgement that participants are autonomous individuals, who are capable of self-determination and individual choice, like the right to decide whether to participate in a study. Respect for persons also includes the protection of those individuals with diminished autonomy, including children and the mentally impaired (DoH, 2015:15; Grove, *et al.,* 2013:164). The researcher had a duty to respect the rights and promote the autonomy of participants. Autonomy includes the ability to deliberate about a decision and to act on that decision (DoH, 2015:15).

1.11.2.1 Right to full disclosure

Full disclosure means that the researcher fully informs the participants (McMillan & Schumacher, 2014:117; Grove, *et al.,* 2013:164) of:

- The purpose of the study;
- The person's right to voluntarily choose to participate in the study or not;
- The responsibilities of the researcher towards the participant and the research study;
- The potential risks and benefits that could possibly result from participation in the study; and
- The person's right to withhold information or withdraw from the study at any given time without any consequence.

Approval of the proposal to conduct the study was first obtained from the Nursing and Midwifery Inquiry for Quality (NUMIQ) scientific committee, the North West University Health Science Research Ethics Committee (NWU-HREC), ethics Number NWU-00356-16-A1, the North West Department of Health (NWDoH) and the respective hospitals. In this research, the right to full disclosure was respected by ensuring that each informed consent form was accompanied by full information (see Appendices A, B and C) and further explanation was provided by the researcher, who informed prospective participants of every aspect of the research (see Section 3.4.1.3) such as how and why they had been selected as participants and how the study would directly or indirectly benefit and/or affect them. After the study had been fully explained and an opportunity for questions was offered, prospective participants were given 24 hours to decide about their possible participation in the study. Only then, were willing participants required to provide written informed consent for their participation in the study. This was done in the presence of a mediator, to make sure that prospective participants were not in any way made to feel coerced or unduly influenced.

1.11.3 The principle of justice

The principle of justice involves being fair to participants, not giving preference to some, keeping promises, being punctual and placing the needs of participants before the objectives of the study (Grove *et al.,* 2015:98). The principle of justice was upheld by ensuring participants' right to fair treatment and privacy prior to, during, and after commencement and completion of the research study.

1.11.3.1 Right to fair treatment

Participants should be randomly selected from the general population based on pre-determined inclusion criteria that is directly related to the research problem and not at all based on easy availability, social conditions, researcher preference, or the ability to manipulate the participants (Grove *et al.,* 2015:98). In this study, an all-inclusive sampling method was applied to the districts of the North West Province (N=4), so, no district remained over or under-studied and there was fair representation of rural and urban districts. Purposive sampling was applied to hospitals (N=6). An important inclusion criterion was that the hospital had to be classified as a large district, regional or provincial tertiary hospital. This classification was most suited for the study as these hospitals have the greatest Number of beds and/or units/wards. The sampling method covered a broad range of public hospitals in the North West Province (see Section 3.4.1.2). Purposive sampling was also applied to nursing units/wards (N=46). An inclusion criterion was that the nursing unit had to be a medical or surgical unit. The medical and surgical units were most suited for the study, as they had continuity of care for 24 hours. An all-inclusive sampling method was

applied to NSMs (N=6; n=6), NUMs (N=46; n=24) and nursing staff (N=750; n=463). Another inclusion criterion was that NSMs and NUMs had to have been appointed or acting in a position for more than six months. Nursing staff also had to have been working in the nursing unit with the same NUM for more than six months.

1.11.3.2 Right to privacy

Privacy is an individual's right to determine when, how, and the circumstances under which personal information would be shared or withheld from others, and this right must be protected by researchers. This means that access to participants' characteristics, responses, opinions, attitudes, behaviour and other information is restricted to the researcher. The researcher ensures privacy by using three practices: 1) anonymity, 2) confidentiality and 3) appropriate storage of data (Grove *et al.,* 2015:105; McMillan & Schumacher, 2010:121). Thus, when a participant voluntarily agrees to take part in a research study, it is the researcher's responsibility to ensure that all data collected throughout the study will be kept private through the procedures of anonymity and confidentiality. Anonymity is ensured when even the researcher does not know who completed the survey questionnaire, while confidentiality is ensured by keeping the identities of the participants secret (Grove *et al.,* 2015:105-106). Only nursing staff data were completely anonymous. Because of the coding system, the data of NSMs and NUMs was not anonymous as they could be identified, but this was kept confidential by the researcher. Completed surveys were put in envelopes and sealed, after which they were placed in sealed boxes.

In this study, confidentiality was ensured by making certain that the names and contact details of participants and hospitals and/or nursing units where research was conducted, was known only to the researcher. A unique code was assigned to each hospital and nursing unit, so neither participants' personal details nor that of the hospitals/nursing units could be identified from the completed surveys. All information (scientific committee approval, HREC approval, permissions for conducting the study from provincial department and participating hospitals, confidentiality agreements of mediators, signed informed consent forms and completed questionnaires) is kept in a locked filing cabinet at the office of the research director, and all computers and back-up media on which data is stored, are password protected. The list of codes is kept only by the researcher and was managed as per data management procedure discussed in section 1.11.4 below.

1.11.4 Data management

The process of data management was observed from data collection. Completed surveys were placed in envelopes and sealed, then put into sealed boxes. The boxes were placed in a safe

place identified by each participating hospital to protect them against damage and theft. Surveys were counted before being sent for statistical analysis. Electronic data is protected by secure passwords. Data will be retained for the five years determined by the policy of the North West University and if data has to be destroyed, it will be destroyed by shredding. During the five-year period, data (scientific committee approval, HREC approval, permissions for conducting the study, confidentiality agreements of mediators, signed informed consent forms and completed questionnaires) will be stored in locked filling cabinets in the office of the Director of NUMIQ.

1.11.5 Other ethical principles

The Department of Health (2015:15-17) describes other crucial guiding principles for ethics, along with the basic ethical principles of beneficence, justice and respect for persons, which must be observed when conducting health research in South Africa. These guiding principles include relevance and value, scientific integrity and researcher competence and expertise.

1.11.5.1 Relevance and value

Research should be relevant and responsive to the needs of the people of South Africa. The proposal should explain the anticipated contribution to knowledge generation and, ideally, how the findings might be translated into products, interventions, processes or services likely to improve living standards and the well-being of South Africans (DoH, 2015:15-16). This research focused on a strategy to enhance the competencies of NUMs in public hospitals of the North West Province as perceived by NSMs, nursing staff and NUMs. These competencies refer to Technical, Human, Conceptual, Leadership and Financial management *knowledge and understanding*, and the *ability to implement* said competencies. Furthermore, the research linked these competencies to nursing staff outcomes and the perceptions nursing staff have of the practice environment. No study in South Africa has ever explored these topics by means of multi-source feedback.

1.11.5.2 Scientific integrity

The study's design and methodology are vital for research integrity, regardless of the discipline. Sound design and methodology are likely to result in reliable and valid data and outcomes that address the research objectives. Poor design and inappropriate methods may expose participants to unnecessary risk of harm and burden with little or no compensating benefit in the form of useful knowledge gained (DoH, 2015:16). The planning, implementation, analysis and reporting of this research was grounded in literature and was conducted at the highest standard possible, with every step of the research process being documented in detail, so that peer review and evaluation of the entire process would be possible.

Plagiarism, another important aspect of scientific integrity, is described as the presentation of someone else's ideas or work as your own new, original work (Brynard *et al.,* 2014:96; Louw, 2017:117). The researcher avoided plagiarising the work of other researchers by correctly referencing sources, both in the written text and bibliography of the study. Furthermore, direct quotations were explicitly identified as such and were limited through the scientific use of paraphrasing and summarising.

1.11.5.3 Investigator competence and expertise

Researchers must be suitably qualified and technically competent to carry out the proposed research. The principal investigator (PI) or research leader has the primary responsibility to ensure the safety and well-being of participants, and the scientific integrity and responsible implementation of the protocol. Principal investigators or research leaders must disseminate research results or findings, whether positive or negative, in a timely, accessible, responsible and competent manner. This includes reporting back to participant communities where appropriate, in accordance with the norm of role-player engagement and collaboration. (DoH, 2015:17). The results of this study will be presented to participants and will be disseminated in the scientific community through publication in peer-reviewed journals and presentations at conferences. In this study, the research design and the topic of study falls within the supervisors' area of expertise, and the resources needed to conduct the study are available at the North-West University (Potchefstroom Campus).

1.12 Classification of chapters

The chapters of the study are organised as follows:

Chapter 1: Overview of the study

Chapter 2: Literature review

Chapter 3: Research design and method

Chapter 4: Analysis, interpretation and discussion of results

Chapter 5: Strategy to enhance competencies of NUMs in public hospitals of the North West Province

Chapter 6: Evaluation of the study, limitations and recommendations for practice, education, research and policy.

1.13 Summary

In Chapter 1, the researcher provided a broad overview of the research study. A background and problem statement regarding management levels in the healthcare context, the importance of the NUM, competence, and competencies in healthcare organisations were detailed. Research questions, aims and objectives, and the hypotheses related to the study were provided. The researcher's methodological assumptions were discussed. The research design and research method were briefly highlighted, and lastly, ethical considerations applicable to this study were discussed together with basic and crucial guiding principles of ethics provided by the Department of Health (DoH, 2015). Chapter 2 discusses the literature review.

CHAPTER 2
LITERATURE REVIEW

2.1 Overview of the chapter

This chapter provides a comprehensive literature review regarding the work environment, educational preparation of the NUM, selection into NUM positions, succession planning, roles and responsibilities and competency and competency profile of the NUM. The literature review then focuses on the NUM competency research and the integration of literature, and concludes with a discussion of nursing staff outcomes (job satisfaction, intent to leave, organisational commitment and compassion practice) and the practice environment. SWOT analysis is applied in order to identify opportunities and threats in the external environment relating to NUM competencies in preparation for strategy development (see Section 1.8.2.7). Opportunities and threats are tabled after each section.

2.2 Search strategy

The literature review was conducted by searching the South African Journal Database System, or SAePublications, and the International Database Systems, ScienceDirect and EBSCOHost (Academic Search Premier, CINAHL, ERIC, Health Source: Nursing/Academic Edition, Master File Premier, MEDLINE, Pre-CINAHL, PsychINFO, SocINDEX with Full Text, Humanities International Complete, Academic Search Complete and Management Research Complete), books, dissertations, theses and the World - Wide Web (Google Scholar). The health sciences librarian assisted in combining the key-words, creating the search strings and accessing the articles that were not available at the North West University, via interlibrary loans.

A broad combination of key-words was used in order to search the literature on competencies of NUMs and nursing staff outcomes, (job satisfaction, intent to leave, organisational commitment and compassion practice) and nursing staff's perception of the practice environment. Table 2.1 outlines the combination of keywords that were used in varying sequences to search for literature on the topic. The keywords were searched in the categories of "Title" or "Abstract" or "Author" or "Keywords". NUM was searched individually using all titles assigned to NUM, as well as with at least one keyword from each category.

Table 2-1: Categories of key words used in the literature search

Nursing Unit Manager					
"Nurse manager" OR "Nursing Unit Manager" OR "Charge nurse" OR "Head nurse" OR "Operational manager" OR "First-line manager" OR "Frontline manager" OR "First-level manager" OR "Clinical manager" OR "Clinical coordinator" OR "Operational Manager"					
Searched with					
Competencies	**Job satisfaction**	**Intent to leave**	**Organisational commitment**	**Compassion Practice**	**Practice environment**
"Competence" OR "Competency"	"Job satisfaction" OR "Staff satisfaction" OR "Employee satisfaction" OR "Work satisfaction"	"Intention to leave" OR "Turnover" OR "Intent to leave"	"Organisational commitment"	"Compassion practice" OR "Compassion satisfaction" OR "Compassion fatigue" OR "Secondary Traumatic Stress" OR "Helper stress"	"Practice environment" OR "Work environment"

2.3 Introduction

A manager's ability to lead effectively, is influenced by several factors: the work environment they find themselves in, the level of management education they have been exposed to, the management characteristics they bring to the table, how they have been selected into management positions, how much decision-making authority they have as managers, the type of support they receive from top management and subordinates, and how those they work with perceive management effectiveness (Tipton, 2015:30). These factors about effective management are also applicable and true for the NUM. These aspects will be addressed in the sections to follow.

2.4 The practice environment of the NUM

International research has shown that nurses who work in hospitals with PPEs are less likely to report poor nurse outcomes (burnout, intention to leave and job dissatisfaction) (Aiken *et al.,* 2012; You *et al.,* 2013) with South African studies showing similar results (Klopper *et al.,* 2012; Coetzee *et al.,* 2013). In addition, nurses who work in hospitals with PPEs are more likely to

perceive patient care as safe and of good quality (Coetzee *et al.,* 2013; Kirwan *et al.*, 2013; You *et al.,* 2013; Aiken *et al.,* 2012), and patient satisfaction as high (Aiken *et al.,* 2012).

For NUMs to achieve positive nursing staff and patient outcomes in their managerial functions, all subscales of the PES-NWI-R) (Lake, 2002) must be present. The subscales are Nurse participation in hospital affairs, Nursing foundations for quality of care, Nurse manager ability, leadership and support for nurses, Adequate staff and resources, and Good collegial nurse-physician relations. Of all these subscales, two had the most significant impact on nursing staff outcomes: Nurse manager ability, leadership and support for nurses, and Nurse participation in hospital affairs (Lambrou, *et al.,* 2014:304). The ability of NUMs to provide effective leadership and balance conflicting demands does not only depend on their preparation for leadership roles, but also on a resourceful infrastructure, organisational support, and recognition in terms of time, resources and personnel invested (Australian College of Nursing White Paper, 2015:11; Hewko, *et al.,* 2015:1062; Pegram, *et al.,* 2014:685; Tipton, 2015:30; Duffield, 1992:50).

The practice environment has been identified as a possible stressor for NUMs (Shirey, 2006:193; Udod *et al.,* 2017:161). Udod *et al.* (2017:161) identified organisational factors that could create role stress for NUMs as working with limited resources, responding to continuous change within organisational work complexities and disconnection of senior or top-level management from practice. At times, there is also a mismatch between the perceived authority and decision-making powers of the NUM, and their actual influence in nursing units and the organisation. This can undermine their ability to lead (Fedoruk & Pincombe, 2000:14; Pegram *et al.,* 2014:686; Wong *et al.,* 2013b:239). Table 2-2 below identifies opportunities and threats for the practice environment of NUMs.

Table 2-2: Opportunities and threats for the practice environment of NUMs

Opportunities	Threats
The practice environment of NUMs	
1.The practice environment influences nurse and patient outcomes	1.NUMs work with limited resources
	2.NUMs have a lack of authority, decision-making power, and actual influence in nursing units
	3.There is lack of organisational support and recognition for NUMs

2.5 Educational preparation of the NUM

The White Paper on the transformation of Higher Education (No 3 of 1997) was developed in an attempt to redress the inequalities and inefficiencies of South Africa's past in order to meet pressing national need and respond to new realities and opportunities, through the creation of a single, coordinated higher education system funded by Government. The Higher Education Act 101 of 1997 was intended to "regulate higher education; to provide for the establishment, composition and functions of a Council on Higher Education (CHE) (DOE, 1997:8, see Section 5.2); to provide for the establishment, governance and funding of public higher education institutions". The South African Qualifications Authority (SAQA) Act 58 of 1995 was established to "provide for the development and implementation of a National Qualifications Framework (NQF) and to provide for matters connected therewith" and to advise the Minister of HE on matters of the NQF.

The National Qualifications Framework (NQF) Act (67 of 2008) was developed as a mechanism for setting appropriate standards for qualifications and quality assurance (QA) and for widening access to educational and occupational opportunities. The NQF has three integrated sub frameworks: The General and Further Education and Training Qualification Sub framework (GFETQSF) overseen by Umalusi, the Higher Education Qualification Sub framework (HEQSF) overseen by the CHE; and the Occupational Qualification Sub framework (OQSF) overseen by the Quality Council for Trades and Occupations (QCTO). These Sub frameworks have to articulate with one another in order to give learners an opportunity to progress in their chosen learning pathways. The NQF is organised according to a series of levels of learning arranged from one to ten, with level one being up to grade 9 of schooling and level ten being doctoral degrees. Each level on the NQF is described by a statement of learning achievement, known as level descriptors, to be attained by learners (National Qualifications Framework, 2010:6) (see also Section 7 (a)(b)(c)).

The Council on Higher Education (CHE) was established as an independent statutory body to advise the Minister of Higher Education and Training on any aspect of HE through its Higher Education Quality Committee (HEQC). The HEQC receives its mandate in terms of the Higher Education Act 101 of 1997 with the framework of regulations for Education and Training Quality Assurers (ETQAs) of the SAQA Act (58 of 1995). The HEQC is therefore one of the permanent subcommittees of CHE and is responsible for the accreditation of programmes and for conducting institutional audits (CHE, 2004:1-3). The review and amendment of the NQF Act (26 of 2010) brought about some legislative changes. According to a joint communiqué on the implementation of the HEQSF, all new programmes have to meet the requirements of the HEQSF. As per the provisions of the Higher Education Act 101 of 1997, the Minister of Higher Education and Training

announced 31 December 2019 as the last enrolment date for students entering non HEQSF-aligned programmes for the first time.

The NQF requires SAQA to develop and implement policy and criteria for the recognition of professional bodies and registration of professional designations. The main objective is to "promote public understanding and trust in the professions through the establishment of a nationally regulated system for the recognition of professional bodies". The SANC is the professional body of nursing that regulates education and nursing and midwifery practice. All professional bodies have to be established through an Act of Parliament in order to be recognized by SAQA.

Notwithstanding the fact that all qualifications are being aligned with the HEQSF, Nursing Colleges are aware of a range of concerns relating to the nature of the qualification types set out in the NQF, including,

- The manner in which the range of new nursing qualifications are arranged, does not accommodate levels obtained from legacy (existing) qualifications. This makes it difficult for legacy qualifications to access HEQSF-aligned qualifications. For example, a prospective student with a diploma in nursing at level six cannot access post graduate diploma at level eight of the new qualifications, as levels cannot be skipped.

The National Policy on Nursing Education and Training (DOH, 2019) outlines the basis for a uniform framework within which nursing education is provided and a mechanism for improving the nursing education system. The aim of the policy is to provide a national framework for nursing education, which will ensure alignment of nursing education with post-school education legislative prescripts and regulatory requirements for professional registration in the new nursing categories. The promulgation and subsequent proclamation of various sections of the Nursing Act 33 of 2005 had implications for nursing education. The key implication was the creation of new categories of nurses, where all professional nurses have to complete a bachelor's degree in nursing and midwifery. To provide for this qualification, all nursing colleges have to acquire a Higher Education Institution (HEI) status. It is then also mandatory for SANC to develop new scopes of practice and related regulations in preparation for the new HEQSF-aligned nursing qualifications. The new qualifications have to be approved by both the SANC and the CHE.

It is important to note is that, in South Africa, all non-HEQSF-aligned nursing qualifications are now called legacy qualifications, and are being phased out to be replaced with new, HEQSF-aligned qualifications that include a bachelor's degree in nursing and midwifery. In order to comply with other relevant laws such as the Higher Education Act 101 of 1997, the SANC and NQF have

already passed the last enrolment date for some of the legacy nursing qualifications: June 2015 was the last date for enrolling as nurse or nursing auxiliary, and these courses were finally phased out in May 2018. The last enrolment date for all non-HEQSF-aligned post-basic and postgraduate qualifications was 31 December 2019. After this date, all registered students will have to be phased out. Although the post-basic and all specialty programmes, including nursing management, are phasing out, no final regulations have been promulgated. This poses a dilemma for institutions, as they have to develop the curricula and have the programmes ready for implementation by January 2020. It also creates the challenge of producing specialty nurses in the country.

Currently, basic baccalaureate degree and diploma courses for nurses (DOH, 2005) are offered differently at universities, universities of technology, and private and public nursing colleges. These programmes, although not management programmes, have a certain number of curriculum hours allocated for management modules.

Blignaut (2012:63-64) did an analysis of exit level outcomes in nursing education institutions (NEIs) that provide the basic baccalaureate degree offered at universities and universities of technology, and nursing diploma offered at private and public nursing colleges. The exit level outcomes explored pertained to the training of nurses in the roles of provider, professional, advocate, manager, educator and researcher. The results indicated that both degree and diploma programmes focused on the provider and professional role. However, the degree training focused more on the educational, managerial and research roles than diploma training, with 83% of the degree curriculum focused on the managerial role, and 58% of the diploma curriculum. This management training only applies to entry-level nursing, and may not adequately address all requirements of management education.

A study by Armstrong and Rispel (2015:9) discovered that nursing curricula at undergraduate level is inappropriate and unresponsive to population and health system needs, and there are skills gaps. Similarly, Michaels *et al.* (2014:127) identified a misalignment between health sciences education and health service needs. Fine (2002:66) identified a perceived disconnect between what healthcare management programmes teach and what is actually required in practice. In agreement, Aiken and Harper-Harrison (2012:11) found that “although it is acceptable to assume that new graduate nurses are being prepared with skill levels for the contemporary role of nursing management”, it is clear that educational preparation and health system expectations do not match. Changes in the healthcare environment occur so rapidly that the educational side often cannot keep up. As a result, students may leave their programmes less than fully prepared for the challenges they will face as managers in practice.

The education of nurse managers is regulated by the SANC through the Nursing Act 50 of 1978 and is offered at universities and universities of technology which provide a bachelor's degree or Bachelor of Technology respectively, as well as the advanced and postgraduate university diplomas (Dolamo & Peprah, 2011:28). Most education of nurse managers takes place through a hybrid model, which has the advantage of asynchronous learning – anytime and anyplace – where students and lecturers interact through a variety of learning resources like audio, video, and computer delivery modes, as a subset of distance learning (Martyn, 2003:19; Reynard, 2007). Teaching management through hybrid models may create a challenge where many assume that managerial competencies can be attained only through cognitive processes or theoretical instruction (Daire *et al.,* 2014:8) and question whether such programmes can provide students with the quality of education that is needed (Kovner *et al.,* 2012:342). However, regulations for the education of nurse managers stipulate that students must undergo practical training that extends over 90 periods that need not be continuous.

According to the SANC the number of registered persons who qualified in nursing management as at 31 December 2017 was 1358. North West University conferred the highest Number of qualifications at 275, followed by University of South Africa at 273. However, the DPSA in the Occupation Specific Dispensation (OSD) for nurses (PHSDSBC, 2007), requires only a basic R425 qualification for registration as nurse (general, psychiatry and community) and midwife, or its equivalent in order to be employed in the position of NUM. Therefore, formal education and experiential competency is not a requirement for becoming an NUM.

Research has indicated that, even though nurse managers have some form of formal healthcare management training and/or qualification, nurse managers do not necessarily rate themselves as competent (Pillay, 2009a:502). A comparative study of competency self-assessments by senior nurse managers in public and private hospitals found a significant difference in competency ratings between the two sectors, with private sector managers rating themselves significantly higher on all of the competencies, except for health services delivery, where there was no difference. However, the low self-assessment of nurse managers in public hospitals did not support the finding that almost 95% of public sector nurse managers reported having some kind of formal training in health management (Pillay, 2009a:502).

In her inaugural lecture on "Preparing the new nurse leader for the 21st Century in South Africa", Professor B.L. Dolamo (22 July 2014) stated the following proposed solutions for meeting the demands for competent nurse leaders in South Africa: "curriculum redesign; innovative teaching methods that reflect work-place realities; and portfolios that illustrate competency". From an educational perspective, there is a need to ensure that management curricula is contemporary, relevant and responsive to the realities of practice; that it provides the skills to assist management

graduates to manage and lead optimally in continuously changing, highly competitive, pressured and, at times, chaotic environments. Achieving this requires innovative and collaborative approaches that foster authentic engagement between the healthcare management practice and the management education sectors (Dignam *et al.,* 2012:66). Table 2-3 below outlines opportunities and threats for the educational preparation of NUMs.

Table 2-3: Opportunities and threats for the educational preparation of NUMs

Opportunities	Threats
Educational preparation	
2. Nursing education will be provided within a national framework that will ensure alignment of nursing education with post-school education legislative prescripts and regulatory requirements for professional registration in the new nursing categories.	4. The management curriculum is outdated at undergraduate, post-basic and postgraduate levels.
3.The management curricula at undergraduate, post-basic and postgraduate levels can be developed to provide nurse graduates with knowledge and skills that are contemporary, relevant and responsive to practice	5. There is not a requirement for a management qualification in order to become a manager.
	6. The legacy undergraduate nursing programmes will be phased out in December 2019, and not all new nursing programmes are HEQSF-aligned as of yet.
	7. The regulations for nurse managers have not yet been published, thus no new post-basic and postgraduate programmes for management have been developed, although programmes will be phased out in December 2019.
	8. There is a misalignment between the legacy nursing qualifications and HEQSF-aligned qualifications in terms of access

2.6 Selection into NUM positions

In South Africa, posts are created by way of position and organisational establishment arrangements and staffing norms (DPSA, 2007). Vacant posts are filled by way of recruitment, selection and appointment. Recruitment can be from internal sources, which include current employees who can become candidates for promotions, transfers and job rotations. Internal recruitment methods include posting notices on notice boards, word of mouth, examining personnel records, perusing promotion lists based on performance, checking seniority lists, and supervisor recommendation (Muller *et al.,* 2013:272). The DPSA consider this natural career

pathing within an occupation or job level. Recruitment from external sources includes employee referrals, applicant-initiated recruitment or walk-ins, advertisements (newspapers, radio and internet) and employment agencies (Muller *et al.,* 2013:274). The selection process depends on organisational policies and procedures that often include receiving application forms, shortlisting suitable applicants according to the basic requirements of the posts, and selection for interviews. Once a decision has been made about the desired candidate, a job offer is extended to the applicant and, if accepted, the applicant is appointed in the position. Placement must match the individual to the job on the basis of knowledge, skills and abilities (Muller *et al.,* 2013:276-79).

Research has indicated that all too often there is an expectation that a nurse who is clinically competent will also be competent in management, even without formal training and/or adequate skills and expertise (Connelly *et al.,* 2003:208; Donaher *et al.,* 2007:277; Paliadelis *et al.,* 2007:830; Douglas, 2008:765; Espinoza *et al.,* 2009:329; McCallin & Frankson, 2010:319; Nel *et al.,* 2011:2; Patrician *et al.,* 2012:461; Kerridge, 2013:16; Daire *et al.,* 2014:6; Roche *et al.,* 2015:61). However, research shows that the best clinicians do not necessarily make good managers, as managing people requires special qualifications and training just as performing clinical bedside nursing requires special qualifications and training (McCallin & Frankson, 2010:319; Tuazan, 2009:52). This focus on clinical expertise often renders staff and top managers blind for a deficiency in the talents and strengths needed for leading and managing people in the complex healthcare structures of today (Doria, 2015:78; Espinoza *et al.,* 2009:330; Thompson & Fairchild, 2013:10).

A study by Paliadelis (2005:6) explored the perceptions of NUMs about the education and support they received in their role, and found that NUMs believed they had been promoted on the basis of their clinical expertise, felt unprepared for the managerial and administrative aspects of their role, continued to identify as nurses rather than managers, and found that the role isolated them from their former peers. Similarly, Sherman *et al*. (2007:85), when exploring viewpoints on the nurse manager role, had many nurse managers describing themselves as “having fallen into the position through assuming it as an interim assignment” or being appointed after they “were asked to apply for the position” by their supervisors or staff they worked with.

NUM positions that remain vacant for too long often place excessive strain on the system and organisations may feel pressured to fill the vacancy (Thompson & Fairchild, 2013:10). This creates even more of a temptation to join in the chorus when the staff start nudging one of their peers to apply for that open NUM position, or for aspiring staff to move up into a management role. This might be due to the fact that nurses develop trust and respect for other nurses within their team, often based on their technical skills at the bedside. Management education therefore needs to respond to the pressure of clinical nurse managers assuming more administrative

responsibilities to support effective management (Dignam *et al.,* 2012:67; Sherman & Pross 2010). Table 2-4 below gives an overview of opportunities and threats for selection into NUM positions.

Table 2-4: Opportunities and threats for selection into NUM positions

Opportunities	Threats
Selection into NUM positions	
4. NUMs are usually recruited, selected and appointed through internal processes within the organisation.	9.NUMs are selected into management positions based on clinical expertise
	10.The internal process of NUM recruitment, selection and appointment into the role often finds them unprepared

2.7 Succession planning

Healthcare organisations must have formal programmes in place to prepare aspiring nursing staff for management positions. Sherman and Pros (2010) reported that deliberate development of future nurse leaders is lacking. Formal succession planning and mentoring to get professional nurses ready to move into management roles when an opportunity arises would be ideal to reduce the challenge of clinical experts being promoted to management positions (Manning *et al.,* 2015:59). When exploring nurse managers' perspectives on the contemporary nurse manager role, Sherman *et al.* (2007:93) found a lack of career planning for becoming a nurse manager, a need for formal orientation and mentorship early in the transition from clinical practice to management, and a need for succession planning for the nurse manager role. McCallin *et al.* (2009:41) concluded that leadership stability, service continuity, job satisfaction, and PPEs for both staff and patients are compromised in the absence of succession planning.

Although succession planning is a strategy to ensure continued organisational leadership (Titzer & Shirey, 2013:155), nurses do not appear to be very interested in nursing management roles (Laschinger *et al.,* 2013:217). Tipton (2015:37) stated that "there are very few convincing arguments that can change the attitudes of those who have seen the struggles of their predecessors". This raises a global concern about nursing leadership and management capacity in the future. A survey among Canadian nurses on personal and situational predictors of aspirations to management found that, of 1241 nurses, only 24.0% (n = 298) indicated that they were either interested or very interested in a unit management role (Laschinger *et al.,* 2013:223). Although nurses reported moderately high levels of self-worth and were fairly confident of their leadership capabilities, they did not report particularly conscious focus on career planning and were neutral about the possibility of continuing their education to qualify for management

positions. The opportunity to motivate others and higher salaries were seen as intrinsic to the position, and motivators for management roles were identified as extrinsic factors. Most nurses (75%; n=931) indicated that they had access to mentoring, although this had only had a moderate impact on their career progression.

Wong *et al*. (2013b:239) found that nurses did not perceive the rewards associated with management to be great enough to outweigh their concerns about management. Nurses associated the following organisational challenges with assuming managerial positions: large spans of control, unrealistic expectations of work performance from top management, and inadequate salaries. The following negative perceptions of the manager role itself were stated: "heavy workloads and multiple pressures, perceived lack of support and educational incentives, large span of control, job insecurity, limited decision-making authority and lack of understanding of the role" (Wong *et al.,* 2013b:239). Lack of understanding of the role and job insecurity predominated. A study conducted by Sherman *et al.* (2015:8-9) examined the factors that lead Generation Y nurses to consider or reject nursing leadership roles, and their findings were similar to that of Bulmer (2013), Laschinger *et al.* (2013), and Wong *et al.* (2013b). Table 2-5 outlines the opportunities and threats associated with succession planning for NUMs.

Table 2-5: Opportunities and threats for succession planning for NUMs

Opportunities	Threats
Succession planning for NUMs	
5.Formal succession planning and mentoring will prepare professional nurses for management roles	11.There is no career and succession planning for NUMs
6.Higher salary and the opportunity to motivate others are regarded as motivation to pursue management positions	12.There is no formal orientation and mentoring early in the NUM role transition
	13.Novice nurses do not aspire to accept management positions

2.8 Roles and responsibilities of the NUM

The DPSA in the Occupation Specific Dispensation (OSD) for nurses (DPSA, 2007), states that the responsibilities of the NUM are "to ensure that holistic nursing care service is delivered to patients in a cost effective, efficient and equitable manner by the unit and to ensure compliance to professional and ethical practice". It is through this job purpose that the job description of the NUM includes different roles and responsibilities in the form of main objectives or key performance areas (KPAs) together with their associated key activities. These key roles and

responsibilities have been divided into the responsibilities of the NUM to the patients, staff, and the organisation. See Table 2-6 below for an illustration, which is followed by a discussion.

Table 2-6: Performance standards and indicators

MAIN OBJECTIVES (measurable outputs/end results)	INDICATORS (indicating how well standards were achieved)
Responsibilities to patients	
1. Supervise and ensure the provision of effective and efficient patient care through adequate nursing care	• Patient reports • Norms and standards guidelines • Nursing care monitoring tool • Treatment and prescription plan • Health research identification report • Audited clinical records • Patient care communication plan • Nursing care plan • Client satisfaction survey reports • Improvement plan
2. Coordinate and monitor the implementation of nursing care plans and evaluation thereof	• Confidential patient reports • Nursing care intervention measures • Continuity of healthcare plan • Continuity of healthcare interventions and progress report • Continuity of healthcare assessment report • Treatment evaluation report
3. Provide relevant health information to healthcare users to assist in achieving optimal health care and rehabilitation of patients	• Health promotion programme and report • Capacity-building programme • Attendance register and reports of meetings • Circulars • Professional and nursing care guidelines • Quality care principles • Student assessment programmes and reports
Responsibilities to staff	
4. Develop and maintain constructive working relationships with nursing and other stakeholders (i.e. inter-professional, inter-sectoral and multi-disciplinary teamwork)	• Attendance register and reports of meetings • Nursing professional guidelines • Peer review reports • Meeting schedules and resolutions • Health improvement plan • Disaster management plan • Multi-disciplinary committee • Quality assurance report • Quality assurance monitoring indicators and tools
Responsibilities towards the organisation	
5. Participate in the analysis, formulation and implementation of nursing guidelines, practices, standards and procedures	• Update and review patient care standards, policies and procedures • Acts/prescripts compliance/ adherence report • Quality improvement plan • Nursing intervention measures

MAIN OBJECTIVES (measurable outputs/end results)	INDICATORS (indicating how well standards were achieved)
	• Nursing intervention assessment report • Nursing healthcare management plan • Standards of Practice and Scope of Practice • Policies and Legislation • Policies, Protocols and Guidelines • Patient Rights Charter • Infection control procedures • Occupational and safety measures
6. Manage and monitor proper utilisation of human, financial and physical resources	• Staffing needs analysis report • Monthly allocation lists • Approved duty schedules, attendance/time registers • Leave schedules • Performance instrument reviews • Personal Development Plan • Annual leave roster • Performance evaluation reports • Individual SANC registration receipts • Skills development reports • Workplace discipline report and disciplinary code & procedure • Delegation letters • Strategic and business plans • Budget report • Monthly expenditure report • Availability of material resources • Inventory registers • Commitment registers

Source: Public Service Act (103 of 1994)

The NUM is expected to supervise effective and efficient patient care. According to The American Organization of Nurse Executives (AONE, 2011), “exceptionally competent leadership is essential to ensure outstanding patient care”. Therefore, the NUM is required to be a competent leader as it indirectly impacts on quality patient care (Li & Wivatvanit, 2016:355; Sherman *et al.,* 2007:93). The NUM is responsible for making sure that nursing care plans are developed, implemented and reviewed and that nursing care intervention measures and progress reports are documented. To achieve this, the NUM needs to be actively involved in patient care and liaise with other members of the multidisciplinary healthcare team to make sure that patient care continues and is never interrupted. Patients should also be actively engaged at various levels (DPSA, 2007).

The NUM also has to take part in health promotion and illness prevention initiatives and assist in their evaluation. The NUM is therefore expected to conduct nursing staff meetings to disseminate information such as new developments on nursing, policies, circulars, or any health information

that will capacitate nursing staff to assist in optimal health or rehabilitation of patients. Communication should be in a manner that will empower nursing staff and contribute to the education and professional development of students in order to contribute to the nursing care of individuals, groups and communities (DPSA, 2007).

Furthermore, the NUM is responsible for analysing staffing needs and developing plans to meet those needs, as well as allocating nursing staff in the unit and implementing a Performance Management and Development System (PMDS). The NUM also has to explore opportunities for professional development and ensure training and development of staff. The NUM also has to deal with grievances and employment relations issues in terms of the accepted policies/procedures, for example management of workplace discipline. In addition, the NUM compiles and controls duty rosters, leave schedules, and attendance registers. The NUM has to monitor and ensure that all nurses are licensed to practice, and delegate activities according to abilities and scope of practice of different categories of nursing staff (DPSA, 2007).

The NUM is expected to collaborate with members of the health and social care teams and participate in decision-making pertaining to healthcare delivery. It is important for the NUM to also consult within the multi-disciplinary health teams, organisations, and special interest groups when dealing with community health issues and needs. It is the responsibility of the NUM to disseminate information on epidemics, nutritional diseases, maternal and infant morbidity and mortality, and other common diseases; and to participate in multi-disciplinary quality assurance task teams and in peer reviews based on the agreed upon quality assurance monitoring indicators and tools (DPSA, 2007).

The NUM is also expected to implement quality improvement plans; manage nursing care activities according to the Standards and Scope of Practice, and act upon breaching of laws relating to nursing practice and professional code of conduct, as well as the Nursing Act and Regulations, and the Code of Ethics and Professional Practice of the South African Nursing Council. Procedures that maintain effective infection control and occupational and safety measures in accordance with Occupational Health & Safety Legislation should also be implemented by the NUM (DPSA, 2007). After all policies, protocols and guidelines have been formulated, the NUM must create awareness to make sure that they are known and well understood, and that there is compliance and adherence to the relevant acts/prescripts applicable to the nursing environment.

The NUM also participates in the development of business plans in line with the strategic plans and promote ways of containing healthcare costs without compromising standards. Motivating for relevant material resources, and managing and controlling assets are also some of the

responsibilities of the NUM. Finally, the NUM has to ensure proper implementation of the budget by monitoring, projecting and reporting expenditure, and ensuring that spending is maximised in line with strategic objectives (DPSA, 2007).

The above-mentioned responsibilities have been weighted and allocated percentages for each of the main objectives as follows:

- Supervise and ensure the provision of effective and efficient patient care through adequate nursing care (20%);
- Coordinate and monitor the implementation of nursing care plans and evaluation thereof (15%);
- Provide relevant health information to healthcare users to assist in achieving optimal health care and rehabilitation of patients (5%);
- Maintain constructive working relationships with nursing and other stakeholders (i.e. inter-professional, inter-sectoral and multi-disciplinary teamwork) (10%);
- Participate in the analysis, formulation and implementation of nursing guidelines, practices, standards and procedures (20%), and
- Manage and monitor proper utilisation of human, financial and physical resources (30%).

A brief review of the main objectives of the responsibilities of the NUM shows that the responsibilities to patients covers three of the six main objectives, although the percentage allocated to the main objectives is more for administrative and not patient care activities. In an observation study by Armstrong *et al.* (2015:105), NUMs observed were found to be spending more of their time on direct patient care instead of management activities. Similarly, Drach-Zahavy and Dagan (2002:23) revealed that head nurses spent a large proportion of their time in clinical practice.

The expected roles and responsibilities of the NUM have been undergoing changes over several decades. There is an indication that NUMs are no longer expected to be clinicians providing clinical care and clinical leadership, but are expected to expand and blend the roles of leader and manager, and still be a clinician. Although the need for NUMs to assume a blended role is evident in literature, there is no consensus on what this role should entail or how the clinical and managerial should be balanced. This debate has been going on for decades, both internationally and nationally. The present roles of NUMs are in contrast with the traditional roles, where NUMs were only expected to supervise and control. NUMs are now expected to lead and manage

change, manage people, finances, information, and the work environment, engage internal and external customers and facilitate the development of staff (Sherman & Pross, 2010). Table 2-7 outlines opportunities and threats in the roles and responsibilities of NUMs

Table 2-7: Opportunities and threats in the roles and responsibilities of NUMs

Opportunities	Threats
Roles and responsibilities of NUMs	
	14. Role of NUM is focused mostly on clinical nursing rather than nursing management

2.9 Competence defined

The concept of competence was introduced by White (1959). Competence, as defined by White (1959:297), refers to an organism's ability to interact effectively with its environment, and should therefore be considered as having a motivational component. Boyatzis (1982) defined competencies as characteristics that are causally related to effective and/or superior performance in a job. Boyatzis further identified competencies as relevant to performance and effectiveness in terms of job demands, individual competencies, and organisational environment. McClelland (1973:7) suggested that competencies should be adopted as a more useful approach to aptitude measurement. Spencer and Spencer (1993) reiterated McClelland's view and defined competency as an "underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance" in a job or situation.

In health and nursing, competency includes knowledge and psychomotor abilities, attitudes, and cognitive skills such as problem-solving (Benner, 1982a:304; MooreMei *et al.,* 2002:316; Fernandez *et al.,* 2012:361; American Nurses Association, 2013:3). The SANC defines competencies as a combination of knowledge, skills, judgement, attitudes, values, capacity and abilities that underpin effective performance in a profession. This is consistent with the Public Service Regulations of South Africa (DPSA, 2001:8) that defines 'competencies' as the blend of knowledge, skills, behaviour and aptitude that a person can apply in the work environment, which indicates the ability to meet the requirements of a specific job.

According to MooreMei *et al.* (2002:316) and Schroeter (2008:2), competence is required before achieving competency, while competencies are attributes underpinning competence. One can refer to how competent an individual is overall or their level of competency in one specific area (Chase 2010:4-5). Chase (1994) and Duffield (1994) used the term competencies and skills as synonyms to signify not only task performance but the underlying knowledge and attitudes needed to practice or perform a task. Comprehensively categorised, competencies are skills. This

is also supported by Katz (1955:36). The interchangeable use of competency and skill has also been noted by Donaher (2004), and Gunawan and Aungsuroch (2017:2). Competence is also defined in the theoretical framework of the study (see Section 1 8.3.1).

2.9.1 Competency profile of a NUM

In South Africa, government has introduced the Occupation Specific Dispensation (OSD) according to Resolution 3 of 2007, which is a financial incentive strategy to attract, motivate and retain health professionals in the public health sector. The competency profile outlines knowledge, skills, and personal and experiential competency required of the NUM. Table 2-8 below outlines the competency profile of the NUM.

Table 2-8: Competency profile of the NUM

KNOWLEDGE	SKILLS	PERSONAL	EXPERIENTIAL COMPETENCY
Thorough knowledge of nursing care processes and procedures, nursing statutes, and other relevant legal frameworks such as: Nursing Act, Health Act, Occupational Health and Safety Act, Patient Rights Charter, Batho-Pele principles, etc.	Operational Management skills Ability to interact with diverse stakeholders and healthcare users and givers. Good communication skills Report-writing skills Facilitation skills Co-ordination skills Liaison skills Networking Problem-solving skills Information management Planning and organising skills Computer literacy skills	Responsive Pro-active Professional Accurate Flexible Shows initiative Cooperative Team player Supportive Assertive	Basic R425 qualification i.e. diploma/degree in nursing or equivalent qualification that allows registration with the South African Nursing Council as a Professional Nurse Current registration with the South African Nursing Council (SANC) A minimum of 7 years appropriate/recognisable experience in nursing after registration as Professional Nurse with the SANC in General Nursing
Knowledge of HR policies such as: Skills Development Act, Public Service Regulations, Labour Relations Act, Disciplinary Code and Procedure,	People management Conflict management Change management Knowledge management Planning and organizing		Knowledge of the management of people, financial management and conflict management

KNOWLEDGE	SKILLS	PERSONAL	EXPERIENTIAL COMPETENCY
Grievance Procedure			

Source: DPSA, South Africa (2007)

Although there is regulated education for nurse managers, the Department of Public Service and Administration (DPSA), in the OSD for nurses (DPSA, 2007), does not set any nursing management qualification as requirement for the position of operational (nursing unit) manager (see subsection 1.3.3). A review of advertisements for NUM posts in South Africa for the period 2012 to 2018, revealed that provinces did not require a nursing management qualification for the position; only one province had indicated experience – but not a management qualification – as requirement. However, all advertisements require a qualification in clinical nursing science programmes leading to registration of additional qualifications, for example, advanced midwifery, intensive care unit, paediatric nursing, operating theatre, etc. This might be an indication of the need for clinical expertise in NUMs in South Africa. Figure 2-1 below provides examples of NUM positions as advertised by different provinces in South Africa.

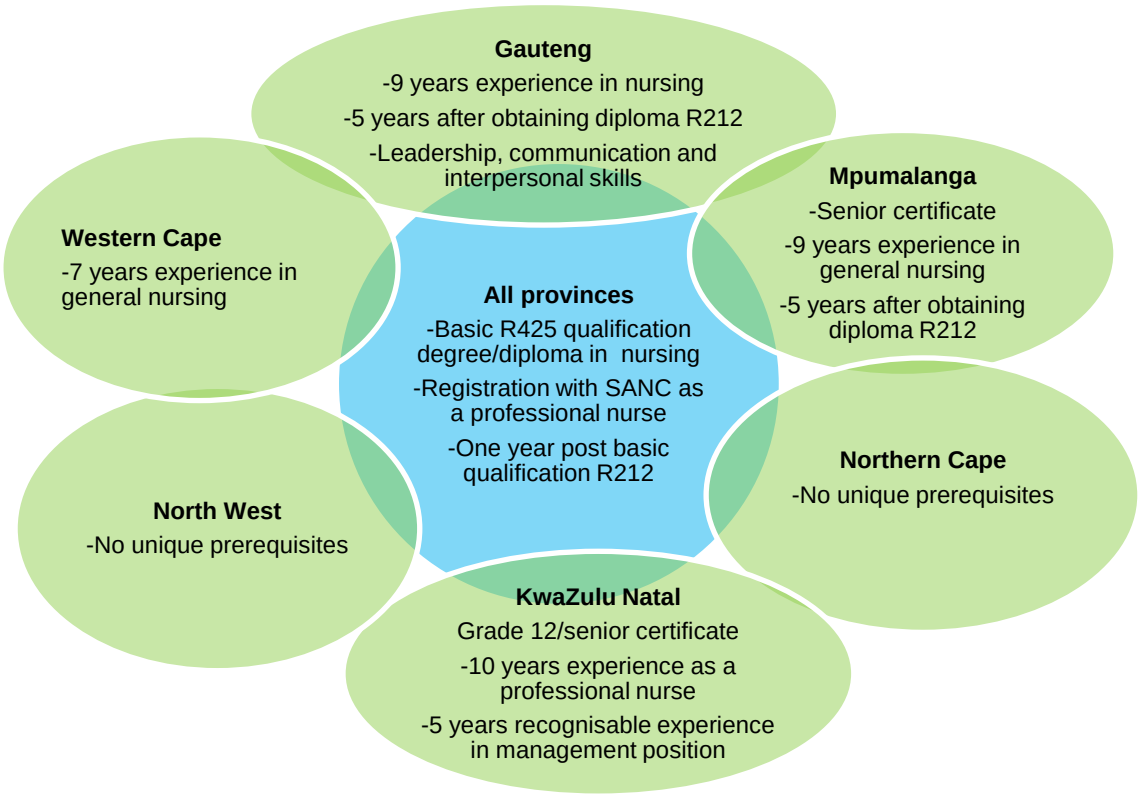

Figure 2-1: Advertisements of NUM positions

The lack of required management qualifications raises concerns of why it is not a requirement for an NUM position and whether the lack of management training and/or qualification will not make it difficult for NUMs to effectively perform their management duties (see Section 1.3 and 2.7).

Furthermore, it creates an inconsistency with the NUM competency profile and performance standards that clearly state the expectation to manage and monitor proper utilisation of human, financial and physical resources; some of the competency profile requirements are only taught in depth in management training. Table 2-9 below outlines opportunities and threats in the competency profile of NUMs.

Table 2-9: Opportunities and threats in the competency profile of NUMs

Opportunities	Threats
Competency profile of NUMs	
	15.High competency is required from NUMs but without requirement for formal management training

2.10 Nurse manager competency research

For NUM competency research, the literature review commences with international literature. There is minimal literature on competencies of NUMs in South Africa; therefore, the review includes all literature found on nursing management and general healthcare management. The review is presented chronologically. Competencies identified in studies were either from survey instruments or themes identified in qualitative studies. Table 2-10 below outlines NUM competency research.

Table 2-10: Nurse manager competency research

Author and date	Aim	Method	Findings	Competencies identified in the studies
Duffield 1991a	To evaluate the use of professional literature in maintaining identified competencies for first-line nurse managers	Two rounds of the Delphi method with 16 expert panel members representing nursing academics, representatives of professional and industrial nursing bodies, representatives of nursing and health service management	Literature shows little comparison between the frequencies at which competencies are mentioned with those deemed important for the role of first-line nurse managers by panel members, which implies that the use of literature as sole method	Functional management Staff management Patient care management Leadership

Author and date	Aim	Method	Findings	Competencies identified in the studies
		professional bodies	for maintaining competence should not be advocated to maintain competence for first-line managers.	
Nistler 1992	To identify self-perceived skills and competencies of selected newly appointed middle managers	A descriptive study utilising a questionnaire instrument on self-identified skills and competencies for first-time, first-line nurse managers in the 0-3 years range	There were some definite areas where the first time, first-line manager could benefit from more specific educational preparation.	Patient care management Human resource management Operational management
Duffield 1994	To identify roles expected of first line managers using Katz' Conceptual framework	Delphi technique with a panel of 16 members with 100% response rate. Panel of experts: Nurse managers, nurse academics and representatives from professional and industrial organisations	Findings revealed high percentage of technical skills consistent with Katz' belief that technical skills are mostly relevant for first-line management.	Technical skills Human skills Conceptual skills
Chase 1994	To describe perceived competencies of the nurse manager from the perspective of nurse managers themselves.	A descriptive study utilizing a questionnaire instrument with 53 competency statements on two scales	Human and Leadership skills were ranked highest in perceived importance while Technical, Conceptual and Financial skills were ranked the lowest in perceived importance.	Technical, Human, Conceptual, Leadership and Financial skills
Drach-Zahavy and Dagan 2002	To depict a picture of what	Semi- structured observation was	The largest proportion of the	Clinical care

Author and date	Aim	Method	Findings	Competencies identified in the studies
	head nurses do (the essence of the head nurse function)	used as a data collection method. Each head nurse was observed for an average of six hours on two different days at two different times of the day.	head nurses' time was occupied by "clinical care"- almost 41% in primary nursing of patients, followed by co-ordination, operations, leadership, personnel management and quality improvement.	System co-ordination Operations Leadership Personnel management Quality improvement
Mathena 2002	To report variables key to the success of the nurse manager role and areas of education that may influence that success	Nurse managers at five Harvard-affiliated hospitals. A survey questionnaire with 71 skill sets in 8 categories on a 5-point Likert scale in two categories: perceived importance for a successful manager and need for professional development in skill set	Interpersonal, staff development and general skills were rated as most important for success. Technical was rated the least important for success. Financial, technical and general skills were rated as important areas in which professional development was needed. Clinical skills were rated as least important for further education or development.	Interpersonal Clinical/Technical Financial Staff development Resource management Political & General skills
Care and Udod, 2003	To explore and develop a profile of the current competencies of first-line managers in a western	A descriptive, exploratory study of nurse managers using combined quantitative and qualitative approach with a	Human and Leadership skills were ranked the highest in perceived importance, with communication as the most	Technical, Human, Conceptual, Leadership and Financial skills

Author and date	Aim	Method	Findings	Competencies identified in the studies
	Canadian Province	third component of data collection through a Critical Incident Technique (CIT) for in-depth exploration of specific competencies. A survey questionnaire with 53 items.	important in the human skills for knowledge and understanding and ability to implement. Technical, Conceptual and Financial skills were ranked the lowest in perceived importance, with nursing and administrative theories the lowest in conceptual and cost benefit analysis the lowest in financial skills	
Connelly *et al.,* 2003	A qualitative study to identify charge nurse competencies	Nurses were interviewed to determine the competencies for charge nurse role. In order to provide a starting point for the semi-structured, open-ended interview questions Katz's (1955) three broad categories of management skills Technical, Human, and Conceptual were used to form initial interview questions.	54 competencies identified grouped into clinical/technical , critical thinking, organisational and human relation skills Identified competencies reflect the importance of charge nurses in hospitals and outline specific leadership skills that charge nurses either possess or need to develop to be effective in the role.	Clinical/Technic al Critical thinking Organisational Human relation skills
Kleinman 2003	Perception of nurse managers and nurse executives regarding	Survey questionnaire with 22 items	The groups agreed about competencies required for nursing	Staffing /scheduling Management Human resource

Author and date	Aim	Method	Findings	Competencies identified in the studies
	competencies required for nursing management roles and the educational preparation required		management roles which were, staffing, human resource management and finance but not educational preparation. Nurse managers perceived high level qualifications like Doctor of Philosophy important for nursing management role, but executives did not.	Finance
DeOnna 2006	To develop and validate the psychometric properties of the Nurse Manager Competency Inventory (NMCI), an instrument developed for the purpose of identifying the competencies of first-line nurse managers employed in the hospital setting linked to job performance and staff retention	The sample (n=527) consisted of nurse managers from first-line, mid, and executive level positions	Findings revealed limited support for the NMCI. Nurse managers supervising less than ten employees scored less on the developed instrument than nurse managers supervising more employees. NMCI recommended as tool for use in human resources, leadership and education.	Promote staff retention Supervisory responsibilities Conduct daily operations.
Donaher, *et al*. 2007	To develop and test the psychometric properties of the Human Capital Competencies Inventory (HCCI), an	An integrative review of primary research describing essential practice activities of	Psychometric testing of the HCCI revealed adequate internal consistency, reliability, and content validity.	Self-development Recruitment Developing others Utilisation

Author and date	Aim	Method	Findings	Competencies identified in the studies
	instrument designed to be used by new and aspiring nurse managers to self-assess human capital competencies	nurse managers in relation to managing Human capital was used to deductively derive content domain and generate items for HCCI.	Respondents in the sample often engaged in activities listed in the HCCI. As a criterion-referenced measure, the HCCI behaved as expected.	Retention
Sherman *et al.,* 2007	To explore the viewpoints of 120 nurse manager study participants on the contemporary nurse manager role and to gain perspective on the critical leadership skills and competencies to build a nursing leadership competency model	A grounded theory methodology was used to capture the perspectives of the nurse managers interviewed about their role. Themes and concepts that emerged from the data were coded into competency categories that formed a framework for the development of a competency model	Six competency categories emerged from the research findings to form a nursing leadership competency model as identified in next column. Two major themes were also identified: nurse manager role as a career choice and the stressors and challenges of the role.	Personal mastery Interpersonal effectiveness Financial management Human resource management Caring Systems thinking
Ten Haaf 2007	To explore the correlation of the five domains of Katz's Conceptual framework (Technical, Human, Conceptual, Leadership and Financial) of nurse manager competencies and staff, and patient outcomes	Cross-sectional survey design utilising the NMCI to measure self-assessed competencies of nurse managers in Technical, Human, Conceptual, Leadership and financial skills and look for relationships between these elements and the outcome of	Findings demonstrated that a significant relationship existed between patient satisfaction with pain control and the nurse manager competency domains of Conceptual, Human, Leadership and Financial. There were negative correlations	Technical, Human, Conceptual, Leadership and Financial skills

Author and date	Aim	Method	Findings	Competencies identified in the studies
		staff satisfaction, patient satisfaction with pain control, patient falls, and medication errors	between patient falls and the Human and Conceptual nurse manager competency domains. Tests for correlations between staff turnover rate and nurse manager competencies were not significant for the total sample.	
Skytt *et al.,* 2008	To study the perception of first-line nurse managers, registered nurses, assistant nurses and head of departments on the first-line nurse manager's current and desired roles	Interviews with five first-line managers, five registered nurses, five assistant nurses and one head of department were used. Qualitative content analysis was used to analyse the transcribed text	Four themes for desired roles were identified: prioritize and develop day-to-day work and time for staff, more authority and focus on day-to-day work in the ward, giving priority to staff and patients by being present and focusing on development and co-operation.	Leader Liaison Entrepreneur Resource allocator
Chase 2010	To pinpoint the current knowledge and ability competencies important to the pivotal role of nurse manager based on the refinement of an instrument previously developed by the researcher	A descriptive study focused on measuring nurse manager competency ratings using a national web-based survey to collect information from hospital nurse managers in the United States who were members of	The sample perceived both knowledge of, and ability to carry out effective communication, effective staffing strategies, retention strategies and effective discipline to be the most significant skills	Technical, Human, Conceptual, Leadership and Financial skills

Author and date	Aim	Method	Findings	Competencies identified in the studies
		AONE via a self-administered competency instrument	necessary for nurse managers.	
Furukawa and Cunha 2011	To identify the profile and competencies of nurse managers of accredited hospitals from their perspective and that of their hierarchical superiors.	Descriptive study with a quantitative approach Two questionnaires applied to 24 professionals	The profile and competencies of most of the nurse managers were compatible with the expectation of their superiors. Eleven competencies were evaluated.	Management of resources, communication, teamwork, process management, decision-making, focus on patients, acquisition of knowledge, entrepreneurship, Leadership, negotiation, and strategic view
Li and Wivatvanit 2016	To explore leadership competencies of first-line managers in Shanghai, China.	Three-round Delphi technique with three rounds of questionnaires consisted of a semi-open-ended form questionnaire, second and third round questionnaires with a 5-point Likert rating scale. A total of 20 questionnaires were returned during the three rounds, representing a response rate of 100%.	60 items under the 8 components listed in next column achieved consensus among the 20 experts. Forty-three items had the highest scores of consensus level	Personal mastery Systems thinking Communication and relationship building Change management Human resource management Financial management Information technology Knowledge of the healthcare environment
Luo *et al.,* 2016	To identify core competencies needed in the transition of nurse managers on the way to excellence	A phenomenological approach that included in-depth interviews with 12 nurse managers. Four	In order to fulfil their clinical responsibilities, nurse managers needed to develop communication	Management skills Personal mastery

Author and date	Aim	Method	Findings	Competencies identified in the studies
		themes were identified from data	and stress management skills.	
National studies				
Belemu 2000	To identify management skills, middle managers require to manage the organisational units effectively and to develop an integrated model for management skills	A survey of clinical professional managers (nurses, doctors and paramedics) in charge of departments with six competency statements and two sections, *knowledge and understanding* and *ability to implement*	A wide variety of skills were regarded by middle managers as important to performance of their managerial roles. technical, human and leadership skills ranked high while financial and computer skills ranked lower	General management Technical, Human Leadership, Financial Computer
Greathead 2000	To create an understanding of the new and expanded role and functions of first-line managers of CHCs within a changed environment	Three-round Delphi method with a panel of 24 senior nurse managers. The panelists were drawn from the National, Provincial, Local Authority Health Departments and academic institutions involved in nurse management training.	A wide range of competencies for first-line nurse manager positions were incorporated for CHCs. A final list of 173 competencies was compiled from the study and encompassed four categories listed in next column	Patient care management Functional management HR management Leadership
Pillay 2008	To ascertain the skills and competency levels of hospital managers and to determine whether there are any significant differences in competency levels between	A self-administered questionnaire among hospital managers to rate proficiency with seven key functions	Managers in the private sector perceived themselves to be significantly more competent in competencies in next column than their public sector colleagues, aside from	Delivery of healthcare, Planning, Organising, Leading, and controlling Legal and ethical issues Self-management

Author and date	Aim	Method	Findings	Competencies identified in the studies
	managers in private and public hospitals.		delivery of healthcare	
Zechner 2008	To identify the gaps between required and existing management skills of senior nurse managers in private and public hospitals.	A comparative study of nurse managers' self-assessment of their managerial competencies. The survey instrument was based on prior research of hospital managers' competencies in South Africa by Pillay (2008)	Nurse managers in the public and private healthcare sectors lack managerial competencies in all relevant management fields identified in next column. The gap was much larger in the public sector than in the private sector	Delivery of healthcare, Planning, organising, Leading and control Legal and ethical issues Self-management
Pillay 2009a	Perceptions of senior nursing managers' competencies in public and private health sectors and training requirements.	A cross-sectional self-administered survey of senior managers in public and private sectors. 420 nursing managers were surveyed of which 215 were senior nursing managers in public hospitals and 205 were senior nursing managers in private hospitals. A list of 51 management competency items were rated on a 5-point Likert-type scale.	There is a significant disparity in perceived management capacity between the public and private sectors and also identified the areas in which the lack of knowledge or skills is most significant for each of the sectors.	Delivery of healthcare Planning, organizing Leading and control Legal and ethical issues Self-management
Smal 2013	To explore healthcare unit managers' views of their role as	Qualitative, exploratory, descriptive and contextual study	NUMs experience workforce challenges, with	Planning and organising

Author and date	Aim	Method	Findings	Competencies identified in the studies
	leader-managers, and to determine the challenges they experience and the skills they need to be effective leader-managers in the 21st century.	Semi-structured interviews were conducted with eight NUMs from a selected public hospital. Three themes emerged during data analysis: attributes skills and challenges with theme 2 having 11 categories.	staff shortages being a serious concern; personal challenges, such as an increased workload and role diversity; and organisational challenges with regard to the management of equipment. NUMs identified their roles according to competencies identified in next column	Change management skills Conflict management Staff development Communication and budgeting skills Interpersonal relationship skills Participative leadership skills Computer literacy and Motivation skills
Armstrong *et al.,* 2015	To examine whether the activities of NUMs facilitate the provision of quality patient care in South African hospitals	A cross-sectional descriptive study conducted in 9 randomly selected hospitals (6 public and 3 private in 2 South African provinces). Observations complemented by semi-structured interviews analysed using thematic content analysis	NUMs spent their time according to the following categories: 25.8% on direct patient care, 16% on hospital administration, 14% on patient administration, 3.6% on education, 13.4% on support and communication, 3.9% on managing stock, 11.5% on staff management, and 11.8% on other activities, like breaks and rests.	Patient care, Hospital administration Patient administration Communication and support Education, Staff management Equipment and stock management Miscellaneous (other)

Table 2-10 above indicates NUM competency research. From the above table it is clear that the NMCI adequately represents all the competencies required by an NUM. Content analysis was performed to demonstrate the Number of times each subscale is mentioned in national and

international literature. Figure 2-2 below outlines a combined summary of studies that mentioned each of the subscales of the NMCI in the NUM competency research.

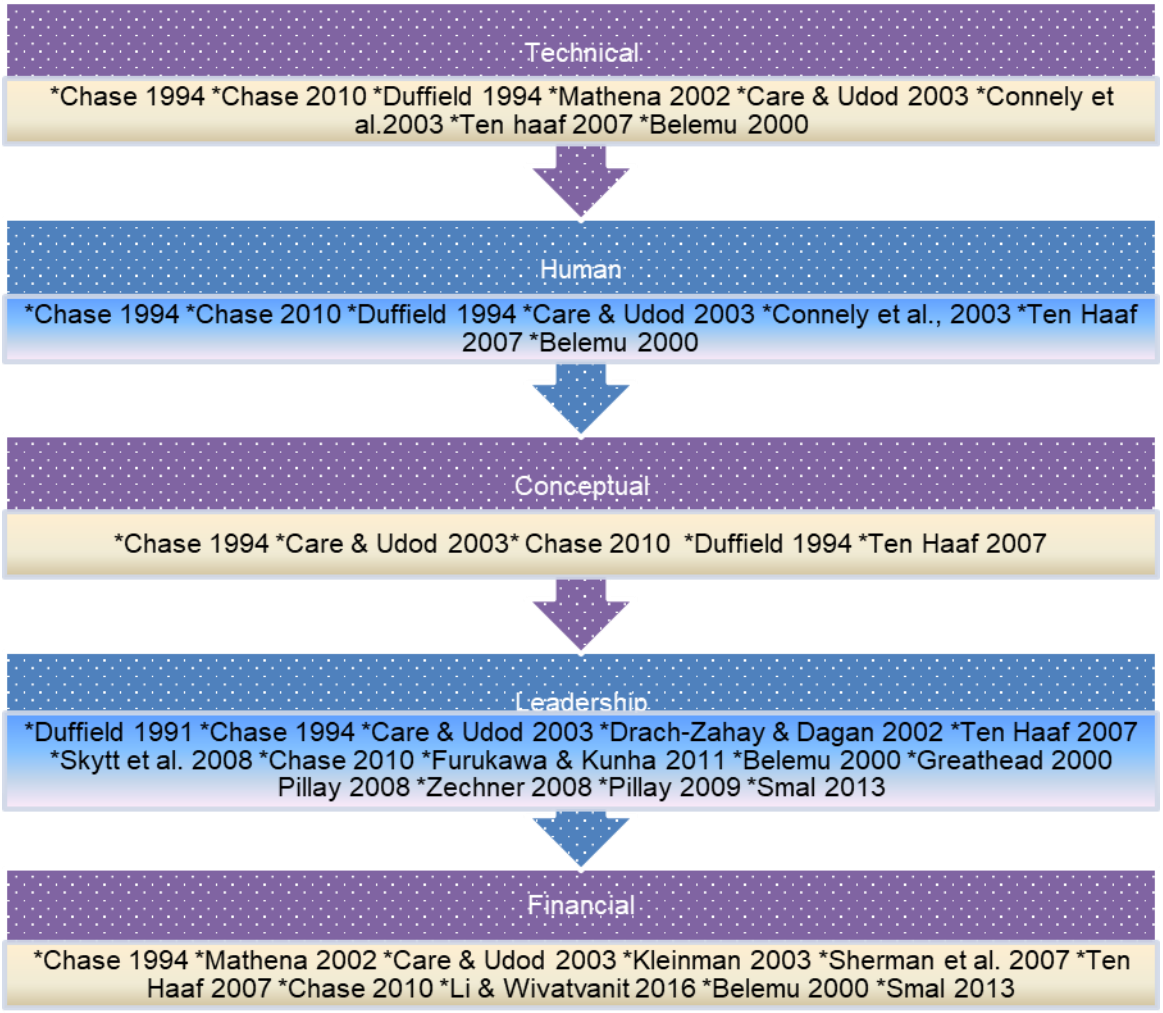

Figure 2-2: Combined summary of NUM research competencies

The Technical subscale was mentioned eight times, the Human subscale seven times, the Conceptual subscale five times, Leadership 15 times, and the Financial subscale was mentioned 10 times. The Leadership subscale was most frequently mentioned, which indicates its importance and value in nursing unit management. The Financial subscale followed, indicating the importance of financial management for an NUM, with the Conceptual subscale being mentioned least. This is consistent with Katz's (1955) conceptual framework where the conceptual skills are associated with top level management and not functional management. Other competency items not listed under the NMCI subscales have also been identified in the NUM competency research. Table 2-11 below outlines additional competency items found in literature, but not listed under the NMCI competency statements although they are relevant and associated with NMCI subscales. These competencies were categorised where they best fit,

using the five subscales of the NMCI according to relevancy. Items mentioned several times are only identified once.

Table 2-11: Additional competency items identified per NMCI subscales

Subscales	Competency Items
Technical	Patient care management, clinical care, patient care, information technology, computer, delivery of healthcare, planning and computer literacy,
Human	Staff management, personnel management, staffing and scheduling, interpersonal effectiveness and relationships, relationship building, and support,
Conceptual	Political, systems thinking, strategic view, system coordination and knowledge of the healthcare environment
Leadership	All competency items identified were included in the NMCI
Financial	Equipment and stock management

2.11 Integration of literature

Reviewing the competency research done in the international arena indicates that most NUM competency research identified competencies through NUM self-assessment (Nistler 1992; Chase 1994; Mathena 2002; Care and Udod, 2003; Sherman *et al.,* 2007; Donaher *et al.,* 2007; Chase 2010; Luo *et al.,* 2016) and the NUM self-assessment and the supervisor (NSM) assessment (Kleinman 2003; DeOnna 2006; Furukawa & Cunha 2011). In other studies, competencies required for NUMs were identified by supervisors alone (Duffield 1991a; Duffield 1994; Li & Wivatvanit 2016) or nursing staff (Connelly *et al.,* 2003) without the NUMs themselves being part of the studies. Only one study linked competencies of NUMs to patient and staff outcomes (Ten Haaf 2007) and one study applied 360° feedback, qualitatively evaluating first-line managers from the perspective of first-line managers themselves, registered nurses, assistant nurses and heads of departments (Skytt *et al.,* 2008).

In South Africa, few competency studies were identified. Competency studies identified were for middle or senior management (Belemu, 2000) and others were comparative studies between senior managers in private and public sectors (Pillay, 2008; Zechner, 2008; Pillay, 2009a). Other studies were conducted in community health centres (Greathead, 2000) - either in terms of

challenges (Smal, 2013) or activities of NUMs (Armstrong *et al.,* 2015). No study could be found that also utilised multi-source feedback to evaluate competencies of NUMs.

DeOnna's (2006:101) recommendations for further study were to obtain additional feedback and insight from multiple stakeholders – including nursing staff – and that this feedback should be scrutinised to develop an understanding of the skill set of successful nurse managers. Schmalenberg and Kramer (2009:61) concurred, stating that "Only nurses can identify the supportive behaviours they experience and through valid measurement, provide the necessary feedback to nurse managers, who in turn have the power to change and alter that aspect of the work". Hence, this study is one of the first few to link competencies of NUMs to nursing staff outcomes and the perceptions of nursing staff of the practice environment. The study will add to the body of literature on the competencies of NUMs through evaluation by 360° (multi-source) feedback.

2.12 Nursing staff outcomes

2.12.1 Introduction

This section discusses nursing staff outcomes. The discussion commences with a definition of nurse outcomes, followed by the discussion of specific nursing staff outcomes measured in this study (job satisfaction, intention to leave, organisational commitment and compassion practice), with their definitions, relevance in literature, and the impact of NUM competencies on the specific nurse outcome. In conclusion, the practice environment is defined and discussed.

2.12.2 Nurse outcomes

An outcome is the results of any event or occurrence (Cummings *et al.,* 2010:5-13; Mark *et al.,* 2003:225, 228) (see section 1.8.2.4). For the purpose of this study, the nursing staff outcomes addressed are job satisfaction, intention to leave, organisational commitment and compassion practice.

Nurse outcomes were measured among the following categories of nursing staff: professional nurses, staff nurses and auxiliary nurses. According to the Nursing Act 33 of 2005:

- A professional nurse is a person who is qualified and competent to independently practice comprehensive nursing in the manner and to the level prescribed and who can assume responsibility and accountability for such practice and is registered as such under the Nursing Act;

- A staff nurse is a person educated to practice basic nursing in the manner and to the level prescribed and is registered as such under the Act; and

- An auxiliary nurse is a person educated to provide elementary nursing care in the manner and to the level prescribed and is registered as such under the Act.

2.12.2.1 Job satisfaction

a) Definition

Job satisfaction is how people feel about their jobs or different aspects of their jobs. It is the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs (Spector, 1997:2). The general consensus among researchers is that job satisfaction is a positive attitude towards the job (Price, 2002:276). A concept analysis by Castaneda and Scanlan (2014:136) defines job satisfaction in nursing as "an affective (i.e. emotional) reaction to a job that results from the incumbent's comparison of actual outcomes with those that are desired, expected, and deserved".

b) Relevance in the literature

Research has indicated that either one or a combination of the following work environment factors has a direct and significant relationship with nurses' job satisfaction, namely, a clear philosophy of nursing, positive working relationships, enough staff to provide quality care, nursing autonomy, work flexibility, workload, and supervisory support in managing conflict (Aiken *et al.,* 2002; Atefi *et al.,* 2014:352; Baernholdt & Mark, 2009:994-999; Bonenberger *et al.,* 2014:9; Cummings *et al.,* 2008:515). Role conflict and ambiguity, poor leadership skills, resource inadequacy, opportunities for advancement, study leave, wages, and rewards (including performance rewards) were also identified as factors contributing to job dissatisfaction (Curtis & Glacken, 2014:653; Feather *et al.,* 2015:132; Hayes *et al.,* 2010:808; Klopper *et al.,* 2012:690; Lu *et al.,* 2012:1020; Molefe & Sehularo, 2015:476; Pillay, 2009b; Sojane *et al.,* 2016:5; Upenieks, 2003:96). Age, educational preparation and tenure in nursing were further aspects found to be contributing to nurses' satisfaction or dissatisfaction with their work (Atefi *et al.,* 2014:352; Curtis & Glacken, 2014:653; Hayes *et al.,* 2010:808).

c) Impact of NUM competencies on job satisfaction

Nurse managers' leadership styles are believed to be important determinants of job satisfaction and retention in nursing (Asamani *et al.,* 2016:64). Lambrou *et al.* (2014:304), in a systematic review to investigate nurses' perceptions of their practice environment in relation to job

satisfaction, found that one of the characteristics of the practice environment with the most significant effect on job satisfaction was the nurse manager's ability, leadership and support for nurses. Studies on job satisfaction indicate that nurses' complaints about managers were about non-support (Atefi *et al.,* 2014:358), poor staff management (Khamisa *et al.,* 2015:661) and lack of praise and recognition (Sojane *et al.,* 2016:7; Sveinsdottir & Blöndal 2014:550). Feather *et al.* (2015:132) also found that job satisfaction was influenced by supportive behaviours of nurse managers, including good communication, showing respect and providing a feeling of being cared for.

2.12.2.2 Intention to leave

a) Definition

Intention to leave is described as the behavioural intention of an individual to voluntarily leave a profession or organisation (Terranova 2008:8). According to Bobko (2001), intention to leave refers to a decision made by an employee that is based on a continuum - from initial thinking about leaving to implementing the actual action of leaving. Intention to leave is not the same as turnover; turnover generally means someone leaving a job (Kovner *et al.,* 2014:64). In an integrative literature review, Flinkman *et al.* (2010:1428) identified a number of variables influencing nurses' intention to leave the profession, including demographics like age, work-related and individual-related variables like limited resources, and lack of growth and development.

b) Relevance in the literature

Baernholdt and Mark (2009:999) found that increased work complexity was associated with a higher turnover rate, suggesting that nursing units with increasingly complex conditions create a situation in which nurses might leave because of a sense of having less control over patients assigned to them. Tummers *et al.* (2013:17-18) presented the most important job characteristics for the explanation of intention to leave the organisation as "insufficient development and lack of career opportunities, negative work environment and lack of or reduced autonomy". These issues were also identified by Dawson *et al.* (2014:4) as creating heavy workloads and stress levels that left nursing staff feeling undervalued and disempowered. Interestingly, intent to leave or stay in nursing has also been found to be influenced by variables such as age, gender, marital status and degree type or level of education (El-Jardali *et al.,* 2009:7; Flinkman *et al.,* 2013:4-5; McCarthy *et al.,* 2007:251-252). Flinkman *et al.* (2010:1422) identified actual turnover as presenting problems for the healthcare system in terms of cost, the ability to care for patients and the quality of care.

c) Impact of NUM competencies on intent to leave

Much has been written about the role of the NUM in ensuring a PPE which links to nurse retention (Choi *et al.,* 2013:433; Dawson *et al.,* 2014:4; Duffield *et al.,* 2010:25; Han *et al.,* 2015:3231; Titzer & Shirey*,* 2013:972; Tuckett *et al.,* 2015:363), as well as about strong leadership qualities of NUMs associated with greater job satisfaction, reduced turnover intention among nursing staff, and improved patient outcomes (Roche *et al.,* 2015:57). Ulrich *et al.* (2014:49) also reported that the more authentic a leader is perceived to be, the less likely nurses would want to leave their positions or even the nursing profession. Mokoka *et al.* (2010:8) also supported the claim that nurse managers can influence retention of professional nurses. Significance of supportive management as a source of retention was furthermore reported by (Tuckett *et al.,* 2015:360).

However, the attitude of NUMs was also confirmed as a major factor in nurses' intention to remain or leave the current workplace (Roche *et al.,* 2015:60; Sveinsdottir & Blondal, 2014:549). Research has indicated that the behaviour of the manager has been cited by nurses as one of many negative factors in their decision to leave. A claim has been made by Ribellin (2003:18) that "nurses do not actually leave the organisation; they leave the manager". Simon *et al.* (2010:623) supported the claim and maintained that nurses' intentions to leave organisations are influenced by the type of organisational leadership.

Conversely, Ten Haaf (2007:92) found no significant correlations between nursing turnover rate and first-line nurse managers' competencies in a study that examined the relationship between the competencies of first-line nurse managers to nursing satisfaction, as measured by nursing turnover rates, patient satisfaction scores related to pain control, patient outcome indicators of patient falls, and medication errors.

2.12.2.3 Organisational Commitment (OC)

a) Definition

Commitment is loyalty to a social unit. The social unit may be an organisation, the subsystem of an organisation, or an occupation. Most research on commitment focuses on organisations rather than subsystems or occupations (Price 1997:335). The concept of commitment was defined by Becker (1960:40) as "one mechanism producing consistent human behaviour". OC was defined by Porter *et al.* (1974:604) as the collective attitude of employees towards their organisations. Porter *et al.* (1974:604) characterized OC according to three psychological factors: 1) a belief in and acceptance of organisational goals and values (identification); 2) a willingness to exert considerable effort toward organisational goal accomplishment (involvement); and 3) a strong desire to remain in an organisation (loyalty). This is almost similar to a definition by Steers

(1977:46) with Mowday *et al.* (1979:2) adding that it is the strength of an individual's "identification with and involvement in a particular organization". OC is also defined as a psychological state that forms the relationship of employees with the organisation and a decision to remain at the organisation or leave (Meyer & Allen, 1991:66).

b) Relevance in the literature

Employee commitment is important for several reasons: 1) literature indicates that commitment is often a better predictor of turnover than is job satisfaction; 2) highly committed employees may perform better than less committed ones; and 3) it has been suggested by research that commitment may be one useful indicator of the effectiveness of an organisation (Steers, 1977:46). In healthcare and nursing, OC reflects the extent of nursing professionals' identification with their hospitals. It is an important index by which to examine their loyalty to the hospitals and forecast their achievement, trust, retention rate, performance and productivity, job satisfaction and life satisfaction (Blegen, 1993; Chen *et al.,* 2015:297; Hsu *et al.,* 2015:573; Mosadeghrad *et al.,* 2008:222; Mosadeghrad & Ferdosi, 2013:125; Yang *et al.,* 2013:45). Veličkovic *et al.* (2014:424) confirmed a strong link between OC and job satisfaction. The presence of highly committed employees in a healthcare organisation plays an important role in improving the overall performance of the services provided, which lead to patient satisfaction (Al-Hussami, 2008:292; Berberoglu & Secim 2015:64).

c) Impact of NUM competencies on Organisational Commitment

Leadership style, including the intellectual stimulation aspect of transformational leadership and empowerment, has been found to play an instrumental role in promoting the OC of nurses (Asiri *et al.,* 2016:5; Kodama *et al.,* 2016:883; Yahaya & Ebrahim, 2016:207). Moreover, employees were found to be highly committed to their organisations, more satisfied with their jobs, and displayed improved job performance when they worked under the supervision of leaders who adopted consultative or participative leadership behaviours (Yahaya & Ebrahim, 2016:207). This was also supported by Brunetto *et al*. (2013:2786), who reported that supervisor-nurse relationships, teamwork, and wellbeing explained half of the nurses' commitment to their organisations. Tekingündüz *et al.* (2017:531) revealed that managers, type of department, the structure of work, emotional trust, promotion, and additional opportunities meaningfully affect the OC of staff.

2.12.2.4 Compassion Practice (CP)

a) Definition

CP exists on a continuum of compassion satisfaction (CS) on one end and compassion fatigue (CF) on the other. Although the two extremes are opposites, nurses are exposed to the same risk factors for CS and CF. Despite this, they continue to flourish in all circumstances that lead to meaningful and purposeful interactions with patients (Coetzee & Klopper, 2010:239). Following a comprehensive concept analysis, Coetzee and Klopper (2010:237) provided a theoretical definition of CF as the final result of a progressive and cumulative process caused by prolonged, continuous and intense contact with patients, the use of self, and exposure to stress. This process has a detrimental effect on the physical, emotional, social and spiritual dimensions of the nurse.

CF is a concept originally introduced in the healthcare arena by Joinson (1992), when she noticed that nurses dealing with frequent heartache had lost their "ability to nurture". Joinson (1992:119) did not define CF but classified it as a unique form of burnout. Figley (1995:2) then defined CF as Secondary Traumatic Stress Disorder (STSD). In contrast to Joinson, Figley's definition was based on therapists who, when dealing with trauma victims, began to exhibit the same characteristics as their patients. Figley (2002:1435) defined CF as a state of tension and preoccupation with the traumatised patients characterised by re-experiencing the traumatic events, avoidance/numbing of reminders persistent arousal (e.g., anxiety) associated with the patient and also as a function of bearing witness to the suffering of others. CF consists of three subscales, namely, disengagement, impotence and lack of fulfilment (Coetzee *et al.,* 2020). Disengagement refers to the inability of the nurse to acknowledge and empathise with a patient, the nurse then becomes demotivated to act on patients' needs, which leads to a feeling of impotence. Finally, if the nurse cannot empathise with or act on the patients' needs, he or she then becomes unfulfilled because of the inability to optimally care for patients to their maximum potential (Coetzee & Laschinger, 2018:8-9).

b) Relevance in the literature

Coetzee and Klopper (2010:237) state that CF evolves from a state of compassion discomfort, which, if not eliminated through adequate rest, leads to compassion stress that exceeds nurses' coping mechanisms and ultimately results in CF. CF has been noted to involve emotional, physical, social, intellectual and spiritual weariness or exhaustion related to chronic or prolonged exposure to trauma (emotional upset) or difficult situations and/or the continuous offering or giving of self (Coetzee & Klopper, 2010:237; Joinson,1992:119; Yoder, 2010:195). CF can affect the quality of work and personal life of nurses and other healthcare workers (Kashani *et al.,* 2010:99). CF has been found to impact on job satisfaction, the quality of patient care, nurse retention, as

well as nurses' intention to leave the profession (Berger *et al.,* 2015: e16; Drudy *et al.,* 2014:520; Sorenson *et al.,* 2016:462). The most overt and continually identified consequences of CF is inadequate performance and a decline in holistic care.

c) Impact of NUM competencies on Compassion Practice

Manager support is regarded as a critical modifiable feature to predict the levels of CS, CF and burnout (Hunsaker *et al.,* 2015:192). Experienced, older and highly educated nurses have been found to exhibit higher levels of CS and lower levels of CF and burnout. NUMs should therefore be aware that younger and inexperienced nurses may be at risk of developing burnout and CF at work (Hunsaker *et al.,* 2015:191-192).

Authentic leadership behaviours have also been found to play a role in creating positive outcomes for new graduate nurses, including decreased levels of burnout (Laschinger *et al.,* 2015:1086). Working conditions that promote person-job fit are important to new nurse retention, as work-life interference influences burnout (Boamah & Laschinger, 2016: E171). The results of these studies highlight the fact that NUMs need to create healthy work environments and encourage initiatives that will make sure that nurses have manageable workloads, flexible work schedules, and receive praise and recognition for work well done or contributions made. These factors should prevent the emergence of burnout and CF, and promote the retention of new nurses (Boamah & Laschinger, 2016: E172).

2.12.2.5 The practice environment

a) Definition

Lake (2007:106S) defines a PPE as support for nurses to function at the highest scope of clinical practice, to work efficiently in an interdisciplinary team of caregivers, and to activate resources rapidly. Research has established that a PPE increases job satisfaction and has the potential to improve both staff and patient outcomes (Duffield *et al.,* 2010:23; Aiken *et al.,* 2011:1052; Duffield *et al.,* 2011:253; Aiken *et al.,* 2012; Klopper *et al.,* 2012:691; Coetzee *et al.,* 2013:162; Atefi *et al.,* 2014:352).

b) Relevance in the literature

Research shows that PPEs are positively associated with patient satisfaction, improved quality of care and patient safety, and improved patient and nursing staff outcomes (Aiken *et al.,* 2001:50-51; Aiken *et al.,* 2008:6; Aiken *et al.,* 2011:363; Aiken *et al.,* 2012; Klopper *et al.,* 2012:691; Coetzee *et al.,* 2013:162). Studies have also shown that the practice environment, a modifiable feature of hospitals, is one of the most important determinants of work-related nurse

outcomes, including burnout levels, intention to leave, and job dissatisfaction (Aiken *et al.,* 2011:362; Klopper *et al.,* 2012:691; Coetzee *et al.,* 2013:162). Nurses who work in hospitals with PPEs are less likely to report poor nursing outcomes (Aiken *et al.,* 2012; Kutney-Lee *et al.,* 2012:199; Van Bogaert *et al.,* 2013:1675; Coetzee *et al.,* 2013:162; Flinkman *et al.,* 2013:9; Twigg & McCullough, 2014:91; Van den Heede *et al.,* 2013:190; Leone *et al.,* 2015:1587; Sojane *et al.,* 2016:5). Certain components of positive work environments have also been linked to better nursing outcomes, like positive nurse-physician collaboration and autonomy, partnership between nursing management and nurses at the bedside, and improvement in work environment (Zangaro & Soeken, 2007:454; Kutney-Lee *et al.,* 2012:199).

c) Impact of NUM competencies on the practice environment

Effective management and/or leadership is highlighted as important in the creation of PPEs for nurses (Cummings *et al.,* 2010:378; Duffield *et al.,* 2010:29; Twigg & McCullough, 2014:91; Hayes *et al.,* 2015:595; Redknap *et al.,* 2015:265; Roche *et al.,* 2016:671). Lake and Friese (2006) found that poor ratings for nurse practice environments were often related to the ratings of nurse managers regarding their leadership and supportiveness. Findings by Duffield *et al.* (2010:23) showed that a nursing manager who is perceived to be a good leader, is visible, consults with staff, provides praise and recognition, and facilitates flexible work schedules. Zori *et al.* (2010:305) revealed that nurse managers with stronger critical thinking dispositions may be better able to create PPEs conducive to job satisfaction and the retention of staff. In South Africa, Klopper *et al.* (2012:689 & 691) indicated that the subscale of Nurse manager ability, leadership and support for nurses had the most influence on CCN outcomes, while Sojane (2012:97) found that from the same subscale, praise and recognition for a job well done had the most impact for registered nurses (RNs) in medical and surgical wards.

2.13 Opportunities and threats

Opportunities and threats are outlined in Table 2-12 below as identified in nursing staff outcomes. The purpose of identifying opportunities and threats was to prepare for strategy development (see Section 1.8.2.7 and 2.1).

Table 2-12: Opportunities and threats in nursing staff outcomes

Opportunities	Threats
Nursing staff outcomes	
7. Nurses working in PPEs are less likely to report poor nurse outcomes	16. Lack of opportunities for advancement, study leave, and wages contribute to job dissatisfaction
8. Positive nurse outcomes improve quality of care, patient safety and patient outcomes.	

2.14 Summary

In this chapter, literature on the work environment of the NUM was explored in terms of the threats that undermine the capacity of NUMs to contribute to their fullest potential in the management of nursing units as well as opportunities that increase the capabilities of NUMs. Literature has indicated that the NUM serves as a link between staff at nursing unit level and top-level management. This indicates how critical the NUM is to the successful engagement of staff and in aligning frontline staff with the organisation's vision, mission and values (Espinoza *et al.,* 2009:328). The educational preparation of the NUM was also explored with regard to the phasing out of legacy qualifications and the disconnection between educational preparation of nurse managers and health system expectations. A trend of appointment into management positions without management qualifications was identified, as well as poor succession planning and minimal interest from nursing staff to pursue available NUM positions. The roles and responsibilities of the NUM were identified in relation to responsibilities to patients, staff and the organisation. The concept of competence was synthesised from different sources. Nurse manager competency research was outlined, and competencies identified. A review of nursing staff outcomes (job satisfaction, intent to leave, organisational commitment and compassion practice) as well as the practice environment was conducted. PPEs were found to be significantly associated with patient satisfaction, improved quality of care, patient safety and better nurse outcomes (Duffield *et al.,* 2010:30; Purdy *et al.,* 2010:901; Aiken *et al.,* 2011:1052; Duffield *et al.,* 2011:253; Aiken *et al.,* 2012; Klopper *et al.,* 2012:691; Coetzee *et al.,* 2013:162). The chapter concluded with the identification of opportunities and threats for strategy development.

CHAPTER 3
RESEARCH DESIGN AND METHOD

3.1 Overview of the chapter

The purpose of this chapter is to outline the research design and method of the study. The chapter commences with a review of the objectives of the study and a discussion of the research design as it was applied to the study. Thereafter, the research methods are discussed in relation to the research design and the strategy development. The rigour as it was applied to the study is detailed and concludes the chapter.

3.2 Introduction

In the first chapter, the overall aim of the study was stated as follows:

The overall aim of the study was to develop a strategy to enhance competencies of NUMs in public hospitals of the North West Province. To achieve this aim, the research objectives were:

- To evaluate NUMs competency ratings according to the NSM, nursing staff, and by self-assessment of the NUM.
- To determine an association between the NUMs' competencies and personal and nursing unit demographics.
- To determine a relationship between the NUMs' competencies and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice), and nursing staff's perceptions of the practice environment.
- To develop a strategy to enhance competencies of NUMs in public hospitals of the North West Province.

In the next section, the research design is discussed in accordance with the aim and objectives of the study and the research methods of the study are described in relation to the research design.

3.3 Research design

According to Klopper (2008:67), any research study starts with the identification of a problem, and then the development of a research design follows logically from the problem identified. A research design is the overall plan or framework that is developed from the research objectives

or the purpose of the study, with the aim of clearly describing the procedures to be followed when conducting the study, how to handle challenges that could undermine the study evidence, and the conditions under which data is to be collected and analysed, in order to achieve greater control of validity and reliability in examining the research problem (Pierce, 2013:133; McMillan & Schumacher, 2014:28; Sharma, 2014:138; Polit & Beck, 2017:56). Furthermore, Creswell and Creswell (2018:11) defined research designs as types of inquiry within qualitative, quantitative and mixed methods approaches that provide specific direction for procedures in a research study, while Babbie (2014:117) illustrated a research design as a schematic view that starts with conceptualisation of an idea, through to choice of research methods and population and sampling up to data analysis and reporting results. According to Grove *et al.* (2015:511), a research design is a blueprint for conducting a study that maximizes control over factors that could interfere with the validity of the findings and specify control mechanisms that will be used. The research design is, therefore, the architectural backbone of a study (Polit & Beck, 2017:56). The research design describes the purpose of the study and the type of questions that are being addressed, as well as the approach to selecting the sample and the techniques for data collection and analysis (Gray, 2014:128).

This study adhered to a quantitative research design, with descriptive, explanatory and contextual research strategies in order to achieve the objectives of the study. Quantitative research refers to an inquiry that uses a general set of orderly, systematic and disciplined procedures to acquire empirical evidence, that is, evidence that is rooted in objective reality, rather than in the personal beliefs or views of the researcher (Pierce, 2013:133; Bowling, 2014:214; Polit & Beck, 2017:11). In quantitative research, evidence is gathered logically through a series of steps, according to a pre-specified plan that applies mechanisms to control the study and uses formal instruments to collect the necessary information, in order to ensure that biases are minimised, and validity and reliability of the study are maximised and findings are objective and reproducible (Pierce, 2013:133; Bowling, 2014:214; Polit & Beck, 2017:11). Muijs (2012:2) defines quantitative research by means of its specificity of collecting numerical data and analysis by using mathematically based methods.

A quantitative research design was used in the form of a cross-sectional survey design. A cross-sectional research design is used to collect data on more than one case or groups of participants in various stages of development in a process, at a single point in time, in order to collect a body of quantitative or quantifiable data in connection with two or more variables. These are then examined to describe the status of or changes in phenomena across stages and to detect patterns of association (Grove *et al.,* 2015:212; Polit & Beck, 2017:168). The assumption is that the stages are part of the process that will progress over time and selecting participants at various

stages in the process provides important information about the totality of the process (Grove *et al.,* 2015:212). Data is collected on one occasion only with different participants, instead of the same participants at several points in time. Also, participants are not followed up. Data is normally collected by self-administered questionnaires, whether postal, electronic or delivered in person.

In this study, a cross-sectional survey was used to obtain detailed and quantified descriptions of competencies of NUMs in public hospitals of the North West Province through multi-source feedback by NSMs, nursing staff - professional nurses, staff nurses and auxiliary nurses - and by self-assessment of NUMs. The competencies were rated in relation to NUMs' *knowledge and understanding* of these competencies and how well they were able to implement them in practice. Information was obtained from participants at different developmental stages of the process, related to their positions in public hospitals, namely: NSMs, NUMs and all categories of nursing staff. Any association of competencies of NUMs with personal and unit demographics was also evaluated by analyses of responses from NSMs, nursing staff and NUMs themselves, and the relationship between NUM competencies and nursing staff outcomes and nursing staff's perceptions of the practice environment was determined.

3.3.1 Research strategies

The research strategies used in this study were descriptive, explanatory and contextual strategies. The purpose of descriptive research is to identify and understand the nature of phenomena in real-life situations, as it naturally happens, in order to describe what exists and generate new knowledge and meaning about phenomena for which limited or no research has been conducted (Grove *et al.,* 2015:212). Furthermore, descriptive research determines the frequency with which something occurs and categorises information (Grove *et al.,* 2015:502). In descriptive research the researcher draws a picture of what happened, or what a situation, person or event is like. Although descriptive research is more restricted than explanatory research, it is important for understanding a phenomenon. If a researcher would like to find out why something happened, it is important to know what happened first and then ask why it happened (Punch, 2014:19-20). The descriptive research enabled the researcher to examine different variables within different samples within a phenomenon of interest, measure these variables, and describe them (Grove *et al.,* 2015:214).

The purpose of explanatory research is to clarify relationships among phenomena and identify possible reasons why certain events occur (Kumar, 2014:13; Punch, 2014:19; Grove *et al.,* 2015:7). Explanatory research involves finding reasons for things, events or situations. According to Mouton (2014:192-193) explanatory research is about identifying causal powers or forces that produce events to be able to make a causal claim. It is important to note that empirical data does

not explain why certain things or events happen. Therefore, a retroductive inference has to be made from the data to the underlying causative mechanisms or processes (Mouton, 2014:194; Neuman, 2014:39-40). In this study, the researcher evaluated the competency ratings of NUMs according to the NSM, nursing staff, and self-assessment of the NUM; determined associations between the NUMs' competencies and personal and nursing unit demographics; and determined the relationship between the NUMs' competencies and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice), and nursing staff's perceptions of the practice environment. According to Polit and Beck (2017:48), quantitative research theories are used deductively to generate hypotheses that are then tested. Punch (2014:20) argues that research with explanation as its objective can set out to test theories as well as build it, as testing alone might prevent researchers from investigating new problem areas and only direct them to the use of verification logic. From the empirical research and literature review, a strategy for enhancing the competencies of NUMs in public hospitals of the North West Province was developed according to the theory of Chase (1994) and SWOT analysis.

Contextual research is depicted as extensive descriptions of differences and distinguishing characteristics of a single case, group, or subculture of intrinsic interest in its immediate and unique value and time-space context (Mouton, 2012:133). Contextual research does not aim to generalize the findings of the research, but to analyse and describe the reality of a particular research setting in such detail that transferability of the research findings would be possible in a similar context (Mouton, 2012:133-134). The context of this study was nursing science (the body of knowledge that directs nursing), nursing management and the competencies of NUMs in public hospitals of the North West Province. Contextual studies include social and environmental settings with specific individuals. When following a contextual strategy, it is essential to provide a description of the context or settings where the study will be conducted and explain why the setting was chosen (Klopper, 2008:68). This study was conducted in natural settings where there was no manipulation or change in the environment (Grove *et al.,* 2015:277).

The study was conducted in public hospitals of the North West Province. Public hospitals are state funded hospitals and are not for profit organisations. They offer free services to all individuals who are unable to pay for their own medical care and are classified as district, regional, tertiary, central, and specialised hospitals (see Section 1.9.1). Purposive sampling was applied to large district, regional and provincial tertiary hospitals (N=6). This classification was most suited for the study, as these are the hospitals with the greatest Number of beds and/or units/wards.

3.4 Empirical research

In this section, the research method of the empirical research of the study is discussed in accordance with the aim and objectives of the study, and in relation to the research design.

3.4.1 Research method – empirical research

According to Klopper (2008:69), the research method contains different steps, such as selecting a suitable population, sampling, data collection, data analysis and ensuring thorough investigation. The research method is therefore discussed in relation to the research instrument, the study population, the sampling method, data collection, and analysis and rigour.

3.4.1.1 Research instrument

For the researcher to describe and explain the relationship between variables there must be a relevant data collection tool that is validated and reliable. According to Sharma (2014:176), survey data can be collected in a Number of ways, the most common being questioning, either directly or in the form of self-reporting through questionnaires. Grove *et al*. (2015:304) state that questionnaires are sometimes referred to as surveys and a study using a questionnaire may be referred to as survey research. For the purpose of this study, a questionnaire was selected as the research instrument. The rationale for the use of a questionnaire is presented in terms of its advantages and limitations, development and format as research instrument.

I. THE QUESTIONNAIRE AS RESEARCH INSTRUMENT

A questionnaire is a self-report form of the same set of questions designed to elicit information through written, verbal or electronic responses of participants, to solicit information that is appropriate and amenable to statistical analysis (Muijs, 2012:30; Babbie, 2014:510; Gray, 2014:352; Sharma, 2014:256; Grove *et al.,* 2015:304; Jackson, 2016:89;). In addition, Grove *et al.* (2015:304) state that questionnaires are designed to determine facts or attributes about the participant or persons known by the participant; facts about actions, events or situations known by the participant; or beliefs, attitudes, opinions, levels of knowledge, or intentions of the participants. Questionnaires can have varying degrees of structure, namely structured (closed form) and unstructured (open form). In a structured questionnaire, participants choose between predetermined responses, which are easy to fill out and take little time to complete - this is also called selected response or closed ended. In unstructured questionnaires, participants answer questions in an unrestricted manner, which requires greater effort as participants have to formulate their own answers (Muijs, 2012:40; Fowler, 2014:87; McMillan & Schumacher 2014:213; Sharma, 2014:257; Grove *et al.,* 2015:304).

Questionnaires can be administered in person when the researcher personally hands questionnaires to a group of participants gathered at the same place. Using self-administration as a tool for administering questionnaires has its advantages. Many participants can complete a questionnaire in a short space of time; it is relatively easy and cheap to do; many participants can be reached, and the response rate is usually optimal. The direct contact made upon delivery sometimes induces people to have an interest in completing the questionnaires (Gray, 2014: 246; Maree & Pietersen, 2016:176). In this study, questionnaires were delivered at prospective participants' workplaces; in this case, it was the public hospitals of the North West Province (see Section 3.4.1.3).

Structured (Likert-type) questionnaires were selected as the research instrument for this study. A Likert-type questionnaire is designed to determine the opinion or attitude of a participant; it contains a Number of declarative statements with a scale after each statement (Grove *et al.,* 2015:307-8). In this study, response choices in the Likert-type questionnaires addressed evaluation, agreement, and/or frequency. The use of questionnaires in this study enabled all participants to provide factual data with regard to competencies of NUMs, nursing staff outcomes, as well as nursing staff's perceptions of the practice environment. Table 3-1 below indicates all questionnaires that were utilised for the study according to categories of each population group.

Table 3-1: Questionnaires for the study according to categories of each population group

Category of population	Questionnaire type	Response type
Nursing Service Managers	Nurse Manager Competency Instrument (NMCI)	Evaluation item responses - scale 1 to 4 with 1 being "not competent at all" to 4 being "exceeds expectations"
Nursing Unit Managers	Nurse Manager competency Instrument (NMCI)	Evaluation item responses – scale 1 to 4 with 1 being "not competent at all" to 4 being "exceeds expectations"
Nursing staff	Nurse Manager competency Instrument (NMCI)	Evaluation item responses – scale 1 to 4 with 1 being "not competent at all" to 4 being "exceed expectations"
	Job satisfaction -Global job satisfaction -Aspects of the job	Agreement options – scale 1 to 7 with one being "strongly agree" and 7 being "strongly disagree" Agreement options – scale 1 to 4 with 1 being "very dissatisfied and 4 being "very satisfied"

Category of population	Questionnaire type	Response type
	Intention to leave	Agreement options – scale 1 to 5 with 1 being “strongly disagree” and 5 being “strongly agree”
	Organisational Commitment Questionnaire (OCQ)	Agreement options – scale 1 to 7 with 1 being “strongly disagree” and 7 being “strongly agree”
	Compassion Practice Instrument (CPI)	Frequency responses Scale 1 to 6 with 1 being “never” and 6 being “always”
	Practice Environment	Agreement options – scale 1 to 4 with 1 being “strongly disagree” and 4 being “strongly agree”

II ADVANTAGES OF QUESTIONNAIRES

Some of the advantages of the structured self-administered questionnaire, as used in this study are listed by Babbie, (2010:287); Gray, (2014:353); McMillan and Schumacher, (2014:228); Sharma, (2014:257); Grove *et al.,* (2015:304); Jackson, (2016:89); Maree and Pietersen, (2016:176) and Polit and Beck, (2017:275):

- Many participants can complete the questionnaire in a short space of time, an important factor in descriptive and explanatory analysis;
- Questionnaires can be completed anonymously, which can be valuable when honest opinions are sought and more likely to provide honest answers;
- It is relatively economical, and the format is standard for all participants and will not depend on the mood of the researcher;
- It provides time for participants to think about responses;
- Questionnaires are one of the easiest research instruments to test for reliability and validity;
- Questionnaires reduce researcher bias or interviewer influence; and
- Asking many questions on a given topic gives considerable flexibility in analysis of results.

III LIMITATIONS OF QUESTIONNAIRES

The use of structured self-administered questionnaire, as research instrument has several limitations such as those referred to by: Babbie, (2010:287); Gray, (2014:353); McMillan and Schumacher, (2014: 228); Sharma, (2014:257); Grove *et al.,* (2015:304); Jackson, (2016:89) and Maree and Pietersen, (2016:176):

- There is no opportunity to clarify any items that might not be understandable to participants;
- Response rates may be low, calling into question the representativeness of the sample;
- The participants may not fully complete the questionnaires, or miss some responses, especially for long questionnaires, and this may threaten the validity of instruments;
- Participants may feel that some questions are not appropriate; and
- The researcher may not be aware or have control over what happens during completion of the questionnaires.

IV DEVELOPMENT OF QUESTIONNAIRES

The study made use of six different surveys. The first survey, the Nurse Manager Competency Instrument (NMCI), was for all participants. The other five surveys were only for nursing staff (professional nurses, staff nurses and auxiliary nurses) and measured nursing staff outcomes (job satisfaction, intent to leave, organisational commitment and compassion fatigue) and nursing staff's perceptions of the practice environment. All instruments were validated. The following is a discussion of all surveys.

Nurse Manager Competency Instrument (NMCI)

The Nurse Manager Competency Instrument (NMCI) was developed and validated by Chase, (1994; 2010). The instrument was freely available on the web and was taken verbatim, that is, adopted as is. Although the validity and reliability of previous studies were applied, the instrument was never used in South Africa, therefore, exploratory and confirmatory factor analysis was done. The instrument has five main categories: Technical skills (11 items), Human skills (13 items), Conceptual skills (8 items), Leadership skills (14 items), and Financial management skills (7 items). Competency statements were derived from nurse manager literature. The instrument consists of 53 items in total, with the level of competency rated on a scale of 1-4 for both *knowledge and understanding* and *ability to implement*, 1=not competent at all, 2=needs improvement, 3=competent, 4=exceeds expectations.

In 2010, a review of the instrument was done by a panel of experts. The American Organization of Nurse Executives (AONE) fellows were chosen to serve in this capacity. AONE fellows are nurse managers who have participated in a one-year programme geared for role development and networking. There were 75 active AONE fellows and they were asked to review the competency statements as experts in the field. AONE gave permission and supplied email addresses to the investigator for this purpose. A cover letter was developed to ask the fellows for their help and expertise in reviewing the competency statements. Fifty-three AONE fellows provided feedback for a response rate of 71%. The competency statements were believed to be stable and previous studies using the instrument have not identified lacking competencies or gaps (Care & Udod, 2003; Ten Haaf, 2007).

After review, six competency statements were changed due to changes in the use of language and to add clarity to the meaning of the competency statements. These included, “Patient Classification Systems” which changed to “Patient Acuity Systems”; “Research Based Practice” changed to “Evidence-Based Practice”; “Political Processes” changed to “Political Process and Advocacy”; “Total Quality Management Processes” changed to “Quality Improvement Processes”; “Organisation of Unit Work” changed to “Organisation of Unit Work and Workflow Processes” and, lastly, “Unit Budgeting and Forecasting” was changed to “Operational and Capital Budget Forecasting”. Changing the terminology did not change the content or meaning, nor did it necessitate having to put any of these statements into new sections in the instrument. Table 3-2 illustrates the changes to the competency statements for the 2010 survey.

Table 3-2: Changes to the NMCI

1994	2010
Technical 5. Patient Classification Systems 7. Research based care practice	**Technical** 5. Patient Acuity Systems 7. Research and Evidence-based Practice
Conceptual 30. Political Process 31. Total Quality Management Processes	**Conceptual** 30. Political Process and Advocacy 31. Quality/Process Improvement
Leadership 42. Organisation of Unit of Work	**Leadership** 42. Organisation of Unit of Work and Workflow Process
Financial Management 49. Unit Budget Forecasting /Generation	**Financial Management** 49. Operational & Capital Budget Forecasting and Generation

Source: (Chase 2010)

The Chase NMCI (1994) has been cited in South Africa by Belemu (2000) and Zechner (2008) in their analysis of middle and senior management skills required of managers to be effective in managing their organisational departments. Furthermore, Belemu (2000) utilised some of Chase's (1994) competency statements to develop categories of management skills, and added two more categories of general management and computer skills to the five categories of Chase (1994). No further use of the instrument has been identified in South Africa.

Job satisfaction survey

Job satisfaction is one of the nursing staff outcomes that were investigated in the study. Developed by Cammann *et al.* (1983), the survey was available in the public domain. The survey consists of four global satisfaction questions on a scale of 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither disagree nor agree, 5 = slightly agree, 6 = agree, and 7 = strongly agree. The questionnaire was developed as part of the Michigan Organisational Assessment Questionnaire to provide information about the perceptions of organisational members. According to Cammann *et al.* (1983:81), the measures of the questionnaire was not based on any theory, but on the broad knowledge of organisational behaviour. The outcome measures reflect interest in job satisfaction. Cammann *et al.* (1983) kept questionnaires as short and specific as possible since they were collecting information on a wide range of organisational issues.

Furthermore, nine specific aspects of job satisfaction were measured, namely work schedule flexibility, opportunity for advancement, independence at work, professional status, wages, educational opportunities, annual leave, sick leave and study leave on a scale of 1 = very dissatisfied, 2 = slightly dissatisfied, 3 = moderately satisfied and 4 = very satisfied. These items are derived from the RN4CAST consortium project of Sermeus *et al.* (2011) and were adopted as utilized by (Klopper *et al*., 2012).

Intention to leave survey

Intention to leave is another nursing staff outcome that was investigated in the study. Developed by Cammann *et al.* (1983) was available in the public domain. Intention to leave was measured by a job turnover scale of 1 = strongly disagree, 2 = disagree, 3 = hard to decide, 4 = agree and 5 = strongly agree. The job turnover intention has only three aspects, for reasons cited to keep questionnaires as short and specific as possible (Cammann *et al.,* 1983). The questionnaire was also developed as part of the Michigan Organisational Assessment Questionnaire to provide information about the perceptions of organisational members.

Organisational Commitment Questionnaire

Developed by Mowday et al. (1979), the instrument was available in the public domain. Organisational commitment was measured by the organisational commitment questionnaire (OCQ) with 1 = strongly disagree, 2 = moderately disagree, 3 = slightly disagree, 4 = neither disagree nor agree, 5 = slightly agree, 6 = moderately agree, and 7 = strongly agree. This instrument has 15 items that appeared in the three aspects of the definition of organisational commitment by Mowday *et al.* (1979:3-4). These three aspects are: 1) affective commitment – based on the emotional ties of the employee with the organisation; 2) normative commitment – based on perceived obligation towards the organisation; and 3) continuance commitment – based on perceived costs of leaving the organisation. In order to examine the psychometric properties of the instrument, a validation strategy that included the use of multiple and diverse samples was developed. For the general measure of commitment to be achieved, it became necessary to collect validity and reliability data from various types of employees in different work environments. A series of empirical studies was thus initiated.

The OCQ was administered to 2,563 employees working in nine different work organisations. These included public, university, hospital, bank and telephone company employees, as well as scientists and engineers, auto company managers, psychiatry technicians, and retail management trainees. A variety of analyses were carried out using the OCQ among the samples. The mean levels of OC ranged from a low of 4.0 to a high of 6.1 across the nine samples. Standard deviation indicated an acceptable distribution of response within samples. Estimates of internal consistency were calculated in three different ways: coefficient alpha, item analysis and factor analysis (Mowday *et al.,* 1979:8). Coefficient alpha was consistently very high, ranging from 0.82 to 0.93 with a median of 0.90. Item analysis took place across six samples. In the six groups, correlations of positively worded items were done on three groups and negatively worded items for the other three groups. Each item had a positive correlation with the total score of the OCQ, with the range of average correlations being 0.36 to 0.72, and a median correlation of 0.64. In general, the negatively worded items had a slightly lower correlation with the total score than the positively worded items, although the difference was not significant. These results suggested that the 15 items of the OCQ were relatively homogenous with respect to the underlying construct they measured (Mowday *et al.,* 1979:16).

To further examine the homogeneity of the OCQ items, factor analyses were performed. The analyses resulted in single factor solution and supported the above-mentioned conclusion that the items were measuring a single common underlying construct. In order to examine the stability of the OCQ over time, test-retest reliabilities were computed for samples for which multiple data

points were available. Test-retest reliabilities reached acceptable levels (from r = 0.53 to r = 0.75) over periods ranging from two to four months.

Compassion Practice Instrument

Compassion practice is one of the nursing staff outcomes that was investigated in the study. This was measured by means of a Compassion Practice Instrument (CPI) developed by Coetzee *et al.* (2020) and permission to use the instrument was granted. The survey consists of 19 questions on a scale ranging from 1 = never to 6 = always. CPI is divided into two subscales: Compassion Satisfaction (CS) and Compassion Fatigue (CF). CF consists of three sub-scales, namely disengaged, impotent and unfulfilled. The subscales are combined to provide a mean score of CF. CF is interpreted according to table 3-3 below

Table 3-3: Interpretation of CF

Mean score	**Interpretation**
0 – 2	Compassion Distress
2.1 – 4	Compassion Stress
4.1 – 6	Compassion Fatigue

A mean score should be calculated for the CS subscale and be interpreted according to table 3-4 below.

Table 3-4: Interpretation of CS

Mean score	**Interpretation**
0 – 2	Low
2.1- 4	Moderate
4.1- 6	High

Practice Environment Scale of the Nurse Work Index Revised (PES-NWI-R))

The United States suffered a national nursing shortage in the 1980s, but it was discovered that some hospitals had somehow managed to escape this challenge. This was because, during this difficult period, they were somehow still able to recruit, attract and retain professional nurses. These hospitals were finally described as "magnets" because of their ability to successfully attract and retain professional nurses when most hospitals were failing (Scott *et al.,* 1999:9). Aiken *et*

al. (2001) conducted a study on nurses' reports on hospital care in 700 hospitals in the United States, Canada, England, Scotland and Germany in the years 1998–1999. Despite the difference in healthcare systems in these countries, nurses reported similar shortcomings in their work environments and the quality of hospital care. A formal investigation was therefore conducted on the "magnetic" hospitals by a task team consisting of a group of nurse fellows from the American Academy of Nursing. Findings revealed that the professionalism of nurse managers and staff members, nurse leaders' visibility and ability to support staff, staff autonomy in clinical practice, and collaboration enabled these hospitals to attract and retain professional nurses. Participative management and support of professional development were traits commonly found in magnet hospital environments (Scott *et al.,* 1999:9).

It is from this investigation that the Nurse Work Index (NWI) was designed by early researchers, comprising all organisational characteristics of those hospitals that created an environment that was attractive to nurses. According to Lake (2002:177), the NWI tool was developed as follows: the original magnet hospital research was conducted by (McClure *et al.,* 1983), followed by the NWI development (Kramer & Hafner, 1989) and the use of the NWI to measure organisational attributes of hospitals (Kramer & Schmalenberg, 1991a; Aiken, Smith & Lake, 1994; Aiken, Sloane, & Lake, 1997; Aiken, Sloane, Lake, Sochalski, & Weber, 1999; Aiken and Patrician, 2000). The NWI was however, modified from time to time. Aiken and Patrician (2000) utilised the NWI items and developed another 46-item measure called the Revised Nurse Work Index (NWI-R). Lake (2002) developed a Practice Environment Scale (PES) from the revised work index (NWI). A PES-NWI-R) was developed as an instrument that could permit researchers to understand the contribution of the practice environment to nurse and patient outcomes.

The PES-NWI-R) consists of 32 Likert-type questions where 1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree and 4 = strongly agree. The PES-NWI-R) contains five subscales. The first subscale is "Nurse participation in hospital affairs". This reveals the participatory role and valued status of nurses in the broad hospital context, and it consists of nine items. The second subscale is "Nursing foundations for quality of care". This subscale focuses on the nursing foundation's high standard of patient care through pervasive nursing philosophy, a nursing rather than medical model of care, and nurses' clinical competency. It consists of ten items. The third subscale is "Nurse manager ability, leadership and support for nurses". It concentrates on the critical role, key qualities and support of a nurse manager. It consists of five items. The fourth subscale is "Staffing and resource adequacy", which focuses on having enough staff and support resources to provide quality patient care. It consists of four items. The fifth subscale is "Collegial nurse-physician relationships". This subscale explores positive working relationships between nurses and doctors, and consists of three items (Lake, 2002:181). This survey was adopted from

RN4CAST consortium project of Sermeus et al. (2011) as applied in the South African context by Klopper et al (2012).

V FORMAT OF QUESTIONNAIRES

For this study, information and instructions for completion of the questionnaire was provided on the informed consent form. All information and instructions on how to complete the questionnaires was given by the researcher in the presence of the mediator, and questionnaires were administered to participants by the mediator. The researcher adhered to the following rules for questionnaires:

- The questionnaire format was attractively laid out;
- Questions were organised in such a way that the questionnaire was easy to respond to;
- Questions followed a logical sequence, so that it kept the participant moving towards completion;
- The questionnaire items and pages were numbered;
- Clear and bold print instructions for answering, and keys for ranking the items were provided in each section; and
- The questionnaires were not too long and included enough information so that items were interesting to participants.

VI STRUCTURE OF THE QUESTIONNAIRES

In this study, there were three different surveys provided to three different population groups, namely NSMs, NUMs and nursing staff (professional nurses, enrolled nurses and auxiliary nurses).

A Nursing Service Manager Survey

The survey consisted of two sections, namely section A and B. Section A consisted of 53 items. The items focused on competencies of nursing unit managers in two sections: 1) *knowledge and understanding* and 2) *ability to implement* or use. Section B consisted of eight items and collected demographic information of participants such as age, gender, hospital size, and educational preparation.

B Nursing Unit Manager Survey

The NUM survey was similar to that of the NSMs above (see Addendum E), although this survey was completed through self-report of NUMs.

C Nursing Staff Survey

The survey consisted of seven sections, labelled A to G. Section A consisted of 9 items and collected demographic information of participants such as age, gender, nursing qualifications, with items 8 and 9 asking about career and workplace satisfaction on a scale ranging from very dissatisfied to very satisfied. Section B consisted of 46 items of the NMCI on a Likert scale. The items focused on competencies of NUMs in only four categories. The last category of Financial management was not included for nursing staff to respond to, as it is not possible for nursing staff to identify the implementation of competencies of Financial management. The items only focus on *ability to implement* and not on *knowledge and understanding*. Section C consisted of 13 items of job satisfaction divided into 4 items of global job satisfaction and 9 items of satisfaction with specific aspects of the job. Section D consisted of 32 items of the practice environment. Section E consisted of 3 items of intention to leave. Section F consisted of 15 items of organisational commitment and section G of 19 items of compassion practice (see Addendum F).

3.4.1.2 Population and sample

The objective of survey designs is to use a sample to be able to learn about a population because of the difficulty of including the entire population in a study, with the two most commonly encountered difficulties being time and costs. The sample should be drawn in such a way that it would be valid to generalise its results to the population (Maree & Pietersen, 2016:192). A population (N) is the entire set of persons, events, organisations, objects or study elements that meets the designated criteria the researcher is interested in studying (Babbie, 2014:119; Grove *et al.,* 2015:46). In a sample population (n), the researcher selects some of the persons, organisation, objects or study elements to represent the population under investigation (Mouton, 2012:134).

The North West Province was selected for the study as it is one of the more rural provinces of South Africa. A study by Casale *et al*. (2013:2) indicated that research in rural areas can be challenging because of isolated geographical areas and limited resources. Furthermore, no studies could be found that had explored the competencies of NUMs in the North West Province.

In this study, an all-inclusive sampling method was applied to the districts of the North West Province (N=4), namely, Bojanala Platinum, Dr Kenneth Kaunda, Dr Ruth Segomotsi Mompati and Ngaka Modiri Molema districts so that no district remained over or under-studied, and there was fair representation of rural and urban districts. Purposive sampling was applied to hospitals (N=6). An inclusion criterion was that the hospital had to be classified as a large district, regional or provincial tertiary hospital. Central hospitals were not in included, as there are none in the

North West Province. This classification was most suited for the study as these hospitals have the greatest number of beds and/or units/wards. The sampling method covered a broad range of public hospitals in the North West Province. Exclusion criteria included hospitals that were classified as small or medium district, and specialised hospitals. Purposive sampling was applied to all wards. Inclusion criteria were all medical and surgical wards (N=46). These wards were best suited for the study because they provide in-patient service on a 24-hour basis and are the busiest wards in hospitals. Although surgical wards have a higher patient turnover than medical wards, this allowed for more comparisons to be made. Exclusion criteria included all specialised wards i.e. trauma, maternity, intensive care units, operating theatres, and all-day wards. The selected samples of hospitals and medical and surgical units/wards are indicated in table 3-5.

Table 3-5: Purposive sample of large district, regional and provincial tertiary hospitals and medical and surgical wards in the North West Province

District	Sub district	Facility level	Facility	No of beds	No of med/surg wards
Bojanala Platinum	Rustenburg	Provincial Tertiary hospital	Job Shimankana Tabane hospital	390	9
Dr Kenneth Kaunda	Matlosana	Provincial Tertiary Hospital	Klerksdorp/Tshepong Hospital Complex	1015	15
	Tlokwe	Regional Hospital	Potchefstroom Hospital	335	7
Ngaka Modiri Molema	Mahikeng	Regional Hospital	Mahikeng Provincial Hospital	492	6
Dr Ruth Segomotsi Mompati	Greater Taung	Large District Hospital	Taung District Hospital	468	4
	Naledi	Regional Hospital	Joe Morolong Memorial Hospital	120	5

All-inclusive sampling was applied to NSMs (N=6) and each NSM was expected to complete a competency evaluation for each NUM in their hospital (multiple data sets), with a total of 46 data entries. The inclusion criteria were willingness to participate in the study and having been employed or acting in the position for at least six months. The exclusion criteria included all NSMs who were on any type of leave during the time of data collection. All-inclusive sampling was applied to NUMs (N=46). Inclusion criteria included willingness to participate in the study and having been employed or acting in the position for at least six months. The exclusion criteria included all NUMs who were on any type of leave during the time of data collection.

All-inclusive sampling was applied to nursing staff (professional nurses, staff nurses and auxiliary nurses), both on day and night duty (N=750). The inclusion criteria included willingness to participate in the study and having worked under the direct supervision of an appointed or acting NUM for more than six months in a medical or surgical ward/unit. Exclusion criteria were all agency staff and student nurses, as it was assumed that they did not have continuous contact and/or interaction with the NUM, and all nursing staff who were on any type of leave during the time of data collection.

3.4.1.3 Data collection

After scientific and ethical approval had been received from the NUMIQ research focus area scientific committee, the North-West University Faculty of Health Sciences Human Research Ethics Committee (HREC), and the North West Provincial Department of Health had granted permission for the study, the researcher met with the Chief Executive Officers (CEOs) or representatives (gatekeepers) of selected hospitals to explain the data collection procedure and receive goodwill consent. A request was put forward to the CEOs or representatives in all selected hospitals for an administrative staff member in the hospital to serve as mediator for the research project. All mediators were trained on the subject of the study and the informed consent process and were made to sign a confidentiality agreement with the researcher and an indemnity form. Each mediator accompanied the researcher during information sharing sessions to make sure that participants were not coerced or made to feel obligated to participate in the study, and was responsible for co-signing and collecting the informed consent forms and distributing surveys. Once goodwill consent had been obtained from CEOs or representatives (gatekeepers) of selected hospitals, the researcher made appointments with prospective participants to explain the study.

The researcher personally presented information on the study to participants. The mediator accompanied the researcher to every unit/ward that met the inclusion criteria at 10:00 and 10:30 (tea times), and between 12:00 and 14:00 (lunch times) for the dayshift, and at 19:00 for the nightshift. This was regarded as the most convenient time for the night shift staff, as it was during this time that families and significant others were visiting patients and the nursing staff would not have started with the night routine. Moreover, the night shift staff were expected to have concluded the hand over report at 18:45. However, the researcher allowed the staff to complete the hand over report first. This process took place at a designated place like a tearoom, nurses' duty room, or boardroom for a maximum of 30 minutes per session for both day and night shifts, to ensure minimum interruption of nurses' duties.

All nurses were given an information leaflet for further reading and an informed consent form to complete and return when they were next on duty, if they were willing to participate in the study. The mediator returned to each ward at the same time the following day and collected and co-signed the informed consent forms. The same process was followed for nurses who had not been on duty the first time for both day and night. A similar procedure was followed for NSMs and NUMs at their offices upon appointment.

Nurses who had submitted their signed informed consent forms were then provided with a survey enclosed in an unsealed envelope with instructions on the envelope of when, where and how to submit the completed survey. The participants had ten days to complete the survey. A sealed cardboard box with a slot large enough to fit an A4 size envelope was placed in a designated place in each ward for nursing staff. The due date was written on top of the box. The placement of the box ensured it could be easily accessed by participants. Participants sealed their surveys in the envelopes provided and posted it in the box. The researcher collected the sealed boxes after 10 days and took it back to North-West University, where the seal on the boxes were broken and surveys counted before submitting it to Statistical Consultation Services (SCS) for capturing of the data. The surveys for nursing staff were white, for NUMs green, and blue for all NSMs. All participants received a pen with the North-West University logo as a token of appreciation.

3.4.1.4 Data analysis

Data were captured by the SCS with the programme EpiData (Lauritsen, 2008) and was analysed using the programmes SPSS 21 (SPSS Inc, 2013) and SAS (SAS Institute Inc, 2003). Descriptive statistics (means, frequencies, percentages and standard deviations) were used to present demographics and results of the scales. Inferential statistics (Spearman's rank-order correlations, crosstabs, effect sizes, t-tests, ANOVA and hierarchical linear modelling) was used to test the hypotheses. Reliability of instruments was established through Cronbach's alpha and validity through exploratory and confirmatory factor analysis.

3.5 Strategy development

In this section, the research method of the strategy development of the study is discussed with the aim and objectives of the study in mind and in relation to the research design.

3.5.1 Research method – strategy development

Deductive and inductive reasoning was used in the formulation of the strategy to enhance competencies of NUMs in public hospitals of the North West Province. Deductive reasoning is reasoning from a general premise to a particular situation (Grove *et al.,* 2013:691). In deductive

logic, two or more premises are used as relational statements to draw a conclusion (Chinn & Kramer, 2008:296). Inductive reasoning is reasoning from the specific to the general in which particular instances are observed and then combined into a larger whole or general statement (Grove *et al.,* 2013:691). In inductive logic, a series of particulars are combined into a larger whole or set of things (Chinn & Kramer, 2008:299). Figure 3-1 below outlines a graphical presentation of deductive and inductive logic.

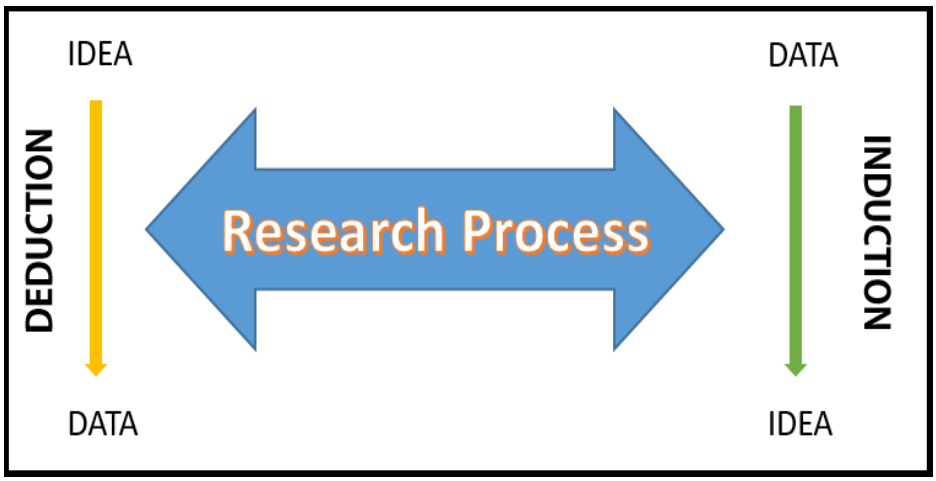

Figure 3-1: Graphical presentation of deductive and inductive logic adapted from Pierce (2013:134)

Katz (1955) believed that managerial skills are not inborn personality traits and that they could and should be developed in managers by providing them with a set of knowledge bases and methods to access information on managerial skills. This premise was therefore used to guide the researcher in developing a strategy to enhance competencies of NUMs in public hospitals of the North West Province. Managers require the necessary management skills to ensure that: 1) they are able to fulfill the functions of management necessary to do their jobs effectively; 2) they can perform their roles correctly and become more managerially self-efficacious; and 3) managers will perform effectively into the future (Peterson & Van Fleet, 2004:1298).

In this study, competencies of NUMs were evaluated from the perspective of NSMs, nursing staff and the self-assessments of NUMs. Furthermore, the study investigated the existence of a relationship between competencies of NUMs and personal and nursing unit demographics, and further linked competencies of NUMs to nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice) and nursing staff's perceptions of the practice environment. The aim was to develop base line data on competencies of NUMs in public hospitals of the North West Province. The base line data allowed for an analysis using the SWOT technique (see Section 1.8.2.7.2). The strengths and weaknesses were identified from

the above-mentioned empirical data. The opportunities and threats were identified from a literature review.

After all strengths, weaknesses, opportunities and threats were identified, they were grouped together under themes that formed the basis for the strategy objectives. The strategy objectives were determined in line with the vision, mission, values, principles and assumptions developed for the strategy. Functional tactics were then developed from strategy objectives as action plans to help achieve strategy objectives. Using and relating all functional tactics to the typology of skills of an effective manager (Technical, Human, Conceptual, Leadership and Financial), the researcher developed a strategy to enhance the competencies of NUMs in public hospitals of the North West Province.

The study findings served as a baseline for the researcher to be able to apply deductive and inductive logic in the formulation of the strategy. Strengths, weaknesses, opportunities, and threats identified, or conclusion statements from the empirical research were used as the evidence for strategy development to enhance competencies of nursing unit managers in public hospitals of the North West Province. Deductive logic was used to develop strategy objectives from study findings (strengths, weaknesses, opportunities and threats identified or conclusion statements), while inductive and deductive logic was applied to develop functional tactics to put into action and implement the strategy that was developed to enhance competencies of nursing unit managers in public hospitals of the North West Province.

3.6 Rigour of the study

Rigour is the umbrella term used to cover all strategies that make the research trustworthy, including validity and reliability (Klopper & Knobloch, 2010:318), attained through discipline and strict accuracy, with precise measuring tools, representative samples, controlled study design (Grove *et al.,* 2015:511), and strict enforcement of rules (Brynard *et al.,* 2014:6). The rigour of the study was ensured by testing the validity and reliability of the research instruments, applying the construct of trustworthiness, and ensuring the theoretical and inferential validity of the study to make certain that the strategy developed produced valid scientific knowledge.

3.6.1 Reliability and validity of questionnaires

The reliability of a measure refers to the internal consistency of question items within a specific category or the consistency of results obtained in the continued use of a particular instrument over time (Brink *et al.,* 2016:170; Grove *et al.,* 2015:287). The instrument reliability depends on a correlation measure that varies between 0 and 1. The closer the measure is to 1, the higher the reliability, and the closer the correlation to 0, the lower the reliability. The Cronbach's alpha

coefficient is the commonly used measure for reliability (Brink *et al.,* 2016:170). According to Pietersen and Maree (2016:239), reliability estimates of 0.80 are regarded more acceptable in most applications. The validity of an instrument is a determination of the extent to which the instrument adequately reflects or measures the abstract construct being examined, or the integrity of the conclusions that are generated from the research (Babbie, 2010:153; Muijs 2012:57; Grove *et al.,* 2015: 290-291). All questionnaires that were used in the study had been validated and used in previous studies. For all questionnaires used in SA for the first time, exploratory and confirmatory factor analysis was done; for those used in SA before only confirmatory factor analysis was performed. Table 3-6 below indicates the reliability and validity of instruments in previous studies.

Table 3-6: Reliability and validity of instruments in previous studies

Instrument	Reliability		Validity
Nurse Manager Competency Instrument (NMCI)	Knowledge and understanding	Ability to implement	This instrument can be noted as a valid measure of important nurse manager competencies (Chase, 2012)
	Technical 0.84 Human 0.94 Conceptual 0.89 Leadership 0.93 Financial 0.93	Technical 0.90 Human 0.96 Conceptual 0.92 Leadership 0.95 Financial 0.95 (Chase, 2010)	
Practice Environment Scale of the Nurse Work Index Revised (PES-NWI-R)) (Lake, 2002)	In SA, Cronbach's alpha coefficient of the PES-NWI-R) subscales 1- 5 was 0.86, 0.89, 0.79, 0.65, and 0.77 respectively (Klopper *et al.,* 2012); 0.82, 0.83, 0.78, 0.79, and 0.66 respectively (Holtzhausen, 2017) with Van Wyk, (2015) determining Cronbach's alpha coefficients of higher than 0.76 in all subscales.		Factor analysis in SA context – good construct validity
The Michigan Organisational Assessment Questionnaire: Global Job Satisfaction (Cammann *et al.,* 1983)	Cronbach's Alpha Overall: α= 0.88 (Cammann *et al.,* 1983)		This instrument has demonstrated discriminant validity (Cammann *et al.,* 1983)
Satisfaction with specific aspects of the job (Sermeus *et al.,* 2011)	Cronbach's Alpha 0.70 – 0.80 (Sermeus *et al.,* 2011)		
The Michigan Organisational Assessment Questionnaire: Job	Cronbach's Alpha Overall: α= .92 - .93 (Cammann *et al,* 1983*)*		CFA supports a 4 factor structure. This instrument has demonstrated predictive validity (Cammann

Instrument	Reliability	Validity
Turnover Intention (Cammann *et al,* 1983*)*		*et al,* 1983)
Organisational Commitment questionnaire (Mowday *et al.,* 1979)	Coefficient alpha ranged from .81 - .93 (Mowday *et al.,* 1979)	The analyses resulted in single factor solution and supported that the items are measuring a single common underlying construct.
Compassion Practice Instrument *(Coetzee et al.,* 2020*)*	Cronbach's alpha coefficient was confirmed 0.70 for disengagement, 0.71 for impotence and 0.75 for unfulfilled (Hlongwane, 2015) and 0.81 for disengagement, 0.83 for impotence and 0.46 for unfulfilled (Holtzhausen, 2017) Coetzee et al. (2020) had the overall reliability score of 0.84 for CS and 0.70 for CF	CFA supported a 3 factor structure. This instrument has demonstrated good construct validity (Coetzee *et al.,* 2020)

3.6.2 Trustworthiness

Trustworthiness indicates validity of the entire research, not only the measuring instruments. This is a measure of how convincing, true and accurate individuals perceive study findings to be (Grove *et al.,* 2013:197; Leedy & Ormrod, 2016:318). The construct of trustworthiness consists of the epistemological standards of truth value, applicability, consistency and neutrality, as well as the theoretical and inferential validity of the study (Brink *et al.,* 2016:172-173).

3.6.2.1 Truth value

Truth value is the full trust or belief of the researcher that the study findings will not have any mistakes or errors that could affect the integrity of findings in relation to the whole research process, participants, and the context in which the study is conducted (Klopper & Knobloch, 2010:319; Grove *et al.,* 2013:197). Truth value in quantitative research is obtained through the strategy of internal validity and measurement validity (Klopper & Knobloch, 2010:319). Internal validity is a decision of the extent to which study findings are a true reflection of reality and not just the results of extraneous variables (Klopper & Knobloch, 2010:320-320; Grove *et al.,* 2015:226-227). Internal validity was ensured by checking whether there was any other reasonable explanation for study findings other than the ones the researcher proposed. Threats to internal validity were checked, for example, through the representativeness of the NSMs, NUMs, and all categories of nursing staff to ensure that the conclusions generated from the research findings were valid. Peer examination was utilised through contact sessions with the

study leaders, who are experts in the study method and the field of nursing management, and meetings with statistical consultation services. In addition, the scientific committee, of the School of Nursing Science evaluated the proposal, the Health Research Ethics Committee conducted an institutional review and the proposal was orally defended to a panel of experts in the methodology and field of study.

3.6.2.2 Applicability

Applicability is the ability to transfer data from research findings of a particular inquiry to other contexts and settings. Applicability is obtained through the strategy of external validity. The study findings obtained within a particular sample can be generalised or transferred to a larger, similar population. This was ensured through the representativeness of the NSMs, NUMs and all categories of nursing staff (Botes, 2006:189; Klopper & Knobloch, 2010:320). To ensure applicability of the findings to other contexts, a description of the background of the study, the aim and objectives of the study, the ontological, epistemological and methodological assumptions of the researcher, the context, and the research methodology was given. The research methodology, including the design, methods, data collection, data analysis, and interpretation of the data and development of the strategy, was comprehensively documented and linked to the objectives and theoretical foundations of the study.

External validity has to do with generalisation of the findings from the sample to the target population and ensures the sample's representativeness of the target population to which findings will be generalised. To ensure external validity in quantitative research, the researcher must consider trying to remove all threats. The threat to and the measures to ensure external validity apply to the sample, the characteristics, and events in the context of the study that must be similar to the target population the findings are to be generalised to (Botes, 2006:182; Klopper & Knobloch, 2010:321).

3.6.2.3 Consistency

Consistency is the ability to reproduce the study with the same population in a similar context with production of the same or comparable results. Consistency of research findings was ensured through the strategies of reliability and dependability (Botes, 2006:193; Klopper & Knobloch, 2010:320) (See Section 3.6.1).

3.6.3 Neutrality

Neutrality means not being directly involved, or taking an impartial stand in a particular situation. The researcher applied impartiality in the collection, analysis and interpretation of data to ensure

the absence of biases, interests or own perspective. To ensure neutrality in quantitative research, the strategy of objectivity is discussed as focusing on both the characteristics of the researcher and the data. This means that the researcher must collect and analyse data objectively by remaining detached and approaching participants from a professional distance. The findings of the study must be a product of scientific inquiry and not of the researcher (Klopper & Knobloch, 2010:323).

3.6.4 Theoretical validity

Theoretical validity is linked to solid theoretical meaning or definition of a concept. To ensure the theoretical validity of a concept, two processes can be employed: a concept analysis or conceptualisation of research. In this study, conceptualisation - which is a process of describing key concepts of the research - was applied as well as the grounding and integration of research within the accepted body of nursing knowledge (Botes, 2006:190; Klopper & Knobloch, 2010:318). Conceptualisation produced specific meanings of concepts for the purpose of this research (Babbie, 2010:131). (See Section 1.8.2).

3.6.5 Inferential validity

Inferential validity has to do with the logical arguments of the research. If the researcher presents logical arguments and justifies research findings, then the research community will be convinced of the validity of the research (Botes, 2006:196). To ensure inferential validity, statements must be acceptable based on existing theoretical frameworks, relevant to the conclusions, and must adequately support and qualify the conclusions (Botes, 2006:196; Klopper & Knobloch, 2010:323). In this study, inferential validity was ensured by inferences (SWOT analysis) through deductive logic from a comprehensive literature review and empirical research. This was achieved by developing strategy objectives, that were based on the results of the SWOT analysis from the comprehensive literature review and empirical research, and the development of functional tactics that were based on the strategy objectives.

3.7 Summary

In this chapter, the research design was described in accordance with the aim and objectives of the study, and the research methods were described in relation to the empirical research and the strategy development of the study. The empirical research phase was discussed with regard to the research instrument, the study population, the sampling method, data collection, data analysis and the strategy development phase. A discussion of the rigour of the study concluded the chapter.

CHAPTER 4
DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Overview of the chapter

This chapter presents the results of the study. It commences with the realisation of the study sample, followed by the demographic profile of NSMs, NUMs and all categories of nursing staff (professional nurses, enrolled nurses and enrolled nursing auxiliaries), and validity and reliability testing of the instruments. Data is then analysed using descriptive and inferential statistics, and interpreted and discussed per objective. Strengths and weaknesses are identified under each objective in order to prepare for strategy development.

4.2 Realisation of the study sample

Chapter 3 provided the research design and method of the study (see section 3.4.1.2), with the sampling method discussed in detail. A total of six hospitals met the inclusion criteria and all six hospitals agreed to participate in the study. From these, 46 medical and surgical units were included as compliant with the inclusion criteria and willing to participate. All six NSMs from participating hospitals agreed to participate in the study (response rate = 100%). Each NSM was expected to complete the survey for each NUM in the participating units. Thus, NSMs completed multiple questionnaires, which added up to 43 surveys; three surveys had not been completed. Of the 46 NUMs, 24 completed the survey (response rate = 52%). A total of 750 nurses (all categories) were employed in participating units during data collection, and 463 completed the survey (response rate = 62%).

4.3 Demographic profile of NSMs, NUMs and nursing staff

The demographic variables of NSMs, NUMs and nursing staff were outlined in the demographic section of the surveys (see Appendices D, E and F). Only valid data is reported; missing data is not reported. The Number of responses for each demographic item is indicated.

4.3.1 Gender distribution: NSMs, NUMs and Nursing staff

All NSMs (6), 22 NUMs and 458 nursing staff responded to the gender item. Figure 4-1 illustrates the gender distribution for NSMs, NUMs and nursing staff.

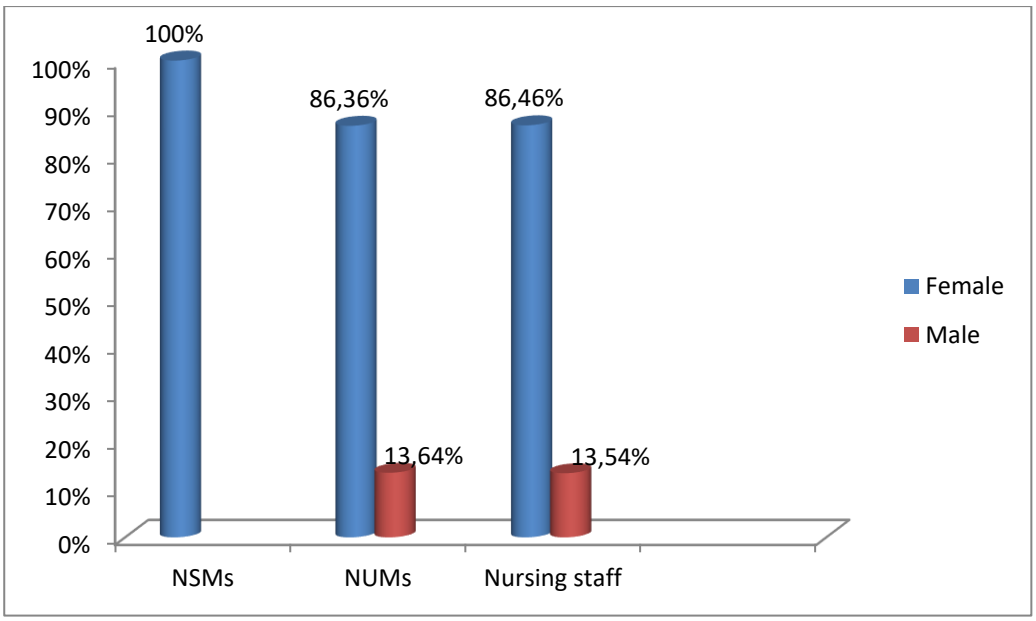

Figure 4-1: Gender distribution: NSMs, NUMs and nursing staff

Figure 4-1 indicates that all NSMs were female (n=6). Of the NUMs, 86.36% (n=19) were female and 13.64% (n=3) were male. Of the total 458 nursing staff participants, 86.46% (n=396) were female and 13.54% (n=62) were male.

4.3.2 Age distribution: NSMs, NUMs and nursing staff

All NSMs, 22 NUMs and 439 nursing staff responded to the age item. The age distribution of NSMs, NUMs and nursing staff is illustrated in Figure 4-2 below

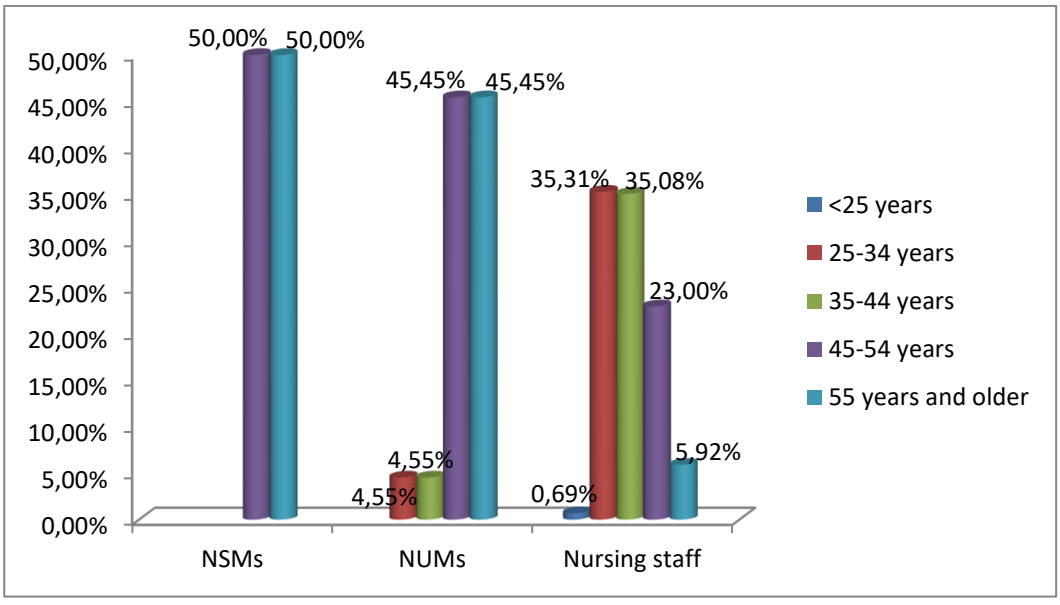

Figure 4-2: Age distribution of NSMs, NUMs and nursing staff

The age distribution of NSMs indicated that 50.00% (n=3) were between the ages 45 – 54 years and 50.00% (n=3) were 55 years and older. Almost half of NUMs 45.45% (n=10) were in the age group of 55 years and older, and would be retiring within the next five years. Another 45.45% (n=10) were nearing retirement age at 45-54 years. Only two NUMs were younger than 45 years. For nursing staff, only a small percentage (0.69%, n=3) were younger than 25 years, with the Number or respondents aged 25-34 years at 35.31% (n=155) and almost equal to 35-44 years 35.08% (n=154). Only 5.92% (n=26) were older than 55 years, with the highest age in this category being 62 years.

4.3.3 Qualifications attained: NSMs, NUMs and Nursing staff

This section discusses the basic nursing qualifications attained by six NSMs, 22 NUMs and 458 nursing staff. See Figure 4-3 below.

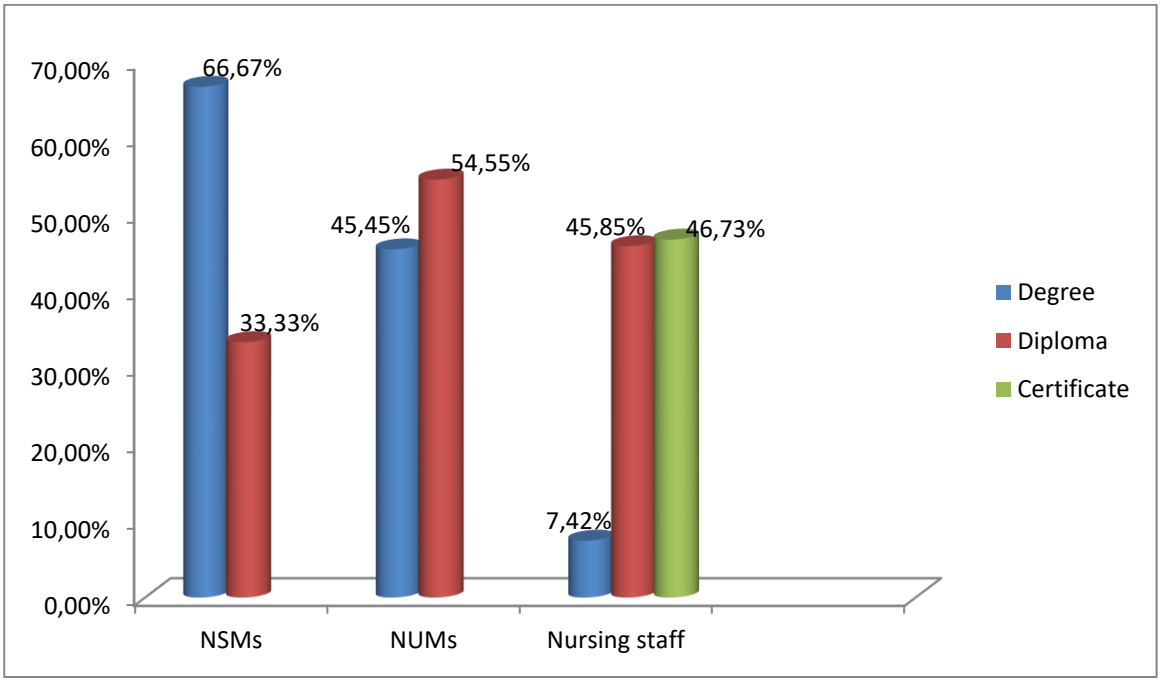

Figure 4-3: Basic nursing qualifications attained of NSMs, NUMs and Nursing staff

Figure 4-3 indicates that the majority of NSMs had a degree in nursing 66.67% (n=4). 54.55% (n=12) of NUMs had a diploma in nursing, while 45.45% (n=10) had a degree in nursing. Almost half of nursing staff (46.73% and n=214) had certificates in nursing - which is the most basic nursing qualification - (enrolled nurses and enrolled nursing auxiliaries), while 45.85% (n=210) had a diploma and only 7.42% (n=34) had a degree in nursing.

4.3.4 Additional management qualifications of NSMs and NUMs

Only NSMs and NUMs were surveyed for additional management qualification. Additional management qualifications are discussed and illustrated together with the level of management qualification (degree or diploma). The information below is based on responses from all six NSMs and 22 NUMs. Figure 4-4 presents additional management qualifications of NSMs and NUMs.

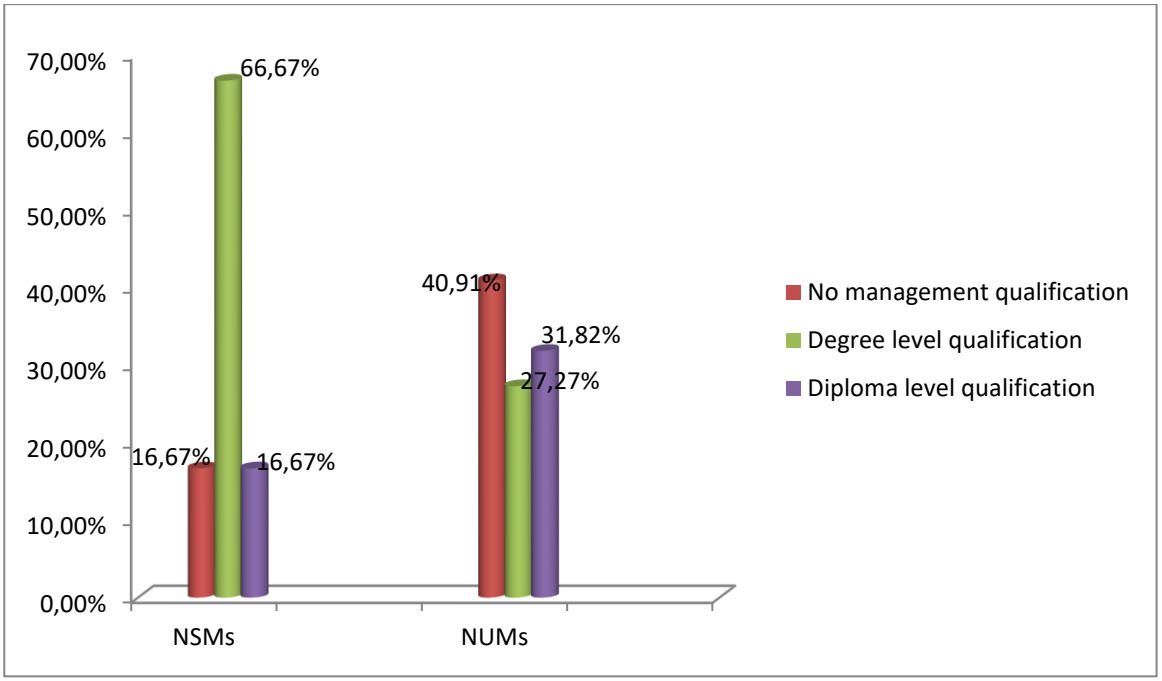

Figure 4-4: Additional management qualification and level of qualification for NSMs and NUMs

Only 16.67% (n=1) of NSMs did not have an additional management qualification, while the majority of NSMs (66.67% and n=4) had a degree in management. 40.91% (n=9) of NUMs did not have an additional management qualification, while only 27.27% (n=6) had degrees in management.

4.3.5 Tenure in current management position: NSMs and NUMs

Five NSMs and 23 NUMs responded to the question on tenure in management positions. Figure 4-5 displays tenure in current management positions.

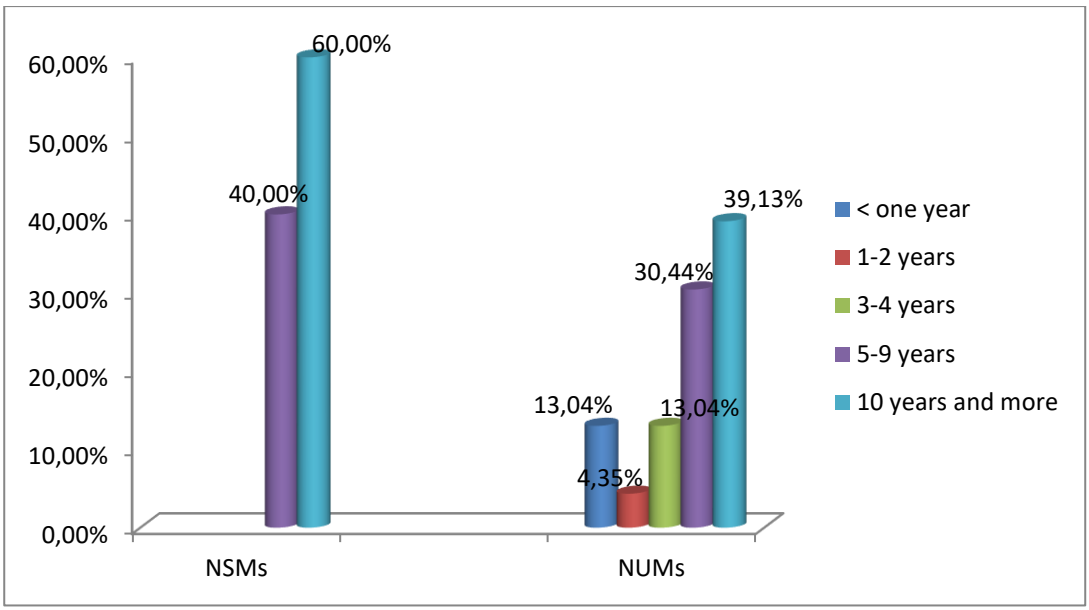

Figure 4-5: Tenure in current management positions (NSMs and NUMs)

According to Figure 4-5, 60.00% (n=3) of NSMs had been in their current management position for 10 or more years. Only 13.04% (n=3) of NUMs had been in a management position for less than one year, with 30.44% (n=7) for 5 to 9 years and 39.13% (n=9) for 10 years or more.

4.3.6 Practice as a nurse: NSMs, NUMs and Nursing Staff

All NSMs, 23 NUMs, and 455 nursing staff participants responded to the question of period of time in nursing practice. Figure 4-6 below illustrates the periods of time NSMs, NUMs and nursing staff had practised as nurses.

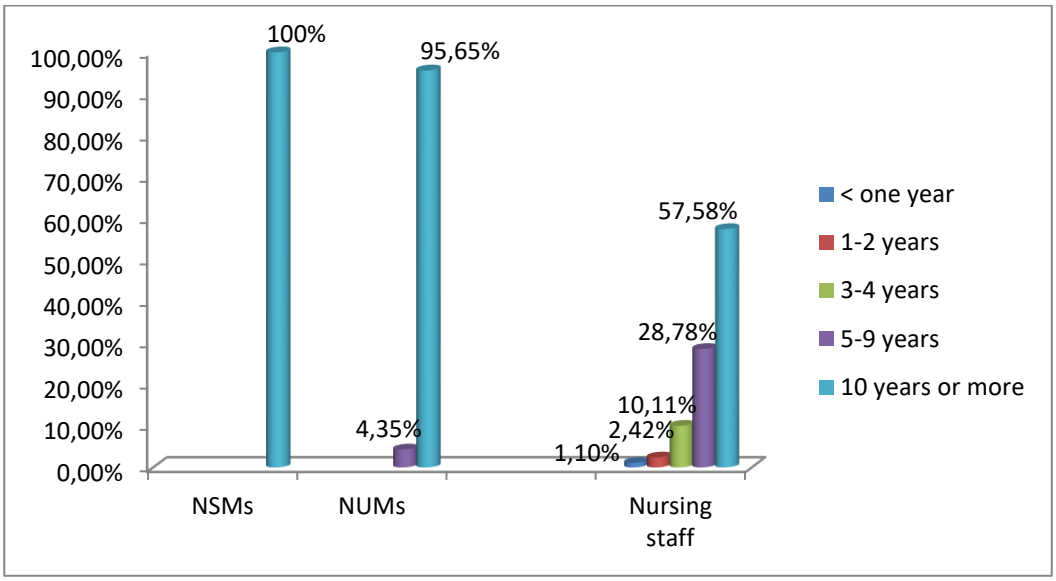

Figure 4-6: Practice as a nurse: NSMs, NUMs and Nursing staff

All NSMs (n=6) had practised as nurses for 10 years or more. Of 23 NUMs, only one (4.35%) had been practising for less than 10 years. Of nursing staff, the majority (57.58% and n=262) had practised as nurses for 10 years or more, with only 2.42% (n=11) having practised for 1-2 years and 1.10% (n=5) for less than one year.

4.3.7 Span of control: NSMs and NUMs

Span of control only applied to NSMs and NUMs, and five NSMs and 15 NUMs responded. Figure 4-7 reveals the span of control for NSMs and NUMs.

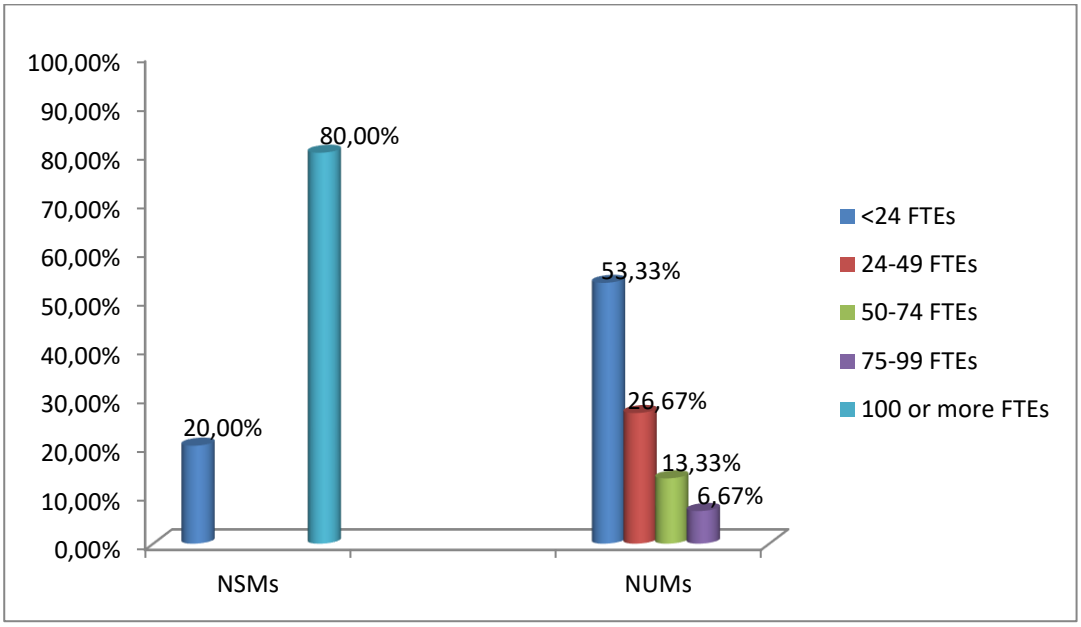

Figure 4-7: Span of control for NSMs and NUMs

The majority of NSMs (80.00% and n=4) had a span of control of more than 100 full time employees (FTEs) with only one NSM (20.00%) with a control span of less than 24 FTEs. 53.33% (n=8) of NUMs had a span of control of less than 24 FTEs while 13.33% (n=2) had 50-74 FTEs and one (6.67%) had 75-99 FTEs. No NUMs had a span of control of more than 100 FTEs.

4.3.8 Hospital size: NSMs and NUMs

The hospital size was also only relevant to NSMs and NUMs. Since NSMs and NUMs were from the same hospitals, the hospital size was identified per NSM. All six NSMs responded to the hospital size item. The Number of NUM participants from each category of hospital is stated in the interpretation. Figure 4-8 outlines the sizes of the hospitals included.

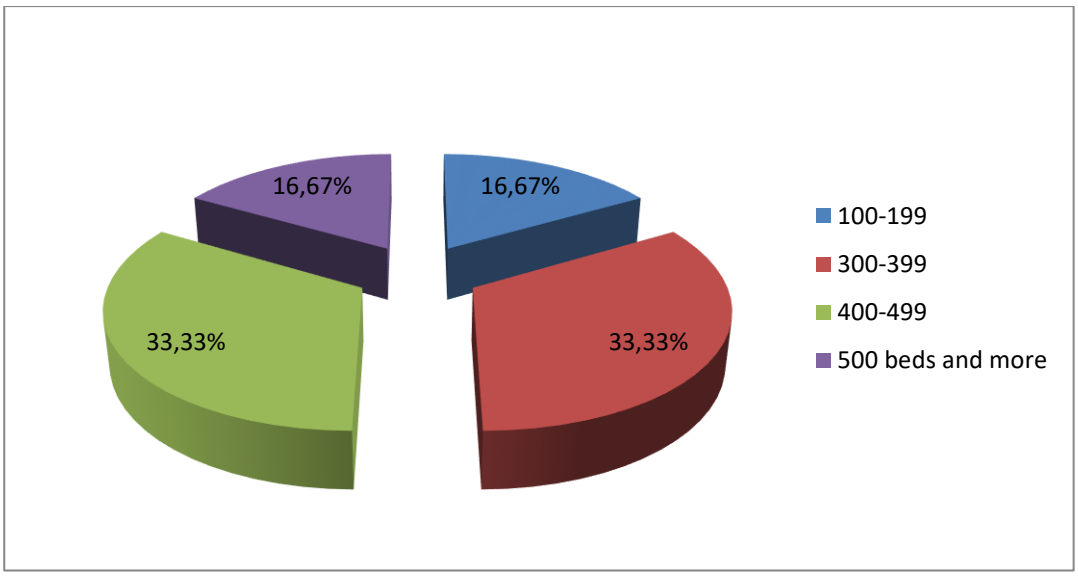

Figure 4-8: Hospital size: NSMs and NUMs

Two hospitals had bed counts of between 300 and 399 with one NUM from each of these hospitals participating. Another two had bed counts of between 400 and 499, with three and six NUM participants respectively. One hospital had between 100 and 199 beds with three NUM participants and the remaining hospital had more than 500 beds, with nine NUMs that completed the survey.

4.3.9 Nursing positions of different categories of nursing staff

Different nursing positions were only identified for different categories of nursing staff (professional nurses, enrolled nurses and nursing auxiliaries). 455 nursing staff responded to this item. Figure 4-9 reveals the nursing positions of different categories of nursing staff.

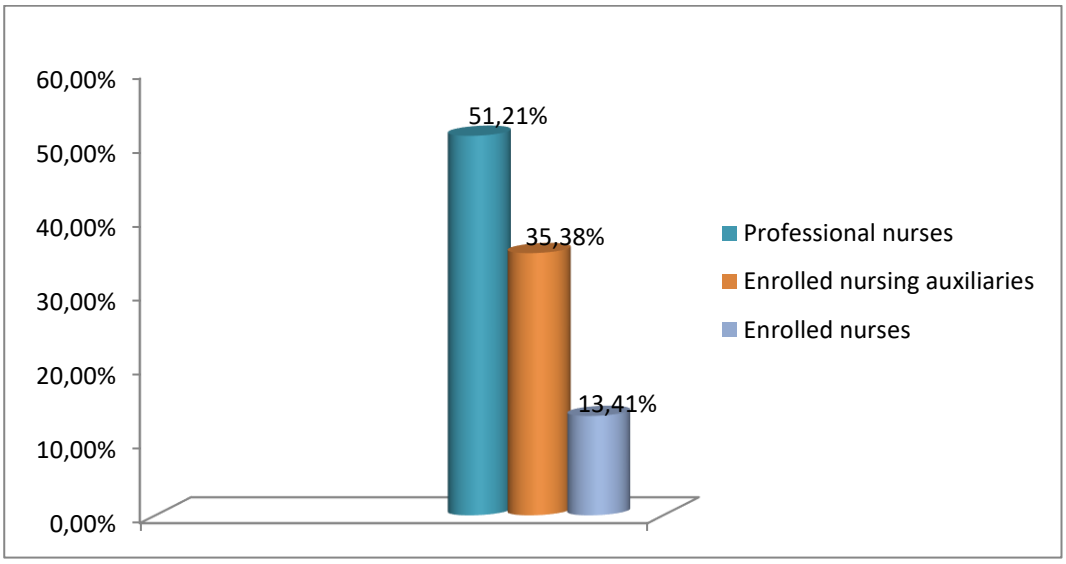

Figure 4-9: Nursing positions of different categories of nursing staff

Figure 4-9 indicates that 51.21% (n=233) were professional nurses, followed by nursing auxiliaries at 35.38 % (n=161) and enrolled nurses at 13.41% (n=61).

4.3.10 Years worked at organisation

Only nursing staff were expected to indicate the years they had worked at an organisation, and 439 nursing staff responded to the item. Figure 4-10 illustrates the years worked at the current organisation.

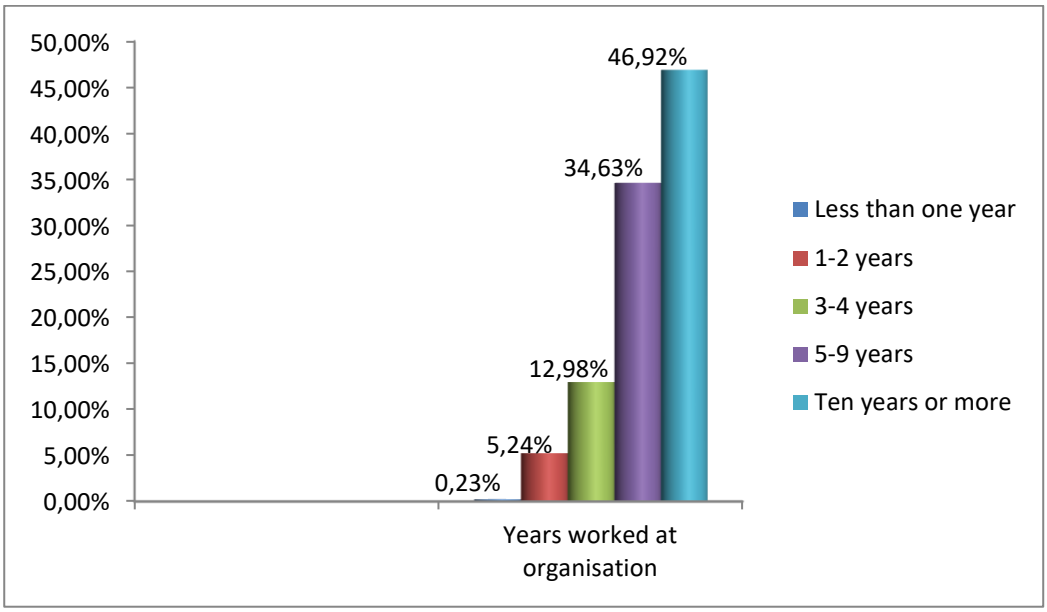

Figure 4-10 Years nursing staff had worked at current organisation

The largest portion of nursing staff (46.92% and n=206) had worked at their respective organisations for 10 and more years, 5.24% (n=23) had been working there for 1-2 years and only one (0.23%) having worked for less than one year.

4.3.11 Satisfaction with nursing as a career of choice and current job: Nursing staff

Only nursing staff were required to indicate their satisfaction with nursing as a career of choice. Satisfaction with nursing as a career of choice was discussed and illustrated together with satisfaction with current employment. 458 nursing staff participants responded to this item and 457 to the question of their level of satisfaction with their current job. Figure 4-11 outlines the satisfaction levels in terms of nursing as a career of choice and current employment.

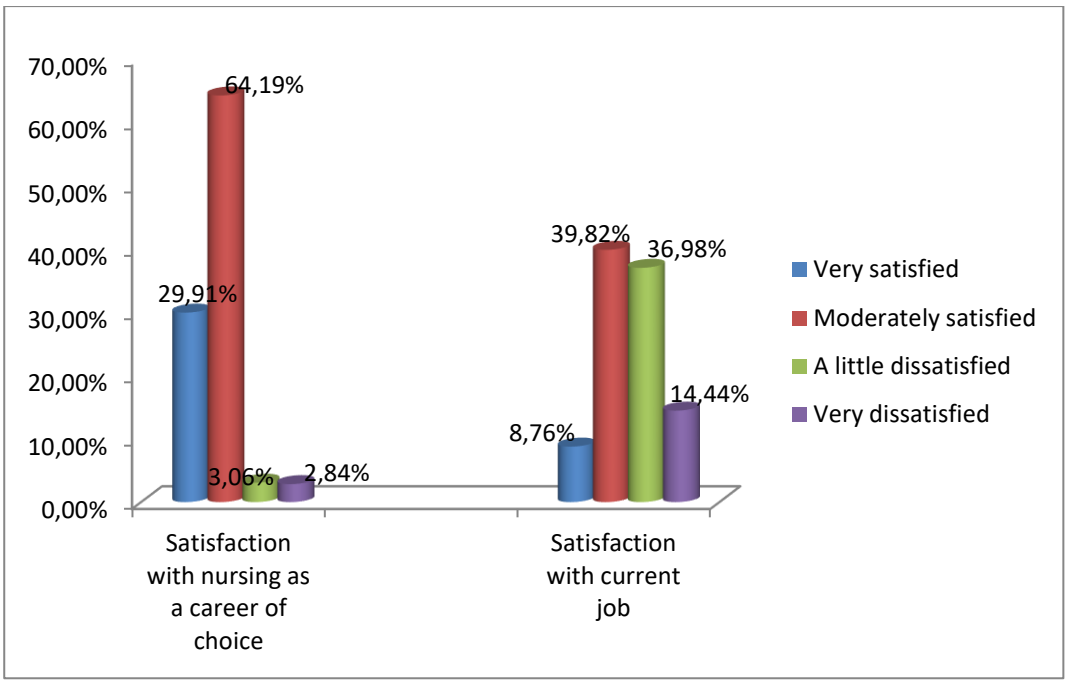

Figure 4-11: Satisfaction with career of choice and current employment: Nursing staff

Nursing staff were generally satisfied with nursing as a career of choice (94.10% and n=431), while a little more than half (51.42% and n=235) were dissatisfied with their current employment. These summary findings are integrated in the discussion of objective 2. Table 4-1 highlights the strengths and weaknesses in terms of demographic profile.

Table 4-1: Strengths and weaknesses in terms of demographic profiles

Strengths	Weaknesses
1. 83.33% (n=5) of NSMs have a formal management qualification.	1. One (16.67%) NSM did not have a formal management qualification.
2. 54.54% (n=12) of NUMs have a formal management qualification.	2. 45.45% (n=10) of NUMs did not have a formal management qualification.
	3. 50.00% (n=3) of NSMs will retire in 10 years or less.
	4. 45.45% (n=10) of NUMs will retire in 10 years or less.
3. 60.00% (n=3) of NSMs have been in their current management positions for more than ten years, which indicate experience and continuity of service.	5. 60.00% (n=3) of NSMs have been in their current management positions for more than ten years, which stagnate succession planning and career development.
	6. 39.13% (n=9) of NUMs have been in their current management positions for more than ten years, which frustrates those aspiring for the position.

Strengths	Weaknesses
4. 39.13% (n=9) of NUMs have been in their current management positions for more than ten years, which indicate experience and continuity of service.	
	7. The span of control of NUMs ranges from (53.33%, n=8) having less than 24 FTEs, (13.33%, n=2) with 50-74 FTEs, and (6.67%, n=1) 75-99 FTEs. This indicate under or over-utilisation of respective NUMs.
	8. There are very few younger nurses. The number of nurses aged 25-34 years (35.31%; n=155) is almost equal to the number of nurses aged 35-44 years (35.08%, n=154) which indicates a plateau in new entrants into the profession.
	9. 1.10% (n=5) of nursing staff (all categories) have been in the profession for less than one year, with 2.42%, (n=11) for 1-2 years, and 10.11% (n=46) for 3-4 years. This also indicates lack of new recruits into the profession.
	10. Only 7.42% (n=34) of professional nurses have a degree in nursing, which is a concern given the international standards for entry into the nursing profession.
5. The high Number of professional nurses (51.21%, n=233) is good as they are key to improving patient outcomes.	11. The skill mix of nursing staff is skewed with 51.21% (n=233) professional nurses, (35.38%, n=161) enrolled nursing auxiliaries and (13.41%, n=61) enrolled nurses which may create higher workloads for some roles and unrealised scope of practice.
6. 94.10% (n=431) of nursing staff are satisfied with nursing as a career of choice.	12. 51.42% (n=235) of nursing staff are not satisfied with their current jobs.

4.4 Construct validity

In this study the construct validity of all the instruments were confirmed through exploratory and/or confirmatory factor analysis. Both exploratory and confirmatory factor analyses were performed on the NMCI and the OCQ as these instruments have never been used in the South African context before. The reliability of all the instruments was also determined.

4.4.1 Nurse manager competency instrument (NMCI)

The NMCI was discussed in section 3.4.1.1 and was used to evaluate competencies of NUMs through multi-source feedback by NSMs, self-evaluation of NUMs, and nursing staff. Since the instrument had never been validated nationally, both exploratory and confirmatory factor analyses were conducted.

4.4.1.1 Exploratory factor analysis of the NMCI

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy should be higher than 0.6 but a value closer to one (1) is desirable. Bartlett's test of sphericity should yield a $p < 0.05$ (Field, 2009:821). Table 4-2 present the suitability of the data for exploratory factor analysis.

Table 4-2: KMO and Bartlett's test of sphericity

Suitability of the data		Values obtained
KMO		0.96
Bartlett's test of sphericity	Approx. Chi-square	12520.5
	df	1035
	Sig.	0.00
Total variance explained		55.24%

The KMO measure of sampling adequacy for the analysis was found to be 0.96 and 55.24% of the total variance was explained by the four extracted factors, which are considered acceptable. The Bartlett test of sphericity has a p=0.00 and is therefore acceptable. The pattern matrix and extracted subscales are presented in Table 4-3

Table 4-3: Pattern matrix of the NMCI

ITEM NO	ITEM	SUBSCALE	COMPONENT			
			1	2	3	4
			Leadership	Conceptual 1	Technical	Conceptual 2
B1	Nursing practice standards	Technical			0.70	
B2	Nursing Care Delivery Systems	Technical			0.88	

ITEM NO	ITEM	SUBSCALE	COMPONENT			
			1	2	3	4
			Leadership	Conceptual 1	Technical	Conceptual 2
B3	Nursing Care Planning	Technical			0.85	
B4	Clinical Skills	Technical			0.73	
B5	Patient Acuity Systems	Technical			0.74	
B6	Infection Control Practices	Technical			0.64	
B7	Research and Evidence-based Practice	Technical		0.71	0.29	
B8	New Technology	Technical		0.74		
B9	Case Management	Technical		0.36		0.32
B10	Information Systems and Computers	Technical		0.60		
B11	Regulatory Council Standards	Technical			0.34	0.33
B12	Effective Communication	Human	0.33			
B13	Effective Staffing Strategies	Human		0.44		
B14	Recruitment Strategies	Human		0.55		0.37
B15	Retention Strategies	Human		0.55		-0.43
B16	Effective Discipline	Human	0.48		0.33	
B17	Effective Counseling Strategies	Human	0.70			
B18	Constructive Performance Evaluation	Human	0.57			

ITEM NO	ITEM	SUBSCALE	COMPONENT			
			1	2	3	4
			Leadership	Conceptual 1	Technical	Conceptual 2
B19	Staff Development Strategies	Human	0.49	0.44		
B20	Group Process	Human	0.45	0.39		
B21	Interviewing Techniques	Human	0.54			
B22	Team-building Strategies	Human	0.64			
B23	Humour	Human	0.44	0.37		
B24	Optimism	Human	0.36	0.44		
B25	Nursing Theories	Conceptual		0.72		
B26	Administrative / Organizational Theories	Conceptual		0.78		
B27	Strategic Planning / goal development	Conceptual				0.43
B28	Ethical Principles	Conceptual				0.41
B29	Teaching / Learning Theories	Conceptual		0.61		
B30	Political Process & Advocacy	Conceptual		0.58		
B31	Quality / Process Improvement	Conceptual				0.56
B32	Legal Issues	Conceptual	0.49	0.28		
B33	Decision-making	Leadership	0.65			
B34	Power and Empowerment	Leadership	0.53			
B35	Delegation	Leadership	0.41			0.39
B36	Change Process	Leadership	0.63			
B37	Conflict Resolution	Leadership	0.75			

ITEM NO	ITEM	SUBSCALE	COMPONENT			
			1	2	3	4
			Leadership	Conceptual 1	Technical	Conceptual 2
B38	Problem-solving	Leadership	0.73			
B39	Stress Management	Leadership	0.67			
B40	Research Process	Leadership	0.37	0.47		
B41	Motivational Strategies	Leadership	0.77			
B42	Organisation of Unit of Work and Workflow Process	Leadership	0.57			
B43	Policies and Procedures	Leadership				0.48
B44	Staff Education	Leadership	0.37	0.41		
B45	Time Management	Leadership	0.42			
B46	Interdisciplinary Care Coordination	Leadership	0.58			

A principal component analysis extraction method with Oblimin rotation converged in 17 iterations. Subscales in the pattern matrix are presented as follows:

- Leadership and Human (factor 1): 23 items: 12, 16, 17, 18, 19, 20, 21, 22, 23, 24, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 44, 45, 46
- Conceptual 1 (factor 2): 11 items: 8, 9, 10, 13, 14, 15, 25, 26, 29, 30, 32
- Technical (factor 3): 8 items: 1, 2, 3, 4, 5, 6, 7, 11
- Conceptual 2 (factor 4): 4 items: 27, 28, 31, 43

Based on the results of this analysis, some items included in specific subscales in the literature loaded onto other subscales. Most of the Human and Leadership items combined as one subscale. The Human, Technical and Conceptual subscales each divided into two subscales. These subscales are discussed in the order that it appeared as loaded onto other subscales.

- Items 12, 16, 17, 18, 19, 20, 21, 22, 23 and 24 loaded on the Leadership subscale instead of on the Human subscale. This might be because items on the Human subscale are about interpersonal relationships and the associated skills, strategies and characteristics, which is essential for effective Leadership. Therefore, many of these items may have loaded on Leadership, as the two are intertwined.

- Items 13, 14, 15 loaded under the subscale Conceptual instead of the subscale Human. The reason for this may be that these items could be identified as strategic management elements, associated with higher-order or Conceptual skills.

- Items 8, 9, 10 loaded on the subscale Conceptual instead of the subscale Technical. This might be because other items on the subscale Technical are directly related to nursing care issues and these items might have been associated with strategic Technical processes rather than nursing Technical skills. The items might also not be regarded as the competencies a NUM needs to provide clinical care. Also, these items are not very common constructs in the SA setting (e.g. we are not very focused on computer advancement or case management), and especially foreign to lower-level nursing staff, which may have led participants to group these items together due to a lack of insight into what these items entailed.

- Items 27, 28 and 31 loaded on a separate subscale. These items are related to planning for the future: goals, ethics, and improvement. Ethics is probably included in this subscale, as it is not currently associated with management practices in the country – hence, the future-related context of this specific item.

- Item 43 loaded on the other Conceptual 2 subscale instead of the subscale Leadership. This item is also about planning for the future, which might have been considered a higher-order management function.

- Most of the items corresponded with the original subscales as portrayed in literature, with only 10 items not fitting under the original subscales. These items mostly represented either additions to or detractions from the Conceptual subscale, thus the exploratory factor analysis was deemed acceptable.

4.4.1.2 Confirmatory factor analysis of the NMCI

The confirmatory factor analysis is presented in Figure 4-12

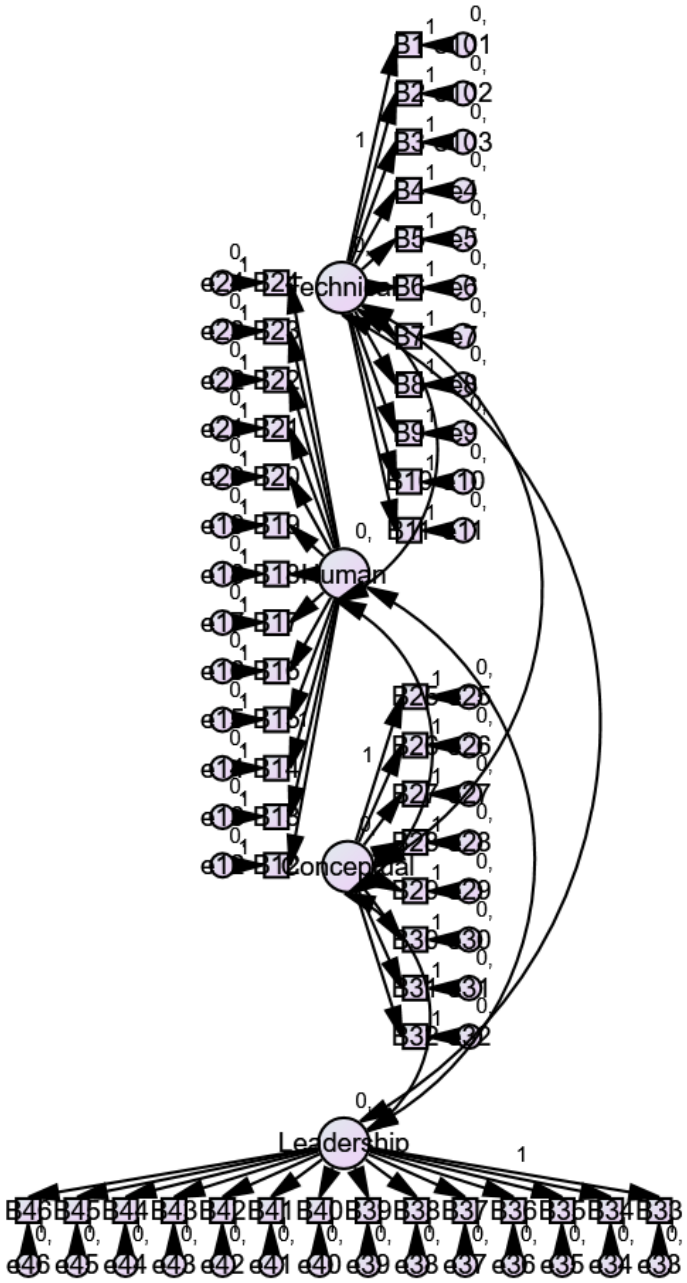

Figure 4-12 Confirmatory Factor Analysis of the NMCI

Standard regression weights and ρ-values of the NMCI are presented in table 4-4

Table 4-4: Standard regression weights and ρ-values of the NMCI

Nurse manager competency instrument			Standard regression weight	P-value
B1	Technical	Nursing practice standards	0.75	***
B2	Technical	Nursing Care Delivery Systems	0.78	***
B3	Technical	Nursing Care Planning	0.76	***

Nurse manager competency instrument			Standard regression weight	P-value
B4	Technical	Clinical Skills	0.76	***
B5	Technical	Patient Acuity Systems	0.76	***
B6	Technical	Infection Control Practices	0.73	***
B7	Technical	Research and Evidence-based Practice	0.53	***
B8	Technical	New Technology	0.46	***
B9	Technical	Case Management	0.59	***
B10	Technical	Information Systems and Computers	0.50	***
B11	Technical	Regulatory Council Standards	0.52	***
B12	Human	Effective Communication	0.54	***
B13	Human	Effective Staffing Strategies	0.65	***
B14	Human	Recruitment Strategies	0.66	***
B15	Human	Retention Strategies	0.60	***
B16	Human	Effective Discipline	0.64	***
B17	Human	Effective Counselling Strategies	0.61	***
B18	Human	Constructive Performance Evaluation	0.72	***
B19	Human	Staff Development Strategies	0.71	***
B20	Human	Group Process	0.73	***
B21	Human	Interviewing Techniques	0.71	***
B22	Human	Team-building Strategies	0.71	***
B23	Human	Humour	0.70	***
B24	Human	Optimism	0.66	***
B25	Conceptual	Nursing Theories	0.61	***
B26	Conceptual	Administrative / Organizational Theories	0.62	***
B27	Conceptual	Strategic Planning / goal development	0.62	***
B28	Conceptual	Ethical Principles	0.56	***
B29	Conceptual	Teaching / Learning Theories	0.66	***
B30	Conceptual	Political Process & Advocacy	0.68	***
B31	Conceptual	Quality / Process Improvement	0.58	***
B32	Conceptual	Legal Issues	0.61	***
B33	Leadership	Decision-making	0.67	***

Nurse manager competency instrument			Standard regression weight	P-value
B34	Leadership	Power and Empowerment	0.68	***
B35	Leadership	Delegation	0.65	***
B36	Leadership	Change Process	0.74	***
B37	Leadership	Conflict Resolution	0.76	***
B38	Leadership	Problem-solving	0.74	***
B39	Leadership	Stress Management	0.70	***
B40	Leadership	Research Process	0.61	***
B41	Leadership	Motivational Strategies	0.75	***
B42	Leadership	Organisation of Unit of Work and Workflow Process	0.71	***
B43	Leadership	Policies and Procedures	0.59	***
B44	Leadership	Staff Education	0.62	***
B45	Leadership	Time Management	0.68	***
B46	Leadership	Interdisciplinary Care Coordination	0.71	***

*** Statistically significant

All items had statistically significant regression weights above 0.46, indicating items significantly loaded on all subscales. Item 2, Nursing Care Delivery Systems, contributed the most weight (0.78) to explaining the subscale Technical Skills, while item 8, New Technology, contributed the least (0.46). Regarding human skills, item 20, Group Process, contributed the most weight (0.73), while item 12, Effective Communication, contributed the least (0.54). Item 30, Political Process and Advocacy contributed the most to explaining the subscale, Conceptual Skills (0.68), while item 28, Ethical Principles, contributed the least (0.56). The subscale of Leadership showed that item 37, Conflict Resolution, contributed the most weight (0.76) and item 43, Policies and Procedures, contributed the least (0.59). The correlation of the four subscales are summarised in Table 4-5.

Table 4-5: Correlation coefficients of the NMCI subscales

			Correlations coefficient	P-values
Technical	<-->	Human	0.78	***
Technical	<-->	Conceptual	0.78	***
Leadership	<-->	Technical	0.77	***
Human	<-->	Conceptual	0.91	***
Leadership	<-->	Human	0.89	***
Leadership	<-->	Conceptual	0.85	***

*** Statistically significant

The information in Table 4-5 indicates that all correlations between the factors of the NMCI are positive and significant. The largest correlation is between the Human and Conceptual subscales (0.91) and the Leadership and Human subscales (0.89), which explains why the Human subscale was divided between these two factors in the EFA. In Table 4-6, the measures of goodness of fit for the four subscales of the NMCI are presented.

Table 4-6: Measures of goodness of fit for the NMCI

	Acceptable values	NMCI
CMIN/DF	3-5	3.97
CFI	>0.9	0.76
RMSEA	<0.1	0.08 (0.078; 0.083)

Measures of goodness of fit for the four subscales of the NMCI yielded a CMIN/DF value of 3.97 which indicates a good model fit. A Comparative Fit Index (CFI) of 0.76 was obtained, which is below 0.9 and therefore a relatively unacceptable fit. A Root Mean Square Error of Approximation (RMSEA) value of 0.08 was obtained with a 90% confidence interval of 0.078 and 0.083. This indicates construct validity as two of the three measures are acceptable.

4.4.2 Organisational commitment questionnaire

The Organisational Commitment Questionnaire (OCQ) was discussed in section 3.4.1.1 and was used to evaluate organisational commitment of nursing staff. Both exploratory and confirmatory factor analyses were conducted since the instrument had never before been used in South Africa.

4.4.2.1 Exploratory factor analysis

Table 4-7 present the suitability of the data for exploratory factor analysis.

Table 4-7: KMO and Bartlett test of sphericity

Suitability of the data		Values obtained
KMO		0.90
Bartlett's test of sphericity	Approx. Chi-Square	2905.7
	df	105
	Sig.	0.00
Total variance explained		53.85

The KMO measure of sampling adequacy for the analysis was found to be 0.90 and 53.85% of the total variance was explained by the two extracted factors. Bartlett's test of sphericity was acceptable at p=0.00. The pattern matrix and extracted subscales are presented in Table 4-8.

Table 4-8: Pattern matrix of OCQ

Item no	Item	Subscale		
			1	2
F2	I talk up this organisation to my friends as a great organisation to work for	Positive	0.84	
F6	I am proud to tell others that I am part of this organisation	Positive	0.83	
F10	I am extremely glad that I chose this organization to work for over others I was considering at the time I joined	Positive	0.81	
F8	This organisation really inspires the very best in me in the way of job performance	Positive	0.81	
F14	For me, this is the best of all possible organisations for which to work	Positive	0.80	
F5	I find that my values and the organisation's value are very similar	Positive	0.75	
F1	I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation be successful	Positive	0.73	
F4	I would accept almost any type of job assignment in order to keep working for this organisation	Positive	0.72	

Item no	Item	Subscale		
			1	2
F13	I really care about the fate of this organisation	Positive	0.71	
F11	There's not too much to be gained by sticking with this organisation indefinitely	Negative		0,67
F3	I feel very little loyalty to this organisation	Negative		0,66
F7	I could just as well be working for a different organisation as long as the type of work was similar	Negative		0,63
F9	It would take very little change in my present circumstances to cause me to leave this organisation	Negative		0,58
F12	Often, I find it difficult to agree with this organisation's policies on important matters relating to its employees	Negative		0,58
F15	Deciding to work for this organisation was a definite mistake on my part	Negative	0.40	0,54

A principal component analysis extraction method with Oblimin rotation converged in three (3) iterations. Subscales in the pattern matrix are presented as follows:

- Positive (factor 1): 9 items: 2, 6, 10, 8, 14, 5, 1, 4 and 13
- Negative (factor 2): 6 items: 11, 3, 7, 9, 12 and 15

Based on the results of this analysis, all positively worded items loaded together, and all negatively worded items loaded together. The two-factor division resembles what was found by Mathieu (1991), as cited in Fields (2002:46). Mathieu (1991) found that a factor analysis yielded two factors in the 15 items of the OCQ. One factor contained nine positively worded items and the other contained six negatively worded items. The meaning of the second factor of negative items was unclear, thus it was regarded as a possible artefact of the way the items were worded. According to Mowday *et al.* (1979:16), all items in the OCQ had a positive correlation with the total score of the OCQ, although negatively worded items correlated to a slightly smaller extent with the total score than positively worded items. These results suggest that the 15 items of the OCQ are relatively homogeneous with respect to the underlying attitude construct they measure.

4.4.2.2 Confirmatory factor analysis of OCQ

The confirmatory factor analysis is presented in Figure 4-13

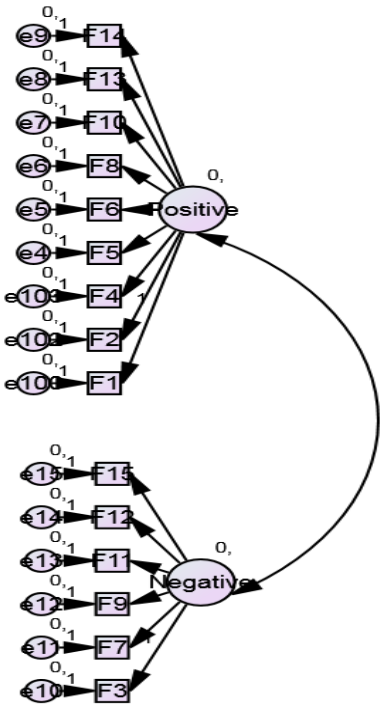

Figure 4-13: Confirmatory factor analysis for OCQ

Table 4-9 outlines standard regression weights and p-values of OCQ.

Table 4-9: Standard regression weights and p-values of OCQ (2 factors)

OCQ			Standard regression weight	P-value
F1	Positive	I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation be successful	0.68	***
F2	Positive	I talk up this organisation to my friends as a great organisation to work for	0.82	***
F4	Positive	I would accept almost any type of job assignment in order to keep working for this organisation	0.67	***
F5	Positive	I find that my values and the organisation's value are very similar	0.70	***
F6	Positive	I am proud to tell others that I am part of this organisation	0.82	***
F8	Positive	This organization really inspires the very best in me in the way of job performance	0.80	***
F10	Positive	I am extremely glad that I chose this organisation to work for over others I was considering at the time I joined	0.80	***

OCQ			Standard regression weight	P-value
F13	Positive	I really care about the fate of this organisation	0.66	***
F14	Positive	For me, this is the best of all possible organisations for which to work	0.79	***
F3	Negative	I feel very little loyalty to this organisation	0.51	***
F7	Negative	I could just as well be working for a different organisation as long as the type of work was similar	0.47	***
F9	Negative	It would take very little change in my present circumstances to cause me to leave this organisation	0.44	***
F11	Negative	There's not too much to be gained by sticking with this organisation indefinitely	0.63	***
F12	Negative	Often, I find it difficult to agree with this organisation's policies on important matters relating to its employees	0.47	***
F15	Negative	Deciding to work for this organisation was a definite mistake on my part	0.49	***

*** Statistically significant

All items had statistically significant regression weights above 0.44 indicating items significantly loaded on all subscales. Item F2 ("I talk up this organisation to my friends as a great organisation to work for") and item F6 ("I am proud to tell others that I am part of this organisation") contributed the most weight (0.82) - both in explaining the subscale "positive items" - while item F13 ("I really care about the fate of this organisation") contributed the least weight (0.66). With regard to negative items, item F11 ("There's not too much to be gained by sticking with this organisation indefinitely") contributed the most weight (0.63) while item F9 ("It would take very little change in my present circumstances to cause me to leave this organisation") contributed the least (0.44). The correlation of the two subscales of the OCQ is summarised in Table 4-10.

Table 4-10: Correlation coefficient of the OCQ subscales

			Correlations coefficient	P-values
Negative	<-->	Positive	-0.12	***

Table 4-10 indicates a small negative correlation of -0.12 between the negative and positive items. Table 4-11 outlines measures of goodness of fit for the OCQ.

Table 4-11: Measures of goodness of fit for the OCQ

	Acceptable values	CF
CMIN/DF	3-5	5.35
CFI	>0.9	0.87
RMSEA with 90% CI	<0.1	0.10 [0.09; 0.17]

Goodness of fit measures for the negative and positive items of the OCQ yielded a CMIN/DF value of 5.35 which presents a relatively unacceptable model fit as it is above five (5); the CFI of 0.87 had an acceptable fit index. An acceptable RMSEA value of 0.10 was obtained with a 90% confidence interval of 0.09; 0.17. This indicates construct validity as two of the three measures are acceptable.

4.4.3 Job satisfaction instruments

The job satisfaction questionnaires were discussed in section 3.4.1.1 and were used to evaluate the job satisfaction of nursing staff. Job satisfaction instruments were divided into global job satisfaction (four items) and satisfaction with specific aspects of the job (nine items). Both exploratory and confirmatory factor analyses were conducted.

4.4.3.1 Exploratory factor analysis for job satisfaction

4.4.3.1.1 Exploratory factor analysis for global job satisfaction

Table 4-12 present the suitability of the data for exploratory factor analysis of global job satisfaction.

Table 4-12 KMO and Bartlett test of sphericity

Suitability of the data		Values obtained
KMO		0.62
Bartlett's test of sphericity	Approx. Chi-Square	328.8
	df	6
	Sig.	0.00
Total variance explained		49.21

The KMO measure of sampling adequacy for the analysis was found to be 0.62 and 49.21% of the total variance was explained by the one extracted factor, which is considered acceptable. The Bartlett test of sphericity has an acceptable p=0.00. The pattern matrix and extracted subscale are presented in Table 4-13

Table 4-13: Pattern matrix of global job satisfaction

Item no	Item	Component
C3	In general, I like working here	0.87
C4	I feel that the healthcare facility provides a supportive work environment in which to work	0.89
C1	All in all, I am satisfied with my job	0.71
C2	In general, I don't like my job	-0.18

A principal component analysis extraction method extracted one component; therefore, the solution could not be rotated. There is only one subscale in the pattern matrix. Based on the results of this analysis, although there is only one component, it has one negative item that does not fit the component. This might be due to the negative wording of the item. This item was therefore deleted from further analysis.

4.4.3.1.2 Confirmatory factor analysis of global job satisfaction

The confirmatory factor analysis is presented in Figure 4-14

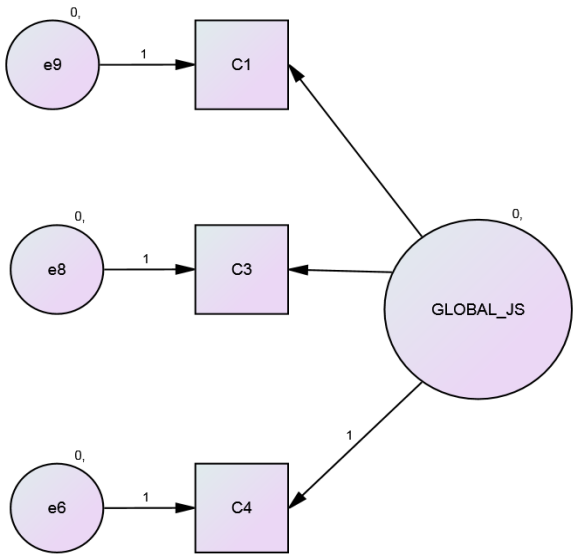

Figure 4-14: Confirmatory factor analysis of global job satisfaction

Table 4-14 outlines the standard regression weights and p-values of global job satisfaction.

Table 4-14: Standard regression weights and p-values of global job satisfaction

Global job satisfaction			Standard regression weight	P-value
C4	Global job satisfaction	I feel that the healthcare facility provides a supportive work environment in which to work	0.72	***
C3	Global job satisfaction	In general, I like working here	0.89	***
C1	Global job satisfaction	All in all, I am satisfied with my job	0.37	***

*** Statistically significant

All items had statistically significant regression weights above 0.37 indicating that items loaded significantly on the subscale. Item C3 (“In general, I like working here”) contributed the most weight (0.89) in explaining global job satisfaction, while item C1 (“All in all, I am satisfied with my job”) contributed the least weight (0.37).

Measures of goodness of fit could not be computed, due to the Number of factors and items.

4.4.3.1.3 Exploratory factor analysis for aspects of the job satisfaction

Aspects of job satisfaction were discussed in section 3.4.1.1 (See section 4.4.3 above). Table 4.15 presents the suitability of data for exploratory factor analysis.

Table 4-15: KMO and Bartlett’s test of sphericity for satisfaction with specific aspects of the job

Suitability of the data		Values obtained
KMO		0.78
Bartlett’s test of sphericity	Approx. Chi-Square	1063.4
	df	36
	Sig.	0.00
Total variance explained		17.39

The KMO measure of sampling adequacy for the analysis was found to be 0.78, which is acceptable, however only 17.39% of the total variance was explained by the two extracted factors.

The Bartlett's test of sphericity has an acceptable p=0.00. The pattern matrix and extracted subscale are presented in Table 4-16

Table 4-16: Pattern matrix of satisfaction with aspects of the job

Item no	Item	Component 1	Component 2
J6	Educational opportunities	0.87	
J9	Study leave	0.77	
J2	Opportunities for advancement	0.76	
J5	Wages	0.75	
J8	Sick leave		0.84
J7	Annual leave		0.78
J4	Professional status		0.50
J3	Independence at work		0.49
J1	Work schedule flexibility	0.35	0.38

A principal component analysis extraction method with Oblimin rotation converged in six (6) iterations. Subscales in the pattern matrix are presented as follows:

- Reward items (factor 1): 4 items: 6, 9, 2 and 5
- Autonomy items (factor 2): 5 items: 8, 7, 4, 3 and 1

Based on the results of this analysis, all items associated with rewards of work loaded together and all items that are associated with autonomy at work loaded together.

4.4.3.1.4 Confirmatory factor analysis for aspects of the job

The confirmatory factor analysis was also conducted for specific aspects of the job and is presented in Figure 4-15.

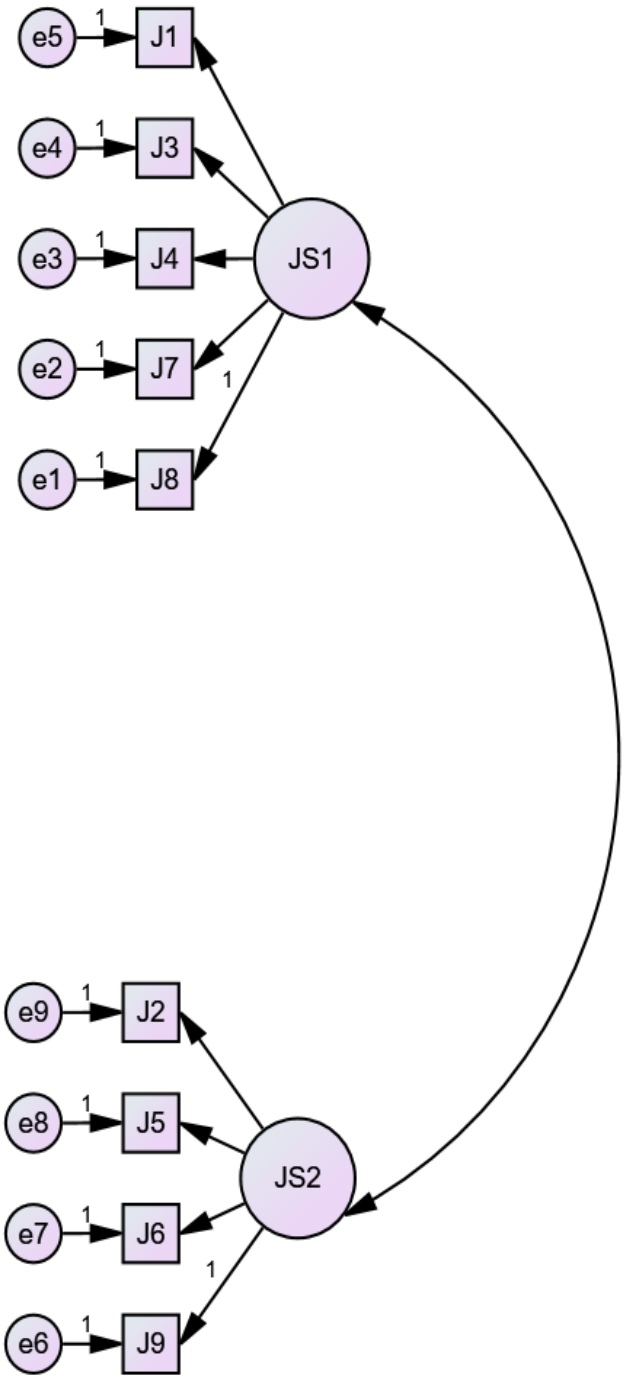

Figure 4-15: Confirmatory factor analysis for specific aspects of the job

Table 4-17: outlines the standard regression weights and p-values of specific aspects of the job.

Table 4-17: Standard regression weights and p-values of specific aspects of the job (2 factors)

Aspects of the job			Standard regression weight	P-value
J8	Autonomy	Sick leave	0.40	***
J7	Autonomy	Annual leave	0.36	0.00
J4	Autonomy	Professional status	0.74	***
J3	Autonomy	Independence at work	0.67	***
J1	Autonomy	Work schedule flexibility	0.34	0.00
J9	Rewards	Study leave	0.74	***
J6	Rewards	Educational opportunities	0.88	***
J5	Rewards	Wages	0.65	***
J2	Rewards	Opportunities for advancement	0.76	***

*** Statistically significant

All items had statistically significant regression weights of 0.34 and above indicating that items loaded significantly on the subscales. Item J4 (“Professional status”) contributed the most weight (0.74) to explaining the subscale, (“Autonomy”) while item J1 (“Work schedule flexibility”) contributed the least weight (0.34). For rewards of work items, item J6 (“Educational opportunities”) contributed the most weight (0.88) while item J5 (“Wages”) contributed the least (0.65). The correlation of the subscales of satisfaction with aspects of the job are summarised in Table 4-18.

Table 4-18: Correlation coefficient of satisfaction with aspects of the job subscales

			Correlations coefficient	P-values
Rewards	<-->	Autonomy	0.49	0.00

A large positive correlation of 0.49 was obtained between rewards and autonomy. Table 4-19 indicates measures of goodness of fit for satisfaction with aspects of the job.

Table 4-19: Measures of goodness of fit for satisfaction with aspects of the job

	Acceptable values	CF
CMIN/DF	3-5	3.69
CFI	>0.9	0.82
RMSEA with 90% CI	<0.1	0.13 [0.10; 0.16]

Measures of goodness of fit for the two subscales of satisfaction with aspects of the job yielded a CMIN/DF value of 3.69 which indicates a good model fit. A CFI of 0.82 was obtained which is a relatively unacceptable fit. A RMSEA value of 0.13 was obtained which is relatively unacceptable with a 90% confidence interval of 0.10 to 0.16. This indicates little construct validity as only one of the three measures is acceptable; thus, the subscale was interpreted with caution.

4.4.3.2 Intention to leave

Intention to leave was discussed in section 3.4.1.1 and was used to evaluate the intention of nursing staff to leave their present jobs.

4.4.3.3 Exploratory factor analysis for intention to leave

Table 4-20 presents the suitability of data for exploratory factor analysis

Table 4-20: KMO and Bartlett's test of sphericity for intention to leave

Suitability of the data		Values obtained
KMO		0.64
Bartlett test of sphericity	Approx. Chi-Square	88.62
	df	3
	Sig.	0.00
Total variance explained		63.71

The KMO measure of sampling adequacy for the analysis was found to be 0.64 and 63.71% of the total variance was explained by the one extracted factor, which is considered acceptable. Bartlett's test of sphericity has an acceptable p=0.00. The pattern matrix and extracted subscale are presented in Table 4-21.

Table 4-21: Pattern matrix of intention to leave

Item no	Item	Component
E1	I plan on leaving my job within the next year	0.81
E2	I have been actively looking for other jobs	0.86
E3	I want to remain in my job	0.72

A principal component analysis extraction method extracted one component; therefore, the solution could not be rotated. There is only one subscale in the pattern matrix. Based on the results of this analysis, although there is only one component, it fits the subscale.

4.4.3.4 Confirmatory factor analysis for intention to leave

The confirmatory factor analysis is presented in Figure 4-16.

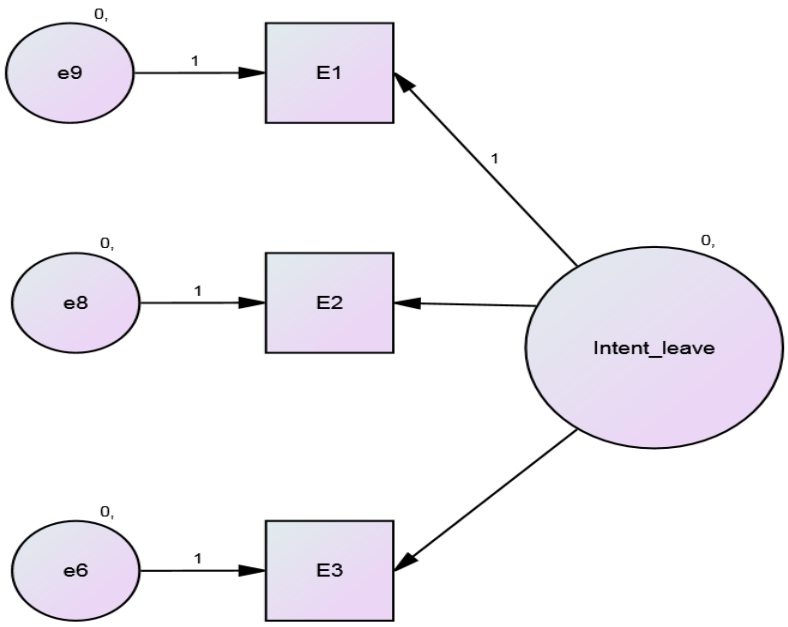

Figure 4-16: Confirmatory factor analysis for intention to leave

Table 4-22 outlines the standard regression weights and p-values of intention to leave.

Table 4-22: Standard regression weights and p-values of intention to leave

Intention to leave			Standard regression weight	P-value
E3	Intention to leave	I want to remain in my job	0.52	***
E2	Intention to leave	I have been actively looking for other jobs	0.87	***
E1	Intention to leave	I plan on leaving my job within the next year	0.67	***

*** Statistically significant

All items had statistically significant regression weights above 0.67 indicating that items loaded significantly on the subscale. Item E2 (“I have been actively looking for other jobs”) contributed the most weight (0.87) in explaining intention to leave while item E3 (“I want to remain in my job”) contributed the least weight (0.52).

Measures of goodness of fit could not be computed, due to the Number of factors and items.

4.4.4 Compassion practice instrument

The Compassion Practice Instrument (CPI) was discussed in section 3.4.1.1 and was used to evaluate compassion satisfaction and fatigue experienced by nursing staff. Since the CPI has been validated nationally (Hlongwane, 2015; Holtzhausen, 2017), only confirmatory factor analysis was conducted.

4.4.4.1 Confirmatory factor analysis of CPI

The confirmatory factor analysis is presented in Figure 4-17

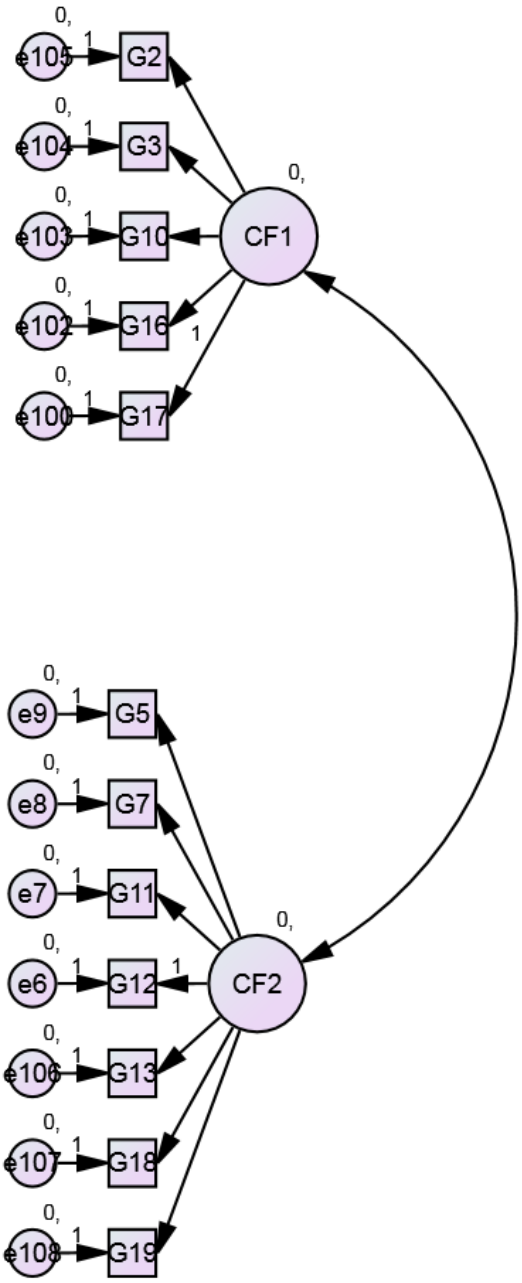

Figure 4-17: Confirmatory factor analysis for CPI

Table 4-23 outlines the standard regression weights and p-values of the CPI.

Table 4-23: Standard regression weights and p-values of CPI (2 factors)

Compassion practice			Standard regression weight	P-value
G17	Satisfaction	I feel satisfied when I am able to help patients	0.83	***
G16	Satisfaction	I enjoy interacting with patients	0.89	***

Compassion practice			Standard regression weight	P-value
G10	Satisfaction	Meeting patients' needs gives meaning and purpose to my life	0.75	***
G3	Satisfaction	I make a positive difference in the lives of patients	0.90	***
G2	Satisfaction	I feel good about the care I provide to patients	0.89	***
G12	Fatigue	I am unable to meet patients' needs the way I would like to	0.63	***
G11	Fatigue	I struggle to open myself up to patients' suffering and sorrow	0.58	***
G7	Fatigue	I doubt I make much difference in the lives of patients	0.48	***
G5	Fatigue	I am unable to provide the kind of care to patients that I would like to	0.68	***
G13	Fatigue	I am unable to see meaning and purpose in caring for patients	0.47	***
G18	Fatigue	I try to shield (protect) myself from patients' suffering and sorrow	0.56	***
G19	Fatigue	I feel that patients deserve better care than I can provide	0.52	***

*** Statistically significant

All items had statistically significant regression weights above 0.47 indicating that items loaded significantly on all subscales. Item G3 ("I make a positive difference in the lives of patients") contributed the most weight (0.90) in explaining the subscale of "Satisfaction" while item G10 ("Meeting patients' needs gives meaning and purpose to my life") contributed the least weight (0.75). Item G5 ("I am unable to provide the kind of care to patients that I would like to") contributed the most weight (0.68) in explaining the "Fatigue" subscale, while item G13 ("I am unable to see meaning and purpose in caring for patients") contributed the least weight (0.47). The correlation of the CPI subscales are summarised in Table 4-24.

Table 4-24: Correlation coefficient of the CPI subscales

			Correlations coefficient	P-values
Fatigue	<-->	Satisfaction	-0.27	0.01

A small negative correlation of -0.27 was obtained between CF and CS. Table 4-25 indicates measures of goodness of fit for the CPI.

Table 4-25: Measures of goodness of fit for the CPI

	Acceptable values	CF
CMIN/DF	3-5	3.34
CFI	>0.9	0.85
RMSEA with 90% CI	<0.1	0.12 [0.10; 0.15]

Measures of goodness of fit for the two subscales of the CP yielded a CMIN/DF value of 3.34 which indicates a good model fit. An unacceptable CFI of 0.85 was obtained. A RMSEA value of 0.12 was obtained which is relatively unacceptable with a 90% confidence interval of 0.10 to 0.15. This indicates little construct validity as only one of the three measures is acceptable; thus, the subscale was interpreted with caution.

4.4.5 The practice environment scale of the nurse work index-revised (PES-NWI-R))

The PES-NWI-R) was discussed under section 3.4.1.1 and was used to measure nursing staffs' perception of the practice environment. Since the PES-NWI-R) has been validated nationally (Klopper *et al.,* 2012; Coetzee *et al.,* 2013; Van Wyk, 2015; Holtzhausen, 2017), only a confirmatory factor analysis was conducted.

4.4.5.1 Confirmatory factor analysis of the PES-NWI-R)

The confirmatory factor analysis is presented in Figure 4-18

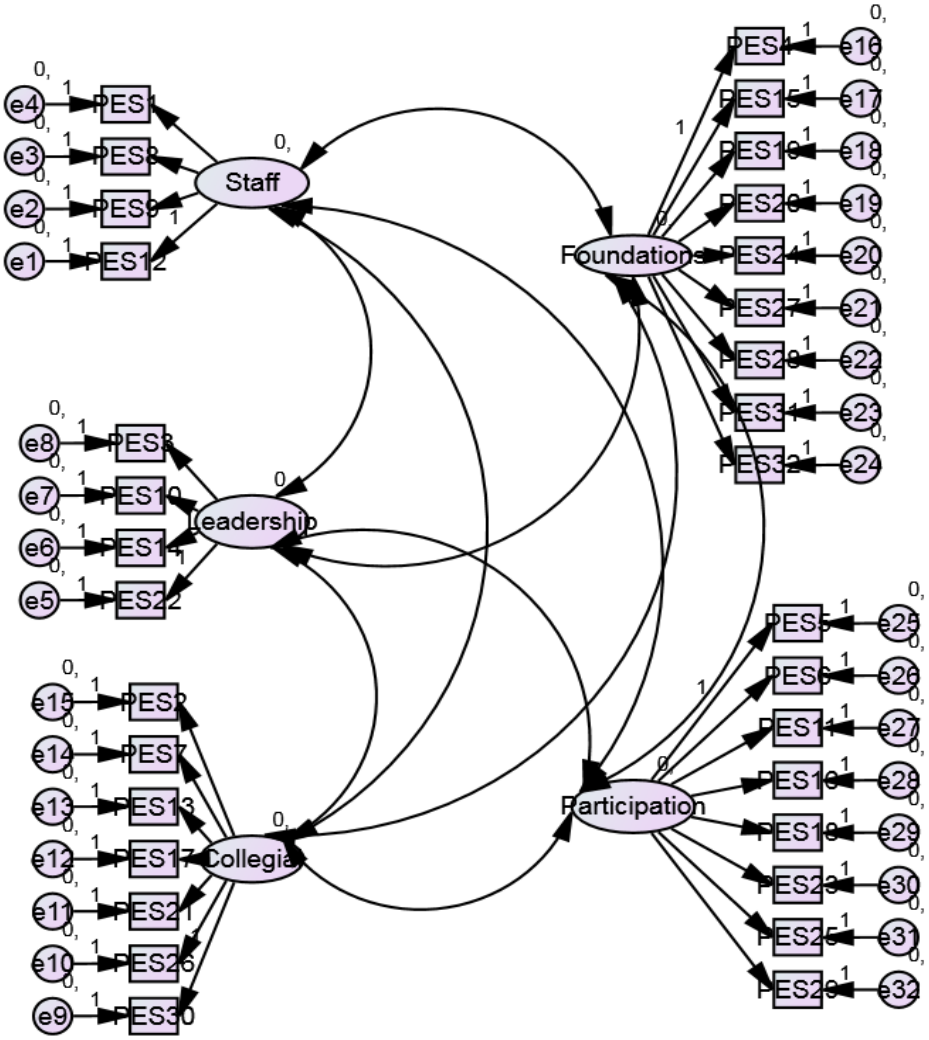

Figure 4-18: Confirmatory factor analysis of the PES-NWI-R)

The standard regression weights and p-values of the PES-NWI-R) are outlined in Table 4-26 below.

Table 4-26: Standard regression weights and p-values of the PES-NWI-R)

PES-NWI-R)			Standard regression weight	P-value
PES12	Staffing and resource adequacy	Enough staff to get the work done.	0.78	***
PES9	Staffing and resource adequacy	Enough registered nurses on staff to provide quality patient care.	0.81	***

PES-NWI-R)			Standard regression weight	P-value
PES8	Staffing and resource adequacy	Enough time and opportunity to discuss patient care problems with other nurses.	0.50	***
PES1	Staffing and resource adequacy	Adequate support services allow me to spend time with my patients.	0.56	***
PES22	Nurse manager ability, leadership and support of nurses	A nurse manager who backs up the nursing staff in decision making, even if the conflict is with a physician.	0.61	***
PES14	Nurse manager ability, leadership and support of nurses	Praise and recognition for a job well done.	0.61	***
PES10	Nurse manager ability, leadership and support of nurses	A nurse manager who is a good manager and leader.	0.65	***
PES3	Nurse manager ability, leadership and support of nurses	A supervisory staff that is supportive of nurses.	0.66	***
PES30	Collegial nurse–physician relationships	Physicians hold nurses in high esteem.	0.72	***
PES26	Collegial nurse–physician relationships	Collaboration between nurses and physicians.	0.61	***
PES21	Collegial nurse–physician relationships	Physicians respect nurses as professionals.	0.70	***
PES17	Collegial nurse–physician relationships	A lot of teamwork between nurses and physicians.	0.66	***
PES13	Collegial nurse–physician relationships	Physicians recognise nurses' contributions to patient care.	0.55	***
PES7	Collegial nurse–physician relationships	Physicians value nurses' observations and judgments.	0.54	***

PES-NWI-R)			Standard regression weight	P-value
PES2	Collegial nurse–physician relationships	Physicians and nurses have good working relationships.	0.51	***
PES4	Nursing foundations for quality of care	Active staff development or continuing education programmes for nurses.	0.54	***
PES15	Nursing foundations for quality of care	High standards of nursing care are expected by the management.	0.24	***
PES19	Nursing foundations for quality of care	A clear philosophy of nursing that pervades the patient care environment.	0.60	***
PES20	Nursing foundations for quality of care	Working with nurses who are clinically competent.	0.44	***
PES24	Nursing foundations for quality of care	An active quality assurance programme.	0.44	***
PES27	Nursing foundations for quality of care	An induction programme for newly appointed nurses	0.50	***
PES28	Nursing foundations for quality of care	Nursing care is based on a nursing rather than a medical model.	0.56	***
PES31	Nursing foundations for quality of care	Written, up-to-date care plans for all patients.	0.63	***
PES32	Nursing foundations for quality of care	Patient care assignments that foster continuity of care (i.e., the same nurse cares for the patient from one day to the next).	0.37	***
PES5	Nurse participation in hospital affairs	Career development/clinical ladder opportunity.	0.63	***
PES6	Nurse participation in hospital affairs	Opportunity for registered nurses to participate in policy decisions.	0.60	***
PES11	Nurse participation in hospital affairs	A nursing service manager who is highly visible and accessible to staff.	0.62	***
PES16	Nurse participation in hospital affairs	A nursing service manager is equal in power and authority to	0.27	***

PES-NWI-R)			Standard regression weight	P-value
		other top level hospital executives.		
PES18	Nurse participation in hospital affairs	Opportunities for advancement.	0.70	***
PES23	Nurse participation in hospital affairs	Management that listens and responds to employee concerns.	0.64	***
PES25	Nurse participation in hospital affairs	Registered nurses are involved in the internal governance of the hospital (e.g., practice and policy committees).	0.45	***
PES29	Nurse participation in hospital affairs	Registered nurses have the opportunity to serve on hospital and nursing committees.	0.37	***

*** Statistically significant

Confirmatory factor analysis confirmed the five subscales of the PES-NWI-R. Item PES9 ("Enough registered nurses on staff to provide quality patient care") contributed the most weight (0.81) in explaining the subscale Staffing and resource adequacy, while item PES8 ("Enough time and opportunity to discuss patient care problems with other nurses") contributed the least weight (0.50). Item PES3 ("A supervisory staff that is supportive of nurses") contributed the most weight (0.66) in explaining the subscale Nurse manager ability, leadership and support of nurses, while item PES14 ("Praise and recognition for a job well done") and item PES22 ("A nurse manager who backs up the nursing staff in decision making, even if the conflict is with a physician") contributed the least weight (0.61) for both. For collegial nurse-physician relationships, item PES30 ("Physicians hold nurses in high esteem") contributed the most weight (0.67) while item PES2 ("Physicians and nurses have good working relationships") contributed the least (0.51). Item PES31 ("Written, up-to-date care plans for all patients") contributed the most weight (0.63) in explaining the subscale Nursing foundations for quality of care, while item PES15 ("High standards of nursing care are expected by the management") contributed the least weight (0.24). Item PES18 ("Opportunities for advancement") contributed the most weight (0.70) in explaining the subscale Nurse participation in hospital affairs, while item PES16 ("A nursing service manager is equal in power and authority to other top-level hospital executives") contributed the least weight (0.27). Table 4-27 indicates the correlations of the subscales of the PES-NWI-R).

Table 4-27: Correlation coefficients of the PES-NWI-R)

			Correlations coefficient	P-values
Staffing and resource adequacy	<-->	Nurse manager ability, leadership and support of nurses	0.74	***
Staffing and resource adequacy	<-->	Collegial nurse–physician relationships	0.63	***
Staffing and resource adequacy	<-->	Nursing foundations for quality of care	0.49	***
Nurse participation in hospital affairs	<-->	Staffing and resource adequacy	0.85	***
Nurse manager ability, Leadership and support of nurses	<-->	Collegial nurse–physician relationships	0.73	***
Nurse manager ability, Leadership and support of nurses	<-->	Nursing foundations for quality of care	0.81	***
Nurse participation in hospital affairs	<-->	Nurse manager ability, leadership and support of nurses	0.96	***
Collegial nurse-physician relationships	<-->	Nursing foundations for quality of care	0.82	***
Nurse participation in hospital affairs	<-->	Nursing foundations for quality of care	0.83	***
Nurse participation in hospital affairs	<-->	Collegial nurse-physician relationships	0.78	***

*** Statistically significant

Most correlations between the subscales were large, with nurse participation in hospital affairs and Nurse manager ability, leadership, and support of nurses having the largest at 0.96 and staffing and resource adequacy and nursing foundations for quality of care having the lowest at 0.49. All correlations were statistically significant. Measures of goodness of fit for the PES-NWI-R) are indicated in Table 4-28 below.

Table 4-28: Measures of goodness of fit for the PES-NWI-R)

	Acceptable values	PES-NWI-R)
CMIN/DF	3-5	4.08
CFI	>0.9	0.73
RMSEA with 90% CI	<0.1	0.08 [0.078; 0.086]

Measures of goodness of fit for the five subscales of the PES-NWI-R) yielded a CMIN/DF value of 4.08 which indicates a good fit as it is below 5. A CFI of 0.73 was obtained, which is below 0.9 and a relatively unacceptable fit. An acceptable RMSEA value of 0.08 was obtained with a 90% confidence interval between 0.078 and 0.086. This indicates construct validity as two of the three measures are acceptable.

4.5 Reliability

Following construct validity testing, reliability testing was done by calculating Cronbach's Alpha coefficients and the mean inter-item correlation. The Cronbach's Alpha coefficient provides an indication of the average correlation among all items that make up a scale. The reliability of a measure refers to the internal consistency of question items within a specific category or the consistency of results obtained in the use of a particular instrument repeatedly over time and across different situations (Grove *et al.,* 2015:287; Field, 2016:68). The instrument reliability depends on a correlation measure that varies between zero and one. The closer the measure is to one, the higher the reliability; the closer the correlation to zero, the lower the reliability and, consequently, the lower the internal consistency (Watson, 2013:320). According to Pietersen and Maree (2016:239), reliability estimates of 0.80 are regarded more acceptable in most applications, while McLaren (2013:187) states that values of coefficient alpha >0.70 are generally accepted as evidence of homogeneity. Optimal mean inter-item correlation values range from 0.2 to 0.4 and all values must be positive to indicate that the items are measuring the same underlying characteristics (Pallant, 2013:6,104). The Cronbach's Alpha and mean inter-item correlations are summarised in Table 4-29 and discussed thereafter.

Table 4-29 Cronbach's Alpha and mean inter-item correlation values

Scale	Subscale	Number of items	Cronbach's alpha	Mean Inter-item correlation
NMCI	*Knowledge and understanding*			
	Technical	11	0.84	0.34
	Human	13	0.94	0.54
	Conceptual	8	0.89	0.51
	Leadership	14	0.93	0.50
	Financial	7	0.93	0.65
	Ability to implement			
	Technical	11	0.90	0.47
	Human	13	0.96	0.63
	Conceptual	8	0.92	0.58
	Leadership	14	0.95	0.60
	Financial	7	0.95	0.75
Global job satisfaction	Global job satisfaction	3	0.73	0.47
Job satisfaction aspects	Autonomy	5	0.67	0.29
	Rewards	4	0.64	0.27
Intention to leave	Intention to leave	3	0.76	0.51
OCQ	Positive	9	0.92	0.57
	Negative	6	0.68	0.26
CPI	Compassion Satisfaction	5	0.94	0.76
	Compassion Fatigue	7	0.76	0.32
PES-NWI-R)	Staffing and resource adequacy	4	0.75	0.43
	Nurse manager ability, Leadership and support of nurses	4	0.73	0.40
	Collegial nurse-physician relationships	7	0.81	0.38
	Nursing foundations for quality of care	9	0.72	0.23
	Nurse participation in hospital affairs	8	0.78	0.29

Chase (1994, 2010) confirmed good internal consistency for the NMCI in international literature. The 1994 results of the different categorical correlations were Technical (0.80), Human (0.85), Conceptual (0.84), Leadership (0.91), and Financial Management (0.92). The categorical correlations of the 2010 results were Technical (0.73), Human (0.76), Conceptual (0.90), Leadership (0.86) and Financial Management (0.70) respectively (Chase, 2010:62). Cronbach's alpha was used to assess the internal consistency of the entire scale. No South African study could be found that had used the NMCI.

The Cronbach's alpha of global job satisfaction was found to be low, probably due to item two (2) which was a negatively worded item. After discussion with promoters and in consultation with the statistician, it was decided to delete the negatively worded item and work with only three items. The Cronbach's alpha without the negatively worded item was confirmed to be 0.73 with a mean inter-item correlation of 0.47. The global job satisfaction questionnaire was therefore utilised with three items instead of four. For satisfaction with aspects of the job, autonomy at work items had a Cronbach's alpha of 0.67 with a mean inter-item correlation of 0.29, while rewards of work items had a Cronbach's alpha of 0.64 with a mean inter-item correlation of 0.27.

Good internal consistency for the OCQ was confirmed by Kacmar *et al.* (1999); Marsden *et al*. (1993); Mathieu (1991); Mathieu & Farr (1991); and Riggs and Knight (1994). Cronbach's alphas ranged from 0.81 - 0.93 across these studies. In general, the negatively worded items correlated weaker with the total score than the positively worded items across all studies, although not with a huge difference. Evidently, Cronbach's alpha reliability coefficients for this study also yielded 0.92 for positively worded items and a lower score of 0.69 for negatively worded items. The mean inter-item correlation values were 0.57 for positively worded items and lower 0.26 for negatively worded items.

The internal consistency of the CPI was confirmed by Coetzee *et al.* (2020) with an overall reliability score of 0.84 for compassion satisfaction and 0.70 for compassion fatigue. Reliability scores obtained for this study were 0.94 for compassion satisfaction and 0.76 for compassion fatigue.

As stated previously (see Section 3.6.1), the internal consistency of the PES-NWI-R) was nationally confirmed by Klopper *et al.* (2012:690), with Cronbach's alpha coefficients of 0.86 for Nurse manager ability, leadership and support, 0.89 for Collegial nurse-physician relationships, 0.79 for Nurse participation in hospital affairs, 0.65 for Nursing foundations for quality of care and 0.77 for Staffing and resource adequacy. This is consistent with a study by Van Wyk (2015:189), where Cronbach's alpha coefficients of higher than 0.76 were obtained for all subscales. Cronbach's alpha coefficients of 0.82 for Nurse manager ability, leadership and support, 0.83 for

Collegial nurse physician relationships, 0.78 for Nurse participation in hospital affairs, 0.79 for Nursing foundations of quality of care and 0.66 for Staffing and resource adequacy were also confirmed by Holtzhausen (2017:115).

4.6 Statistical analysis

Data analysis was discussed in Chapter 3 (see Section 3.4.1.4). In this section, the descriptive and inferential statistics of all instruments are presented according to objectives.

4.6.1 Objective one

To evaluate nursing unit managers' competency ratings according to the nursing service manager, nursing staff, and by self-assessment of the nursing unit manager.

The structure and format of the NMCI was discussed in detail in chapter three (see section 3.4.1.1). The descriptive statistics of this instrument is discussed for NSMs, NUMs and all other categories of nursing staff. Although the sample for NSMs was six (n=6), each NSM had to evaluate all NUMs in all participating nursing units under the NSM's control. This resulted in NSMs reporting on up to 43 NUMs, even though participating NUMs were less. For NSMs and NUMs the instrument had two sections: *knowledge and understanding* of competencies and *ability to implement* competencies. For nursing staff, the instrument only had the *ability to implement* section. Nursing staff also did not complete the Financial subscale. Therefore, the NMCI had 53 items for NSM and NUMs and 46 items for nursing staff. In the next section, the percentage distributions, means, standard deviation, and t-tests for the NMCI for all items and subscales under *knowledge and understanding* are discussed for NSMs and NUMs. Thereafter, the *ability to implement* is discussed for NSMs, NUMs and nursing staff.

4.6.1.1 Descriptive statistics of NMCI

The NMCI has a competency rating scale of 1-4, with 1 = not competent at all, 2 = needs improvement, 3 = competent, 4 = exceeds expectations. In item analysis, all items with a mean value equal to or less than 2.5 were identified and added as weaknesses and all items with a mean value equal to or more than 3.0 were identified and added as strengths for strategy development.

Table 4-30 below outlines the item analysis for *knowledge and understanding* of competencies as reported by NSMs and NUMs, followed by its interpretation.

Table 4-30 Percentages, means and standard deviations -*knowledge and understanding* items for NSMs and NUMs: t-tests

			***Knowledge and understanding* of competencies**								
Item No	**Item**		**Number**	**Not competent at all**	**Needs improvement**	**Competent**	**Exceeds expectation**	**Mean**	**Standard Deviation**	**p-value**	**Effect size**
			N	**%**	**%**	**%**	**%**	**M**	**SD**		
Technical subscale											
1.	Nursing Practice Standards	NSM	43	0	0	93.02	6.98	3.07	0.26	0.90	0.03
		NUM	23	0	13.04	65.22	21.74	3.09	0.60		
2.	Nursing Care Delivery Systems	NSM	42	0	2.39	85.71	11.90	3.10	0.37	0.48	0.17
		NUM	22	0	4.54	72.73	22.73	3.18	0.50		
3.	Nursing Care Planning	NSM	43	0	4.65	81.40	13.95	3.09	0.43	0.21	0.31
		NUM	23	0	4.35	65.22	30.43	3.26	0.54		
4.	Clinical Skills	NSM	42	0	0	88.10	11.90	3.12	0.33	0.87	0.04
		NUM	21	0	14.29	61.90	23.81	3.10	0.62		
5.	Patient Acuity Systems	NSM	43	0	11.63	83.72	4.65	2.93	0.40	0.32	0.23
		NUM	22	4.55	4.55	68.18	22.72	3.09	0.68		
6.	Infection Control Practices	NSM	41	0	0	95.12	4.88	3.05	0.22	0.82	0.05
		NUM	23	0	26.09	39.13	34.78	3.09	0.79		
7.	Research and Evidence-based Practice	NSM	42	7.14	38.10	54.76	0	2.48	0.63	0.80	0.06
		NUM	21	9.52	33.33	52.38	4.77	2.52	0.75		
8.	New Technology	NSM	43	9.30	41.86	48.84	0	2.40	0.66	0.52	0.16
		NUM	23	4.35	52.17	30.43	13.05	2.52	0.79		

			***Knowledge and understanding* of competencies**								
Item No	**Item**		**Number**	**Not competent at all**	**Needs improvement**	**Competent**	**Exceeds expectation**	**Mean**	**Standard Deviation**	**p-value**	**Effect size**
			N	**%**	**%**	**%**	**%**	**M**	**SD**		
9.	Case Management	NSM	43	9.30	37.21	51.16	2.33	2.47	0.70	0.28	
		NUM	22	4.55	36.36	45.45	13.64	2.68	0.78		0.28
10.	Information Systems and Computers	NSM	43	9.30	20.93	69.77	0	2.60	0.66	0.85	
		NUM	21	4.76	38.10	52.38	4.76	2.57	0.68		0.05
11.	Regulatory Council Standards	NSM	42	0	0	95.24	4.76	3.05	0.22	0.16	
		NUM	22	0	13.64	81.82	4.54	2.91	0.43		0.32
Human subscale											
12.	Effective Communication	NSM	43	0	4.65	79.07	16.28	3.12	0.45	0.19	
		NUM	23	0	13.04	78.26	8.70	2.96	0.47		0.34
13.	Effective Staffing Strategies	NSM	43	0	16.28	76.74	6.98	2.91	0.48	0.12	
		NUM	21	4.76	38.10	47.62	9.52	2.62	0.74		0.39
14.	Recruitment Strategies	NSM	43	2.33	32.56	65.11	0	2.63	0.54	0.15	
		NUM	21	4.76	57.15	33.33	4.76	2.38	0.67		0.37
15.	Retention Strategies	NSM	43	2.33	27.90	65.12	4.65	2.72	0.59	0.10	
		NUM	21	4.76	52.38	38.10	4.76	2.43	0.68		0.43
16.	Effective Discipline	NSM	42	0	14.29	78.57	7.14	2.93	0.46	0.92	
		NUM	23	0	26.09	56.52	17.39	2.91	0.67		0.02
17.	Effective Counselling Strategies	NSM	43	0	16.28	76.74	6.98	2.91	0.48	0.76	
		NUM	23	4.35	13.04	65.22	17.39	2.96	0.71		0.07

			***Knowledge and understanding* of competencies**								
Item No	**Item**		**Number**	**Not competent at all**	**Needs improvement**	**Competent**	**Exceeds expectation**	**Mean**	**Standard Deviation**	**p-value**	**Effect size**
			N	**%**	**%**	**%**	**%**	**M**	**SD**		
18.	Constructive Performance Evaluation	NSM	43	2.33	6.98	86.04	4.65	2.93	0.46	0.49	
		NUM	23	4.35	8.70	65.22	21.73	3.04	0.71		0.16
19.	Staff Development Strategies	NSM	43	0	23.26	72.09	4.65	2.81	0.50	0.61	
		NUM	23	8.70	13.04	56.52	21.74	2.91	0.85		0.12
20.	Group Process	NSM	43	0	16.28	79.07	4.65	2.88	0.45	0.18	
		NUM	22	4.54	40.91	40.91	13.64	2.64	0.79		0.31
21.	Interviewing Techniques	NSM	43	2.33	18.60	76.74	2.33	2.79	0.51	0.48	
		NUM	23	4.35	17.39	60.87	17.39	2.91	0.73		0.17
22.	Team-building Strategies	NSM	43	0	20.93	69.77	9.30	2.88	0.54	0.74	
		NUM	23	4.35	21.74	60.87	13.04	2.83	0.72		0.08
23.	Humour	NSM	43	4.65	18.60	62.80	13.95	2.86	0.71	0.51	
		NUM	23	8.70	8.70	56.52	26.08	3.00	0.85		0.16
24.	Optimism	NSM	42	7.13	14.29	64.29	14.29	2.86	0.75	0.53	
		NUM	23	4.35	26.08	60.87	8.70	2.74	0.69		0.16
Conceptual subscale											
25.	Nursing Theories	NSM	43	0	30.23	58.14	11.63	2.81	0.63	0.24	
		NUM	23	4.35	4.35	78.26	13.04	3.00	0.60		0.30
26.	Administrative / Organisational Theories	NSM	43	2.33	18.60	69.77	9.30	2.86	0.60	0.64	
		NUM	23	4.35	21.73	65.22	8.70	2.78	0.67		0.12

			***Knowledge and understanding* of competencies**								
Item No	**Item**		**Number**	**Not competent at all**	**Needs improvement**	**Competent**	**Exceeds expectation**	**Mean**	**Standard Deviation**	**p-value**	**Effect size**
			N	**%**	**%**	**%**	**%**	**M**	**SD**		
27.	Strategic Planning / goal development	NSM	43	2.33	13.95	76.74	6.98	2.88	0.54	0.37	
		NUM	21	0	9.52	80.96	9.52	3.00	0.45		0.21
28.	Ethical Principles	NSM	43	0	4.65	81.40	13.95	3.09	0.43	0.30	
		NUM	22	9.09	4.55	72.72	13.64	2.91	0.75		0.25
29.	Teaching / Learning Theories	NSM	43	0	16.28	74.42	9.30	2.93	0.51	0.47	
		NUM	23	0	17.39	60.87	21.74	3.04	0.64		0.18
30.	Political Process & Advocacy	NSM	43	0	27.91	62.79	9.30	2.81	0.59	0.85	
		NUM	23	4.35	21.73	65.22	8.70	2.78	0.67		0.05
31.	Quality / Process Improvement	NSM	43	0	0	90.70	9.30	3.09	0.29	0.45	
		NUM	23	8.70	8.70	60.87	21.73	2.96	0.82		0.17
32.	Legal Issues	NSM	43	0	20.93	76.74	2.33	2.81	0.45	0.67	
		NUM	23	8.70	17.39	65.21	8.70	2.74	0.75		0.10
Leadership subscale											
33.	Decision-making	NSM	43	0	6.97	90.70	2.33	2.95	0.30	0.14	
		NUM	23	4.35	0	69.56	26.09	3.17	0.65		0.34
34.	Power and Empowerment	NSM	43	0	6.98	83.72	9.30	3.02	0.41	0.64	
		NUM	22	0	13.64	63.64	22.72	3.09	0.61		0.11
35.	Delegation	NSM	43	0	4.65	83.72	11.63	3.07	0.40	0.70	
		NUM	23	4.35	4.35	65.22	26.08	3.13	0.69		0.09

			***Knowledge and understanding* of competencies**								
Item No	**Item**		**Number**	**Not competent at all**	**Needs improvement**	**Competent**	**Exceeds expectation**	**Mean**	**Standard Deviation**	**p-value**	**Effect size**
			N	**%**	**%**	**%**	**%**	**M**	**SD**		
36.	Change Process	NSM	43	0	16.28	76.74	6.98	2.91	0.48	0.41	0.19
		NUM	23	0	21.74	52.17	26.09	3.04	0.71		
37.	Conflict Resolution	NSM	42	0	16.67	73.81	9.52	2.93	0.51	0.19	0.32
		NUM	23	4.35	0	73.91	21.74	3.13	0.63		
38.	Problem-solving	NSM	42	0	11.90	76.20	11.90	3.00	0.49	0.18	0.32
		NUM	23	4.35	0	65.22	30.43	3.22	0.67		
39.	Stress Management	NSM	42	2.38	23.81	71.43	2.38	2.74	0.54	0.63	0.11
		NUM	23	4.35	26.09	52.17	17.39	2.83	0.78		
40.	Research Process	NSM	42	4.76	42.86	52.38	0	2.48	0.59	0.64	0.11
		NUM	23	8.70	34.78	47.82	8.70	2.57	0.79		
41.	Motivational Strategies	NSM	41	0	17.07	78.05	4.88	2.88	0.46	0.96	0.01
		NUM	23	4.35	26.08	47.83	21.74	2.87	0.81		
42.	Organisation of Unit of Work and Workflow Process	NSM	41	0	4.88	85.36	9.76	3.05	0.38	0.38	0.20
		NUM	23	4.35	13.04	69.57	13.04	2.91	0.67		
43.	Policies and Procedures	NSM	42	0	4.76	83.33	11.91	3.07	0.41	0.92	0.02
		NUM	23	4.35	4.35	69.56	21.74	3.09	0.67		
44.	Staff Education	NSM	42	0	16.66	64.29	19.05	3.02	0.60	0.22	0.32
		NUM	23	0	8.70	60.87	30.43	3.22	0.60		
45.	Time Management	NSM	42	0	4.76	85.71	9.53	3.05	0.38	0.42	0.18

			***Knowledge and understanding* of competencies**								
Item No	**Item**		**Number**	**Not competent at all**	**Needs improvement**	**Competent**	**Exceeds expectation**	**Mean**	**Standard Deviation**	**p-value**	**Effect size**
			N	**%**	**%**	**%**	**%**	**M**	**SD**		
		NUM	23	4.35	17.39	60.87	17.39	2.91	0.73		
46.	Interdisciplinary Care Coordination	NSM	42	0	19.05	76.19	4.76	2.86	0.47	0.44	
		NUM	22	4.55	27.27	59.09	9.09	2.73	0.70		0.18
Financial subscale											
47.	Cost Containment and Cost Avoidance Practices	NSM	42	0	14.29	80.95	4.76	2.90	0.43	0.73	
		NUM	23	0	21.74	60.87	17.39	2.96	0.64		0.08
48.	Productivity Measurements	NSM	42	0	21.43	66.67	11.90	2.90	0.58	0.65	
		NUM	23	4.35	21.74	60.87	13.04	2.83	0.72		0.11
49.	Operational & Capital Budget Forecasting and Generation	NSM	42	2.38	19.05	76.19	2.38	2.79	0.52	0.64	
		NUM	23	8.70	26.09	52.17	13.04	2.70	0.82		0.11
50.	Cost Benefit Analysis	NSM	42	0	35.72	61.90	2.38	2.67	0.53	0.75	
		NUM	23	4.35	43.48	39.13	13.04	2.61	0.78		0.07
51.	Unit Budget Control Measures	NSM	42	0	28.57	69.05	2.38	2.74	0.50	0.63	
		NUM	23	8.70	13.04	65.22	13.04	2.83	0.78		0.11
52.	Financial Resource Procurement	NSM	41	0	21.95	75.61	2.44	2.80	0.46	0.25	
		NUM	22	0	40.90	54.55	4.55	2.64	0.58		0.29
53	Financial Resource Monitoring	NSM	42	0	26.19	69.05	4.76	2.79	0.52	0.76	
		NUM	23	0	34.78	56.52	8.70	2.74	0.62		0.08

4.6.1.1.1 Percentages, means and standard deviations for NMCI (*knowledge and understanding*) for NSM and NUM:

a) Technical subscale for *knowledge and understanding* of NSMs and NUMs

The Technical subscale has 11 items. According to NSMs, there are three items of the subscale at which NUMs are “not competent”, or “need improvement”: item 7 (Research and Evidence-based Practice) at 45.24% (n=19), item 8 (New Technology) (51.16%; n=22), and item 9 (Case Management) (46.51%; n=20). NUMs rated themselves as competent in all Technical items.

b) Human subscale for *knowledge and understanding* of NSMs and NUMs

The Human subscale has 13 items. NSMs rated NUMs as competent in all the Human subscale items. NUMs, however, rated themselves as “not competent” for two of the items in this subscale: item 14 (Recruitment Strategies) at 61.91% (n=13) and item 15 (Retention Strategies) at 57.14% (n=12). NUMs rated themselves “not competent” or “needs improvement” in these items.

c) Conceptual subscale for *knowledge and understanding* of NSMs and NUMs

The Conceptual subscale has eight items. NSMs rated NUMs as competent in all the Conceptual subscale items. NUMs also rated themselves as competent in all items of this subscale.

d) Leadership subscale for *knowledge and understanding* of NSMs and NUMs

The Leadership subscale has 14 items. According to NSMs, NUMs are “not competent” in only one item of this subscale – 47. 62% (n=20) of NSMs felt that NUMs were “not competent” in item 40 (Research process).

e) Financial subscale for *knowledge and understanding* of NSMs and NUMs

The Financial subscale has seven items. NSMs rated NUMs as competent in all the Financial subscale items. NUMs also rated themselves as competent for all items on this subscale.

Table 4-31 below outlines the item analysis for *ability to implement* competencies as reported by NSMs, NUMs and nursing staff. The Financial subscale portion is based on responses from NSMs and NUMs only.

Table 4-31: Percentages, means and standard deviation for NMCI (*Ability to implement* competencies) for NSMs, NUMs and nursing staff

Item No	Item		Number	Not competent at all	Needs improvement	Competent	Exceeds expectation	Mean	Standard Deviation	P-Value	Effect size	
			N	%	%	%	%	M	SD		NSM with	NUM with
Technical subscale												
1.	Nursing Practice Standards	NSM	42	0	9.52	80.96	9.52	3.00	0.44	0.00		
		NUM	21	0	9.52	66.67	23.81	3.14	0.57		0.25	
		Nursing staff	454	2.20	24.89	68.06	4.85	2.76	0.57		0.47	0.70
2.	Nursing Care Delivery Systems	NSM	43	0	9.30	76.74	13.96	3.05	0.49	0.00		
		NUM	20	0	5.00	65.00	30.00	3.25	0.55		0.37	
		Nursing staff	455	1.10	21.32	71.65	5.93	2.82	0.53		0.38	0.73
3.	Nursing Care Planning	NSM	41	0	7.32	78.05	14.63	3.07	0.47	0.00		
		NUM	21	0	0	76.19	23.81	3.24	0.44		0.35	
		Nursing staff	453	0.88	18.32	73.95	6.85	2.87	0.52		0.39	0.68
4.	Clinical Skills	NSM	41	0	2.44	87.80	9.76	3.07	0.35	0.04		
		NUM	20	0	10.00	55.00	35.00	3.25	0.64		0.28	
		Nursing staff	447	2.01	13.87	75.17	8.95	2.91	0.55		0.24	0.52
5.	Patient Acuity Systems	NSM	42	0	26.19	66.67	7.14	2.81	0.55	0.01		

Item No	Item		Number	Not competent at all	Needs improvement	Competent	Exceeds expectation	Mean	Standard Deviation	P-Value	Effect size	
			N	%	%	%	%	M	SD		NSM with	NUM with
		NUM	19	0	10.53	57.89	31.58	3.21	0.63		0.64	
		Nursing staff	449	2.45	23.39	69.71	4.45	2.76	0.57		0.01	0.65
6.	Infection Control Practices	NSM	42	0	2.38	90.48	7.14	3.05	0.31	0.02		
		NUM	20	0	20.00	45.00	35.00	3.15	0.75		0.14	
		Nursing staff	452	3.32	23.01	65.93	7.74	2.78	0.63		0.34	0.41
7.	Research and Evidence-based Practice	NSM	42	7.14	42.86	42.86	7.14	2.50	0.74	0.13		
		NUM	21	4.76	52.38	38.10	4.76	2.43	0.68		0.10	
		Nursing staff	448	12.72	52.90	31.92	2.46	2.24	0.70		0.31	0.23
8.	New Technology	NSM	43	6.98	48.84	37.20	6.98	2.44	0.73	0.03		
		NUM	20	0	45.00	45.00	10.00	2.65	0.67		0.28	
		Nursing staff	449	12.25	55.23	28.73	3.79	2.24	0.71		0.28	0.57
9.	Case Management	NSM	43	6.98	34.88	51.16	6.98	2.58	0.73	0.65		
		NUM	19	0	42.11	42.11	15.78	2.74	0.73		0.21	
		Nursing staff	446	7.40	42.60	45.74	4.26	2.47	0.70		0.01	0.20
10.	Information Systems and Computers	NSM	43	4.65	23.25	65.12	6.98	2.74	0.66	0.01		
		NUM	19	0	42.11	52.63	5.26	2.63	0.60		0.17	
		Nursing staff	448	14.28	48.66	32.37	4.69	2.27	0.76		0.52	0.37
11.		NSM	42	0	2.38	88.10	9.52	3.07	0.34	0.03		

Item No	Item		Number	Not competent at all	Needs improvement	Competent	Exceeds expectation	Mean	Standard Deviation	P-Value	Effect size	
			N	%	%	%	%	M	SD		NSM with	NUM with
	Regulatory Council Standards	NUM	20	0	25.00	70.00	5.00	2.80	0.52		0.52	
		Nursing staff	444	8.11	23.65	58.33	9.91	2.70	0.76		0.42	0.07
Human subscale												
12.	Effective Communication	NSM	43	0	11.63	65.11	23.26	3.12	0.59	0.00		
		NUM	20	0	15.00	65.00	20.00	3.05	0.60		0.11	
		Nursing staff	447	9.40	36.24	47.20	7.16	2.52	0.76		0.72	0.63
13.	Effective Staffing Strategies	NSM	43	0	25.58	60.47	13.95	2.88	0.63	0.00		
		NUM	19	0	36.84	52.63	10.53	2.74	0.65		0.22	
		Nursing staff	447	17.45	51.90	25.50	5.15	2.18	0.78		1.01	0.81
14.	Recruitment Strategies	NSM	42	2.39	35.71	54.76	7.14	2.67	0.65	0.00		
		NUM	18	0	50.00	38.89	11.11	2.61	0.70		0.08	
		Nursing staff	449	28.29	42.98	25.39	3.34	2.04	0.82		0.84	0.77
15.	Retention Strategies	NSM	42	2.39	35.71	57.14	4.76	2.64	0.62	0.00		
		NUM	19	5.26	52.63	31.58	10.53	2.47	0.77		0.22	
		Nursing staff	452	27.21	43.58	26.55	2.66	2.05	0.80		0.80	0.58
16.	Effective Discipline	NSM	42	0	23.81	59.52	16.67	2.93	0.64	0.00		
		NUM	20	0	25.00	55.00	20.00	2.95	0.69		0.03	
		Nursing staff	446	10.54	39.24	45.74	4.48	2.44	0.74		0.53	0.56

Item No	Item		Number	Not competent at all	Needs improvement	Competent	Exceeds expectation	Mean	Standard Deviation	P-Value	Effect size	
			N	%	%	%	%	M	SD		NSM with	NUM with
17.	Effective Counselling Strategies	NSM	42	0	23.81	64.29	11.90	2.88	0.59	0.00		
		NUM	20	5.00	10.00	70.00	15.00	2.95	0.69		0.10	
		Nursing staff	448	10.94	39.96	46.20	2.90	2.41	0.72		0.49	0.58
18.	Constructive Performance Evaluation	NSM	43	2.33	11.63	76.74	9.30	2.93	0.55	0.00		
		NUM	20	0	10.00	65.00	25.00	3.15	0.59		0.37	
		Nursing staff	448	10.05	49.11	36.38	4.46	2.35	0.72		0.78	1.08
19.	Staff Development Strategies	NSM	43	0	30.23	60.47	9.30	2.79	0.60	0.00		
		NUM	20	5.00	20.00	55.00	20.00	2.90	0.79		0.14	
		Nursing staff	449	16.93	48.10	30.29	4.68	2.23	0.78		0.83	0.90
20.	Group Process	NSM	43	0	18.60	72.10	9.30	2.91	0.53	0.00		
		NUM	18	0	33.33	55.56	11.11	2.78	0.65		0.20	
		Nursing staff	451	12.64	45.90	37.47	3.99	2.33	0.74		0.69	0.51
21.	Interviewing Techniques	NSM	43	0	27.90	65.12	6.98	2.79	0.56	0.00		
		NUM	21	0	14.28	66.67	19.05	3.05	0.59		0.44	
		Nursing staff	450	12.00	43.56	41.11	3.33	2.36	0.73		0.40	0.74
22.	Team-building Strategies	NSM	42	0	26.20	61.90	11.90	2.86	0.61	0.00		
		NUM	21	0	23.81	52.38	23.81	3.00	0.71		0.20	

Item No	Item		Number	Not competent at all	Needs improvement	Competent	Exceeds expectation	Mean	Standard Deviation	P-Value	Effect size	
			N	%	%	%	%	M	SD		NSM with	NUM with
		Nursing staff	446	15.02	40.14	41.48	3.36	2.33	0.77		0.57	0.76
Human subscale												
23.	Humour	NSM	43	4.65	23.26	53.49	18.60	2.86	0.77	0.00		
		NUM	20	5.00	15.00	50.00	30.00	3.05	0.83		0.23	
		Nursing staff	442	13.80	45.93	35.52	4.75	2.31	0.77		0.58	0.77
24.	Optimism	NSM	42	7.14	11.90	64.29	16.67	2.90	0.76	0.00		
		NUM	19	5.26	21.05	57.89	15.80	2.84	0.76		0.08	
		Nursing staff	446	13.45	48.21	34.08	4.26	2.29	0.75		0.70	0.61
Conceptual subscale												
25.	Nursing Theories	NSM	43	2.33	39.53	46.51	11.63	2.67	0.71	0.00		
		NUM	20	0	20.00	65.00	15.00	2.95	0.60		0.39	
		Nursing staff	442	21.04	39.82	32.58	6.56	2.25	0.86		0.59	0.91
26.	Administrative / Organisational Theories	NSM	43	4.65	20.93	60.47	13.95	2.84	0.72	0.00		
		NUM	20	0	20.00	70.00	10.00	2.90	0.55		0.09	
		Nursing staff	445	21.12	45.62	28.99	4.27	2.16	0.80		0.99	1.07
27.	Strategic Planning / goal development	NSM	43	4.65	25.58	53.49	16.28	2.81	0.76	0.12		
		NUM	20	5.00	10.00	75.00	10.00	2.90	0.64		0.11	

Item No	Item		Number	Not competent at all	Needs improvement	Competent	Exceeds expectation	Mean	Standard Deviation	P-Value	Effect size	
			N	%	%	%	%	M	SD		NSM with	NUM with
		Nursing staff	445	7.42	34.38	53.71	4.49	2.55	0.70		0.24	0.39
Conceptual subscale												
28.	Ethical Principles	NSM	43	0	6.98	76.74	16.28	3.09	0.48	0.00		
		NUM	18	5.56	11.11	72.22	11.11	2.89	0.68		0.30	
		Nursing staff	448	5.80	29.24	56.70	8.26	2.67	0.71		0.53	0.25
29.	Teaching / Learning Theories	NSM	43	0	27.90	60.47	11.63	2.84	0.61	0.00		
		NUM	20	0	10.00	70.00	20.00	3.10	0.55		0.43	
		Nursing staff	450	17.33	46.00	29.56	7.11	2.26	0.83		0.74	1.07
30.	Political Process & Advocacy	NSM	43	0	32.56	53.49	13.95	2.81	0.66	0.00		
		NUM	19	0	21.05	73.69	5.26	2.84	0.50		0.04	
		Nursing staff	443	12.42	52.82	30.70	4.06	2.26	0.72		0.79	0.83
31.	Quality / Process Improvement	NSM	43	0	4.65	83.72	11.63	3.07	0.40	0.00		
		NUM	20	0	20.00	60.00	20.00	3.00	0.65		0.11	
		Nursing staff	445	7.19	33.03	55.51	4.27	2.57	0.69		0.58	0.46
32.	Legal Issues	NSM	42	0	23.81	64.29	11.90	2.88	0.59	0.00		
		NUM	19	0	21.05	73.69	5.26	2.84	0.50		0.07	
		Nursing staff	445	12.36	50.79	33.03	3.82	2.28	0.73		0.84	0.78

Item No	Item		Number	Not competent at all	Needs improvement	Competent	Exceeds expectation	Mean	Standard Deviation	P-Value	Effect size	
			N	%	%	%	%	M	SD		NSM with	NUM with
Leadership subscale												
33.	Decision-making	NSM	42	0	11.90	76.20	11.90	3.00	0.49	0.00		
		NUM	20	0	5.00	75.00	20.00	3.15	0.49		0.30	
		Nursing staff	449	8.91	34.08	51.44	5.57	2.54	0.73		0.45	0.66
34.	Power and Empowerment	NSM	43	0	11.63	72.09	16.28	3.05	0.53	0.00		
		NUM	19	0	15.79	68.42	15.79	3.00	0.58		0.08	
		Nursing staff	445	10.34	43.15	41.12	5.39	2.42	0.75		0.68	0.62
35.	Delegation	NSM	43	0	6.98	69.77	23.25	3.16	0.53	0.00		
		NUM	20	0	10.00	70.00	20.00	3.10	0.55		0.11	
		Nursing staff	446	4.93	28.93	58.52	7.62	2.69	0.68		0.59	0.50
36.	Change Process	NSM	43	0	27.91	58.14	13.95	2.86	0.64	0.05		
		NUM	20	0	15.00	65.00	20.00	3.05	0.60		0.30	
		Nursing staff	447	6.26	36.47	52.35	4.92	2.56	0.69		0.23	0.52
37.	Conflict Resolution	NSM	42	0	23.81	54.76	21.43	2.98	0.68	0.00		
		NUM	20	0	5.00	80.00	15.00	3.10	0.45		0.18	
		Nursing staff	447	9.62	41.39	44.74	4.25	2.44	0.72		0.59	0.77
38.	Problem-solving	NSM	42	0	19.05	59.52	21.43	3.02	0.64	0.00		

Item No	Item		Number	Not competent at all	Needs improvement	Competent	Exceeds expectation	Mean	Standard Deviation	P-Value	Effect size	
			N	%	%	%	%	M	SD		NSM with	NUM with
		NUM	20	0	5.00	70.00	25.00	3.20	0.52		0.27	
		Nursing staff	450	8.67	40.00	46.89	4.44	2.47	0.72		0.74	0.99
Leadership subscale												
39.	Stress Management	NSM	41	2.44	31.70	58.54	7.32	2.71	0.64	0.00		
		NUM	21	0	28.57	52.38	19.05	2.90	0.70		0.28	
		Nursing staff	452	12.39	42.92	41.81	2.88	2.35	0.73		0.41	0.69
40.	Research Process	NSM	38	2.63	52.63	39.48	5.26	2.47	0.65	0.11		
		NUM	21	4.76	42.86	42.86	9.52	2.57	0.75		0.13	
		Nursing staff	447	14.54	48.77	33.33	3.36	2.26	0.74		0.26	0.36
41.	Motivational Strategies	NSM	39	0	25.64	66.67	7.69	2.82	0.56	0.01		
		NUM	20	0	30.00	45.00	25.00	2.95	0.76		0.17	
		Nursing staff	448	9.82	41.07	44.42	4.69	2.44	0.73		0.40	0.55
42.	Organisation of Unit of Work and Workflow Process	NSM	40	0	7.50	80.00	12.50	3.05	0.45	0.00		
		NUM	21	0	14.29	71.42	14.29	3.00	0.55		0.09	
		Nursing staff	441	8.16	32.43	53.74	5.67	2.57	0.72		0.59	0.52
43.	Policies and Procedures	NSM	41	0	4.88	82.92	12.20	3.07	0.41	0.01		
		NUM	20	0	10.00	75.00	15.00	3.05	0.51		0.05	

Item No	Item		Number	Not competent at all	Needs improvement	Competent	Exceeds expectation	Mean	Standard Deviation	P-Value	Effect size	
			N	%	%	%	%	M	SD		NSM with	NUM with
		Nursing staff	445	4.04	24.49	64.05	7.42	2.75	0.65		0.46	0.42
44.	Staff Education	NSM	41	0	19.51	56.10	24.39	3.05	0.67	0.00		
		NUM	21	0	14.29	52.38	33.33	3.19	0.68		0.21	
		Nursing staff	447	12.30	43.85	36.47	7.38	2.39	0.80		0.83	1.02
Leadership subscale												
45.	Time Management	NSM	41	0	7.32	78.05	14.63	3.07	0.47	0.00		
		NUM	20	0	30.00	50.00	20.00	2.90	0.72		0.24	
		Nursing staff	454	6.39	33.92	53.30	6.39	2.60	0.70		0.66	0.39
46.	Interdisciplinary Care Coordination	NSM	41	0	26.83	63.41	9.76	2.83	0.59	0.93		
		NUM	20	0	25.00	65.00	10.00	2.85	0.59		0.04	
		Nursing staff	452	5.53	25.66	59.07	9.74	2.73	0.71		0.04	0.07
Financial subscale												
47.	Cost Containment and Cost Avoidance Practices	NSM	41	0	19.51	70.73	9.76	2.90	0.54	0.15		0.55
		NUM	21	0	19.05	61.90	19.05	3.00	0.63			
48.	Productivity Measurements	NSM	41	0	24.39	58.54	17.07	2.93	0.65	0.11		0.64
		NUM	21	0	14.29	71.42	14,29	3.00	0.55			

Item No	Item		Number	Not competent at all	Needs improvement	Competent	Exceeds expectation	Mean	Standard Deviation	P-Value	Effect size	
			N	%	%	%	%	M	SD		NSM with	NUM with
49.	Operational & Capital Budget Forecasting and Generation	NSM	42	2.38	38.10	52.38	7.14	2.64	0.66	0.14	0.53	
		NUM	20	0	55.00	35.00	10.00	2.55	0.69			
Financial subscale												
50.	Cost Benefit Analysis	NSM	42	0	38.10	54.76	7.14	2.69	0.60	0.03	0.90	
		NUM	21	0	47.62	38.10	14.28	2.67	0.73			
51.	Unit Budget Control Measures	NSM	42	0	30.96	61.90	7.14	2.76	0.58	0.06	0.80	
		NUM	21	0	38.10	42.85	19.05	2.81	0.75			
52.	Financial Resource Procurement	NSM	41	0	29.27	63.41	7.32	2.78	0.57	0.27	0.31	
		NUM	21	0	33.33	57.14	9.53	2.76	0.62			
53	Financial Resource Monitoring	NSM	42	0	28.57	59.53	11.90	2.83	0.62	0.11	0.67	

a) Technical subscale for the ability of NSMs, NUMs and nursing staff to implement items.

Table 4-31 displays the results in terms of the ability of NSMs, NUMs and nursing staff to implement items.

For item 7 (Research and Evidence-based Practice), 50.00% (n=21) and for item 8 (New technology) 55.82% (n=24) of NUMs were rated “not competent” or “needs improvement” by NSMs.

NUMs themselves (57.14%; n=12) only rated themselves “not competent” or “needs improvement” in one item on this subscale, which was item 7 (Research and Evidence-based Practice).

Four items in this subscale were rated as “not competent” or “needs improvement” by nursing staff. These were item 7 (Research and Evidence-based Practice) (65.62%; n=294), item 8 (New technology) (67.48%; n=303), item 9 (Case management) (50.00%; n=223), and item 10 (Information systems and computers) (62.95%; n=282).

b) Human subscale for ability of NSMs, NUMs and nursing staff to implement items.

NSMs rated NUMs “competent” in all the Human subscale items for *ability to implement.*

One item was rated as “not competent” or “needs improvement” by NUMs themselves: item 15 (Retention strategies). 57.89% (n=11) of NUMs did not feel competent in their *ability to implement* this item

Twelve items were rated as “not competent” or “needs improvement” by nursing staff in this subscale. These were item 13 (Effective staffing strategies) (69.35%; n=310), item 14 (Recruitment strategies) (71.27%; n=320), item 15 (Retention strategies) (70.79%; n=320), item 16 (Effective discipline) (49.78%; n=222), item 17 (Effective counselling strategies) (50.90%; n=228), item 18 (Constructive performance evaluation) (59.16%; n=265), item 19 (Staff development strategies) (65.04%; n=292), item 20 (Group process) (58.54%; n=264), item 21 (Interviewing techniques) (55.56%; n=250), item 22 (Team building strategies) (55.16%; n=246), item (Humour) (59.73%; n=264), and item 24 (Optimism) (61.66%; n=275).

c) Conceptual subscale for the ability of NSMs, NUMs and nursing staff to implement items

NSMs rated NUMs competent in all the Conceptual subscale items. NUMs also rated themselves competent in all items of the subscale.

Five of the eight items were rated “not competent” or “needs improvement” by nursing staff. These were items 25 (Nursing theories) (60.86%; n=269), item 26 (Administrative/Organisational theories) (66.74%; n=297), item 29 (Teaching and learning theories) (63.33%; n=285), item 30 (Political process & advocacy) (65.24%; n=289), and item 32 (Legal issues) (63.15%; n=281).

d) Leadership subscale for the ability of NSMs, NUMs and nursing staff to implement items.

The Leadership subscale has 14 items. 55.26% (n=21) of NSMs rated NUMs “not competent” or “needs improvement” on item 40 (Research process). NUMs rated themselves competent in all items of the subscale.

Seven items were rated as “not competent at all” or “needs improvement” by nursing staff. These were item 34 (Power and empowerment) (53.49%; n=238), item 37 (Conflict resolution) (51.01%; n=228), item 38 (Problem solving) (48.67%; n=219), item 39 (Stress management) (55.31%; n=250) and item 40 (Research process) (63.31%; n=283). Nursing staff also felt that NUMs were “not competent” in item 41 (Motivational strategies) (50.89%; n=228) and item 44 (Staff education) (56.15%; n=251).

e) Financial subscale for the ability of NSMs and NUMs to implement items

The Financial subscale has seven items and was only completed by NSMs and NUMs. NSMs rated NUMs competent in all items of the Financial subscale. NUMs also rated themselves competent in all items of the subscale.

4.6.1.2 Comparison of subscales of NMCI between different groups

The aim of this analysis was to identify differences between groups. The statistical procedures used to examine differences for this study were the t-test and analysis of variance (ANOVA) in cases where only one measurement per ward was collected. In cases where more than one measurement per ward per hospital were collected (nursing staff), the dependency of data from the same ward had to be considered in all analyses using hierarchical linear modelling (HLM).

4.6.1.2.1 T-tests

The t-tests were analysed to compare the results of the two groups of managers, NUMs and NSMs to see if there were any differences in their responses. This was performed for *knowledge and understanding* in all subscales and *ability to implement* for the Financial subscale only. The *ability to implement* section of the other subscales of the survey could not be analysed by using t-tests as the survey was completed by three groups (NSMs, NUMs and nursing staff) and was analysed by analysis of variance. The *ability to implement* under the Financial subscale was analysed for the two groups of managers, as it was only completed by them and not the nursing staff (see Section 4.6.1). Only statistically and practically significant results are reported. A p-value of smaller than 0.05 was deemed statistically significant. However, this was not a random sample from the population, and therefore no generalisations were made. P-values were therefore reported for completeness, but more emphasis was placed on the interpretation of effect sizes. The following guideline was used to interpret effect sizes: a) d=0.2 for small, b) d=0.5 for medium, and c) d=0.8 for large. Effect sizes of 0.4 and more were also reported as they tend towards medium effect size and practical significance. The analyses of items are reported first and then subscales. All large effect sizes were identified for use in the development of the strategy.

a) T-tests of the NMCI knowledge and understanding section items

Table 4-30 illustrates the t-tests for NMCI *knowledge and understanding* section items for NSMs and NUMs.

The effect sizes for Table 4.30 are reported. Item 15 (Retention strategies) had a medium effect size (d=0.43; p=0.10) where NSMs rated NUMs higher; NUMs rated themselves lower in the *knowledge and understanding* section of the Human subscale. No other items displayed significant differences between the way NSMs evaluated NUMs and the way NUMs evaluated themselves in terms of *knowledge and understanding* of the NUM competency items.

Differences between hospitals related to NMCI competency ratings

Hospitals differed significantly in ratings across the board. For this reason, linear regression modelling was implemented in further analysis to consider these differences.

b) T-tests of the NMCI knowledge and understanding section subscales

The t-test was also performed for *knowledge and understanding* in the different subscales of the NMCI. Table 4-32 illustrates the NMCI *knowledge and understanding* section of subscale t-tests for NSMs and NUMs.

Table 4-32: *Knowledge and understanding* subscales for NSM and NUM: T-tests

Item no	Subscales	Population	N	Mean	Standard Deviation	p-value	Effect size
1	Technical	NSM	43	2.85	0.26	0.58	
		NUM	23	2.91	0.47		0.12
2.	Human	NSM	43	2.86	0.41	0.64	
		NUM	23	2.80	0.57		0.11
3.	Conceptual	NSM	43	2.91	0.37	0.87	
		NUM	23	2.89	0.54		0.04
4.	Leadership	NSM	43	2.92	0.31	0.58	
		NUM	23	2.99	0.55		0.13
5.	Financial	NSM	42	2.79	0.53	0.81	0.06

Table 4-32 indicates no significant effect sizes between the ratings of the subscales by NSMs and NUMs.

c) The NMCI *ability to implement* section Financial subscale t-tests

The Financial subscale was only completed by NUMs and NSMs (see Section 4.6.1). Table 4-33 outlines the Financial *ability to implement* competencies subscale.

Table 4-33: *Ability to implement* Financial subscale for NSMs and NUMs: T-tests

Item no	Subscale	Population	N	Mean	Standard Deviation	p-value	Effect size
5.	Financial	NSM	42	2.80	0.42	0.84	
		NUM	21	2.77	0.55		0.05

Table 4-33 indicates no significant effect sizes between the ratings of the Financial subscale by NSMs and NUMs.

4.6.1.2.2 Analysis of variance (ANOVA)

The analysis of variance (ANOVA) tests were performed for the three groups, namely NSMs, NUMs and nursing staff. These analyses were performed for the *ability to implement* competencies section, as this section was completed by more than two groups to identify if there were differences in terms of competency ratings. The *ability to implement* analyses was also performed for only four subscales because nursing staff did not complete the Financial subscale

(see Section 4.6.1 and Appendix F). The following guideline was used to interpret effect sizes: a) small effect w=0.2, b) medium effect w=0.5 and c) large effect w=0.8. Effect sizes from 0.4 and above are reported for all three groups.

a) The NMCI *ability to implement* competencies section of the four subscales items- ANOVA

The analyses commence with items and then subscales. The effect sizes are analysed for NSMs against NUMs as well as nursing staff against the NUMs and nursing staff against NSMs evaluation of NUMs. All large effect sizes were identified and used in the development of the strategy. The analyses of variance for Table 4-31 are discussed.

a-a) Technical subscale *ability to implement* items for NSMs, NUMs and nursing staff – ANOVA

Medium effects of statistical significance were noted between NSMs and NUMs in the Technical subscale on two items: 5 (Patient acuity systems) (w=0.64; p=0.01) and 11 (Regulatory council standards) (w=0.52; p=0.03). In both of these items, NUMs rated their own *ability to implement* higher than what NSMs did. Nursing staff had statistically significant, medium to large effect sizes with NUMs in items 1(Nursing practice standards) (w=0.70; p=0.00), item 2 (Nursing care delivery systems) (w=0.73; p=0.00), item 3 (Nursing care planning) (w=0.68; p=0.00), item 4 (Clinical skills) (w=0.52; p=0.04), item 5 (Patient acuity systems) (w=0.65; p=0.01), item 6 (Infection control practices) (w=0.41; p=0.02), and item 8 (New technology) (w=0.57; p=0.03). In all of these items, the nursing staff had less confidence in the NUMs' abilities to implement than the NUMs had in themselves. NSMs showed medium effects with statistical significance against nursing staff in three items, namely item 1 (Nursing practice standards) (w=0.47; p=0.00), item 10 (Information systems and computer) (w=0.52; p=0.01), and item 11 (Regulatory council standards) (w=0.42; p=0.03). In each of these three items, nursing staff rated NUMs' abilities to implement lower than what NSMs did.

a-b) Human subscale *ability to implement* items for NSMs, NUMs and nursing staff – ANOVA

One medium effect size of statistical significance was identified between NSMs and NUMs in the Human subscale for item 21 (Interviewing techniques) (w=0.44; p=0.00). NUMs rated their *ability to implement* higher than what NSMs rated. Nursing staff had statistically significant medium to large effect sizes against NUMs in the Human subscale for 13 items: item12 (Interviewing techniques) (w=0.63; p=0.00), item 13 (Effective staffing strategies) (w=0.81; p=0.00), item 14 (Recruitment strategies) (w=0.77; p=0.00), item 15 (Retention strategies) (w=0.58; p=0.00), item 16 (Effective discipline) (w=0.56; p=0.00), item 17 (Effective counselling strategies) (w=0.58;

p=0.00), item 18 (Constructive performance evaluation) (w=1.08; p=0.00), item 19 (Staff development strategies) (w=0.90; p=0.00), item 20 (Group process) (w=0.51; p=0.00), item 21 (Interviewing techniques) (w=0.74; p=0.00), item 22 (Team building strategies) (w=0.76; p=0.00), item 23 (Humour) (w=0.77; p=0.00) and item 24 (Optimism) (w=0.61; p=0.00). In all these items NUMs rated their *ability to implement* higher than nursing staff did.

Nursing staff also had statistically significant medium to large effect sizes against NSMs in 13 items of this subscale as follows: item 12 (Effective communication) (w=0.72; p=0.00), item 13 (Effective staffing strategies) (w=1.01; p=0.00), item 14 (Recruitment strategies) (w=0.84; p=0.00), item 15 (Retention strategies) (w=0.80; p=0.00), item 16 (Effective discipline) (w=0.53; p=0.00), item 17 (Effective counselling strategies) (w=0.49; p=0.00), item 18 (Constructive performance evaluation) (w=0.78; p=0.00), item 19 (Staff development strategies) (w=0.83; p=0.00), item 20 (Group process) (w=0.69; p=0.00), item 21 (Interviewing techniques) (w=0.40; p=0.00), item 22 (Team building strategies) (w=0.57; p=0.00), item 23 (Humour) (w=0.58; p=0.00) and item 24 (Optimism) (w=0.70; p=0.00). In all of these items NSMs rated NUMs' abilities to implement higher than what nursing staff did.

a-c) Conceptual subscale *ability to implement* items for NSMs, NUMs and nursing staff – ANOVA

One medium effect size of statistical significance was identified between NSMs and NUMs in the Conceptual subscale on item 29 (Teaching/learning theories) (w=0.43; p=0.00). NUMs rated their *ability to implement* higher than what NSMs did.

Nursing staff showed medium and large effects with statistical significance against NUMs in six items of the Conceptual subscale items namely, item 25 (Nursing theories) (w=0.91; p=0.00), item 26 (Administrative/organisational theories) (w=1.07; p=0.00), item 29 (Teaching/learning theories) (w=1.07; p=0.00), item 30 (Political process and advocacy) (w=0.83; p=0.00), item 31 (Quality/process improvement) (w=0.46; p=0.00) and item 32 (Legal issues) (w=0.78; p=0.00). In all of these items nursing staff had less confidence in the NUMs' *ability to implement* than what the NUMs had in themselves.

NSMs showed medium and large effects with statistical significance against nursing staff in seven items of the Conceptual subscale namely, item 25 (Nursing theories) (w=0.59; p=0.00), item 26 (Administrative/organisational theories) (w=0.99; p=0.00), item 28 (Ethical principles) (w=0.53; p=0.00), item 29 (Teaching/learning theories) (w=0.74; p=0.00), item 30 (Political process and advocacy) (w=0.79; p=0.00), item 31 (Quality/process improvement) (w=0.58; p=0.00) and item

32 (Legal issues) (w=0.84; p=0.00). In each of these seven items, nursing staff rated NUMs' abilities to implement lower than what NSMs did.

a-d) Leadership subscale *ability to implement* items for NSMs, NUMs and nursing staff – ANOVA

Medium and large effects of statistical significance were noted between nursing staff and NUMs in the Leadership subscale on 11 items: Item 33 (Decision making) (w=0.66; p=0.00), item 34 (Power and empowerment) (w=0.62; p=0.00), item 35 (Delegation) (w=0.50; p=0.00), item 36 (Change process" (w=0.52; p=0.05), item 37 (Conflict resolution) (w=0.77; p=0.00), item 38 (Problem solving) (w=0.99; p=0.00), item 39 (Stress management) (w=0.69; p=0.00), item 41 (Motivational strategies) (w=0.55; p=0.01), item 42 (Organization of unit of work and workflow process) (w=0.52; p=0.00), item 43 (Policies and procedures) (w=0.42; p=0.01) and item 44 (Staff education) (w=1.02; p=0.00). In all these items NUMs rated their *ability to implement* higher than nursing staff did.

Nursing staff also had statistically significant medium to large effect sizes against NSMs in 11 items of the Leadership subscale as follows: item 33 (Decision making) (w=0.45; p=0.00), item 34 (Power and empowerment) (w=0.68; p=0.00), item 35 (Delegation) (w=0.59; p=0.00), item 37 (Conflict resolution) (w=0.59; p=0.00), item 38 (Problem solving) (w=0.74; p=0.00), item 39 (Stress management) (w=0.41; p=0.00), item 41 (Motivational strategies) (w=0.40; p=0.01), item 42 (Organization of unit of work and workflow process) (w=0.59; p=0.00), item 43 (Policies and procedures) (w=0.46; p=0.01) item 44 (Staff education) (w=0.83; p=0.00) and item 45 (Time management) (w=0.66; p=0.00). In all of these items NSMs rated NUMs' abilities to implement higher than what nursing staff did.

b) The NMCI ability to implement competencies section subscales – ANOVAS

Differences between NMCI competency ratings according to HLM

Due to the fact that results of nursing staff working in the same ward in a hospital are not independent, Hierarchical Linear modelling (HLM) was employed to test for differences in groups where nursing staff were included. Table 4-34 outlines *ability to implement* subscales for NSMs, NUM and nursing staff.

Table 4-34: NMCI – *ability to implement subscales* for NSMs, NUM and nursing staff: Hierarchical Linear modelling (HLM)

Item no	Subscales	Population	N	Mean	MSE	Variance between hospitals	Variance between wards in hospitals	p-value	Effect sizes	
									NSM with	NUM with
1	Technical	NSM	43	2.83	0.16	0.00	0.03	0.00		
		NUM	21	2.94					0.24	
		Nursing staff	148	2.59					0.57	0.81
2	Human	NSM	43	2.86	0.22	0.02	0.04	0.00		
		NUM	21	2.88					0.07	
		Nursing staff	148	2.35					1.08	1.01
3	Conceptual	NSM	43	2.88	0.22	0.01	0.04	0.00		
		NUM	21	2.88					0.07	
		Nursing staff	148	2.39					0.97	0.90
4	Leadership	NSM	43	2.94	0.21	0.01	0.04	0.00		
		NUM	21	2.98					0.04	
		Nursing staff	148	2.59					0.84	0.89

b-a) Technical subscale for NSMs, NUMs and nursing staff

There are medium to large effects of statistical significance in the *ability to implement* the Technical subscale between nursing staff and NSMs (w=0.57; p=0.00) and NUMs (w=0.81; p=0.00). NUMs rated themselves higher and NSMs also rated NUMs higher than nursing staff did in the overall subscale *ability to implement*.

b-b) Human subscale for NSMs, NUMs and nursing staff

In the Human subscale, nursing staff had large effects of statistical significance with NSMs (w=1.08; p=0.00) and NUMs (w=1.01; p=0.00). NUMs had confidence in the overall subscale of ability *to implement*, while NSMs also had confidence in the abilities of NUMs to implement the subscale more than nursing staff did.

b-c) Conceptual subscale for NSMs, NUMs and nursing staff

Large effects of statistical significance were noted between both NSMs (w=0.97; p=0.00) and NUMs (w=0.90; p=0.00) with nursing staff. NUMs rated themselves and NSMs also rated NUMs higher than nursing staff did in the *ability to implement* the overall subscale.

b-d) Leadership subscale for NSMs, NUMs and nursing staff

The Leadership subscale had medium effects of statistical significance between nursing staff and NSMs (w=0.84; p=0.00) as well as NUMs (w=0.89; p=0.00). Nursing staff rated NUMs lower than NUMs rated themselves and NSMs rated NUMs higher in the *ability to implement* the overall subscale than nursing staff did.

4.6.1.2.3 Discussion of objective 1

The research hypothesis that there is no difference between competency ratings of NUMs by NSMs, nursing staff and by self-assessment of NUMs, is rejected. Findings revealed minimal differences between the way NSMs evaluated NUMs, and the way NUMs evaluated themselves in terms of competency ratings for the various subscales. However, there were significant differences in how nursing staff rated NUMs compared to the ratings of NSMs and the self-ratings of NUMs in terms of the latter's abilities to implement competencies. Nursing staff ratings of NUMs were consistently lower than NUMs' ratings of themselves, and nurses also rated NUMs lower than even NSMs did. In a qualitative multi-source feedback study by Skytt *et al.* (2008), the perception of the current and desired roles of NUMs varied between groups. The NUMs themselves, registered nurses and assistant nurses reported a similar understanding, which differed from that of the heads of departments. The NUMs, registered nurses and assistant nurses

emphasised the NUMs' role of providing service in the ward, while heads of departments emphasised the development of services and co-operation with other nurse managers.

The Technical subscale exemplified that nursing staff regard NUMs' management of patient care of vital importance. Although research has confirmed the shift of the role of NUM from patient care expert to nursing manager only (Corser, 1995; Duffield, 1991b; Mark, 1994:55; Duffield & Franks, 2001:88; Espinoza *et al.,* 2009; DeCampli *et al.,* 2010; Dignam *et al.,* 2012:66; Cadmus & Wisniewska, 2013:674; Kerridge, 2013), nursing staff have shown interest in an NUM who shows responsibilities toward the clinical care of patients as well. It is important to note that there is one item in this subscale, Research and Evidenced-based Practice, where NSMs, NUMs and nursing staff had no confidence in NUMs in terms of *knowledge and understanding* and *ability to implement* the item. Furthermore, NSMs and nursing staff also rated NUMs as "not competent" in the items New Technology and Case Management. NSMs also disagreed with NUMs in their *ability to implement* Patient Acuity Systems (w=0.64; p=0.01) with NUMs being more confident of their competence than NSMs.

Nursing staff rated the Human subscale more negatively than all other subscales. A study conducted by Roche *et al.* (2015: 60) found that even if nurse managers could be adequately prepared for management, it was the human skills that were most valued by nurses in their leaders. Various studies have indicated that nurse managers must focus on the quality of workplace relationships as a first step to retaining nurses (Mokoka *et al.,* 2010:8; Brunetto *et al.,* 2013:2795; Wagner *et al.,* 2015:4). Feather *et al.* (2015:132) reported that nurses prefer an NUM who keeps their private information confidential and allows them to speak freely without repercussions when identifying problems in the unit. Amos *et al.* (2005:16) suggested that the nurse leader/manager must nurture interpersonal relationships and encourage nursing staff efforts at effective communication, through which team members will become more comfortable in addressing issues among themselves, solving problems together, and resolving conflicts.

NUMs must develop strategies for nursing staff to gain more experience and further build their careers, to comply with requirements like continuous professional development (CPD), supplement gaps from previous education (Pool *et al.,* 2015:939; Brekelmans *et al.,* 2016:16; Pool *et al.,* 2016:27) and increase their opportunities for promotion (Nsemo *et al.,* 2013:332). NUMs should further develop interesting communication behaviours like humour that can improve nurses' job satisfaction, so as to reduce turnover and also improve performance (Kim, 2013:266). Factors like effective staffing strategies, recruitment strategies and retention strategies have already been established as important functional abilities of NUMs (Kleinman, 2003:453-454; De Onna, 2006:80-88; Donaher *et al.,* 2007:280-281; Chase, 2010:117).

The low ratings of nursing staff in all items of the Human subscale, emphasises the importance of the Human subscale – particularly the interpersonal relations and effective communication elements that link to people management. It must be noted that people management is a skill comprehensively taught in management education in South Africa. However, management education is not a requirement for appointment of NUMs, while people management is a required skill according to the competency profile of the NUM (see Table 2.3). The difference between management education and appointment requirements was also identified by Farrell (2001:31) and was found to be highly surprising given the complex skills required for people management.

In the Conceptual subscale, findings revealed that nursing staff have the need for an NUM with the ability to see the organisation as a whole. Nursing staff have indicated the need for an NUM who thinks and manages strategically within the broader organisation, recognising how the various functions of the organisation depend on one another and how changes in any one part affect all the others.

For the item nursing theories, nursing staff had no confidence in NUMs' abilities to implement the item. Research has indicated that nursing practice has found its foundations in nursing theory (Laurent, 2000:83) that also serves as a foundation for relevant nursing interventions (Jansson & Forsberg 2016:773), which can be utilised by NUMs for effective management of nursing units. Nursing staff also had no confidence in NUMs' abilities to implement teaching and learning theories. Curran (2014:238) identified limited exposure to adult learning theory as affecting nursing professional development, educational practices, learning outcomes, organisational knowledge transfer, and, subsequently, the professional development of the nurses being served and their quality of nursing care.

Nursing staff also did not positively rate the item Legal Issues of the Conceptual subscale. Nursing staff felt that NUMs were not competent in the ability to implement legal issues. With the present situation in healthcare organisations (characterised by nursing staff shortages and increased workloads), nurses can omit or commit an act that could cost the life of a patient. Valiee *et al.* (2014:209-210) reported that nurses cited exhaustion, lack of experience, shortage of staff, and increased workload as some of the causes of errors. Nursing staff need to be provided with safety measures or protection against acts of omission or commission or mitigation of risks associated with such acts such as reduction of workloads or providing adequate staffing for nursing staff to feel protected against legal issues, which would also reduce legal actions against healthcare organisations.

The Leadership subscale was also evaluated in a more negative light by nursing staff. Nursing staff rated NUMs lower than NUMs rated themselves, while NSMs rated NUMs higher and more

positively than nursing staff did. Research has identified the lack of several factors associated with the Leadership subscale in NUMs. These are poor role modelling and ineffective management responses to staff problems and conflicts (Farrell, 2001:31), exclusionary communication practices (Moreland & Apker, 2016:822), poor problem-solving processes (Rahim, 2002:214) , and lack of creation of feelings of trust and safety in staff, and a subsequent perception of lack of support (Zori *et al.,* 2010:309). However, some factors identified as lack of ability to implement competencies by NUMs cannot be entirely attributed to deficiencies of NUMs themselves, but are actually factors emanating from organisations as well. Examples of these are limited decision-making authority (Wong *et al.,* 2013b:237) and creation of empowering work conditions (Laschinger *et al.,* 2009:233). Kleinman (2004:8) suggested that intellectual stimulation and an emphasis on problem solving may be an important leadership behaviour that facilitates sharing of responsibilities and might also reduce nursing staff intentions or thoughts about turnover.

Nursing staff also rated NUMs as "not competent" in the ability to implement stress management. Research has already indicated that the role of the NUM is stressful (Warshawsky & Havens, 2014:35). Lack of competencies in stress management by NUMs has also been identified by Luo *et al.* (2016: E93). Nursing staff do not entirely understand the roles of NUMs or the demands that preclude the NUM from providing the necessary support, interaction and visibility expected. Also, NUMs' inability to manage stress is due to organisational factors like time and resource constraints (Laschinger *et al.,* 2009:233), powerlessness (Wong *et al.,* 2013b:237), role ambiguity, transition into NUM role, challenging work environment characterized by incivility and bullying (Van Wyk, 2015:320) and increased span of control (Shirey, 2006:193; Udod *et al.,* 2017:161). These factors are stressors for NUMs, which then becomes identified as inability to implement stress management. Therefore, organisational factors will always have an impact on the competencies of NUMs.

Given that 90% of all global healthcare services are provided by nurses and midwives, strengthening care provided by this group through education will, by extension, strengthen healthcare systems as a whole by improving delivery of care, and resulting in sustained positive health outcomes for patients (Clark *et al.,* 2015:61-2). Duffield *et al.* (2008:16) recommended that NUMs respond to local staff concerns including, among others, improving on-the-job orientation and providing paid continuing education to enhance job satisfaction. Although NUMs can contribute by motivating for nurses' continuing education, this is not only the responsibility of the NUM, but also of top management. Quite often, for example, nurses complain that NUMs have supported their applications for study leave, which was then turned down at organisational level and they decide to leave (O'Brien-Pallas *et al.,* 2006:268). This further indicates that some factors

identified as NUMs' lack of ability to implement competencies are not necessarily shortcomings of the NUMs themselves, but are factors emanating from organisations as well.

Katz (1955:37) stated that, in practice, managerial skills are closely related, although they vary in relative importance at different levels of responsibility. The interrelatedness of the managerial skills has been identified in this study between the Human, Conceptual and Leadership subscales. Some competencies of the Human subscale also fit in with competencies of the Leadership subscale. In the EFA, there were large correlations between the Human and Conceptual subscales (0.91) and the Leadership and Human subscales (0.89). This also explains why the Human subscale was divided between the Conceptual and Leadership subscales in the EFA.

In the financial subscale, NUMs rated themselves competent in cost containment and cost avoidance practices, NSMs felt they were less competent in the ability to implement the same item as well as in productivity measurements and unit budget control measures. However, NSMs had confidence that NUMs are competent in the ability to implement operational and capital budget forecasting, generation cost benefit analysis and financial resource monitoring. Table 4-35 below outlines strengths and weaknesses of objective one.

Table 4-35: Strengths and weaknesses in objective one

Strengths	Weaknesses
Technical subscale	
7. NSMs rated NUMs as competent in *knowledge and understanding* of the following: • Nursing Practice Standards (M=3.07; SD=0.26); • Nursing Care Delivery Systems (M=3.10; SD=0.37); • Nursing Care Planning (M=3.09; SD=0.43); • Clinical Skills (M=3.12; SD=0.33); • Infection Control Practices (M=3.05; SD=0.22); and • Regulatory Council Standards (M=3.05; SD=0.22).	13. NSMs felt that NUMs lacked competence in *knowledge and understanding* of the following: • Research and Evidence-Based Practice (M=2.48; SD=0.63); • New Technology (M=2.40; SD=0.66); and • Case Management (M=2.47; SD=0.70)
8. NUMs felt competent in knowledge and understanding of the following: • Nursing Practice Standards (M=3.09; SD=0.60);	

• Nursing Care Delivery Systems (M=3.18; SD=0.50); • Nursing Care Planning (M=3.26; SD=0.54); • Clinical Skills (M=3.10; SD=0.62); • Patient Acuity Systems (M=3.09; SD=0.68); and • Infection Control Practices (M=3.09; SD=0.79).	
9. NSMs felt NUMs were competent in the ability to implement the following: • Nursing Practice Standards (M=3.00; SD=0.44); • Nursing Care Delivery Systems (M=3.05; SD=0.49); • Nursing Care Planning (M=3.07; SD=0.47); • Clinical Skills (M=3.07; SD=0.35); • Infection Control Practices (M=3.05; SD=0.31); and • Regulatory Council Standards (M=3.07; SD=0.34).	14. NSMs were not convinced of NUMs' competence in the ability to implement the following: • Research and Evidence-based Practice (M=2.50; SD=0.74); and • New Technology (M=2.44; SD=0.73).
10. NUMs rated themselves competent in the *ability to implement* the following: • Nursing Practice Standards (M=3.14; SD=0.57); • Nursing Care Delivery Systems (M=3.25; SD=0.55); • Nursing Care Planning (M=3.24; SD=0.44); • Clinical Skills (M=3.25; SD=0.64); • Patient Acuity Systems (M=3.21; SD=0.63); and • Infection Control Practices (M=3.15; SD=0.75).	15. NUMs rated themselves not competent in the *ability to implement* • Research and Evidence-based Practice (M=2.43; SD=0.68).
	16. Nursing staff rated NUMs not competent in the *ability to implement* the following four aspects: • Research and Evidence-based Practice (M=2.24; SD=0.70); • New Technology (M=2.24; SD=0.71); • Case Management (M=2.47; SD=0.70); and • Information Systems and Computers (M=2.27; SD=0.76).
11. NSMs disagreed with NUMs regarding their *ability to implement* Regulatory Council Standards (w=0.52; p=0.03), with NSMs being more confident of NUMs' competence than NUMs themselves.	17. NSMs disagreed with NUMs regarding their *ability to implement* Patient Acuity Systems w=0.64; p=0.01) with NUMs being more confident of their competence than NSMs.
	18. Nursing staff differed from NSMs regarding NUMs' *ability to implement* three items, rating NUMs lower than NSMs did:

	• Nursing Practice Standards (w=0.47; p=0.00); • Information Systems and Computers (w=0.52; p=0.01; and • Regulatory Council Standards (w=0.42; p=0.03).
	19. Nursing staff rated NUMs lower than NUMs did themselves in the *ability to implement* the following: • Nursing Practice Standards (w=0.70; p=0.00); • Nursing Care Delivery Systems (w=0.73; p=0.00); • Nursing Care Planning (w=0.68; p=0.00); • Clinical Skills (w=0.52; p=0.04); • Patient Acuity Systems (w=0.65; p=0.01); • Infection Control Practices (w=0.41; p=0.02); and • New Technology (w=0.57; p=0.03).
	20. Overall, nursing staff rated NUMs' ability to implement the Technical subscale lower than what NUMs themselves did (w=0.81; p=0.00).
Human subscale	
12. NSMs felt that NUMs were competent in *knowledge and understanding* of • Effective Communication (M=3.12; SD=0.45).	
13. NUMs felt competent in their *knowledge and understanding* of: • Constructive Performance Evaluation (M=3.04; SD=0.71); and • Humour (M=3.00; SD=0.85).	21. NUMs did not feel competent in *knowledge and understanding* of: • Recruitment Strategies (M=2.38; SD=0.67); and Retention Strategies (M=2.43; SD=0.68).
14. NSMs rated NUMs as competent in the *ability to implement* • Effective Communication (M=3.12; SD=0.59).	
15. NUMs felt competent in the *ability to implement* the following: • Effective Communication (M=3.05; SD=0.60); • Constructive Performance Evaluation (M=3.15; SD=0.59); • Interviewing Techniques (M=3.05; SD=0.59); • Team-building Strategies (M=3.00; SD=0.71); and • Humour (M=3.05; SD=0.83).	
	22. Nursing staff rated NUMs incompetent in the *ability to implement* the following: • Effective Staffing Strategies (M=2.18; SD=0.78); • Recruitment Strategies (M=2.04; SD=0.82); • Retention Strategies (M=2.05; SD=0.80); • Effective Discipline (M=2.44; SD=0.74); • Effective Counselling Strategies (M=2.41; SD=0.72); • Constructive Performance Evaluation (M=2.35; SD=0.72);

	• Staff Development Strategies (M=2.23; SD=0.78); • Group Process (M=2.33; SD=0.74); • Interviewing Techniques (M=2.36; SD=0.73); • Team-building Strategies (M=2.33; SD=0.77); • Humour (M=2.31; SD=0.77); and • Optimism (M=2.29; SD=0.75).
	23. NSMs felt that NUMs were less competent than NUMs themselves did in the *ability to implement* • Interviewing Techniques (w=0.44; p=0.00).
	24. Nursing staff felt less confident than NSMs in NUMs' *abilities to implement* all Human subscale items: • Effective Communication (w=0.72; p=0.00); • Effective Staffing Strategies (w=1.01; p=0.00); • Recruitment Strategies (w=0.84; p=0.00); • Retention Strategies (w=0.80; p=0.00); • Effective Discipline (w=0.53; p=0.00); • Effective Counselling Strategies (w=0.49; p=0.00); • Constructive Performance Evaluation (w=0.78; • p=0.00); • Staff Development Strategies (w=0.83; p=0.00); • Group Process (w=0.69; p=0.00); • Interviewing Techniques (w=0.40; p=0.00); • Team-building Strategies (w=0.57; p=0.00); • Humour (w=0.58; p=0.00); and • Optimism (w=0.70; p=0.00).
	25. Nursing staff did not agree with NUMs' ratings of themselves in all Human subscale items, feeling that NUMs were less competent than what they reported themselves to be in terms of: • Effective Communication (w=0.63; p=0.00); • Effective Staffing Strategies (w=0.81; p=0.00); • Recruitment Strategies (w=0.77; p=0.00); • Retention Strategies (w=0.58; p=0.00); • Effective Discipline (w=0.56; p=0.00); • Effective Counselling Strategies (w=0.58; p=0.00); • Constructive Performance Evaluation (w=1.08; p=0.00);

	• Staff Development Strategies (w=0.90; p=0.00); • Group Process (w=0.51; p=0.00); • Interviewing Techniques (w=0.74; p=0.00); • Team-building Strategies (w=0.76; p=0.00); • Humour (w=0.77; p=0.00); and • Optimism (w=0.61; p=0.00).
	26. Nursing staff experienced NUMs' as not competent in their ability to implement the overall Human subscale (M=2.35), and were thus more negative than NUMs were about themselves (w=1.01; p=0.00).
16. NSMs felt more confident in NUMs knowledge and understanding of retention strategies, than NUM themselves did (d=0.43; p=0.10).	
Conceptual subscale	
17. NSMs rated NUMs as competent in *knowledge and understanding* of the following: • Ethical Principles (M=3.09; SD=0.43); and • Quality / Process Improvement (M=3.09; SD=0.29).	
18. NUMs felt competent in *knowledge and understanding* of the following: • Nursing Theories (M=3.00; SD=0.60); • Strategic Planning / Goal development (M=3.00; SD=0.45); and • Teaching / Learning Theories (M=3.04; SD=0.64).	
19. NSMs rated NUMs as competent in the *ability to implement* the following items: • Ethical Principles (M=3.09; SD=0.48); and • Quality / Process Improvement (M=3.07; SD=0.40).	
20. NUMs felt confident in their abilities to implement the two Conceptual items, namely: • Teaching / Learning Theories (M=3.10; SD=0.55); and • Quality / Process Improvement (M=3.00; SD=0.65).	
	27. Nursing staff felt that NUMs were not competent in their abilities to implement several items, namely: • Nursing Theories (M=2.25; SD=0.86); • Administrative / Organisational Theories (M=2.16; SD=0.80); • Teaching / Learning Theories (M=2.26; SD=0.83); • Political Process & Advocacy (M=2.26; SD=0.72); and • Legal Issues (M=2.28; SD=0.73).
	28. NSMs felt that NUMs rated themselves too highly on the ability to implement:

	• Teaching / Learning Theories (w=0.43; p=0.00);
	29. Nursing staff differed with NSMs on their ratings of NUMs' *ability to implement* several items, rating NUMs lower than what NSMs did: • Nursing Theories (w=0.59; p=0.00); • Administrative / Organisational Theories (w=0.99; p=0.00); • Ethical Principles (w=0.53; p=0.00); • Teaching / Learning Theories (w=0.74; p=0.00); • Political Process & Advocacy (w=0.79; p=0.00); • Quality / Process Improvement (w=0.58; p=0.00); and • Legal Issues (w=0.84; p=0.00).
	30. Nursing staff differed with NUMs on their ratings of themselves on the *ability to implement* the following items, rating NUMs lower than what they did themselves: • Nursing Theories (w=0.91; p=0.00); • Administrative / Organisational Theories (w=1.07; p=0.00); • Teaching / Learning Theories (w=1.07; p=0.00); • Political Process & Advocacy (w=0.83; p=0.00); • Quality / Process Improvement (w=0.46; p=0.00); and • Legal Issues (w=0.78; p=0.00).
	31. Nursing staff experienced NUMs' as not competent in the *ability to implement* the overall Conceptual subscale (M=2.39) and also saw the implementation of the subscale less favourably than what NUMs did (w=0.90; p=0.00).
Leadership subscale	
21. NSMs rated NUMs as competent in *knowledge and understanding* of the following: • Power and Empowerment (M=3.02; SD=0.41); • Delegation (M=3.07; SD=0.40); • Problem-solving (M=3.00; SD=0.49); • Organisation of Unit of Work and Workflow Process (M=3.05; SD=0.38); • Policies and Procedures (M=3.07; SD=0.41); • Staff Education (M=3.22; SD=0.60); and • Time Management (M=3.05; SD=0.38).	32. NSMs felt that NUMs were not competent in *knowledge and understanding* of the • Research Process (M=2.48; SD=0.59).
22. NUMs rated themselves as competent in *knowledge and understanding* of the following: • Decision-making (M=3.17; SD=0.65); • Power and Empowerment (M=3.09; SD=0.61); • Delegation (M=3.13; SD=0.69); • Change Process (M=3.04; SD=0.71); • Conflict Resolution (M=3.13; SD=0.63); • Problem-solving (M=3.22; SD=0.67);	

• Policies and Procedures (M=3.09; SD=0.67); and • Staff Education (M=3.22; SD=0.60).	
23. NSMs felt NUMs were competent in the *ability to implement* the following items: • Decision-making (M=3.00; SD=0.49); • Power and Empowerment (M=3.05; SD=0.53); • Delegation (M=3.16; SD=0.53); • Problem-solving (M=3.02; SD=0.64); • Organisation of Unit of Work and Workflow Process (M=3.05; SD=0.45); • Policies and Procedures (M=3.07; SD=0.41); • Staff Education (M=3.05; SD=0.67); and • Time Management (M=3.07; SD=0.47).	33. NSMs rated NUMs as not competent in the *ability to implement* the: • Research Process (M=2.47; SD=0.65).
24. NUMs rated themselves as competent in the *ability to implement* the following: • Decision-making (M=3.15; SD=0.49); • Power and Empowerment (M=3.00; SD=0.58); • Delegation (M=3.10; SD=0.55); • Change Process (M=3.05; SD=0.60); • Conflict Resolution (M=3.10; SD=0.45); • Problem-solving (M=3.20; SD=0.52); • Organisation of Unit of Work and Workflow Process (M=3.00; SD=0.55); • Policies and Procedures (M=3.05; SD=0.51); and • Staff Education (M=3.19; SD=0.68).	
	34. Nursing staff felt that NUMs were not competent in the *ability to implement* the following: • Power and Empowerment (M=2.42; SD=0.75); • Conflict Resolution (M=2.44; SD=0.72); • Problem-solving (M=2.47; SD=0.72); • Stress Management (M=2.35; SD=0.73); • Research Process (M=2.26; SD=0.74); • Motivational Strategies (M=2.44; SD=0.73); and • Staff Education (M=2.39; SD=0.80).
	35. Nursing staff disagreed with NSMs' rating of NUMs' abilities to implement several items and rated NUMs lower than NSMs throughout: • Decision-making (w=0.45; p=0.00); • Power and Empowerment (w=0.68; p=0.00); • Delegation (w=0.59; p=0.00); • Conflict Resolution (w=0.59; p=0.00); • Problem-solving (w=0.74; p=0.00); • Stress Management (w=0.41; p=0.00); • Motivational Strategies (w=0.40; p=0.01); • Organisation of Unit of Work and Workflow Process (w=0.59; p=0.00); • Policies and Procedures (w=0.46; p=0.00); • Staff Education (w=0.83; p=0.00); and • Time Management (w=0.66; p=0.00).

	36. Nursing staff expressed lower ratings than NUMs for the *ability to implement* of the following items: • Decision-making (w=0.66; p=0.00); • Power and Empowerment (w=0.62; p=0.00); • Delegation (w=0.50; p=0.00); • Change process (w=0.52; p=0.05); • Conflict Resolution (w=0.77; p=0.00); • Problem-solving (w=0.99; p=0.00); • Stress Management (w=0.69; p=0.00); • Motivational Strategies (w=0.55; p=0.01); • Organisation of Unit of Work and Workflow Process (w=0.52; p=0.00); • Policies and Procedures (w=0.42; p=0.00); and • Staff Education (w=1.02; p=0.00).
	37. Nursing staff experienced NUMs' *ability to implement* the overall Leadership subscale in a more negative light than what NUMs did (w=0.89; p=0.00).
Financial subscale	
25. NUMs rated themselves competent in the *ability to implement* two Financial items, namely: • Cost Containment and Cost Avoidance Practices (M=3.00; SD=0.63); and • Productivity Measurements (M=3.00; SD=0.55).	
26. NSMs were more confident in NUMs' *ability to implement* several Financial items, viz.: • Operational and Capital Budget Forecasting and Generation (w=0.0.53; p=0.14); • Cost Benefit Analysis (w=0.90; p=0.03); and • Financial Resource Monitoring (w=0.67; p=0.11).	38. NSMs felt that NUMs were less competent than what they reported of themselves in the *ability to implement* of several Financial items, namely: • Cost Containment and Cost Avoidance Practices (w=0.55; p=0.15); • Productivity Measurements (w=0.64; p=0.11); and • Unit Budget Control Measures (w=0.80; p=0.06).

4.6.2 Objective two

To determine an association between the nursing unit managers' competencies and personal and nursing unit demographics.

In this section, an association between NUMs' personal and nursing unit demographics is determined by evaluation of NUM demographics and NUM competencies as evaluated by NSMs, NUMs themselves, and nursing staff is discussed.

4.6.2.1 NUM personal and nursing unit demographic data

NUMs' personal and nursing unit demographics as associated with NUM competencies were evaluated using t-tests and correlations. The gender, additional management qualifications and level of management qualification of NUMs were associated with NUM competencies using t-tests. Hospital size, age, tenure in management position, years practiced as a registered nurse, and span of control was associated with NUM competencies using correlations. Each of the NUM demographics as associated with NUM competencies was investigated from the view of NSMs, then NUMs, and nursing staff. NUM demographics and NUM competencies as rated by nursing staff data were analysed in two ways: by collapsing and expanding the data to match the NUM and nursing staff data entry points. Thus, NUM competencies as rated by nursing staff working under a specific NUM were collapsed (by using the mean of the competencies of all staff in a ward in a hospital) to combine with their specific NUM (collapsing of data); while NUM demographics were expanded to match with each specific nursing staff member in his/her unit (expanding of data). For NSMs and NUMs both *knowledge and understanding* and *ability to implement* sections were evaluated while for nursing staff only the ability to implement section was evaluated. In all cases where data were expanded, it had to be considered that the results of nursing staff in the same ward in a hospital were not independent, so Hierarchical Linear Modelling (HLM) was employed to test for differences in groups where nursing staff were included.

4.6.2.1.1 T-tests

Independent samples t-testing was done to compare the mean scores for the following demographic data: gender of participants, additional management qualification and level of management qualification. The guideline used to interpret effect sizes was previously discussed (see Section 4.6.1.2.1).

4.6.2.1.1.1 T-tests on NUM gender associated with NUM competencies as evaluated by **NSM**

Table 4-36 below outlines t-tests on NUM gender associated with NUM competencies as evaluated by NSM

Table 4-36: T-tests on NUM gender associated with NUM competencies as evaluated by NSM

NMCI- *Knowledge and understanding*								
Subscale	**Gender**	**Mean**	**t-value**	**df**	**p-value**	**Valid N**	**SD**	**Effect size**
Technical	Female	2.84				14	0.24	
	Male	2.76	0.54	15	0.60	3	0.21	0.34
Human	Female	2.84				14	0.34	
	Male	2.92	-0.43	15	0.67	3	0.08	0.26
Conceptual	Female	2.81				14	0.31	
	Male	2.88	-0.33	15	0.74	3	0.13	0.20
Leadership	Female	2.86				14	0.34	
	Male	2.95	-0.48	15	0.64	3	0.04	0.28
Financial	Female	2.72				14	0.59	
	Male	2.95	-0.65	15	0.53	3	0.08	0.39
NMCI- *Ability to implement*								
Technical	Female	2.72				14	0.22	
	Male	2.76	-0.24	15	0.81	3	0.21	0.15
Human	Female	2.74				14	0.42	
	Male	2.92	-0.75	15	0.46	3	0.08	0.45
Conceptual	Female	2.73				14	0.35	
	Male	2.83	-0.48	15	0.64	3	0.07	0.29
Leadership	Female	2.78				14	0.38	
	Male	2.95	-0.75	15	0.46	3	0.04	0.45
Financial	Female	2.78				14	0.08	
	Male	2.95	-0.50	15	0.62	3	0.30	0.30

In the *ability to implement* section there are two medium effect sizes in the Human (d=0.45; p=0.46) and Leadership (d=0.45; p=0.46) subscales. NSMs perceived males to be more competent than females in the *ability to implement* Human and Leadership competencies. However, it is important to interpret this analysis with caution as there were only three males in the sample.

4.6.2.1.1.2 T-tests on NUM additional management qualification associated with NUM competencies as evaluated by NSM

Table 4-37 below outlines t-tests on NUM additional management qualification associated with NUM competencies as evaluated by NSM

Table 4-37: T-tests on NUM additional management qualification associated with NUM competencies as evaluated by NSM

NMCI- *Knowledge and understanding*								
Subscale	**Additional management qualification**	**Mean**	**t-value**	**df**	**p-value**	**Valid N**	**SD**	**Effect size**
Technical	Yes	2.90	1.29	15	0.22	8	0.26	0.54
	No	2.76				9	0.19	
Human	Yes	2.88	0.29	15	0.77	8	0.30	0.14
	No	2.83				9	0.34	
Conceptual	Yes	2.83	0.06	15	0.95	8	0.21	0.02
	No	2.82				9	0.35	
Leadership	Yes	2.84	-0.43	15	0.67	8	0.30	0.20
	No	2.90				9	0.33	
Financial	Yes	2.68	-0.61	15	0.55	8	0.49	0.27
	No	2.84				9	0.60	
NMCI- *Ability to implement*								
Technical	Yes	2.76	0.56	15	0.58	8	0.18	0.25
	No	2.70				9	0.24	
Human	Yes	2.79	0.18	15	0.86	8	0.38	0.09
	No	2.75				9	0.41	
Conceptual	Yes	2.72	-0.37	15	0.72	8	0.27	0.16
	No	2.78				9	0.37	
Leadership	Yes	2.76	-0.56	15	0.58	8	0.33	0.25
	No	2.86				9	0.39	
Financial	Yes	2.73	-0.52	15	0.61	8	0.50	0.23
	No	2,87				9	0.60	

In the *knowledge and understanding* section of NUM competencies as rated by NSMs, the Technical subscale has a medium effect size (d=0.54; p=0.22), meaning that NSMs felt that NUMs with an additional management qualification were more competent in the Technical subscale.

4.6.2.1.1.3 T-tests on NUM level of management qualification associated with NUM competencies as evaluated by NSMs

Table 4-38 below outlines t-tests for NUM level of management qualification associated with NUM competencies as evaluated by NSM

Table 4-38: T-tests for NUM level of management qualification associated with NUM competencies as evaluated by NSM

NMCI- *Knowledge and understanding*								
Subscale	**Level of management qualification**	**Mean**	**t-value**	**df**	**p-value**	**Valid N**	**SD**	**Effect size**
Technical	Diploma	2.92	-0.71	7	0.50	6	0.15	0.33
	Degree	3.03				3	0.32	
Human	Diploma	2.86	-1.19	7	0.27	6	0.28	0.79
	Degree	3.08				3	0.20	
Conceptual	Diploma	2.92	0.00	7	1.00	6	0.13	0.00
	Degree	2.92				3	0.07	
Leadership	Diploma	2.82	-1.42	7	0.20	6	0.25	1.00
	Degree	3.07				3	0.25	
Financial	Diploma	2.81	-0.16	7	0.88	6	0.47	0.10
	Degree	2.86				3	0.29	
NMCI-*Ability to implement*								
Technical	Diploma	2.86	0.59	7	0.58	6	0.18	0.40
	Degree	2.79				3	0.19	
Human	Diploma	2.76	-1.21	7	0.27	6	0.38	0.78
	Degree	3.05				3	0.25	
Conceptual	Diploma	2.83	0.23	7	0.83	6	0.30	0.14
	Degree	2.79				3	0.07	
Leadership	Diploma	2.77	-0.79	7	0.45	6	0.34	0.53
	Degree	2.95				3	0.27	
Financial	Diploma	2.81	-0.67	7	0.52	6	0.47	0.41
	Degree	3.00				3	0.14	

In the knowledge and understanding section of NUM competencies as rated by NSMs, the Human (d=0.79; p=0.27) and Leadership (d=1.00; p=0.20) subscales had two large effect sizes. This means that NSMs perceive NUMs with a degree in management to have greater knowledge and understanding of Human and Leadership competencies as compared to NUMs with a management diploma. For the ability to implement section, one medium effect size was noted in the Technical subscale (d=0.40; p=0.58) meaning that NSMs perceive NUMs with a management diploma to be more competent than NUMs with a degree in management in terms of the ability to implement Technical competencies. In contrast, NSMs perceive NUMs with a degree in management to be more competent in the ability to implement Human (d=0.78; p=0.27), Leadership (d=0.53; p=0.45) and Financial (d=0.41; p=0.52) competencies than NUMs with a management diploma. However, it is important to interpret this analysis with caution as only six NUMs in the sample had a management degree.

4.6.2.1.1.4 T-tests of NUM gender associated with NUM competencies as evaluated by NUMs

Table 4-39 below outlines t-tests on NUM gender associated with NUM competencies as evaluated by NUM

Table 4-39: T-tests of NUM gender associated with NUM competencies as evaluated by NUMs

NMCI- *Knowledge and understanding*								
Subscale	**Gender**	**Mean**	**t-value**	**df**	**p-value**	**Valid N**	**SD**	**Effect size**
Technical	Female	2.87	0.48	20	0.34	19	0.44	0.18
	Male	2.79				3	0.23	
Human	Female	2.74	-0.22	20	0.65	19	0.55	0.11
	Male	2.79				3	0.39	
Conceptual	Female	2.83	-0.35	20	0.46	19	0.52	0.14
	Male	2.90				3	0.30	
Leadership	Female	2.95	-0.03	20	0.43	19	0.54	0.01
	Male	2.95				3	0.32	
Financial	Female	2.69	-0.29	20	0.26	19	0.61	0.12
	Male	2.76				3	0.36	
NMCI- *Ability to implement*								
Technical	Female	2.89	-0.18	18	0.15	18	0.39	0.06
	Male	2.91				2	0.13	
Human	Female	2.83	0.79	18	0.12	18	0.50	0.20
	Male	2.73				2	0.05	
Conceptual	Female	2.81	-0.23	18	0.20	18	0.47	0.09
	Male	2.86				2	0.20	
Leadership	Female	2.94	-0.40	18	0.14	18	0.45	0.10
	Male	2.89				2	0.05	
Financial	Female	2.74	2.63	18	0.02	18	0.50	0.62
	Male	2.43				2	0.00	

In the *ability to implement* section of NUM competencies as rated by NUMs themselves, the Financial subscale had a medium practical significance as well as statistical significance (d=0.62; p=0.02) meaning that females felt more competent in the *ability to implement* financial competencies than males. Again, the small sample of male NUM participants (n=3) should be considered when drawing this conclusion.

4.6.2.1.1.5 T-tests of NUM additional management qualification associated with NUM competencies as evaluated by NUMs

Table 4-40 below outlines t-tests on NUM additional management qualification associated with NUM competencies as evaluated by NUM

Table 4-40: T-tests on NUM additional management qualification associated with NUM competencies as evaluated by NUM

NMCI- *Knowledge and understanding*								
Subscale	**Additional management qualification**	**Mean**	**t-value**	**df**	**p-value**	**Valid N**	**SD**	**Effect size**
Technical	Yes	2.86	-0.01	20	0.90	12	0.46	0.00
	No	2.86				10	0.38	
Human	Yes	2.80	0.51	20	0.75	12	0.50	0.21
	No	2.68				10	0.56	
Conceptual	Yes	2.85	0.10	20	0.78	12	0.48	0.04
	No	2.83				10	0.54	
Leadership	Yes	2.98	0.33	20	0.57	12	0.59	0.12
	No	2.91				10	0.43	
Financial	Yes	2.81	0.99	20	0.96	12	0.59	0.41
	No	2.57				10	0.57	
NMCI- *Ability to implement*								
Technical	Yes	2.84	-0.64	18	0.66	12	0.37	0.29
	No	2.95				8	0.38	
Human	Yes	2.84	0.26	18	0.20	12	0.56	0.09
	No	2.79				8	0.35	
Conceptual	Yes	2.75	-0.91	18	0.02	12	0.54	0.30
	No	2.92				8	0.25	
Leadership	Yes	2.95	0.22	18	0.04	12	0.53	0.07
	No	2.91				8	0.22	
Financial	Yes	2.81	1.18	18	0.55	12	0.51	0.49
	No	2.56				8	0.43	

The Financial subscale in both the *knowledge and understanding* and the *ability to implement* sections had medium effect sizes (d=0.41; p =0.96) and (d=0.49; p =0.55) respectively. This means that NUMs with an additional management qualification felt more competent in financial matters.

4.6.2.1.1.6 T-tests on NUM level of management qualification associated with NUM competencies as evaluated by NUMs

Table 4-41 below outlines t-tests on level of management qualification associated with NUM competencies as evaluated by NUM

Table 4-41 T-tests on NUM level of management qualification associated with NUM competencies as evaluated by NUM

NMCI- *Knowledge and understanding*								
Subscale	**Level of management qualification**	**Mean**	**t-value**	**df**	**p-value**	**Valid N**	**SD**	**Effect size**
Technical	Diploma	3.02	0.20	11	0.50	7	0.31	0.11
	Degree	2.98				6	0.35	
Human	Diploma	2.95	0.09	11	0.04	7	0.26	0.04
	Degree	2.93				6	0.55	
Conceptual	Diploma	2.98	-0.22	11	0.72	7	0.40	0.11
	Degree	3.02				6	0.33	
Leadership	Diploma	3.10	-0.23	11	0.74	7	0.41	0.12
	Degree	3.15				6	0.46	
Financial	Diploma	2.96	0.20	11	0.73	7	0.45	0.11
	Degree	2.90				6	0.51	
NMCI-*Ability to implement*								
Technical	Diploma	2.94	-0.06	11	0.92	7	0.41	0.03
	Degree	2.95				6	0.36	
Human	Diploma	3.03	0.60	11	0.16	7	0.38	0.28
	Degree	2.86				6	0.61	
Conceptual	Diploma	2.88	0.10	11	0.57	7	0.40	0.05
	Degree	2.85				6	0.56	
Leadership	Diploma	2.96	-0.52	11	0.56	7	0.43	0.28
	Degree	3.10				6	0.48	
Financial	Diploma	2.94	0.39	11	0.65	7	0.49	0.22
	Degree	2.83				6	0.49	

The above table indicates no practical or statistical significance with regard to level of management qualification and NUM competencies as evaluated by NUMs themselves.

4.6.2.1.1.7 T-tests on NUM gender associated with NUM competencies as evaluated by nursing staff

The nursing staff evaluation was only conducted for the *ability to implement* section and four competency subscales (see Section 4.6.1). Tables 4-42 and 4-43 below outline t-tests on NUM gender associated with NUM competencies as evaluated by nursing staff (collapsed and expanded). The first table demonstrates when NUM competencies as evaluated by nursing staff are collapsed on unit level to match their specific NUM (collapsing of data); while the second table demonstrates HLM on NUM gender associated with NUM competencies as evaluated by nursing staff (expanded).

Table 4-42 T-tests on NUM gender associated with NUM competencies as evaluated by nursing staff (collapsed)

NMCI- *Ability to implement*								
Subscale	**Gender**	**Mean**	**t-value**	**df**	**p-value**	**Valid N**	**SD**	**Effect size**
Technical	Female	2.63				15	0.32	
	Male	2.47	0.78	16	0.44	3	0.13	0.47
Human	Female	2.40				15	0.34	
	Male	2.12	1.33	16	0.20	3	0.28	0.82
Conceptual	Female	2.42				15	0.35	
	Male	2.31	0.50	16	0.62	3	0.30	0.31
Leadership	Female	2.55				15	0.36	
	Male	2.32	1.02	16	0.32	3	0.26	0.63

Table 4-43: HLM on NUM gender associated with NUM competencies as evaluated by nursing staff (expanded)

Subscale	**Gender**	**Mean**	**MSE**	**Variance Ward in Hospital**	**p-value**	**Valid N**	**Effect size**
Technical	Female	2.63	0.18	0.07	0.39	154	0.33
	Male	2.47				36	
Human	Female	2.40	0.23	0.08	0.19	153	0.50
	Male	2.12				36	
Conceptual	Female	2.42	0.23	0.10	0.62	153	0.19
	Male	2.31				36	
Leadership	Female	2.55	0.22	0.09	0.29	153	0.41
	Male	2.32				36	

The collapsed data showed greater effect sizes than that of the expanded data, but both analyses produced significant effect sizes between NUM gender and NUM competencies as rated by nursing staff. In the collapsed data, the Human subscale had a large effect size (d=0.82; p=0.20), and the Technical (d=0.47; p=0.44) and Leadership (d=0.63; p=0.32) subscales had a medium effect size. In the expanded data, the Technical (d=0.33; p= 0.39), Human (d=0.50; p=0.19) and Leadership (d=0.41; p=0.29) subscales all had medium practical significance. In all of the analyses, nursing staff rated female NUMs as more competent in Technical, Human and Leadership subscales.

4.6.2.1.1.8 T-tests on NUM additional management qualification associated with NUM competencies as evaluated by nursing staff

Tables 4-44 and 4-45 below outlines t-tests on NUM additional management qualification associated with NUM competencies as evaluated by nursing staff. The first table demonstrates when NUM competencies as evaluated by nursing staff are collapsed on unit level to match their

specific NUM (collapsing of data); while the second table demonstrates HLM on NUM additional qualification associated with NUM competencies as evaluated by nursing staff (expanded).

Table 4-44 T-tests on NUM additional management qualification associated with NUM competencies as evaluated by nursing staff (collapsed)

NMCI- *Ability to implement*								
Subscale	**Additional management qualification**	**Mean**	**t-value**	**df**	**p-value**	**Valid N**	**SD**	**Effect size**
Technical	Yes	2.69	1.49	16	0.16	9	0.30	0.66
	No	2.49				9	0.27	
Human	Yes	2.47	1.54	16	0.14	9	0.35	0.69
	No	2.23				9	0.31	
Conceptual	Yes	2.52	1.63	16	0.12	9	0.37	0.67
	No	2.27				9	0.27	
Leadership	Yes	2.59	1.05	16	0.31	9	0.37	0.46
	No	2.42				9	0.32	

Table 4-45 HLM on NUM additional management qualification associated with NUM competencies as evaluated by nursing staff (expanded)

Subscale	**Additional management qualification**	**Mean**	**MSE**	**Variance Ward in Hospital**	**p-value**	**Valid N**	**Effect size**
Technical	Yes	2.71	0.18	0.05	0.11	97	0.45
	No	2.49				93	
Human	Yes	2.49	0.23	0.07	0.09	96	0.48
	No	2.22				93	
Conceptual	Yes	2.54	0.26	0.07	0.08	96	0.50
	No	2.26				93	
Leadership	Yes	2.60	0.22	0.09	0.25	96	0.34
	No	2.42				93	

Here also, the collapsed data showed greater effect sizes than that of the expanded data, but in both analyses, there were significant effect sizes between NUM additional management qualification and NUM competencies as rated by nursing staff. In the collapsed data, all subscales had medium effect sizes: Technical (d=0.66; p=0.16), Human (d=0.69; p=0.14), Conceptual (d=0.67; p=0.12) and Leadership (d=0.46; p=0.31). In the expanded data, the Technical (d=0.45; p=0.11), Human (d=0.48; p=0.09) and Conceptual (d=0.50; p=0.08) had medium practical significance. In all of the analyses, nursing staff rated NUMs with an additional management qualification as more competent.

4.6.2.1.1.9 T-tests on NUM level of management qualification associated with NUM competencies as evaluated by nursing staff

Tables 4-46 and 4-47 below outline t-tests on NUM level of management qualification associated with NUM competencies as evaluated by nursing staff (collapsed and expanded). The first table demonstrates when NUM competencies as evaluated by nursing staff are collapsed on unit level to match their specific NUM (collapsing of data); while the second table demonstrates HLM on NUM level of management qualification associated with NUM competencies as evaluated by nursing staff (expanded).

Table 4-46 T-tests on NUM level of management qualification associated with NUM competencies as evaluated by nursing staff (collapsed)

NMCI- *Ability to implement*								
Subscale	**Level of management qualification**	**Mean**	**t-value**	**df**	**p-value**	**Valid N**	**SD**	**Effect size**
Technical	Diploma	2.61	-0.69	8	0.51	6	0.38	0.37
	Degree	2.75				4	0.17	
Human	Diploma	2.48	0.08	8	0.94	6	0.40	0.04
	Degree	2.46				4	0.21	
Conceptual	Diploma	2.50	-0.16	8	0.88	6	0.42	0.09
	Degree	2.53				4	0.26	
Leadership	Diploma	2.61	-0.20	8	0.85	6	0.42	0.11
	Degree	2.66				6	0.38	

Table 4-47 HLM on NUM level of management qualification associated with NUM competencies as evaluated by nursing staff (expanded)

Subscale	**Level of management qualification**	**Mean**	**MSE**	**Variance Ward in Hospital df**	**p-value**	**Valid N**	**Effect size**
Technical	Diploma	2.62	0.19	0.08	0.53	52	0.26
	Degree	2.76				53	
Human	Diploma	2.50	0.25	0.09	0.89	52	0.06
	Degree	2.47				52	
Conceptual	Diploma	2.58	0.25	0.11	0.92	52	0.04
	Degree	2.55				52	
Leadership	Diploma	2.69	0.26	0.10	0.91	52	0.05
	Degree	2.65				52	

There is no significance in both collapsed and expanded data on NUM level of management qualification associated with NUM competencies as evaluated by nursing staff.

4.6.2.1.2 Spearman rank order correlations

Spearman rank order correlations between NUMs' personal and nursing unit demographics - including hospital size, age, tenure in management position, years practiced as registered nurse, and span of control - and NUM competencies as evaluated by NSM, NUM and nursing staff, are discussed. The main result in a correlation test is the derivation of the correlation co-efficient (r). Positive values indicate that, as one variable increases, so does the second; negative values indicate that, as one variable increases, the other decreases or vice versa (Curtis & Drennan, 2013:356). Grove *et al.* (2015:341) proposed that r values of 0.3 or less indicate a weak relationship, values between 0.3 and 0.5 indicate a moderate/medium relationship and values above 0.5 a strong relationship. Only medium and strong correlations are reported and discussed; however, values are considered as medium effect as from 0.25. Due to the fact that nursing staff in the same ward in a hospital's results are not independent, HLM was employed to test for correlations in expanded data for nursing staff, using PROC SURVEYREG in SAS.

4.6.2.1.2.1 Correlations between NUM personal demographics and unit demographics with NUM competencies as evaluated by NSM

Table 4-48 outlines correlations between NUMs personal demographics and unit demographics with NUM competencies as evaluated by NSM.

Table 4-48: Correlations between NUMs personal demographics and unit demographics with NUM competencies as evaluated by NSM

Scale	Subscale		Hospital size	Age	Tenure in management position	Years practiced as a RN	Span of control
NMCI: *Knowledge and understanding*	Technical	CC	0.62	0.32	0.43	0.22	0.27
		Sig.(2-tailed)	0.01	0.22	0.07	0.38	0.45
		N	18	17	18	18	10
	Human	CC	0.41	0.05	0.31	0.41	0.18
		Sig.(2-tailed)	0.09	0.86	0.22	0.09	0.63
		N	18	17	18	18	10
	Conceptual	CC	0.50	0.03	0.34	0.34	0.53
		Sig.(2-tailed)	0.04	0.91	0.17	0.16	0.12
		N	18	17	18	18	10
	Leadership	CC	0.42	-0.15	0.27	0.40	0.44
		Sig.(2-tailed)	0.08	0.58	0.29	0.10	0.20
		N	18	17	18	18	10
	Financial	CC	0.44	0.06	0.25	0.32	0.18
		Sig.(2-tailed)	0.07	0.83	0.31	0.20	0.63
		N	18	17	18	18	10

Scale	Subscale		Hospital size	Age	Tenure in management position	Years practiced as a RN	Span of control
NMCI: *Ability to implement*	Technical	CC	0.37	0.32	0.44	0.22	0.46
		Sig.(2-tailed)	0.13	0.21	0.07	0.39	0.18
		N	18	17	18	18	10
	Human	CC	0.30	-0.09	0.17	0.41	0.24
		Sig.(2-tailed)	0.23	0.73	0.51	0.10	0.50
		N	18	17	18	18	10
	Conceptual	CC	0.29	-0.04	0.29	0.29	0.67
		Sig.(2-tailed)	0.25	0.88	0.25	0.25	0.03
		N	18	17	18	18	10
	Leadership	CC	0.32	-0.13	0.25	0.36	0.47
		Sig.(2-tailed)	0.19	0.61	0.31	0.15	0.18
		N	18	17	18	18	10
	Financial	CC	0.51	-0.07	0.22	0.33	0.21
		Sig.(2-tailed)	0.03	0.78	0.38	0.17	0.56
		N	18	17	18	18	10

a) NUM demographics and NUM competencies as evaluated by NSM: Hospital size

In the *knowledge and understanding* section, hospital size had medium correlations of practical significance with NUM competencies as rated by NSMs with regard to the Human (r=0.41; p=0.09), Leadership (r=0.42; p=0.08) and Financial (r=0.44; p=0.07) subscales, and large correlations of practical and statistical significance with regard to the: Technical (r=0.62; p=0.01) and Conceptual subscales (r=0.50; p=0.04). This means that the larger the hospital size, the more NSMs felt that NUMs were competent in the *knowledge and understanding* of NMCI competencies. In the *ability to implement* section, hospital size had medium correlations of practical significance with NUM competencies as rated by NSMs with regard to: Technical (r=0.37; p=0.13), Human (r=0.30; p=0.23), Conceptual (r=0.29; p=0.25) and Leadership (r=0.32; p=0.19) subscales, and a large correlation of practical and statistical significance with regard to the Financial subscale (r=0.51; p=0.03). In other words, the larger the hospital size, the more NSMs felt that NUMs were able to implement Technical, Human, Conceptual, Leadership and Financial competencies.

b) NUM demographics and NUM competencies as evaluated by NSM: Age

The Technical subscale in *the knowledge and understanding* and the *ability to implement* sections had medium correlations of (r=0.32; p=0.22) and (r=0.32; p=0.21) with the age of the NUM respectively. This means that NSMs felt that NUMs were competent in *knowledge and*

understanding and the *ability to implement* the Technical competencies as they advanced in years.

c) NUM demographics and NUM competencies as evaluated by NSM: Tenure in management position

In the *knowledge and understanding* section, tenure in management position had medium correlations of practical significance with NUM competencies as rated by NSMs with regard to the Technical (r=0.43; p=0.07), Human (r=0.31; p=0.22), Conceptual (r=0.34; p=0.17), Leadership (r=0.27; p=0.29) and Financial (r=0.25; p=0.31) subscales. This means that the longer the NUM has been in the management position, the more NSMs felt that NUMs were competent in *knowledge and understanding* of the Technical, Human, Conceptual, Leadership and Financial competencies. In the *ability to implement* section, tenure in management position had medium correlation of practical significance with NUM competencies as rated by NSMs with regard to Technical (r=0.44; p=0.07), Conceptual (r=0.29; p=0.25) and Leadership (r=0.25; p=0.31) subscales. Thus, the longer the NUM has been in the management position, the more NSMs felt that NUMs were able to implement Technical, Conceptual and Leadership competencies.

d) NUM demographics and NUM competencies as evaluated by NSM: Years practiced as a registered nurse

In the *knowledge and understanding* section, years practiced as a registered nurse (RN) had medium correlations of practical significance with NUM competencies as rated by NSMs with regard to the Human (r=0.41; p=0.09), Conceptual (r=0.34; p=0.16), Leadership (r=0.40; p=0.10) and Financial (r=0.32; p=0.20) subscales. Hence, the longer the NUM has practiced as an RN, the more NSMs felt that NUMs were competent in the *knowledge and understanding* of the Human, Conceptual, Leadership and Financial competencies. In the *ability to implement* section, practice as RN had medium correlations of practical significance with NUM competencies as rated by NSMs with regard to Human (r=0.41; p=0.10), Conceptual (r=0.29; p=0.25), Leadership (r=0.36; p=0.15) and Financial (r=0.33; p=0.17) subscales. This means that the longer the NUM has practiced as an RN, the more NSMs felt that NUMs were able to implement Human, Conceptual, Leadership and Financial competencies.

e) NUM demographics and NUM competencies as evaluated by NSM: Span of control

In the *knowledge and understanding* section, span of control had one large and two medium correlations of practical significance with NUM competencies as rated by NSMs with regard to the Technical (r=0.27; p=0.45), Conceptual (r=0.53; p=0.12) and Leadership (0.44; p=0.20) subscales meaning that the larger the span of control for the NUM, the more NSMs felt that NUMs

were competent in the *knowledge and understanding* of the Technical, Conceptual and Leadership competencies. In the *ability to implement* section, span of control had medium correlations of practical significance with NUM competencies as rated by NSMs with regard to the Technical (r=0.46; p=0.18) and Leadership (r=0.47; p=0.18) subscales and a large correlation of practical significance and statistical significance with regard to the Conceptual subscale (r=0.67; p=0.03). This means that the larger the span of control, the more NSMs felt that NUMs were able to implement Technical, Leadership and Conceptual competencies.

4.6.2.1.2.2 Correlations between NUM personal demographics and unit demographics with NUM competencies as evaluated by NUM

Table 4-49 outlines correlations between NUM personal demographics and unit demographics with NUM competencies as evaluated by NUM

Table 4-49: Correlations between NUMs personal demographics and unit demographics with NUM competencies as evaluated by NUMs

Scale	Subscale		Hospital size	Age	Tenature in management position	Years practiced as an RN	Span of control
NMCI *knowledge and understanding*	Technical	CC	0.57	0.11	0.45	0.32	0.25
		Sig.(2-tailed)	0.01	0.62	0.03	0.13	0.38
		N	21	22	23	23	15
	Human	CC	0.29	-0.08	0.23	0.14	0.39
		Sig.(2-tailed)	0.20	0.73	0.28	0.51	0.15
		N	21	22	23	23	15
	Conceptual	CC	0.44	0.14	0.27	0.26	-0.08
		Sig.(2-tailed)	0.05	0.53	0.21	0.23	0.78
		N	21	22	23	23	15
	Leadership	CC	0.36	-0.11	0.30	0.23	0.04
		Sig.(2-tailed)	0.11	0.63	0.16	0.30	0.89
		N	21	22	23	23	15
	Financial	CC	0.41	0.11	0.30	0.29	0.17
		Sig.(2-tailed)	0.06	0.61	0.17	0.17	0.55
		N	21	22	23	23	15
NMCI ability to implement	Technical	CC	0.70	0.13	0.42	0.37	0.28
		Sig.(2-tailed)	0.00	0.59	0.06	0.10	0.33
		N	19	20	21	21	14
	Human	CC	0.55	-0.15	0.27	0.18	0.28
		Sig.(2-tailed)	0.01	0.54	0.23	0.42	0.34
		N	19	20	21	21	14
	Conceptual	CC	0.60	-0.14	0.21	0.23	-0.16

Scale	Subscale		Hospital size	Age	Tenature in management position	Years practiced as an RN	Span of control
		Sig.(2-tailed)	0.01	0.56	0.36	0.32	0.58
		N	19	20	21	21	14
	Leadership	CC	0.46	-0.27	0.26	0.20	-0.13
		Sig.(2-tailed)	0.05	0.25	0.25	0.38	0.66
		N	19	20	21	21	14
	Financial	CC	0.45	-0.06	0.27	0.37	-0.02
		Sig.(2-tailed)	0.05	0.80	0.24	0.10	0.94
		N	19	20	21	21	14

a) NUM demographics and NUM competencies as evaluated by NUM: Hospital size

In the *knowledge and understanding* section, hospital size had medium correlations of practical significance with NUM competencies as rated by NUMs with regard to the Human (r=0.29; p=0.20), Conceptual (r=0.44; p=0.05), Leadership (r=0.36; p=0.11) and Financial (r=0.41; p=0.06) subscales and a large correlation of practical and statistical significance with regard to the Technical subscale (r=0.57; p=0.01). Thus, the larger the hospital size, the more NUMs felt that they were competent in the *knowledge and understanding* of the Human, Technical, Conceptual, Leadership and Financial competencies. In the *ability to implement* section, hospital size had large correlations of practical and statistical significance with NUM competencies as rated by NUMs with regard to Technical (r=0.70; p=0.00), Human (r=0.55; p=0.01) and Conceptual (r=0.60; p=0.01), and medium correlations of practical and statistical significance with regard to the Leadership (r=0.46; p=0.05) and Financial (r=0.45; p=0.05) subscales. Meaning the larger the hospital size, the more NUMs felt that they were able to implement NMCI competencies.

b) NUM demographics and NUM competencies as evaluated by NUM: Age

There were no practical or statistically significant correlations between NMCI subscales in the *knowledge and understanding* section and only one negative medium correlation with regard to the Leadership subscale (r=-0.27; p=0.25) in the *ability to implement* section and age of NUMs as perceived by NUMs themselves. This means that, the younger the NUM, the more confident they felt about their ability to implement the items on the Leadership subscale.

c) NUM demographics and NUM competencies as evaluated by NUM: Tenure in management position

In the *knowledge and understanding* section, tenure in management position had a medium correlation of practical and statistical significance with NUM competencies as rated by NUMs with regard to the Technical (r=0.45; p=0.03) and three medium correlations of practical significance with regard to the Conceptual (r=0.27; p=0.21), Leadership (r=0.30; p=0.16) and Financial (r=0.30; p=0.17) subscales. Thus, the longer the NUM has been in the management position, the more NUMs felt that they were competent in the *knowledge and understanding* of the Technical, Conceptual, Leadership and Financial competencies. In the *ability to implement* section, tenure in management position had four medium correlations of practical significance with NUM competencies as rated by NUMs with regard to Technical (r=0.42; p=0.06), Human (r=0.27; p=0.23), Leadership (r=0.26; p=0.25) and Financial (r=0.27; p=0.24) subscales. The longer the NUM has been in the management position the more NUMs felt that they were able to implement Technical, Human, Leadership and Financial competencies.

d) NUM demographics and NUM competencies as evaluated by NUM: Years practiced as a registered nurse

In the *knowledge and understanding* section, practice as RN had three medium correlations of practical significance with NUM competencies as rated by NUMs with regard to the Technical (r=0.32; p=0.13), Conceptual (0.26; p=0.23) and Financial (r=0.29; p=0.17) subscales. Hence, the longer the NUM has practiced as an RN, the more NUMs felt that they were competent in the *knowledge and understanding* of the Technical, Conceptual and Financial competencies. In the *ability to implement* section, practice as RN had medium correlations of practical significance with NUM competencies as rated by NUMs with regard to Technical (r=0.37; p=0.10) and Financial (r=0.37; p=0.10) subscales. This means that the longer the NUM has practiced as an RN, the more NUMs felt that they were able to implement the Technical and Financial competencies.

e) NUM demographics and NUM competencies as evaluated by NUM: Span of control

In the *knowledge and understanding* section, span of control had two medium correlations of practical significance with NUM competencies as rated by NUMs with regard to the Technical (r=0.25; p=0.38) and Human (r=0.39; p=0.15) subscales. This means that the larger the span of control of the NUM, the more NUMs felt that they were competent in the *knowledge and understanding* of the Technical and Human competencies. In the *ability to implement* section, span of control had medium correlations of practical significance with NUM competencies as rated by NUMs with regard to Technical (r=0.28; p=0.33) and Human (r=0.28; p=0.34) subscales.

This means that the larger the NUM's span of control, the more NUMs felt that they were able to implement the Technical and Human competencies.

4.6.2.1.2.3 Correlations between NUM personal demographics and unit demographics with NUM competencies as evaluated by nursing staff

In this section, the nursing staff data were collapsed or expanded as discussed in Section 4.6.2.1. Tables 4-50 and 4-51 below outline correlations between personal and nursing unit demographics and NUM competencies as evaluated by nursing staff (collapsed and expanded).

Table 4-50: Correlations between NUM personal demographics and unit demographics with NUM competencies as evaluated by nursing staff (collapsed)

Scale	Subscale		Hospital size	Age	Tenure in management position	Years practiced as an RN	Span of control
NMCI *ability to implement*	Technical	CC	0.26	-0.18	0.53	0.39	0.31
		Sig.(2-tailed)	0.28	0.47	0.02	0.10	0.35
		N	19	18	19	19	11
	Human	CC	0.31	-0.14	0.54	0.34	0.48
		Sig.(2-tailed)	0.20	0.58	0.02	0.15	0.14
		N	19	18	19	19	11
	Conceptual	CC	0.16	0.04	0.41	0.39	0.53
		Sig.(2-tailed)	0.50	0.88	0.08	0.10	0.09
		N	19	18	19	19	11
	Leadership	CC	0.33	-0.13	0.58	0.39	0.59
		Sig.(2-tailed)	0.16	0.61	0.01	0.10	0.06
		N	19	18	19	19	11

Table 4-51: Correlations between NUM personal demographics and unit demographics with NUM competencies as evaluated by nursing staff (expanded)

Scale	Subscale		Hospital size	Age	Tenure in management position	Years practiced as an RN	Span of control
NMCI *ability to implement*	Technical	CC	0.14	0.07	0.29	0.26	0.12
		Sig.(2-tailed)	0.02	0.23	0.00	0.00	0.19
		N	177	173	179	179	115
	Human	CC	0.13	0.10	0.23	0.18	0.16

Scale	Subscale		Hospital size	Age	Tenure in management position	Years practiced as an RN	Span of control
		Sig.(2-tailed)	0.03	0.08	0.00	0.01	0.09
		N	177	173	179	179	115
	Conceptual	CC	0.09	-0.02	0.23	0.16	-0.22
		Sig.(2-tailed)	0.16	0.76	0.00	0.03	0.01
		N	177	173	179	179	115
	Leadership	CC	0.18	-0.09	0.29	0.24	0.14
		Sig.(2-tailed)	0.00	0.16	0.00	0.00	0.12
		N	177	173	179	179	115

a) NUM demographics and NUM competencies as evaluated by nursing staff: Hospital size

In the *ability to implement* section of the collapsed data, hospital size had medium correlations of practical significance with NUM competencies as rated by nursing staff with regard to Technical (r=0.26; p=0.28), Human (r=0.31; p=0.20) and Leadership (r=0.33; p=0.16) subscales, while for the expanded data, there were no correlations between the demographics of NUM and nursing staff rating of NUM competencies.

b) NUM demographics and NUM competencies as evaluated by nursing staff: Age

There were no correlations between any of the NMCI subscales in the *ability to implement* section and age of NUMs as perceived by nursing staff for both the collapsed and expanded data.

c) NUM demographics and NUM competencies as evaluated by nursing staff: Tenure in management position

In the collapsed *ability to implement* section, tenure in management position had a medium correlation of practical significance with NUM competencies as rated by nursing staff with regard to the Conceptual (r=0.41; p=0.08) and large correlations of practical and statistical significance with NUM competencies as rated by nursing staff with regard to Technical (r=0.53; p=0.02), Human (r=0.54; p=0.02) and Leadership (r=0.58; p=0.01). In the expanded analysis tenure in management position had medium correlations of practical and statistical significance with NUM competencies as rated by nursing staff with regard to Technical (r=0.29; p=0.00) and Leadership (r=0.29; p=0.00) subscales. Thus, the longer the NUM has been in the management position the more nursing staff felt that NUMs were able to implement NMCI competencies.

d) NUM demographics and NUM competencies as evaluated by nursing staff: Years practiced as a registered nurse

In the *ability to implement* section of the collapsed analysis, practice as RN had medium correlations of practical significance with NUM competencies as rated by nursing staff with regard to Technical (r=0.39; p=0.10), Human (r=0.34; p=0.15), Conceptual (r=0.39; p=0.10) and Leadership (r=0.39; p=0.10) subscales. This means that the longer the NUM has practiced as an RN, the more nursing staff felt that they were able to implement the NMCI competencies. In the expanded analysis, practice as RN had no correlations of practical or statistical significance with NUM competencies as rated by nursing staff.

e) NUM demographics and NUM competencies as evaluated by nursing staff: Span of control

In the *ability to implement* section of the collapsed analysis, span of control had medium correlations of practical significance with NUM competencies as rated by nursing staff with regard to Technical (r=0.31; p=0.35) and Human (r=0.48; p=0.14) subscales and large correlations of practical significance with regard to the Conceptual (r=0.53; p=0.09) and Leadership (r=0.59; p=0.06) subscales. Hence, the larger the span of control, the more nursing staff felt that NUMs were able to implement NMCI competencies. In the expanded analysis, span of control had no correlations with NUM competencies as rated by nursing staff.

4.6.2.1.3 Discussion of objective two

The research hypothesis that posits no association between NUMs' competencies and personal and nursing unit demographics, is rejected.

NUMs do not all have an additional management qualification either at degree or diploma level (see subsection 4.3.4). Nursing staff perceived an NUM with an additional management as more competent in the *ability to implement* competencies. NUMs with an additional management qualification perceived themselves as competent only in the *knowledge and understanding* of the financial competencies. Findings further revealed that NSMs perceived NUMs with an additional management diploma as having *knowledge and understanding* and the *ability to implement* competencies only in the technical competencies, and NUMs with a degree level management qualification as competent in the *knowledge and understanding* of Human and Leadership competencies and the *ability to implement* the Human, Leadership and Financial competencies. Both NUMs and nursing staff did not consider the level of management qualification as having any impact. Nursing staff in this study required NUMs to have an additional management qualification, which reiterates global findings of a need for management education for NUMs (Swearingen, 2009:107; DeCampli *et al.,* 2010:132; Duffield *et al.,* 2010:30; Dolamo & Peprah, 2011:2; O'Donnell *et al.,* 2012:198).

In a study that compared nurses trained through degree and diploma programmes, Clinton *et al.* (2005:92) found that, although degree programmes were adequately providing nurses with sufficient practical skills to provide quality care, diploma-trained nurses did not compare unfavourably. Nonetheless, degree-trained nurses stood out. In an analysis after attribution of roles to the exit level outcomes of NEIs, as provided by the South African Qualifications Authority (SAQA), Blignaut (2012:63-64) found that basic baccalaureate degree programmes for nurses contained more (83%) managerial role at exit level while those for diploma nursing programme education had less (58%) managerial role at exit level. In a study to determine the effects of nurse staffing and nurse education on patient deaths in hospitals with different nurse work environments, Aiken *et al*. (2011:5) found that if there is 10% more Bachelor of Science in Nursing (BSN) nurses, the effects on patients' deaths and failure to rescue in all hospitals surveyed, regardless of their work environment, were decreased by roughly 4%. This proves that degree prepared nurses are more outstanding.

Findings also demonstrated that NUM competency ratings correlate with hospital size for NSMs, NUMs and nursing staff. Medium and large correlations were found between all *knowledge and understanding* and *ability to implement* sections. All results indicated that the larger the hospital, the greater the perception that the NUM was knowledgeable and able to implement NMCI competencies. Chase (2010:94-97) found a correlation only with the Technical subscale and hospital size and minimal correlations with other subscales in both knowledge and ability sections for nurse managers.

The results indicated only one medium correlation for NSMs in the Technical subscale for both *knowledge and understanding* and *ability to implement*, with the perception of NUMs' technical abilities improving as their age increased. NSMs, NUMs and nursing staff did not perceive that the age of NUMs has any impact on other competencies. Only medium negative correlations were indicated for NUMs and nursing staff in the Leadership subscale, where they perceived NUMs' leadership abilities decreasing as they aged. Chase (2010:92) found that age had a medium effect on overall ability ratings of nurse managers. Chase noted that the older the respondent, the better the competency ratings for ability. In contrast, a study by Hlad'o *et al.* (2017: e153-154) found that work ability tended to decrease with age, and that competencies were determined by other factors like availability of resources, positive work environments, and training and development; not only age. This study does, therefore, provide support to the perceived idea that NUMs become more competent in terms of technical abilities as they age.

Findings also demonstrated that NUM competency ratings correlate with tenure in management position for NSMs, NUMs and nursing staff. Correlations were found in both *knowledge and understanding* and *ability to implement* sections for NSMs and nursing staff and excluded only

the Conceptual subscale for NUMs. The results indicated that the longer the NUMs' tenure in the management position, the more knowledgeable and able to implement NMCI competencies the NUM was perceived. This was consistent with a study by Chase (2010:92) which found tenure in management position to be the only variable that demonstrated large effect sizes in both knowledge and *ability to implement* competencies by nurse managers. This, therefore, provides that NUMs become more competent with time.

The results indicated that NUM competency ratings correlate with NUMs who has practiced for an extended period as RNs in the *knowledge and understanding* and implementation abilities for four subscales, for NSMs and nursing staff except the Technical for NSMs. For NUMs, correlations were found in both knowledge and understanding and *ability to implement* sections only for the Technical, Conceptual and Financial subscales. Therefore, the NUMs who had been practising as RNs for an extended period, were perceived as having an impact on *knowledge and understanding* and *ability to implement* NMCI competencies. Important to note is that NSMs did not perceive NUMs' time as practising RNs as having an impact on the Technical subscale, while NUMs did not perceive NUMs' time as practising RNs as having an impact on the Human and Leadership subscales.

Findings also demonstrated that NUM competency ratings have a positive association with span of control for NSMs, NUMs and nursing staff. Correlations were found in both *knowledge and understanding* and *ability to implement* sections for NSMs except in the Human and Financial subscales. NUMs also had positive correlations with span of control except for the Technical and Human subscales in the *knowledge and understanding* and Technical and Financial subscales in the *ability to implement* section. Nursing staff had correlations with all subscales for *ability to implement*. The results indicated that, the greater the span of control, the more the NUM was perceived to be knowledgeable and able to implement NMCI competencies.

The above results indicate that an additional management qualification was highly perceived by nursing staff. The level of management qualification was not perceived as having an impact by either NUMs or nursing staff, while NSMs perceived an additional degree qualification to have more impact on competencies than a diploma. Tenure in management positions and time in practice as RN were also perceived as having an impact on competencies. NUMs' personal demographics like age affected NUMs' competencies to a lesser extent, while nursing unit demographics, like hospital size and span of control, affected NUMs' competencies to a greater extent. Table 4-52 below outlines the strengths and weaknesses of objective two.

Table 4-52: Strengths and weaknesses in objective two

Strengths	Weaknesses
Additional management qualification	
27. NSMs rated NUMs with an additional management qualification to be more competent in the *knowledge and understanding* of Technical (d=0.54; p=0.22) competencies.	39. NSMs did not perceive additional management qualifications as impacting on NUMs *knowledge and understanding* of Human (d=0.14; p=0.77), Conceptual (d=0.02; p= 0.95), Leadership (d=0.20; p=0.67) and Financial (d=0.27; p=0.55) competencies.
28. NUMs rated themselves more competent in the *knowledge and understanding* of Financial (d=0.41; p=0.96) competencies when they had an additional qualification.	40. NSMs did not perceive additional management qualifications as impacting on NUMs *ability to implement* Technical (d=0.25; p=0.58); Human (d=0.09; p=0.86), Conceptual (d=0.16; p= 0.72), Leadership (d=0.25; p=0.58) and Financial (d=0.23; p=0.61) competencies.
29. NUMs rated themselves more competent in the *ability to implement* Financial (d=0.49; p=0.55) competencies when they had an additional qualification.	41. NUMs did not perceive additional management qualifications as impacting on their *knowledge and understanding* of Technical (d=0.00; p=0.90), Human (d=0.21; p=0.75), Conceptual (d=0.04; p= 0.78) and Leadership (d=0.12; p=0.57) competencies.
30. Nursing staff rated NUMs with an additional management qualification as being more competent in the *ability to implement* Technical (d=0.66; p=0.16); Human (d=0.69; p=0.14); Conceptual (d=0.67; p=0.12); and Leadership (d=0.46; p=0.31) competencies.	42. NUMs did not perceive additional management qualifications as impacting on their *ability to implement T*echnical (d=0.29; p=0.66); Human (d=0.09; p=0.20), Conceptual (d=0.30; p= 0.02), Leadership (d=0.07; p=0.04) and Financial (d=0.49; p=0.55) competencies.
Level of management qualification	
31. NSMs rated NUMs with a degree qualification in management as being more competent in the *knowledge and understanding* of Human (d=0.79; p=0.27) and Leadership (d=1.00; p=0.20) competencies.	43. NSMs did not perceive NUMs with a degree qualification in management as being more competent in *knowledge and understanding* of Technical (d=0.33; p=0.50); Conceptual (d=0.00; p= 1.00) and Financial (d=0.10; p=0.88) competencies.
32. NSMs rated NUMs with a degree qualification in management as being more competent in the *ability to implement* Human (d=0.78; p=0.27); Leadership (d=0.54; p=0.45) and Financial (d=0.41; p=0.52) competencies.	44. NSMs did not perceive NUMs with a degree qualification in management as being more competent in the *ability to implement* Conceptual (d=0.14; p= 0.83) competencies.
33. NSMs perceived that NUMs with a diploma qualification in management were more competent in the *ability to implement* Technical (d=0.40; p=0.58) competencies.	45. NUMs did not perceive that the level of the management qualification had any impact on *knowledge and understanding* or *ability to implement* competencies.

Strengths	Weaknesses
Level of management qualification continued	
	46. Nursing staff did not perceive that the level of the management qualification had any impact on *ability to implement* competencies.
Hospital size	
34. NSMs rated NUMs more competent as the size of the hospital increased with regard to the *knowledge and understanding* of Technical (r=0.62; p=0.01), Human (r=0.50; p=0.04), Conceptual (r=0.41; p=0.09), Leadership (r=0.42; p=0.08) and Financial (r=0.44; p=0.07) competencies. 35. NSMs rated NUMs more competent as the size of the hospital increased with regard to the *ability to implement* Technical (r=0.37; p=0.13), Human (r=0.30; p=0.23), Conceptual (r=0.29; p=0.25), Leadership (r=0.32; p=0.19) and Financial (r=0.51; p=0.03) competencies. 36. NUMs rated themselves more competent as the hospital size increased with regard to the *knowledge and understanding* of Technical (r=0.57; p=0.01), Human (r=0.29; p=0.20), Conceptual (r=0.44; p=0.05), Leadership (r=0.36; p=0.11) and Financial (r=0.41; p=0.06) competencies. 37. NUMs rated themselves more competent as the hospital size increased with regard to the *ability to implement* Technical (r=0.70; p=0.00), Human (r=0.55; p=0.01), Conceptual (r=0.60; p=0.01), Leadership (r=0.46; p=0.05) and Financial (r=0.45; p=0.05) competencies. 38. Nursing staff rated NUMs more competent as the hospital size increased regarding the *ability to implement* Technical (r=0.26; p=0.28), Human (r=0.31; p=0.20) and Leadership (r=0.33; p=0.16) competencies.	

Strengths	Weaknesses
Age	
39. NSM rated NUMs to be more competent in the *knowledge and understanding* of Technical (r=0.32; p=0.22) competencies with advancing age. 40. NSM rated NUMs to be more competent in the *ability to implement* Technical (d=0.32; p=0.21) competencies with advancing age.	47. NSMs did not perceive age as impacting on NUMs competencies in the *knowledge and understanding* of Human (r=0.05; p=0.86), Conceptual (r=0.03; p=0.91), Leadership (r=-0.15; p=0.58) and Financial (r=0.06; p=0.83) competencies. 48. NSMs did not perceive age as impacting on NUMs competencies on the *ability to implement* Human (r=-0.09; p=0.73), Conceptual (r=-0.04; p=0.88), Leadership (r=-0.13; p=0.61) and Financial (r=-0.07; p=0.78) competencies. 49. NUMs did not perceive age as impacting on their *knowledge and understanding* of Technical (r=0.11; p=0.62), Human (r=-0.08; p=0.73), Conceptual (r=0.14; p=0.53), Leadership (r=0.11; p=0.63) and Financial (r=0.11; p=0.61) competencies. 50. NUMs did not perceive age as impacting on their *ability to implement* Technical (r=0.13; p=0.59), Human (r=-0.15; p=0.54), Conceptual (r=-0.14; p=0.56), and Financial (r=-0.06; p=0.80) competencies. 51. NUMs rated themselves less competent in the *ability to implement* Leadership (r=-0.27; p=0.25) competencies with increasing age.
Tenure in management position	
41. NSMs rated NUMs with tenure in their management position as being more competent in the *knowledge and understanding* of Technical (r=0.43; p=0.07), Human (r=0.31; p=0.22), Conceptual (r=0.34; p=0.17), Leadership (r=0.27; p=0.29) and Financial (r=0.25; p=0.10) competencies. 42. NSMs rated NUMs with tenure in their management position as being more competent in the *ability to implement* Technical (r=0.44; p=0.07), Conceptual (r=0.29; p=0.25), Leadership (r=0.36; p=0.15) and Financial (r=0.33; p=0.17) competencies. 43. NUMs perceived tenure in their nursing management position to be correlated with more competence in the *knowledge and understanding* of Technical (r=0.57; p=0.01), Conceptual (r=0.27; p=0.21), Leadership (r=0.30; p=0.16) and Financial (r=0.30; p=0.17) competencies.	52. NUMs did not perceive tenure in management position as having an influence on *knowledge and understanding* of Human (r=0.14; p=0.51) 53. NSMs did not perceive NUMs with tenure in their management position as being more competent in the *ability to implement* Human (r=0.17; p=0.51) competencies.

Strengths	Weaknesses
Tenure in management position continued	
44. NUMs perceived tenure in their nursing management position to be correlated with more competence in the *ability to implement* Technical (r=0.42; p=0.06), Human (r=0.27; p=0.23), Leadership (r=0.26; p=0.25) and Financial (r=0.37; p=0.10) competencies. 45. Nursing staff perceived tenure in NUMs nursing management position to be correlated with more competence in the *ability to implement* Technical (r=0.53; p=0.02), Human (r=0.54; p=0.02), Conceptual (r=0.41; p=0.08) and Leadership (r=0.58; p=0.01) competencies.	54. NUMs did not perceive tenure in management position as having an influence on *ability to implement* Conceptual (r=0.23; p=0.32) competencies.
Practice as a registered nurse	
46. NSMs rated NUMs with more years of experience as a registered nurse as being more competent in the *knowledge and understanding* of Human (r=0.41; p=0.09, Conceptual (r=0.34; p=0.16), Leadership (r=0.40; p=0.10) and Financial (r=0.32; p=0.20) competencies. 47. NSMs rated NUMs with more years of experience as a registered nurse as being more competent in the *ability to implement* Human (r=0.41; p=0.10, Conceptual (r=0.29; p=0.25) and Leadership (r=0.36; p=0.15) and Financial (r=0.33; p=0.17) competencies. 48. NUMs perceived years of experience as a registered nurse to be correlated with more competence in the *knowledge and understanding* of Technical (r=0.32; p=0.13), Conceptual (r=0.26; p=0.23), and Financial (r=0.29; p=0.17) competencies. 49. NUMs perceived years of experience as a registered nurse to be correlated with more competence in the *ability to implement* Technical (r=0.37; p=0.10) and Financial (r=0.37; p=0.10) competencies. 50. Nursing staff perceived years of experience as a registered nurse to be correlated with more competence in the *ability to implement* Technical (r=0.39; p=0.10) Human (r=0.34; p=0.15, Conceptual (r=0.39; p=0.10) and Leadership (r=0.39; p=0.10) competencies.	55. NSMs did not perceive NUMs with more years of experience as a registered nurse as being more competent in the *knowledge and understanding* of Technical (r=0.22; p=0.38) competencies. 56. NSMs did not perceive NUMs with more years of experience as a registered nurse as being more competent in the *ability to implement* Technical (r=0.22; p=0.39) competencies. 57. NUMs did not perceive years of experience as a registered nurse as having an influence on *knowledge and understanding* of Human (r=0.14; p=0.51) and Leadership (r=0.23; p=0.30) competencies. 58. NUMs did not perceive years of experience as a registered nurse as having an influence on *ability to implement* Human (r=0.18; p=0.42), Conceptual (r=0.23, p=0.32) and Leadership (r=0.20; p=0.38) competencies.

Strengths	Weaknesses
Span of control	
51. NSMs rated NUMs with a larger span of control as being more competent in the *knowledge and understanding* of Technical (r=0.27; p=0.45), Conceptual (r=0.53; p=0.12) and Leadership (r=0.44; p=0.20) competencies.	59. NSMs did not perceive NUMs with a larger span of control as being more competent in the *knowledge and understanding* of Human (r=0.18; p=0.63) and Financial (r=0.18; p=0.63) competencies.
52. NSMs rated NUMs with a larger span of control as being more competent in the ability to implement Technical (r=0.46; p=0.18, Conceptual (r=0.67; p=0.03) and Leadership (r=0.47; p=0.18) competencies.	60. NSMs did not perceive NUMs with a larger span of control as being more competent in the *ability to implement* Human (r=0.24; p=0.50) and Financial (r=0.21; p=0.56) competencies.
53. NUMs perceived span of control to be correlated with more competence in the *knowledge and understanding* of Technical (r=0.25; p=0.38) and Human (r=0.39; p=0.15).	61. NUMs did not perceive span of control as having an influence on *knowledge and understanding* of Conceptual (r=-0.08; p=0.78), Leadership (r=0.04; p=0.89) and Financial (r=0.17; p=0.55) competencies.
54. NUMs perceived span of control to be correlated with more competence in the *ability to implement* Technical (r=0.28; p=0.33) and Financial (r=0.28; p=0.34) competencies.	62. NUMs did not perceive span of control as having an influence on *ability to implement* Conceptual (r=-0.16; p=0.58), Leadership (r=-0.13, p=0.66) and Financial (r=-0.02; p=0.94) competencies.
55. Nursing staff perceived the increased span of control of NUMs to be correlated with more competence in the *ability to implement* Technical (r=0.31; p=0.35) Human (r=0.48; p=0.14, Conceptual (r=0.53; p=0.09) and Leadership (r=0.59; p=0.06) competencies.	

4.6.3 Objective 3

To determine a relationship between the nursing unit managers' competencies and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice), and nursing staff's perceptions of the practice environment.

The structure and format of the instruments used to measure nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice) and nursing staff's perceptions of the practice environment was discussed in detail in Chapter 3 (see section 3.4.1.1). Only nursing staff evaluated the relationship between the NUMs' competencies and nursing staff outcomes. As stated previously (see section 4.6.1), nursing staff evaluated only the *ability to implement* section and only four subscales of the NMCI. In this section, the descriptive statistics of the nursing staff outcomes and nursing staff's perceptions of the practice environment

and the correlations between the NUMs' competencies and the aforementioned, are discussed. Due to the dependency of nursing staff in a ward, correlations were determined using PROC SURVEYREG in SAS.

4.6.3.1 Descriptive statistics

The descriptive statistics of nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice) and nursing staff's perceptions of the practice environment is discussed in the section that follows.

4.6.3.1.1 Job satisfaction

Job satisfaction was explored by measuring global job satisfaction and satisfaction with specific aspects of the job. As a summary, the global job satisfaction questionnaire consisted of three items on a scale that ranged from 1 to 7 with 1 being "strongly disagree" and 7 being "strongly agree". In the next section, a report on item analysis is provided. All items with a mean value equal to or less than 4.0 were identified and added as weaknesses for strategy development, and all items with a mean value equal to or more than 5.0 was identified and added as strengths. The satisfaction with specific aspects of the job questionnaire consists of nine items on a scale that ranged from 1 to 4 with 1 being "very dissatisfied" and 4 being "very satisfied". All items with a mean value equal to or less than 2.5 were identified and added as weaknesses and all items with a mean value equal to or more than 3.0 were identified and added as strengths. Table 4-53 below illustrates percentages, means and standard deviations for global job satisfaction.

Table 4-53: Percentages, means and standard deviations for global job satisfaction

Item no	Item	Number	Strongly disagree	Disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Agree	Strongly agree	Mean	Standard Deviation
		N	%	%	%	%	%	%	%	M	SD
1	All in all I am satisfied with my job	453	5.30	8.83	10.60	19.21	30.24	18.10	7.73	4.45	1.57
3	In general, I like working here	449	5.35	9.80	34.08	18.04	11.80	12.25	8.69	3.93	1.61
4	I feel that the healthcare facility provides a supportive work environment in which to work	455	19.34	26.37	17.36	13.19	12.97	6.37	4.40	3.11	1.72

Table 4-54 shows that almost half of nursing staff (49.22%; n=221) disagreed with the statement that it was enjoyable to work at their organisation. The majority of nursing staff (63.07%; n=287) disagreed with the statement that the healthcare facility provides a supportive work environment in which to work. Table 4-55 below outlines percentages, means and standard deviation for satisfaction with specific aspects of the job.

Table 4-54 Percentages, means and standard deviations for satisfaction with aspects of the job

Item no	Item	Number	Very dissatisfied	A little dissatisfied	Moderately satisfied	Very satisfied	Mean	Standard Deviation
		N	%	%	%	%	M	SD
1	Work schedule flexibility	453	5.96	25.61	58.72	9.71	2.72	0.72
2	Opportunities for advancement	453	24.06	46.14	25.17	4.64	2.10	0.82
3	Independence at work	451	2.44	23.50	60.31	13.75	2.85	0.67
4	Professional status	453	5.96	27.81	52.76	13.47	2.74	0.76

Item no	Item	Number	Very dissatisfied	A little dissatisfied	Moderately satisfied	Very satisfied	Mean	Standard Deviation
		N	%	%	%	%	M	SD
5	Wages	453	27.81	46.36	20.75	5.08	2.03	0.83
6	Educational opportunities	449	32.29	37.64	22.72	7.35	2.05	0.92
7	Annual leave	450	3.56	18.22	49.56	28.67	3.03	0.78
8	Sick leave	452	4.42	16.15	57.74	21.68	2.97	0.75
9	Study leave	454	37.89	30.18	21.59	10.35	2.04	1.00

The majority of nursing staff were dissatisfied with opportunities for advancement (70.20%; n=318), wages (74.17%; n=336), educational opportunities (69.93%; n=314), and study leave (68.07%; n=309) while 78.23% (n=352) were satisfied with annual leave.

4.6.3.1.2 Intention to leave

The intention to leave questionnaire consisted of three items on a scale that ranged from one to five with one (1) being “strongly disagree” and five (5) being “strongly agree”. Reverse score items are written in bold. Reverse score items with a mean equal to or above 3.0 were identified and added as a weakness for strategy development, while those with a mean value of 2.0 or below were identified as a strength. All other items with a mean value of 3.0 or below were identified and added as a weakness for strategy development, while those with a mean value of 4.0 or above were identified as strengths. The percentages, means and standard deviations for intention to leave are outlined in Table 4-55 below.

Table 4-55: Percentages, means, and standard deviation for intention to leave

Item no	Item	Number	Strongly disagree	Disagree	Hard to decide	Agree	Strongly Agree	Mean	Standard Deviation
		N	%	%	%	%	%	M	SD
1	I plan on leaving my job within the next year (R)	446	13.00	22.42	41.93	13.68	8.97	2.83	1.10
2	I have been actively looking for other jobs (R)	446	13.23	26.23	17.94	31.17	11.43	3.01	1.25
3	I want to remain in my job	449	8.46	17.15	44.10	18.49	11.80	3.08	1.08

Almost half of the nursing staff (42.60%; n=190) agreed that they were actively looking for other jobs.

4.6.3.1.3 Organisational commitment (oc)

The OCQ consists of 15 items on a scale that ranged from 1 to 7 with 1 being “strongly disagree” and 7 being “strongly agree”. Reverse score items are written in bold. All reverse score items with a mean value equal to or above 4.0 were identified and added as weaknesses for strategy development, while those with a mean value of 3.0 or below were identified as strengths. All other items with a mean value equal to or less than 4.0 were identified and added as weaknesses for strategy development, and all items with a mean value equal to or more than 5.0 were identified and added as strengths. Table 4-56 illustrates the percentages, means, and standard deviations for OC.

Table 4-56: Percentages, means and standard deviation for organisational commitment

Item no	Item	Number	Strongly disagree	Moderately Disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately Agree	Strongly agree	Mean	Standard Deviation
		N	%	%	%	%	%	%	%	M	SD
1	I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful	451	2.66	7.32	21.06	22.84	16.41	11.53	18.18	4.50	1.66
2	I talk up this organization to my friends as a great organization to work for	448	6.47	8.26	34.60	17.63	16.07	8.93	8.04	3.88	1.58
3	**I feel very little loyalty to this organization (R)**	446	8.07	7.17	23.77	27.80	18.83	8.97	5.38	3.91	1.51
4	I would accept almost any type of job assignment in order to keep working for this organization	439	9.34	22.55	27.33	15.26	11.62	5.69	8.20	3.47	1.68
5	I find that my values and the organization’s value are very similar	446	5.38	10.76	38.12	15.70	15.70	6.50	7.85	3.76	1.54
6	I am proud to tell others that I am	445	5.39	9.89	34.16	13.26	15.96	7.87	13.48	4.02	1.71

Item no	Item	Number	Strongly disagree	Moderately Disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately Agree	Strongly agree	Mean	Standard Deviation
		N	%	%	%	%	%	%	%	M	SD
	part of this organization										
7	**I could just as well be working for a different organization as long as the type of work was similar (R)**	441	4.31	8.84	12.70	12.47	34.47	15.42	11.79	4.57	1.60
8	This organization really inspires the very best in me in the way of job performance	445	5.84	11.46	35.96	14.83	14.83	10.34	6.74	3.79	1.57
9	**It would take very little change in my present circumstances to cause me to leave this organization (R)**	445	7.64	6.97	18.43	32.81	20.45	7.19	6.52	3.99	1.49
10	I am extremely glad that I chose this organisation to work for over others I was considering at the time I joined	447	8.50	17.90	30.20	13.87	12.53	8.05	8.95	3.64	1.71
11	**There's not too much to be gained by sticking with this organisation indefinitely (R)**	444	10.81	10.14	17.34	26.13	24.77	5.86	4.95	3.81	1.57
12	**Often, I find it difficult to agree with this organisation's policies on important matters relating to its employees (R)**	446	5.38	8.97	16.37	19.28	31.17	11.66	7.17	4.26	1.54
13	I really care about the fate of this organisation	441	3.17	9.52	25.85	27.44	13.38	11.34	9.30	4.10	1.53

Item no	Item	Number	Strongly disagree	Moderately Disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately Agree	Strongly agree	Mean	Standard Deviation
		N	%	%	%	%	%	%	%	M	SD
14	For me, this is the best of all possible organisations for which to work	450	9.56	18.89	28.89	15.56	10.89	8.67	7.56	3.56	1.69
15	**Deciding to work for this organisation was a definite mistake on my part (R)**	449	15.14	7.57	12.69	40.98	12.69	4.45	6.46	3.68	1.61

Table 4-56 indicates that almost half (49.33%; n=221) of nursing staff do not talk up the healthcare organisation as a great organisation to work for. More than half of nursing staff (59.22%; n=260) also disagreed with the fact that they would accept another type of job assignment in order to keep working for their healthcare organisations, while 54.26% (n=242) disagreed that their values and that of the organisation were similar. Slightly more than half of the nursing staff (53.26%; n=237) disagreed that the healthcare organisation inspired the very best in them in the way of job performance, while another 56.60% (n=253) disagreed that they are glad for having chosen their organisations to work for over others at the time they joined. More than half of nursing staff (57.33%; n=258) disagreed that their organisation is the best of all possible organisations for which to work. With reverse score items, 61.68% (n=272) of nursing staff agreed that they could just as well be working for a different organisation as long as the type of work was similar, while half of nursing staff (50.00%; n=221) agreed that they find it difficult to agree with their organisations' policies on important matters relating to employees.

4.6.3.1.4 COMPASSION PRACTICE (CP)

CP was explored by measuring compassion fatigue and compassion satisfaction. The CP questionnaire consisted of 19 items on a scale from 1 to 6, with 1 being "never" and 6 "always". Reverse score items are written in bold. All reverse score items with a mean value equal to or above 3.5 were identified and added as weaknesses for strategy development, while those with a mean value of 2.0 or below were identified as strengths. All other items with a mean value equal to or less than 3.5 were identified and added as weaknesses for strategy development, and all items with a mean value equal to or more than 4.0 were identified and added as strengths. An outline of the percentages, means, and standard deviations of the CPI is provided in Table 4-57 below.

Table 4-57 Percentages, means, and standard deviation for CP

Item	Number	Never	Rarely	Sometimes	Often	Very Often	Always	Mean	Standard Deviation
	N	%	%	%	%	%	%	M	SD
I try to get to know patients as a whole (psycho-social-spiritual) person.	447	1.12	6.26	34.90	23.71	10.74	23.27	4.06	1.32
I feel good about the care I provide to patients.	448	0.22	3.57	30.58	26.34	8.93	30.36	4.31	1.30
I make a positive difference in the lives of patients	443	0.90	4.51	43.79	17.16	9.03	24.60	4.03	1.33
I struggle to connect with patients (R)	440	16.14	22.73	37.27	12.50	7.05	4.32	2.85	1.28
I am unable to provide the kind of care to patients that I would like to (R)	440	9.09	11.36	26.36	35.68	13.18	4.32	3.45	1.24
I have no energy to invest in patients (R)	440	19.77	32.27	29.32	9.55	5.23	3.86	2.60	1.27
I doubt I make much difference in the lives of patients (R)	441	21.32	20.86	33.33	13.83	6.58	4.08	2.76	1.33
I encourage patients to share their thoughts and feelings with me.	441	1.36	10.43	37.41	21.32	9.07	20.41	3.88	1.35
I am able to meet the needs of patients.	442	1.36	7.69	43.44	20.14	8.37	19.00	3.83	1.30
Meeting patients' needs gives meaning and purpose to my life.	446	1.12	5.16	20.18	33.18	12.33	28.03	4.35	1.28
I struggle to open myself up to patients' suffering and sorrow (R)	442	10.63	21.04	37.78	16.52	8.82	5.20	3.07	1.27

Item	Number	Never	Rarely	Sometimes	Often	Very Often	Always	Mean	Standard Deviation
	N	%	%	%	%	%	%	M	SD
I am unable to meet patients' needs the way I would like to (R)	436	8.49	11.01	25.92	33.03	16.51	5.05	3.53	1.27
I am unable to see meaning and purpose in caring for patients (R)	434	24.88	28.57	23.27	11.29	8.53	3.46	2.60	1.38
I notice when patients are upset, even if they don't say anything.	440	1.36	7.73	35.23	21.82	16.14	17.73	3.97	1.29
I provide holistic (psycho-social-spiritual) patient care.	443	0.68	4.06	46.50	16.48	9.48	22.80	3.98	1.30
I enjoy interacting with patients.	445		4.49	34.16	23.37	9.89	28.09	4.23	1.30
I feel satisfied when I am able to help patients.	443	0.23	5.42	18.74	28.44	12.87	34.31	4.51	1.29
I try to shield (protect) myself from patients' suffering and sorrow (R)	444	9.46	18.02	39.19	16.67	9.01	7.66	3.21	1.32
I feel that patients deserve better care than I can provide (R)	447	5.59	7.16	10.07	10.29	35.12	31.77	4.57	1.48

The majority of nursing staff (92.62%; n=414) try to get to know patients as a whole (psycho-social-spiritual) person; 96.21% (n=431) feel good about the care they provide to patients; 94.58% (n=419) feel they make a positive difference in the lives of patients; 93.72% (n=418)

reported that meeting patients' needs gives meaning and purpose to their lives; 95.51% (n=425) enjoy interacting with patients and 94.36% (n=418) feel satisfied when they are able to help patients. With reverse score items, 80.51% (n=351) are unable to meet patients' needs the way they would like to, and 87.25% (n= 390) feel that patients deserve better care than they can provide.

4.6.3.1.5 Practice environment scale of the nurse work index – revised (PES-NWI-R))

The PES-NWI-R) has 32 items on a scale of 1 to 4, with 1 indicating "strongly disagree" and 4 "strongly agree" with a supportive practice environment. All items with a mean value equal to and less than 2.5 were identified as weaknesses and listed for strategy development, and all items with a mean value equal to or more than 3.0 were identified and added as strengths. Table 4-58 outlines percentages, means, and standard deviations for the PES-NWI-R).

Table 4-58: Percentages, means, and standard deviation for the PES of the NWI-R

Item No	Item	Number	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	Mean	Standard deviation
		N	%	%	%	%	M	SD
1	Adequate support services allow me to spend time with my patients	450	10.67	40.89	36.44	12.00	2.50	0.84
2	Physicians and nurses have good working relationships	453	4.19	27.81	53.86	14.13	2.78	0.73
3	A supervisory staff that is supportive of nurses	452	8.41	39.82	43.58	8.19	2.52	0.76
4	Active staff development or continuing education programmes for nurses	448	12.05	52.01	28.57	7.37	2.31	0.78
5	Career development / clinical ladder opportunity	448	20.09	48.88	25.22	5.80	2.17	0.81
6	Opportunity for registered nurses to participate in policy decisions	449	12.47	50.11	27.62	9.80	2.35	0.82

Item No	Item	Number	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	Mean	Standard deviation
		N	%	%	%	%	M	SD
7	Physicians value nurses' observations and judgments	448	6.70	25.45	59.38	8.48	2.70	0.72
8	Enough time and opportunity to discuss patient care problems with other nurses'	448	10.04	38.39	39.06	12.50	2.54	0.84
9	Enough registered nurses on staff to provide quality patient care	450	44.44	29.33	20.22	6.00	1.88	0.93
10	A nursing unit manager who is a good manager and leader	449	8.91	45.21	32.96	12.92	2.50	0.83
11	A nursing service manager who is highly visible and accessible to staff	444	10.36	47.30	27.93	14.41	2.46	0.86
12	Enough staff to get the work done	450	53.33	19.56	20.22	6.89	1.81	0.99
13	Physicians recognise nurses' contributions to patient care	451	8.20	22.62	60.75	8.43	2.69	0.74
14	Praise and recognition for a job well done	451	16.19	37.92	36.14	9.76	2.39	0.87
15	High standards of nursing care are expected by management	452	2.88	7.96	42.92	46.24	3.33	0.74
16	A nursing service manager is equal in power and authority to other top level hospital executives	445	4.49	27.42	54.61	13.48	2.77	0.73
17	A lot of teamwork between nurses and physicians	447	8.05	47.20	34.68	10.07	2.47	0.78

Item No	Item	Number	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	Mean	Standard deviation
		N	%	%	%	%	M	SD
18	Opportunities for advancement	444	24.77	44.14	23.42	7.66	2.14	0.88
19	A clear philosophy of nursing that influences the patient care environment	444	4.95	36.49	47.97	10.59	2.64	0.74
20	Working with nurses who are clinically competent	446	4.04	15.92	56.05	23.99	3.00	0.75
21	Physicians respect nurses as professionals	434	14.75	44.70	29.49	11.06	2.37	0.87
22	A nursing unit manager who backs up the nursing staff in decision making, even if the conflict is with a physician	448	10.71	43.08	34.15	12.05	2.48	0.84
23	Management that listens and responds to employee concern	447	21.70	44.07	26.62	7.61	2.20	0.87
24	An active quality assurance program	431	7.19	21.35	63.34	8.12	2.72	0.71
25	Registered nurses are involved in the internal governance of the hospital (e.g. practice and policy committee)	443	10.84	19.64	60.95	8.58	2.67	0.78
26	Collaboration between nurses and physicians	447	5.59	25.28	60.40	8.72	2.72	0.70
27	An induction programme for newly appointed nurses.	441	7.26	20.86	56.46	15.42	2.80	0.78

Item No	Item	Number	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	Mean	Standard deviation
		N	%	%	%	%	M	SD
28	Nursing care is based on a nursing rather than a medical mode.	432	3.24	31.71	52.08	12.96	2.75	0.72
29	Registered nurses have the opportunity to serve on hospital and nursing committees	445	6.29	19.78	61.35	12.58	2.80	0.73
30	Physicians hold nurses in high esteem	444	20.05	44.82	28.60	6.53	2.22	0.84
31	Written, up-to-date care plans for all patients	449	4.90	24.28	57.02	13.81	2.80	0.73
32	Patient care assignments that foster continuity of care (i.e. the same nurse care for the patient form one day to the next)	449	5.35	15.81	52.56	26.28	3.00	0.80

For staffing and resource adequacy, a little more than half (51.56%; n=232) of nursing staff disagreed that adequate support services allow them to spend time with their patients, with almost three quarters (73.77%; n=332) disagreeing with the statement of enough registered nurses on staff to provide quality patient care. The majority of nursing staff (72.89%; n=328) did not agree that there were enough staff to get the work done.

On Nurse manager ability, leadership, and support, more than half of nursing staff (54.12%; n=243) disagreed that their NUM is a good manager and leader, while 54.10% (n=244) disagreed with receiving praise and recognition for a job well done. More than half of nursing staff (53.79%; n=241) disagreed with the statement of a nursing unit manager who backs up the nursing staff in decision making, even if the conflict is with a physician.

With nurse-physician relationships, 55.25% (n=247) of nursing staff disagreed with a lot of teamwork between nurses and physicians, while 74.19% (n=258) disagreed with the statement

that physicians respect nurses as professionals, and 64.87% (n=288) disagreed that physicians hold nurses in high esteem.

On nursing foundations for quality of care, 64.06% (n=287) disagreed that there is active staff development or continuing education programmes for nurses. The majority of nursing staff (89.16%; n=403) agreed that high standards of nursing care are expected by management, while 80.04% (n=357) agreed that they are working with nurses who are clinically competent. 78.84% (n=354) also agreed that patient care assignments foster continuity of care (i.e. the same nurse cares for the patient from one day to the next).

For nurse participation in hospital affairs, 68.98% (n=309) disagreed with career development / clinical ladder opportunity. More than half of nursing staff (62.58%; n=281) also disagreed with opportunities for registered nurses to participate in policy decisions, while 57.66% (n=256) disagreed that a nursing service manager is highly visible and accessible to staff. Almost three quarters of nursing staff (68.91%; n=306) disagreed with opportunities for advancement, and the majority of nursing staff (65.77%; n=294) disagreed that management listens and responds to employee concerns.

4.6.3.2 Correlations

Due to the fact that the results of nursing staff in the same ward in a hospital are not independent, HLM was employed to test for correlations in nursing staff data, using PROC SURVEYREG in SAS. Correlations between NUMs' *ability to implement* competencies and nursing staff outcomes as evaluated by nursing staff are outlined in Table 4-59 below.

Table 4-59: Correlations between NUM *ability to implement* competencies and staff outcomes as evaluated by nursing staff

			Job satisfaction				Organisational commitment		Compassion Practice		PES of the NWI-R				
	Subscale		Global job satisfaction	Job Rewards	Job autonomy	Intention to leave	Positive	Negative	Satisfaction	Fatigue	Staffing and resource adequacy	Collegial relationships	Nurse manager ability, leadership and support	Foundations for quality of care	Nurse participation in hospital affairs
NMCI	Technical	Correlation Coefficient	0.24	0.07	0.39	-0.07	0.31	-0.15	0.27	0.02	0.13	0.29	0.37	0.47	0.07
		Sig. (2-tailed)	0.04	0.43	0.01	0.38	0.00	0.16	0.00	0.88	0.14	0.02	0.00	0.00	0.00
		N	454	454	454	449	448	448	145	145	453	455	455	454	454
	Human	Correlation Coefficient	0.44	0.27	0.52	-0.21	0.45	-0.06	0.25	0.06	0.22	0.27	0.54	0.46	0.42
		Sig. (2-tailed)	0.00	0.01	0.00	0.02	0.00	0.59	0.01	0.60	0.02	0.08	0.00	0.00	0.00
		N	454	454	454	449	448	448	145	145	453	455	455	454	454
	Conceptual	Correlation Coefficient	0.49	0.34	0.46	-0.32	0.55	-0.10	0.29	0.15	0.34	0.32	0.47	0.49	0.49
		Sig. (2-tailed)	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.22	0.00	0.04	0.00	0.00	0.00
		N	454	454	454	449	448	448	145	145	453	455	455	454	454
	Leadership	Correlation Coefficient	0.39	0.19	0.55	-0.20	0.35	-0.07	0.07	0.09	0.07	0.24	0.48	0.50	0.37
		Sig. (2-tailed)	0.00	0.05	0.00	0.02	0.00	0.57	0.54	0.48	0.42	0.11	0.00	0.00	0.00
		N	454	454	454	449	448	448	145	145	453	455	455	454	454

** Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

a) Correlations between NUMs' *ability to implement* competencies and job satisfaction

The above table indicates that global job satisfaction had medium correlations of practical and statistical significance with NUM competencies as evaluated by nursing staff in terms of the Human (r=0.44; p=0.00) and Leadership (r=0.39; p=0.00) subscales, and a large correlation of practical and statistical significance with the Conceptual (r=0.49; p=0.00) subscale. In *satisfaction with job rewards*, there was a medium correlation of practical and statistical significance with regard to the Human (r=0.27; p=0.01) subscale, and a medium correlation of practical and statistical significance with regard to the Conceptual (r=0.34; p=0.00) subscale. In satisfaction with job autonomy, there was a medium correlation of practical and statistical significance with regard to the Technical (r=0.39; p=0.00) subscale, and large correlations of practical and statistical significance with regard to the Human (r=0.52; p=0.00), Conceptual (r=0.46; p=0.00) and Leadership (r=0.55; p=0.00) subscales.

b) Correlations between NUMs' *ability to implement* competencies and *intention to leave*

There was a negative medium correlation of practical and statistical significance between the Conceptual (r=-0.32; p=0.00) subscale and *intention to leave*.

c) Correlations between NUMs' *ability to implement* competencies and *organisational commitment*

Positive items of OC yielded medium correlations of practical and statistical significance with NUM competencies as evaluated by nursing staff with regard to the Technical (r=0.31; p=0.00) and Leadership (r=0.35; p=0.00) subscales, and large correlations of practical and statistical significance with regard to the Human (r=0.45; p=0.00) and Conceptual (r=0.55; p=0.00) subscales.

d) Correlations between NUMs' *ability to implement* competencies and *compassion practice*

Compassion satisfaction had medium correlations of practical and statistical significance with NUM competencies as evaluated by nursing staff with regard to the: Technical (r=0.27; p=0.00), Human (r=0.25; p=0.01) and Conceptual (r=0.29; p=0.00) subscales.

e) Correlations between NUMs' *ability to implement* competencies and *perception of the practice environment*

The subscale staffing and resource adequacy had only one medium correlation of practical and statistical significance (r=0.34; p=0.00) with the Conceptual subscale.

The nurse-physician collegial relationships had medium correlations of practical and statistical significance with NUM competencies as evaluated by nursing staff with regard to the Technical (r=0.29; p=0.00), Human (r=0.27; p=0.08) and Conceptual (r=0.32; p=0.00) subscales.

The Nurse manager ability, leadership, and support for nurses had medium and large correlations of practical and statistical significance with NUM competencies as evaluated by nursing staff. These correlations relate to the: Technical (r=0.37; p=0.00), Human (r=0.54; p=0.00), Conceptual (r=0.47; p=0.00) and Leadership (r=0.48; p=0.00) subscales.

Nursing foundations for quality of care had large correlations of practical and statistical significance with NUM competencies as evaluated by nursing staff with regard to the Technical (r=0.47; p=0.00), Human (r=0.46; p=0.00), Conceptual (r=0.49; p=0.00) and Leadership (r=0.50; p=0.00) subscales.

Nurse participation in hospital affairs had medium and large correlations of practical and statistical significance with NUM competencies as evaluated by nursing staff. These relate to Human (r=0.42; p=0.00), Conceptual (r=0.49; p=0.00) and Leadership (r=0.37; p=0.00) subscales.

4.6.3.3 Discussion of objective three

The aim of this objective was to determine if there is a relationship between NUMs' *ability to implement* competencies and nursing staff outcomes, and their perception of the practice environment. The major findings are that NUM *ability to implement* competencies has a relationship with all nursing staff outcomes except the negative items of OC and CF and the practice environment. The findings are significant, as this is the first known study to specifically evaluate competencies of NUMs from multi-source feedback and link these competencies to nursing staff outcomes and nursing staff's perception of the practice environment in public hospitals of the North West Province.

With regard to job satisfaction (global job satisfaction, satisfaction with job rewards and job autonomy), nursing staff expressed that it was not enjoyable to work at their organisation and that the organisation did not provide a supportive work environment in which to work. With regard to aspects of the job, the majority of nursing staff were dissatisfied with wages, opportunities for advancement and educational opportunities, and most were satisfied with annual leave. This is consistent with studies on job satisfaction that have indicated that nursing staff report the most dissatisfaction in relation to lack of support (Atefi *et al.,* 2014:358; Feather *et al.,* 2015:132), wages, opportunities for advancement, and educational opportunities (Klopper *et al.,* 2012: 693). Job satisfaction correlated most with the Conceptual and Human subscales, followed by the Leadership and Technical subscales.

Nursing staff indicated that they had actively been looking for jobs with regard to intention to leave. Studies on intention to leave have confirmed that nurses want to leave their jobs and/or organisations (Aiken *et al.,* 2001:46; McCarthy *et al.,* 2007:252; El-Jardali *et al.,* 2009:7; Flinkman *et al.,* 2010:1431; Coetzee *et al.,* 2013:169; Flinkman *et al.,* 2013:8-9; Homburg *et al.,* 2013:817; Sveindottir & Blǒndal 2014:548; Leone *et al.,* 2015:1588; Sojane *et al.,* 2016:5). A study by Ten Haaf (2007:87) – the only study found that evaluated competencies of nurse managers in relation to nursing staff and patient outcomes – found that tests for correlations between turnover rate and first-line manager competencies were not significant for the total sample. Intention to leave had no correlations with the competency subscale except one negative correlation with the Conceptual subscale.

With regard to OC, nursing staff expressed that they do not talk highly of their organisations, and that they do not share the same values as that of their organisation. Nursing staff also indicated that their organisations do not inspire them in terms of job performance, and they are not happy for having chosen their organisations to work for over others. With reverse score items, nursing staff agreed that they could just as well be working for a different organisation, as long as the work was the same. They found it difficult to agree with their organisations' policies on important matters relating to employees. The findings indicated that nursing staff do not have OC. Veličkovic *et al.* (2014:424) already confirmed a strong link between OC and job satisfaction. OC studies have found leadership style and empowerment (Asiri *et al.,* 2016:5; Kodama *et al.,* 2016:883; Yahaya & Ebrahim, 2016:207), supervisor-nurse relationships, and teamwork (Brunetto *et al.,* 2013:2786) to play an instrumental role in promoting OC of nurses. Positive items of OC correlated the most with Conceptual and Human subscales, followed by Leadership and Technical subscales.

With regard to CP, the majority of nursing staff indicated that they try to get to know patients as a whole (psycho-social-spiritual) person, feel good about the care they provide to patients and that they feel they make a positive difference in the lives of patients. Nursing staff also reported that meeting patients' needs gives meaning and purpose to their lives, enjoy interacting with patients and feel satisfied when they are able to help patients. With reverse score items, nursing staff expressed that they are unable to meet patients' needs the way they would like to and feel that patients deserve better care than they can provide. Findings indicate that nursing staff has CS. A study conducted by Hunsaker *et al.* (2015:190) indicated that stable leadership and support from managers at the unit level supports CS. CS had correlated most with the Conceptual subscale followed by Technical and Human subscales.

The practice environment consists of nurse staffing and resource adequacy, nurse-physician collegial relationships, abilities of the nurse manager, leadership and support for nurses, nursing foundations for quality of care, and nurse participation in hospital affairs.

Nursing staff perceptions about nurse staffing and resource adequacy, was that there were inadequate support services to allow them to spend time with their patients; there were not enough registered nurses on staff to provide quality patient care, and insufficient staff to get the work done. Inadequate nursing staff and resource requirements were also identified by Klopper *et al.* (2012:690), Van Wyk (2015:317), and Holtzhausen (2017:99). Nurse staffing and resource adequacy correlated only with the Conceptual subscale of the NMCI.

With regard to nurse-physician relationships, nursing staff expressed that there is no teamwork between nurses and physicians, physicians do not respect nurses as professionals, nor do they hold nurses in high esteem. The results indicate poor relationship between nurses and physicians. The nurse-physician relationships correlated mostly with the Conceptual subscale followed by the Technical and Human subscales.

With regards to Nurse manager ability, leadership, and support for nurses, nursing staff reported that the NUM was not a good manager and leader and that they did not receive praise and recognition for a job well done, nor did the NUM back them up in decision making and conflicts. Lambrou *et al.* (2014:304) found that the subscale Nurse manager ability, leadership, and support had the strongest correlation with job satisfaction in the studies reviewed, thus confirming that job satisfaction plays a critical role in the development of PPEs. Similarly, Van Wyk (2015:203) reported that CCNs valued the leadership and support from managers while Sojane *et al.* (2016:8) reported that RNs were satisfied with the leadership and support of their nurse managers, except for praise and recognition. Duffield *et al*. (2011:30) identified the role of nurse leaders as being critical to a positive work environment, with important characteristics being visibility, accessibility, open discussion and support for nurses. Nurse manager ability, leadership and support for nurses' is critical to nursing staff perception of the practice environment. Nurse manager ability, leadership, and support for nurses subscale correlated with the Human and Leadership subscales followed by the Technical subscale.

On nursing foundations for Quality of Care, nursing staff expressed that high standards of nursing care were expected by management, that they were working with clinically competent nurses and that there was continuity of care. Nursing staff also reported that there were no active staff development or continuing education programmes for nurses. The nursing foundations for Quality of care subscale highly correlated with the Leadership and Conceptual subscales followed by the Technical and Human subscales. It is important to note that the subscale Nursing Foundations for Quality of Care has the highest correlations with competencies of NUMs and that items of this

subscale are consistent with the NUM's responsibilities towards patients (see Section 2.8, Table 2-2). A study by Klopper *et al.* (2012:693) on the practice environment, job satisfaction and burnout of CCNs in South Africa also reported the subscale Nursing Foundations for Quality of Care as one of the highly ranked subscales, while Holtzhausen (2017:99) found that CSNs had better outcomes if the healthcare facility was driven by a nursing philosophy, which is an item of the Nursing Foundations for Quality of Care subscale.

For nurse participation in hospital affairs, nursing staff expressed that there is no career development / clinical ladder opportunity, no opportunity for registered nurses to participate in policy decisions, the NSM is not highly visible and accessible to staff, no opportunities for advancement and that management does not listen and respond to employee concerns. This indicate that nursing staff would have better outcomes if nurses were afforded the opportunity to participate in both hospital and nursing affairs as identified by (Holtzhausen, 2017:99). The nurse participation in hospital affairs correlated with the Conceptual subscale followed by the Human and Leadership subscales.

In conclusion, nursing staff outcomes can be regarded as being influenced by the competencies of NUMs, except for negative items of OC and CF. In nursing staff perceptions of the practice environment, most PE subscales correlate with the Human, Conceptual and Leadership subscales. The unique finding is that nursing staff do not correlate the Technical and Financial subscales with a PPE, but correlate interpersonal relationships, future orientation and Leadership competencies with the creation of a PPE. Therefore, there is a need to enhance the frontline leadership of NUMs. NUMs must also develop an awareness of the impact their leadership has on staff outcomes and use that as tool for change, improvement, and/or learning opportunity. Table 4-60 below outlines the strengths and weaknesses identified in objective three.

Table 4-60: Strengths and weaknesses in objective three

Strengths	Weaknesses
Global job satisfaction	
	63. 49.23% (n=221) of nursing staff did not like working at their healthcare organisations. 64. More than half of nursing staff (63.07%, n=287) disagreed that the healthcare organisation provided a supportive work environment in which to work.
Aspects of the job	
56. More than three quarters (78.23%; n=352) of nursing staff were satisfied with their annual leave.	65. 70.20% (n=318) of nursing staff were dissatisfied with opportunities for advancement. 66. 74.17% (n=336) of nursing staff were dissatisfied with wages. 67. 69.93% (n=314) of nursing staff were dissatisfied with educational opportunities. 68. 68.07% (n=309) of nursing staff were dissatisfied with study leave.
Intention to leave	
	69. 42.60% (n=190) of nursing staff agreed that they have actively been looking for other jobs.
Organisational Commitment	
	70. 49.33% (n=221) of nursing staff do not talk up the healthcare organisation as a great organisation to work for. 71. More than half (59.22%; n=260) of nursing staff would not accept another type of job assignment in order to keep working for the healthcare organisations. 72. 54.26% (n=242) of nursing staff find that their values and the organisation's values are not similar. 73. 61.68% (n=272) of nursing staff agreed that they could just as well be working for a different organisation as long as the type of work was similar. 74. More than half of nursing staff (53.26%; n=237) disagreed that the healthcare organisation inspired the very best in them in the way of job performance. 75. 56.60% (n=253) disagreed that they were glad for choosing this healthcare organisations to work for over others they had been considering at the time of joining. 76. Half of the nursing staff (50.00%; n=221) agreed that they find it difficult to agree with their healthcare organisations policies on important matters relating to its employees. 77. 57.33% (n=258) disagree that their healthcare organisation is the best of all possible organisations for which to work.

Strengths	Weaknesses
Compassion Practice	
57. Many nursing staff (92.62%; n=414) try to get to know patients as a whole (psycho-social-spiritual) person 58. Most nursing staff (96.21%; n=431) feel good about the care they provide to patients. 59. Many nursing staff (94.58%; n=419) feel they make a positive difference in the lives of patients 60. Most of the nursing staff (93.72%; n=418) feel that meeting patients' needs gives meaning and purpose to their lives. 61. Most nursing staff (95.51%; n=425) enjoy interacting with patients. 62. Most nursing staff (94.36%, n=418) feel satisfied when they are able to help patients.	78. More than half of nursing staff (61.14%; n=269) struggle to connect with patients. 79. 80.51% (n=351) of nursing staff are unable to meet patients' needs the way they would like to. 80. Most nursing staff (87.25%; n= 390) feel that patients deserve better care than they can provide.
PES-NWI-R)	
Staffing and resource adequacy	
	81. 51.56% (n=232) of nursing staff disagreed that adequate support services allow them to spend time with their patients. 82. Almost three quarters of nursing staff (73.77%; n=332) disagreed that there is enough registered nurses on staff to provide quality patient care. 83. 72.89% (n=328) disagreed that there is enough staff to get the work done.
Nurse manager ability, leadership and support for nurses	
	84. 54.12% (n=243) of nursing staff disagreed that they had a nursing unit manager who was a good manager and leader. 85. Half of nursing staff (54.10%; n=244) disagreed that they received praise and recognition for a job well done. 86. 53.79% (n=241) of nursing staff disagreed that they had a nursing unit manager who backed up the nursing staff in decision making, even if the conflict was with a physician.
Nurse-physician collegial relationships	
	87. 55.25% (n=247) of nursing staff disagreed that there was a lot of teamwork between nurses and physicians 88. Almost three quarters (74.19%; n=258) of nursing staff disagreed that physicians respected nurses as professionals. 89. 64.87% (n=288) of nursing staff disagreed that physicians hold nurses in high esteem.

Strengths	Weaknesses
Nursing foundations for quality of care	
63. 89.16% (n=403) of nursing staff agreed that high standards of nursing care are expected by management 64. Most nursing staff (80.04%; n=357) agreed that they were working with nurses who were clinically competent. 65. 78.84% (n=354) of nursing staff agreed that patient care assignments fostered continuity of care (i.e. the same nurse care for the patient form one day to the next).	90. 64.06% (n=287) disagreed that there is active staff development or continuing education programmes for nurses.
Nurse participation in hospital affairs	
	91. 68.98% (n=309) of nursing staff disagreed that there was career development / clinical ladder opportunity. 92. The majority of nursing staff (62.58%; n=281) disagreed that there was opportunity for registered nurses to participate in policy decisions. 93. 57.66% (n=256) of nursing staff disagreed on a nursing service manager who was highly visible and accessible to staff. 94. The majority of nursing staff (68.91%; n=306) disagreed that there were opportunities for advancement. 95. 65.77% (n=294) of nursing staff disagreed that management listens and respond to employee concerns.

4.6.3.4 Summary

In this chapter, the demographic profiles of NSMs, NUMs and nursing staff (all categories) were outlined. Construct validity and reliability of all instruments was also reported. The descriptive and inferential statistics of all instruments were analysed and interpreted according to objectives. Competencies of NUMs were evaluated from the perspective of NSMs, NUMs and nursing staff. The relationship between NUMs' personal and unit demographics and NUMs' competencies was also evaluated from the perspectives of NSMs, NUMs and nursing staff. The relationship between NUMs' competencies and staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice) as well as nursing staff's perceptions of the practice environment was evaluated only from the perspective of nursing staff. Each objective was

concluded with an integrated discussion and identification of strengths and weaknesses that have an impact on competencies of NUMs in public hospitals of the North West Province. Nursing staff rated competencies of NUMs far lower than what NSMs and NUMs did. Nursing staff also continued to pick up a lot of differences in NUM competency ratings with NSMs.

CHAPTER 5
A STRATEGY TO ENHANCE COMPETENCIES OF NURSING UNIT MANAGERS

5.1 Overview of the chapter

This chapter presents a strategy to enhance competencies of NUMs in public hospitals of the North West Province. The chapter commences with a discussion of strategy and the strategic process. Thereafter, a discussion of a strategy to enhance competencies of NUMs in public hospitals of the North West Province is presented in terms of vision, mission, values, principles, assumptions, strategy objectives and functional tactics. The chapter concludes with a discussion of the implementation of the strategy.

5.2 Introduction

Jones and Hill (2013:4) define strategy as a set of related actions that managers take to increase organisational performance. Other literature refers to strategy as developing a full-blown game plan that spells out particular competitive moves and approaches employed by managers to move organisations in intended directions to compete successfully and gain competitive advantage, meet customer needs and achieve performance objectives or targets (Gamble *et al.,* 2013:2; Lazenby, 2014:4; Louw & Venter 2014:10). The strategic process is defined as the process by which organisations determine the values that are needed and how to add those values to organisations in order to bring them together. This process also determines the way customers are treated and the way employees are viewed and rewarded (Louw & Venter 2014:22). The strategic process does not bring success to organisations without a vision for the future and the establishment of a competitive advantage, which is achieved only if the strategy is crafted (developed) and executed (implemented) (Louw & Venter 2014:22).

The entire organisation should be involved in the strategy process. This will help organisations to develop relationships with the environment and adapt to environmental changes. Organisations in this study refer to nursing units/wards in public hospitals of the North West Province. Managers are the linchpins in the strategy making-process, and must understand that public hospitals – despite not operating for profit – still compete for scarce resources and must develop strategies that lead to a demonstration of the meeting of performance targets (Jones & Hill, 2013:9).

The process of crafting (development) and executing (implementation) strategy consists of five integrated stages:

- Developing a strategic vision that will indicate an organisation or company's long-term direction, a mission statement that describes the core business or reason for existence, and a set of core values to guide the strategic vision and mission;
- Setting objectives for measuring performance and progress towards the intended long-term direction;
- Crafting a strategy for advancing the organisation along the path to the envisioned future and to achieving performance objectives;
- Executing the chosen strategy efficiently and effectively and
- Monitoring development, evaluating performance, and initiating corrective adjustments (actions) that are needed (Gamble *et al.,* 2013:14-15; Louw & Venter 2014:22).

A graphic presentation of the five strategy stages is illustrated in figure 5-1 below.

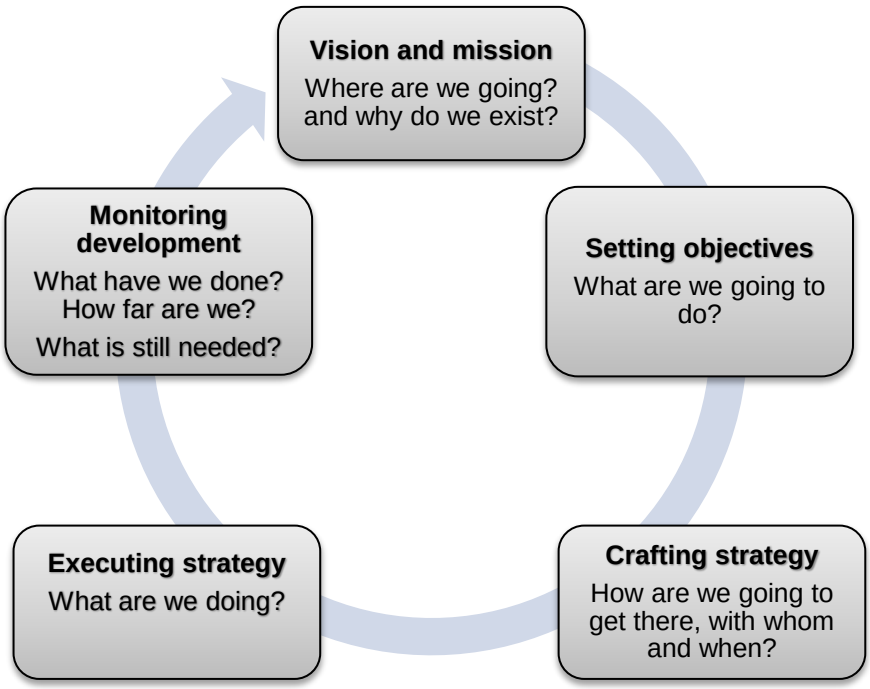

Figure 5-1: Five strategy stages

The strategic process has evolved from the twentieth to the twenty–first century. This was influenced by managers and industry leaders of the time. This study continues up to the crafting of the strategy; strategy execution and monitoring will be part of the post-doctoral studies. Table 5-1 explains the evolution of strategy.

Table 5-1: The evolution of the strategic process

Period	1950s	1960 to early 1970s	Late 1970s to mid-1980s	Late 1980s to 1990s	2000s	2010s
Dominant theme	Budgeting and control	Corporate planning	Positioning organisations	Taking a competitive advantage	Innovative strategies	Sustainable competitive advantage
Main issues	Concentrated on financial control through budgeting	Planning for organisational growth and enlargement	Selecting industries and markets	Focusing around competitive advantage and new developments	Reconciling size with market responsiveness	Focusing on: value innovation, sustainability, engaging stakeholders and winner – take – all markets
Principal concepts and techniques	Financial budgeting Investment planning Project appraisal	Forecasting and planning for businesses	Analysing industries and dividing markets according to consumer characteristics	Focusing on resources and capabilities, shareholder value, knowledge management and information technology	Cooperative strategies and competing for standards	Engaging stakeholders and investing in value innovation, governance and ethics
Organisational implications	Operational and capital budgeting were key mechanisms of coordination and control	Rise of corporate planning and long-term formal planning	Multiple-divisional and multiple-national structures with greater industry and market selectivity	Restructuring and re-engineering, outsourcing services and e-business	Forming alliances and networks, new models of leadership and less reliance on direction and more on emergence	Developing global strategies and integrated sustainability reporting and more reliance on distinctive capabilities

Adapted from: Louw & Venter (2014:13-14)

Table 5-1 reveals that the dominant theme for strategic process has moved from corporate planning to gaining competitive advantage that is sustainable, even for non-profit organisations. Principal concepts now used in strategic process are value innovation, stakeholder engagement, governance and ethics. Organisational implications are that strategy process has moved from coordination and control to integrated sustainability reporting and more reliance on distinctive capabilities which, in this study, support the typology of skills of an effective manager. This means that what a manager can accomplish is based on the skills the manager possesses. Strategy spells out competitive moves and approaches employed by managers to move organisations in

intended directions to compete successfully and gain competitive advantages, meet customer needs, and achieve performance objectives or targets. Strategy also encompasses the premise that managers should be provided with a knowledge base and methods to access managerial skills so that they are able to discharge their management functions effectively and increase the likelihood that they will perform effectively into the future.

The strategic process was used to develop a vision and mission, and identify values, principles and assumptions to formulate strategic objectives and functional tactics to enhance competencies of NUMs in public hospitals of the North West Province. This was based on the typology of skills of an effective manager (Katz, 1955).

5.3 Review of the basis for strategy development

A SWOT analysis was applied to identify strengths, weaknesses, opportunities and threats (see Chapters 2 and 4), which formed the basis for the development of a strategy to enhance competencies of NUMs in public hospitals of the North West Province. Strengths, weaknesses, opportunities and threats were utilized for strategy development, as the researcher built on the strengths and opportunities and tried to improve on the weaknesses and threats to enhance competencies of NUMs. Deductive and inductive reasoning was used in the formulation of the strategy to enhance competencies of NUMs in public hospitals of the North West Province (see Chapter 1, Section 1.10.1). Table 5-2 outlines strengths and weaknesses, and Table 5-3 the opportunities and threats identified from the study.

Table 5-2: Strengths and Weaknesses identified in the study

Category	Subcategory	Strengths	Weaknesses
Demographic profiles	Management qualification	1. 83.33% (n=5) of NSMs have a formal management qualification. 2. 54.54% (n=12) of NUMs have a formal management qualification.	1. One (16.67%) NSM did not have a formal management qualification. 2. 45.45% (n=10) of NUMs did not have a formal management qualification.
	Age (NSMs and NUMs)		3. 50.00% (n=3) of NSMs will retire in 10 years or less 4. 45.45% (n=10) of NUMs will retire in 10 years or less

Category	Subcategory	Strengths	Weaknesses
Demographic profiles	Tenure in management position	3. 60.00% (n=3) of NSMs have been in their current management positions for more than ten years, which indicate experience and continuity of service 4. 39.13% (n=9) of NUMs have been in their current management positions for more than ten years, which indicate experience and continuity of service	5. 60.00% (n=3) of NSMs have been in their current management positions for more than ten years, which is indicative of stagnant succession planning and career development. 6. 39.13% (n=9) of NUMs have been in their current management positions for more than ten years, which stagnate those aspiring for the position.
	Span of control		7. Span of control consists of various ranges, with 53.33% (n=8) of NUMs having control of less than 24 FTEs, 13.33% (n=2) of 50-74 FTEs, and 6.67% (n=1) of 75-99 FTEs. This indicates under or over-utilisation of respective NUMs
	Age (nursing staff)		8. There are very few younger nurses. The Number of nurses aged 25-34 years (35.31%, n=155) is almost equal to the Number of nurses aged 35-44 years (35.08%, n=154), which indicates a plateau in new entrants to the profession.
	Practice as a nurse		9. 1.10% (n=5) of nursing staff (all categories) have been in the profession for less than one year, with 2.42% (n=11) for 1-2 years, and 10.11% (n=46) for 3-4 years. This also indicates lack of new recruits into the profession
	Educational level		10. Only 7.42% (n=34) of professional nurses have a degree in nursing which is a concern given the international standards for entry in the nursing profession.
	Nursing positions	5. The high number of professional nurses (51.21%, n=233) is good, as they are key to improving patient outcomes.	11. The skills mix of nursing staff is skewed with 51.21% (n=233) professional nurses, 35.38% (n=161) enrolled nursing auxiliaries, and 13.41% (n=61) enrolled nurses. This might create higher workloads for some

Category	Subcategory	Strengths	Weaknesses
			roles and unrealised scope of practice.
	Career satisfaction	6. 94.10% (n=431) of nursing staff are satisfied with nursing as a career of choice.	12. 51.42% (n=235) of nursing staff are not satisfied with their current jobs.
Nurse Manager Competency Instrument	Technical subscale	7. NSMs rated NUMs to be competent in *knowledge and understanding* of the following: • Nursing Practice Standards (M=3.07; SD=0.26); • Nursing Care Delivery Systems (M=3.10; SD=0.37); • Nursing Care Planning (M=3.09; SD=0.43); • Clinical Skills (M=3.12; SD=0.33); • Infection Control Practices (M=3.05; SD=0.22); and • Regulatory Council Standards (M=3.05; SD=0.22). 8. NUMs felt competent in *knowledge and understanding* of the following: • Nursing Practice Standards (M=3.09; SD=0.60); • Nursing Care Delivery Systems (M=3.18; SD=0.50); • Nursing Care Planning (M=3.26; SD=0.54); • Clinical Skills (M=3.10; SD=0.62); • Patient Acuity Systems (M=3.09; SD=0.68); and • Infection Control Practices (M=3.09; SD=0.79). 9. NSMs felt NUMs were competent in the *ability to implement* the following: • Nursing Practice Standards (M=3.00; SD=0.44); • Nursing Care Delivery Systems (M=3.05; SD=0.49); • Nursing Care Planning (M=3.07; SD=0.47);	13. NSMs felt NUMs lacked competence in *knowledge and understanding* of the following: • Research and Evidence-Based Practice (M=2.48; SD=0.63); • New Technology (M=2.40; SD=0.66); and • Case Management (M=2.47; SD=0.70) 14. NSMs felt NUMs lacked competence in the *ability to implement* the following: • Research and Evidence-based Practice (M=2.50; SD=0.74); and • New Technology (M=2.44; SD=0.73). 15. NUMs rated themselves not competent in the *ability to implement* • Research and Evidence-based Practice (M=2.43; SD=0.68). 16. Nursing staff rated NUMs as not competent in the ability to implement the following four aspects: • Research and Evidence-based Practice (M=2.24; SD=0.70); • New Technology (M=2.24; SD=0.71); • Case Management (M=2.47; SD=0.70); and • Information Systems and Computers (M=2.27; SD=0.76). 17. NSMs disagreed with NUMs regarding their *ability to implement* Patient Acuity Systems w=0.64; p=0.01) with NUMs having more confidence in their competence than NSMs. 18. Nursing staff differed from NSMs regarding NUMs' *ability to implement* the following

Category	Subcategory	Strengths	Weaknesses
Nurse manager Competency Instrument	Technical subscale	• Clinical Skills (M=3.07; SD=0.35); • Infection Control Practices (M=3.05; SD=0.31); and • Regulatory Council Standards (M=3.07; SD=0.34). 10. NUMs rated themselves as competent in the *ability to implement* the following: • Nursing Practice Standards (M=3.14; SD=0.57); • Nursing Care Delivery Systems (M=3.25; SD=0.55); • Nursing Care Planning (M=3.24; SD=0.44); • Clinical Skills (M=3.25; SD=0.64); • Patient Acuity Systems (M=3.21; SD=0.63); and • Infection Control Practices (M=3.15; SD=0.75). • 11. NSMs disagreed with NUMs regarding their *ability to implement* Regulatory Council Standards (w=0.52; p=0.03), with NSMs being more confident of NUMs' competence than NUMs themselves.	three items, rating NUMs lower than NSMs did: • Nursing Practice Standards (w=0.47; p=0.00); • Information Systems and Computers (w=0.52; p=0.01; and • Regulatory Council Standards (w=0.42; p=0.03). 19. Nursing staff rated NUMs lower than NUMs themselves did in the *ability to implement* the following: • Nursing Practice Standards (w=0.70; p=0.00); • Nursing Care Delivery Systems (w=0.73; p=0.00); • Nursing Care Planning (w=0.68; p=0.00); • Clinical Skills (w=0.52; p=0.04); • Patient Acuity Systems (w=0.65; p=0.01); • Infection Control Practices (w=0.41; p=0.02); and • New Technology (w=0.57; p=0.03). 20. Overall, nursing staff rated NUMs' *ability to implement* the Technical subscale lower than NUMs themselves did (w=0.81; p=0.00).
	Human subscale	12. NSMs felt NUMs were competent in *knowledge and understanding* of • Effective Communication (M=3.12; SD=0.45). 13. NUMs felt competent in their *knowledge and understanding* of: • Constructive Performance Evaluation (M=3.04; SD=0.71); and • Humour (M=3.00; SD=0.85).	21. NUMs felt incompetent in their *knowledge and understanding* of: • Recruitment Strategies (M=2.38; SD=0.67); and • Retention Strategies (M=2.43; SD=0.68). 22. Nursing staff rated NUMs incompetent in the *ability to implement* the following: • Effective Staffing Strategies (M=2.18; SD=0.78); • Recruitment Strategies (M=2.04; SD=0.82); • Retention Strategies (M=2.05; SD=0.80);

Category	Subcategory	Strengths	Weaknesses
Nurse Manager Competency Instrument	Human subscale	14. NSMs rated NUMs as competent in the *ability to implement* • Effective Communication (M=3.12; SD=0.59). 15. NUMs felt competent in the *ability to implement* the following: • Effective Communication (M=3.05; SD=0.60); • Constructive Performance Evaluation (M=3.15; SD=0.59); • Interviewing Techniques (M=3.05; SD=0.59); • Team-building Strategies (M=3.00; SD=0.71); and • Humour (M=3.05; SD=0.83). 16. NSMs felt more confident in NUMs' *knowledge and understanding* of Retention Strategies than NUMs themselves did (d=0.43; p=0.10).	• Effective Discipline (M=2.44; SD=0.74); • Effective Counselling Strategies (M=2.41; SD=0.72); • Constructive Performance Evaluation (M=2.35; SD=0.72); • Staff Development Strategies (M=2.23; SD=0.78); • Group Process (M=2.33; SD=0.74); • Interviewing Techniques (M=2.36; SD=0.73); • Team-building Strategies (M=2.33; SD=0.77); • Humour (M=2.31; SD=0.77); and • Optimism (M=2.29; SD=0.75). 23. NSMs felt that NUMs were less competent than NUMs themselves did in the *ability to implement* • Interviewing Techniques (w=0.44; p=0.00). 24. Nursing staff felt less confident than NSMs in NUMs' *abilities to implement* all Human subscale items: • Effective Communication (w=0.72; p=0.00); • Effective Staffing Strategies (w=1.01; p=0.00); • Recruitment Strategies (w=0.84; p=0.00); • Retention Strategies (w=0.80; p=0.00); • Effective Discipline (w=0.53; p=0.00); • Effective Counselling Strategies (w=0.49; p=0.00); • Constructive Performance Evaluation (w=0.78; p=0.00); • Staff Development Strategies (w=0.83; p=0.00); • Group Process (w=0.69; p=0.00);

Category	Subcategory	Strengths	Weaknesses
Nurse Manager Competency Instrument	Human subscale		• Interviewing Techniques (w=0.40; p=0.00); • Team-building Strategies (w=0.57; p=0.00); • Humour (w=0.58; p=0.00); and • Optimism (w=0.70; p=0.00). 25. Nursing staff did not agree with NUMs' ratings of themselves in all Human subscale items, feeling that NUMs were less competent than what they reported themselves to be in terms of: • Effective Communication (w=0.63; p=0.00); • Effective Staffing Strategies (w=0.81; p=0.00); • Recruitment Strategies (w=0.77; p=0.00); • Retention Strategies (w=0.58; p=0.00); • Effective Discipline (w=0.56; p=0.00); • Effective Counselling Strategies (w=0.58; p=0.00); • Constructive Performance Evaluation (w=1.08; p=0.00); • Staff Development Strategies (w=0.90; p=0.00); • Group Process (w=0.51; p=0.00); • Interviewing Techniques (w=0.74; p=0.00); • Team-building Strategies (w=0.76; p=0.00); • Humour (w=0.77; p=0.00); and • Optimism (w=0.61; p=0.00). 26. Nursing staff experienced NUMs' as not competent in their *ability to implement* the overall Human subscale (M=2.35), and thus also more negative than what NUMs reported of themselves (w=1.01; p=0.00).

Category	Subcategory	Strengths	Weaknesses
Nurse Manager Competency Instrument	Conceptual subscale	17. NSMs rated NUMs to be competent *knowledge and understanding* of the following: • Ethical Principles (M=3.09; SD=0.43); and • Quality / Process Improvement (M=3.09; SD=0.29). 18. NUMs felt competent in *knowledge and understanding* of the following: • Nursing Theories (M=3.00; SD=0.60); • Strategic Planning / Goal development (M=3.00; SD=0.45); and • Teaching / Learning Theories (M=3.04; SD=0.64). 19. NSMs rated NUMs competent in the *ability to implement* the following items: • Ethical Principles (M=3.09; SD=0.48); and • Quality / Process Improvement (M=3.07; SD=0.40). 20. NUMs felt confident in their *ability to implement* the two Conceptual items, namely: • Teaching / Learning Theories (M=3.10; SD=0.55); and • Quality / Process Improvement (M=3.00; SD=0.65).	27. Nursing staff felt that NUMs were not competent in their *ability to implement* several items, namely: • Nursing Theories (M=2.25; SD=0.86); • Administrative / Organisational Theories (M=2.16; SD=0.80); • Teaching / Learning Theories (M=2.26; SD=0.83); • Political Process & Advocacy (M=2.26; SD=0.72); and • Legal Issues (M=2.28; SD=0.73). 28.NSMs felt that NUMs rated themselves too highly on the *ability to implement:* • Teaching / Learning Theories (w=0.43; p=0.00). 29. Nursing staff differed with NSMs on their ratings of NUMs' *ability to implement* several items, rating NUMs lower than what NSMs did: • Nursing Theories (w=0.59; p=0.00); • Administrative / Organisational Theories (w=0.99; p=0.00); • Ethical Principles (w=0.53; p=0.00); • Teaching / Learning Theories (w=0.74; p=0.00); • Political Process & Advocacy (w=0.79; p=0.00); • Quality / Process Improvement (w=0.58; p=0.00); and • Legal Issues (w=0.84; p=0.00). 30. Nursing staff gave NUMs a lower rating than NUMs gave themselves for the ability to implement the following items: • Nursing Theories (w=0.91; p=0.00);

Category	Subcategory	Strengths	Weaknesses
Nurse Manager Competency Instrument	Conceptual subscale		• Administrative / Organizational Theories (w=1.07; p=0.00); • Teaching / Learning Theories (w=1.07; p=0.00); • Political Process & Advocacy (w=0.83; p=0.00); • Quality / Process Improvement (w=0.46; p=0.00); and • Legal Issues (w=0.78; p=0.00). 31. Nursing staff experienced NUMs as not competent in the ability to implement the overall Conceptual subscale (M=2.39) and saw the implementation of this subscale in a less favourable light than NUMs did (w=0.90; p=0.00).
	Leadership subscale	21. NSMs rated NUMs as competent in *knowledge and understanding* of the following: • Power and Empowerment (M=3.02; SD=0.41); • Delegation (M=3.07; SD=0.40); • Problem-solving (M=3.00; SD=0.49); • Organisation of Unit of Work and Workflow Process (M=3.05; SD=0.38); • Policies and Procedures (M=3.07; SD=0.41); • Staff Education (M=3.22; SD=0.60); and • Time Management (M=3.05; SD=0.38). 22. NUMs rated themselves as competent in *knowledge and understanding* of the following: • Decision-making (M=3.17; SD=0.65); • Power and Empowerment (M=3.09; SD=0.61); • Delegation (M=3.13; SD=0.69);	32. NSMs felt that NUMs were not competent in *knowledge and understanding* of • Research Process (M=2.48; SD=0.59). 33. NSMs rated NUMs as incompetent in the *ability to implement* the • Research Process (M=2.47; SD=0.65). 34. Nursing staff felt that NUMs were not competent in the *ability to implement* the following: • Power and Empowerment (M=2.42; SD=0.75); • Conflict Resolution (M=2.44; SD=0.72); • Problem-solving (M=2.47; SD=0.72); • Stress Management (M=2.35; SD=0.73); • Research Process (M=2.26; SD=0.74); • Motivational Strategies (M=2.44; SD=0.73); and • Staff Education (M=2.39; SD=0.80).

Category	Subcategory	Strengths	Weaknesses
Nurse Manager Competency Instrument	Leadership subscale	• Change Process (M=3.04; SD=0.71); • Conflict Resolution (M=3.13; SD=0.63); • Problem-solving (M=3.22; SD=0.67); • Policies and Procedures (M=3.09; SD=0.67); and • Staff Education (M=3.22; SD=0.60). 23. NSMs felt NUMs were competent in the *ability to implement* the following items: • Decision-making (M=3.00; SD=0.49); • Power and Empowerment (M=3.05; SD=0.53); • Delegation (M=3.16; SD=0.53); • Problem-solving (M=3.02; SD=0.64); • Organisation of Unit of Work and Workflow Process (M=3.05; SD=0.45); • Policies and Procedures (M=3.07; SD=0.41); • Staff Education (M=3.05; SD=0.67); and • Time Management (M=3.07; SD=0.47). 24. NUMs rated themselves as competent in the *ability to implement* the following: • Decision-making (M=3.15; SD=0.49); • Power and Empowerment (M=3.00; SD=0.58); • Delegation (M=3.10; SD=0.55); • Change Process (M=3.05; SD=0.60); • Conflict Resolution (M=3.10; SD=0.45); • Problem-solving (M=3.20; SD=0.52); • Organisation of Unit of Work and Workflow Process (M=3.00; SD=0.55); • Policies and Procedures (M=3.05; SD=0.51); and	35. Nursing staff disagreed with NSMs' rating of NUMs' *ability to implement* the items below and rated NUMs lower than NSMs did throughout: • Decision-making (w=0.45; p=0.00); • Power and Empowerment (w=0.68; p=0.00); • Delegation (w=0.59; p=0.00); • Conflict Resolution (w=0.59; p=0.00); • Problem-solving (w=0.74; p=0.00); • Stress Management (w=0.41; p=0.00); • Motivational Strategies (w=0.40; p=0.01); • Organisation of Unit of Work and Workflow Process (w=0.59; p=0.00); • Policies and Procedures (w=0.46; p=0.00); • Staff Education (w=0.83; p=0.00); and • Time Management (w=0.66; p=0.00). 36. Nursing staff expressed lower ratings than NUMs for the *ability to implement* the following items: • Decision-making (w=0.66; p=0.00); • Power and Empowerment (w=0.62; p=0.00); • Delegation (w=0.50; p=0.00); • Change process (w=0.52; p=0.05); • Conflict Resolution (w=0.77; p=0.00); • Problem-solving (w=0.99; p=0.00); • Stress Management (w=0.69; p=0.00); • Motivational Strategies (w=0.55; p=0.01); • Organization of Unit of Work and Workflow Process (w=0.52; p=0.00); • Policies and Procedures (w=0.42; p=0.00); and

Category	Subcategory	Strengths	Weaknesses
Nurse Manager Competency Instrument	Leadership subscale	• Staff Education (M=3.19; SD=0.68). • Organisation of Unit of Work and Workflow Process (M=3.00; SD=0.55); • Policies and Procedures (M=3.05; SD=0.51); and • Staff Education (M=3.19; SD=0.68).	• Staff Education (w=1.02; p=0.00). 37. Nursing staff experienced NUMs' *ability to implement* the overall Leadership subscale in a more negative light than what NUMs did (w=0.89; p=0.00).
	Financial subscale	25. NUMs rated themselves competent in *the ability to implement* two Financial items, namely: • Cost Containment and Cost Avoidance Practices (M=3.00; SD=0.63); and • Productivity Measurements (M=3.00; SD=0.55). 26. NSMs were more confident in NUMs' *ability to implement* several financial items, viz.: • Operational and Capital Budget Forecasting and Generation (w=0.0.53; p=0.14); • Cost Benefit Analysis (w=0.90; p=0.03); and • Financial Resource Monitoring (w=0.67; p=0.11).	38. NSMs felt that NUMs were less competent than what they reported of themselves in the *ability to implement* of several Financial items, namely: • Cost Containment and Cost Avoidance Practices (w=0.55; p=0.15); • Productivity Measurements (w=0.64; p=0.11); and • Unit Budget Control Measures (w=0.80; p=0.06).
NUM demographics evaluation by NSMs, NUMs and nursing staff	Additional management qualification	27. NSM rated NUMs with an additional management qualification more competent in the *knowledge and understanding* of Technical (d=0.54; p=0.22) competencies. 28. NUMs rated themselves more competent in the *knowledge and understanding* of financial (d=0.41; p=0.96) competencies when they had an additional management qualification. 29. NUMs rated themselves more competent in the ability to implement financial (d=0.49; p=0.55) competencies when they had an additional qualification.	39. NSMs did not perceive additional management qualifications as impacting on NUMs' knowledge and understanding of Human (d=0.14; p=0.77), Conceptual (d=0.02; p= 0.95), Leadership (d=0.20; p=0.67) and Financial (d=0.27; p=0.55) competencies. 40. NSMs did not perceive additional management qualifications as impacting on NUMs *ability to implement* Technical (d=0.25; p=0.58); Human (d=0.09; p=0.86), Conceptual (d=0.16; p= 0.72), Leadership (d=0.25; p=0.58) and Financial (d=0.23; p=0.61) competencies.

Category	Subcategory	Strengths	Weaknesses
NUM demographics evaluation by NSMs, NUMs and nursing staff	Additional management qualification	30. Nursing staff rated NUMs with an additional management qualification as being more competent in the ability to implement Technical (d=0.66; p=0.16); Human (d=0.69; p=0.14); Conceptual (d=0.67; p=0.12); and Leadership (d=0.46; p=0.31) competencies.	41. NUMs did not perceive additional management qualifications as impacting on their knowledge and understanding of Technical (d=0.00; p=0.90), Human (d=0.21; p=0.75), Conceptual (d=0.04; p= 0.78) and Leadership (d=0.12; p=0.57) competencies. 42. NUMs did not perceive additional management qualifications as impacting on their ability to implement Technical (d=0.29; p=0.66); Human (d=0.09; p=0.20), Conceptual (d=0.30; p= 0.02), Leadership (d=0.07; p=0.04) and Financial (d=0.49; p=0.55) competencies.
	Level of management qualification	31. NSMs rated NUMs with a degree qualification in management as being more competent in the *knowledge and understanding* of Human (d=0.79; p=0.27) and Leadership (d=1.00; p=0.20) competencies. 32. NSMs rated NUMs with a degree qualification in management as being more competent in the *ability to implement* Human (d=0.78; p=0.27); Leadership (d=0.54; p=0.45) and Financial (d=0.41; p=0.52) competencies 33. NSMs perceived that NUMs with a diploma qualification in management were more competent in the *ability to implement* Technical (d=0.40; p=0.58) competencies.	43. NSMs did not perceive NUMs with a degree qualification in management as being more competent in *knowledge and understanding* of Technical (d=0.33; p=0.50); Conceptual (d=0.00; p= 1.00) and Financial (d=0.10; p=0.88) competencies. 44. NSMs did not perceive NUMs with a degree qualification in management to be more competent in the *ability to implement* Conceptual (d=0.14; p= 0.83) competencies. 45. NUMs did not perceive that the level of the management qualification had any impact on *knowledge and understanding* or *ability to implement* competencies. 46. Nursing staff did not perceive the level of management qualification to have any impact on *ability to implement* competencies.
	Hospital size	34. NSMs rated NUMs more competent as the size of the hospital increased with regard to the *knowledge and understanding* of Technical (r=0.62; p=0.01), Human (r=0.50; p=0.04), Conceptual	

Category	Subcategory	Strengths	Weaknesses
NUM demographics evaluation by NSMs, NUMs and nursing staff	Hospital size	(r=0.41; p=0.09), Leadership (r=0.42; p=0.08) and Financial (r=0.44; p=0.07) competencies. 35. NSMs rated NUMs more competent as the hospital size increased with regard to the *ability to implement* Technical (r=0.37; p=0.13), Human (r=0.30; p=0.23), Conceptual (r=0.29; p=0.25), Leadership (r=0.32; p=0.19) and Financial (r=0.51; p=0.03) competencies. 36. NUMs rated themselves more competent as the hospital size increased with regard to the *knowledge and understanding* of Technical (r=0.57; p=0.01), Human (r=0.29; p=0.20), Conceptual (r=0.44; p=0.05), Leadership (r=0.36; p=0.11) and Financial (r=0.41; p=0.06) competencies. 37. NUMs rated themselves more competent as the hospital size increased with regard to the *ability to implement* Technical (r=0.70; p=0.00), Human (r=0.55; p=0.01), Conceptual (r=0.60; p=0.01), Leadership (r=0.46; p=0.05) and Financial (r=0.45; p=0.05) competencies. 38. Nursing staff rated NUMs more competent as the hospital size increased regarding the *ability to implement* Technical (r=0.26; p=0.28), Human (r=0.31; p=0.20) and Leadership (r=0.33; p=0.16) competencies.	
	Age	39. NSM rated NUMs to be more competent in the *knowledge and understanding* of Technical (r=0.32; p=0.22) competencies with advancing age. 40. NSM rated NUMs to be more competent in the *ability to implement* Technical (d=0.32; p=0.21)	47. NSMs did not perceive age as impacting on NUMs competencies in the *knowledge and understanding* of Human (r=0.05; p=0.86), Conceptual (r=0.03; p=0.91), Leadership (r=-0.15; p=0.58) and Financial (r=0.06; p=0.83) competencies.

Category	Subcategory	Strengths	Weaknesses
NUM demographics evaluation by NSMs, NUMs and nursing staff	Age	competencies with advancing age.	48. NSMs did not perceive age as impacting on NUMs competencies on the *ability to implement* Human (r=-0.09; p=0.73), Conceptual (r=-0.04; p=0.88), Leadership (r=-0.13; p=0.61) and Financial (r=-0.07; p=0.78) competencies. 49. NUMs did not perceive age as impacting on their *knowledge and understanding* of Technical (r=0.11; p=0.62), Human (r=-0.08; p=0.73), Conceptual (r=0.14; p=0.53), Leadership (r=0.11; p=0.63) and Financial (r=0.11; p=0.61) competencies. 50. NUMs did not perceive age as impacting on *the ability to implement* Technical (r=0.13; p=0.59), Human (r=-0.15; p=0.54), Conceptual (r=-0.14; p=0.56), and Financial (r=-0.06; p=0.80) competencies. 51. NUMs rated themselves to be less competent in the *ability to implement* Leadership (r=-0.27; p=0.25) competencies with advancing age.
	Tenure in management position	41. NSMs rated NUMs with longer tenure in their management position as being more competent in the *knowledge and understanding* of Technical (r=0.43; p=0.07), Human (r=0.31; p=0.22), Conceptual (r=0.34; p=0.17), Leadership (r=0.27; p=0.29) and Financial (r=0.25; p=0.10) competencies. 42. NSMs rated NUMs with longer tenure in their management position as being more competent in the *ability to implement T*echnical (r=0.44; p=0.07), Conceptual (r=0.29; p=0.25), Leadership (r=0.36; p=0.15) and Financial (r=0.33; p=0.17) competencies. 43. NUMs perceived longer tenure in their nursing	52. NUMs did not perceive tenure in management position as having an influence on *knowledge and understanding* of Human (r=0.14; p=0.51) 53. NSMs did not perceive NUMs with longer tenure in their management position as being more competent in the *ability to implement* Human (r=0.17; p=0.51) competencies 54. NUMs did not perceive longer tenure in management position as having an influence on *ability to implement* Conceptual (r=0.23; p=0.32) competencies.

Category	Subcategory	Strengths	Weaknesses
NUM demographics evaluation by NSMs, NUMs and nursing staff	Tenure in management position	management position to be correlated with more competence in the *knowledge and understanding* of Technical (r=0.57; p=0.01), Conceptual (r=0.27; p=0.21), Leadership (r=0.30; p=0.16) and Financial (r=0.30; p=0.17) competencies. 44. NUMs perceived longer tenure in their nursing management position to be correlated with more competence in the *ability to implement* Technical (r=0.42; p=0.06), Human (r=0.27; p=0.23), Leadership (r=0.26; p=0.25) and Financial (r=0.37; p=0.10) competencies. 45. Nursing staff perceived longer tenure in NUMs nursing management position to correlate with more competence in the *ability to implement* Technical (r=0.53; p=0.02), Human (r=0.54; p=0.02), Conceptual (r=0.41; p=0.08) and Leadership (r=0.58; p=0.01) competencies.	
	Practice as a registered nurse	46. NSMs rated NUMs with more years of experience as a registered nurse as more competent in the *knowledge and understanding* of Human (r=0.41; p=0.09, Conceptual (r=0.34; p=0.16), Leadership (r=0.40; p=0.10) and Financial (r=0.32; p=0.20) competencies. 47. NSMs rated NUMs with more years of experience as registered nurse as more competent in the *ability to implement* Human (r=0.41; p=0.10, Conceptual (r=0.29; p=0.25) and Leadership (r=0.36; p=0.15) and Financial (r=0.33; p=0.17) competencies. 48. NUMs perceived years of experience as a registered nurse to correlate with more competence in the *knowledge*	55. NSMs did not perceive NUMs with more years of experience as registered nurse as more competent in the *knowledge and understanding* of Technical (r=0.22; p=0.38) competencies. 56. NSMs did not perceive NUMs with more years of experience as registered nurse as more competent in the *ability to implement* Technical (r=0.22; p=0.39) competencies. 57. NUMs did not perceive years of experience as a registered nurse as having an influence on *knowledge and understanding* of Human (r=0.14; p=0.51) and Leadership (r=0.23; p=0.30) competencies.

Category	Subcategory	Strengths	Weaknesses
NUM demographics evaluation by NSMs, NUMs and nursing staff	Practice as a registered nurse	*and understanding* of Technical (r=0.32; p=0.13), Conceptual (r=0.26; p=0.23), and Financial (r=0.29; p=0.17) competencies. 49. NUMs perceived years of experience as a registered nurse to correlate with more competence in the *ability to implement* Technical (r=0.37; p=0.10) and Financial (r=0.37; p=0.10) competencies. 50. Nursing staff perceived years of experience as a registered nurse to correlate with more competence in the *ability to implement* Technical (r=0.39; p=0.10) Human (r=0.34; p=0.15, Conceptual (r=0.39; p=0.10) and Leadership (r=0.39; p=0.10) competencies.	58. NUMs did not perceive years of experience as a registered nurse as having an influence on *ability to implement* Human (r=0.18; p=0.42), Conceptual (r=0.23, p=0.32) and Leadership (r=0.20; p=0.38) competencies.
	Span of control	51. NSMs rated NUMs with a larger span of control more competent in the *knowledge and understanding* of Technical (r=0.27; p=0.45), Conceptual (r=0.53; p=0.12) and Leadership (r=0.44; p=0.20) competencies 52. NSMs rated NUMs with a larger span of control as more competent in the *ability to implement* Technical (r=0.46; p=0.18, Conceptual (r=0.67; p=0.03) and Leadership (r=0.47; p=0.18) competencies. 53. NUMs perceived span of control to be correlated with more competence in the *knowledge and understanding* of Technical (r=0.25; p=0.38) and Human (r=0.39; p=0.15). 54. NUMs perceived span of control to be correlated with more competence in the *ability to implement* Technical (r=0.28; p=0.33) and Financial (r=0.28; p=0.34) competencies. 55. Nursing staff perceived the increased span of control of NUMs to be correlated with	59. NSMs did not perceive NUMs with a larger span of control more competent in the *knowledge and understanding* of Human (r=0.18; p=0.63) and Financial (r=0.18; p=0.63) competencies. 60. NSMs did not perceive NUMs with a larger span of control as more competent in the *ability to implement* Human (r=0.24; p=0.50) and Financial (r=0.21; p=0.56) competencies. 61. NUMs did not perceive span of control as having an influence on *knowledge and understanding* of Conceptual (r=-0.08; p=0.78), Leadership (r=0.04; p=0.89) and Financial (r=0.17; p=0.55) competencies. 62. NUMs did not perceive span of control as having an influence on *ability to implement* Conceptual (r=-0.16; p=0.58), Leadership (r=-0.13, p=0.66) and Financial (r=-0.02; p=0.94) competencies.

Category	Subcategory	Strengths	Weaknesses
	Span of control	more competence in the *ability to implement* Technical (r=0.31; p=0.35) Human (r=0.48; p=0.14, Conceptual (r=0.53; p=0.09) and Leadership (r=0.59; p=0.06) competencies.	
Nursing staff outcomes	Global job satisfaction		63. 49.23% (n=221) of nursing staff did not like working at their healthcare organisations. 64. More than half of nursing staff (63.07%, n=287) disagreed that the healthcare organisation provided a supportive environment in which to work
	Specific aspects of the job	56. More than three quarters (78.23%; n=352) of nursing staff were satisfied with their annual leave.	65. 70.20% (n=318) of nursing staff were dissatisfied with opportunities for advancement. 66. 74.17% (n=336) of nursing staff were dissatisfied with wages. 67. 69.93% (n=314) of nursing staff were dissatisfied with educational opportunities. 68. 68.07% (n=309) of nursing staff were dissatisfied with study leave.
	Intention to leave		69. 42.60% (n=190) of nursing staff agreed that they were actively looking for other jobs.
	Organisational Commitment		70. 49.33% (n=221) of nursing staff do not talk up the healthcare organisation as a great organisation to work for. 71. More than half (59.22%; n=260) of nursing staff would not accept another type of job assignment in order to keep working for the healthcare organisations. 72. 54.26% (n=242) of nursing staff find that their values and the organisation's values are not similar. 73. 61.68% (n=272) of nursing staff agreed that they could just as well be working for a different organisation as

Category	Subcategory	Strengths	Weaknesses
Nursing staff outcomes	Organisational Commitment		long as the type of work was similar. 74. More than half of nursing staff (53.26%; n=237) disagreed that the healthcare organisation inspired the very best in them in the way of job performance. 75. 56.60% (n=253) disagreed that they were glad for choosing this healthcare organisations to work for over others that they were considering at the time of joining. 76. Half of the nursing staff (50.00%; n=221) agreed that they found it difficult to agree with their healthcare organisations policies on important matters relating to its employees. 77. 57.33% (n=258) disagreed that their healthcare organisation was the best of all possible organisations for which to work.
	Compassion Practice	57. Many nursing staff (92.62%; n=414) try to get to know patients as a whole (psycho-social-spiritual) person 58. Most nursing staff (96.21%; n=431) feel good about the care they provide to patients. 59. Many nursing staff (94.58%; n=419) feel they make a positive difference in the lives of patients 60. Most of the nursing staff (93.72%; n=418) feel that meeting patients' needs gives meaning and purpose to their lives. 61. Most nursing staff (95.51%; n=425) enjoy interacting with patients. 62. Most nursing staff (94.36%, n=418) feel satisfied when they are able to help patients.	78. More than half of nursing staff (61.14%; n=269) struggle to connect with patients. 79. 80.51% (n=351) of nursing staff are unable to meet patients' needs the way they would like to. 80. Most nursing staff (87.25%; n= 390) feel that patients deserve better care than they can provide.

Category	Subcategory	Strengths	Weaknesses
Nursing Staffs perception of the practice environment (PES-NWI-R)	Nurse staffing and resource adequacy		81. 51.56% (n=232) of nursing staff disagreed that adequate support services allow them to spend time with their patients. 82. Almost three quarters of nursing staff (73.77%; n=332) disagreed that there is enough registered nurses on staff to provide quality patient care. 83. 72.89% (n=328) disagreed that there is enough staff to get the work done
	Nurse manager ability, leadership and support for nurses		84. 54.12% (n=243) of nursing staff disagreed that they had a nursing unit manager who is a good manager and leader. 85. Half of nursing staff (54.10%; n=244) disagreed that they received praise and recognition for a job well done. 86. 53.79% (n=241) of nursing staff disagreed that they had a nursing unit manager who backs up the nursing staff in decision making, even if the conflict is with a physician.
	Nurse-physician collegial relationships		87. 55.25% (n=247) of nursing staff disagreed that there is a lot of teamwork between nurses and physicians 88. Almost three quarters (74.19%; n=258) of nursing staff disagreed that physicians respect nurses as professionals. 89. 64.87% (n=288) of nursing staff disagreed that physicians hold nurses in high esteem.
	Nursing foundations for quality of care	63. 89.16% (n=403) of nursing staff agreed that high standards of nursing care are expected by management 64. Most nursing staff (80.04%; n=357) agreed that they are working with nurses who are clinically competent.	90. 64.06% (n=287) disagreed that there is active staff development or continuing education programmes for nurses.

Category	Subcategory	Strengths	Weaknesses
Nursing Staffs perception of the practice environment (PES-NWI-R)	Nursing foundations for quality of care	65. 78.84% (n=354) of nursing staff agreed that patient care assignments foster continuity of care (i.e. the same nurse care for the patient from one day to the next).	
	Nurse participation in hospital affairs		91. 68.98% (n=309) of nursing staff disagreed that there is career development / clinical ladder opportunity. 92. Many nursing staff (62.58%; n=281) disagreed that there is opportunity for registered nurses to participate in policy decisions. 93. 57.66% (n=256) of nursing staff disagreed about a nursing service manager who is highly visible and accessible to staff. 94. The majority of nursing staff (68.91%; n=306) disagreed that there are opportunities for advancement. 95. 65.77% (n=294) of nursing staff disagreed that management listens and respond to employee concerns.

Table 5-3: Opportunities and threats identified in the study

Category	Subcategory	Opportunities	Threats
Literature review	The practice environment of the NUM	1.The practice environment influences nurse and patient outcomes	1. NUMs work with limited resources 2. NUMs have a lack of authority, decision making, and actual influence in nursing units 3. There is lack of organisational support and recognition for NUMs
	Educational preparation of the NUM	2. Nursing education will be provided within a national framework that will	4. The management curriculum is outdated at undergraduate, post-

Category	Subcategory	Opportunities	Threats
		ensure alignment of nursing education with post-school education legislative prescripts and regulatory requirements for professional registration in the new nursing categories. 3. The management curriculum at undergraduate, post-basic and postgraduate can be developed to provide knowledge and skills to nurse graduates that are contemporary, relevant and responsive to practice	basic and postgraduate levels. 5. There is not a requirement for a management qualification in order to become a manager. 6. The legacy undergraduate nursing programmes will be phased out in December 2019, and not all new nursing programmes are HEQSF-aligned as of yet. 7. The regulations for nurse managers have not been published yet, thus no new post-basic and postgraduate programmes for management have been developed although it will be phased out in Dec 2019. 8. There is nonalignment between the legacy nursing qualifications and HEQSF aligned qualifications in terms of access
	Selection into NUM positions	4. NUMs are usually recruited, selected and appointed through internal processes within the organisation.	9. NUMs are selected into management positions based on clinical expertise 10. The internal process of recruitment, selection and appointment into the role often find NUM unprepared
	Succession planning	5. Formal succession planning and mentoring will prepare professional nurses for	11. There is no career and succession planning for NUMs

Category	Subcategory	Opportunities	Threats
		management roles 6. Higher salary and the opportunity to motivate others are regarded as motivation to pursue management positions	12. There is no formal orientation and mentoring early in the NUM role transition 13. Novice nurses do not aspire to accept management positions
	Roles and responsibilities of the NUM		14. Role of NUM is focused mostly on clinical nursing rather than nursing management
	Competency profile of NUMs		15. High competency is required from NUMs without formal management education and training requirements
	Nursing staff outcomes	7. Nurses working in PPEs are less likely to report poor nurse outcomes 8. Positive nurse outcomes improve quality of care, patient safety and patient outcomes.	16. Lack of opportunities for advancement, study leave, and wages contribute to job dissatisfaction

5.4 A strategy to enhance competencies of NUMs in public hospitals of the North West province

A strategy to enhance competencies of NUMs in public hospitals of the North West Province was developed according to the strategic process discussed in Section 5.2 above. In this section, the development of a strategy to enhance competencies of NUMs in public hospitals of the North West Province is discussed.

5.4.1 Vision

At the beginning of the strategy-making process the organisation must engage with the issue of the direction that the organisation wishes to take (Gamble *et al.,* 2013:16). These views about the direction for the future constitute a vision. A vision is therefore a mental image of the desired future where managers have a responsibility not to see the organisation as it is, but as what it may become. The vision is also the direction that management views as important for the

organisations' future products, services, customers and/or technologies employed (Lazenby, 2014:29; Gamble *et al.,* 2013:16).

To develop a vision for competencies of NUMs in public hospitals of the North West Province, the researcher reviewed the visions of the following stakeholders: the National Department of Health (NDoH), the North West Department of Health (NWDoH), SANC, the Council on Higher Education (CHE) and the South African Institute of HealthCare Managers (SAIHCM) as an institution that aims to promote high standards of healthcare management in South Africa.

The vision of the NDoH is **"A long and healthy life for all South Africans"** (DoH, 2015/16-2019/20 Strategic Plan)

The vision of NWDoH is: **"Healthy self-reliant communities in the North West Province"**

The vision of SANC is: **"Excellence in professionalism and advocacy for health care users"**

The vision for CHE is: "**To be a dynamic organization contributing to a transformed, equitable and quality higher education and training system in South Africa".**

The vision for SAIHCM is: **"To be a strategic leadership forum for health care managers in South Africa".**

The vision for the strategy to enhance competencies of NUMs in public hospitals of the North West Province was developed from some elements of the stakeholders' visions and is stated as: "**To create a healthy nurse workforce and community through excellence in leadership and management**".

5.4.2 Mission

A mission is a direction setting guideline and serves as the conscience of the organisation. While visions are articulated pictures of where the organisation is heading, a mission guides the organisation in terms of what needs to be done. A mission describes the present purpose of the organisation in terms of answering questions like ("who are we", "what do we do" and "why are we here") (Gamble *et al.,* 2013:20; Lazenby, 2014:35).

The mission for enhancing competencies of NUMs in public hospitals of the North West Province was also derived from some elements of the vision and mission statements of stakeholders involved in education and management of nurses (see Section 5.4.1). The mission statement of the strategy is: "**To improve the health and healthcare provision of all communities in the North West Province, through dynamic and people driven leadership and competent management that supports the creation of positive practice environments**".

5.4.3 Values

A vision statement is a verbalised picture of where the organisation is headed, while the mission guides the organisation in terms of what needs to be done during the journey. The values become more important because they explain how things will be done on a daily basis. Values are beliefs, traits and behavioural norms that organisational personnel are expected to display when conducting daily organisational business or pursuing the strategic vision and mission of the organisation (Gamble *et al.,* 2013:21; Lazenby, 2014:42). Robert Ferguson identified 17 common values shared by Fortune 500 companies. These 17 common values are a way of defining acceptable behaviour. They are guiding principles, often outlined in an organisation's Code of Business Conduct, and should rarely be changed. These values were therefore applied for the strategy to enhance competencies of NUMs in public hospitals of the North West Province:

- Achievement (Results, Success)
- Care (Service, Compassion)
- Community (Corporate Citizenship)
- Customers (Customer Satisfaction
- Environment (Sustainability)
- Excellence (Quality, Performance)
- Fairness (Diversity, Inclusive)
- Innovation (Creativity, Ingenuity)
- Integrity (Ethics, Honesty)
- Leadership (Influence, Competitive Advantage)
- Learning (Continuous Improvement, Knowledge)
- Passion (Enthusiasm, Fun)
- People (Employee Engagement)
- Respect (Trust, Dignity)
- Responsibility (Accountability, Commitment)
- Safety (Health)
- Teamwork (Collaboration, Cooperation) Ferguson Values (2018)

5.4.4 Principles

A principle is a rule or belief that guides a person's actions. The researcher applied the principles of the Department of Health in order to ensure that the principles of the strategy for NUM competencies are the same and are applicable to all public hospitals of the North West Province. These are indicated in the White Paper for the Transformation of the Health System in South Africa, (DOH, 1997). Table 5-4 presents the principles of the Department of Health and their

application to the strategy to enhance competencies of NUMs in public hospitals of the North West Province.

Table 5-4: Application of the principles of DoH to the strategy

DoH principles	Application to strategy
Equity	Fair, just and consistent treatment must be exercised at all times to both patients and staff in nursing units Equal opportunities should be provided in terms of praise and recognition, rewards, wages, career development and study leave.
Effectiveness	Nursing units must be managed according to legislative mandates in so much that actual performance outcomes meet the expected outcomes.
Efficiency	Nursing unit must be managed in the right manner for achievement of unit and organisational objectives to get maximum outputs even with minimum resources.
Quality	Standards of care must be maintained in nursing units as well as implementation of nursing guidelines and policies NUMs must evaluate care against the set standards and criteria and participate in the implementation of corrective actions.
Access	Provision of care must be accessible in all nursing units to all healthcare users Management support, availability and care must be accessible to all staff in nursing units
Local accountability	NUMs must be liable or answerable to all acts of omission or commission in the nursing units, either to staff, patients or patients' families
Sustainability	NUMs must maintain standards of nursing care by regularly engaging staff through regular meetings, in-service education, on the spot teaching and dissemination of information such as new developments on nursing or policies and circulars

5.4.5 Assumptions

An assumption is something that is accepted as true or as certain to happen without proof or verification (Polit & Beck, 2017:9). According to Klopper (2008:67), views that researchers bring to their research are not meant to be tested, as these are their assumptions about the world that influence how they conduct their research. A strategy to enhance competencies of NUMs in public hospitals of the North West Province is influenced by several assumptions. These assumptions are stated explicitly as they provide a point of departure for the interpretation of a strategy to enhance competencies of NUMs in public hospitals of the North West Province.

A strategy to enhance competencies of NUMs in public hospitals of the North West Province is influenced by the following assumptions:

1. The strategy is developed for use in public hospitals of the North West Province;

2. In order to enhance competencies of NUMs in public hospitals of the North West Province, the strategy must be interpreted in terms of the typology of skills of an effective administrator (manager), which is centred around the premise that what a manager can accomplish is based on the skills that the manager possesses. A skill is conceived as comprising three components: i) the existence of a domain-specific knowledge base; ii) a method for assessing this knowledge base and iii) the ability to enact a set of behaviours or cognitions using the retrieved knowledge to perform a given task (Peterson & Van Fleet, 2004:1298);

3. In this strategy, the existence of a specific knowledge base is applied to the competencies of NUMs, which is their *knowledge and understanding* of competencies and *ability to implement* competencies. This was evaluated through multi-source feedback by NSMs, nursing staff and the self-evaluations of NUMs. The specific knowledge base was also evaluated through determining a relationship between NUMs competencies and their personal and unit demographics and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice) as well as nursing staff's perceptions of the practice environment;

4. The strategy is viewed as "alive" because healthcare organisations are dynamic with complex healthcare reforms where NUMs have to adapt to the challenges facing healthcare delivery from time to time and also assist those who work under their supervision to adapt. The supervisors of NUMs should also make sure that the NUMs are provided with the necessary support that will assist them to overcome any constraints. Supervisors should make sure that NUMs are updated on necessary competencies from time to time, either through in-service education, workshops or conferences. Key elements that will assist NUMs in performance must also be put in place, such as, people/systems, structures and resources. Continuous evaluation is necessary in order to change, revise, and renew the strategy objectives and functional tactics for continuous enhancement of competencies of NUMs in public hospitals of the North West Province;

5. To change, revise, or renew the strategy objectives and functional tactics, a review of the SWOT analysis must be considered; and

6. When all five strategy objectives are in place, a PPE would be the outcome.

5.4.6 Strategy objectives

The strategic objectives are set to convert the vision into specific performance targets. Objectives reflect managements' aspirations for organisational performance in the light of the organisation's

prevailing competitive conditions and internal capabilities. Well stated objectives are measurable and have a deadline for achievement. Objectives serve as yardsticks for tracking organisational performance and progress towards the vision. Objectives should include both short-term and long-term performance targets (Gamble *et al.,* 2013:21-24).

The aim of the development of a strategy in this study was to enhance competencies of NUMs in public hospitals of the North West Province. The strategy objectives were determined in line with the vision, mission, values, principles and assumptions of the strategy to enhance competencies of NUMs in public hospitals of the North West Province and were based on the 65 strengths and 95 weaknesses, 8 opportunities and 16 threats identified in the study. All opportunities, threats, strengths, and weaknesses were grouped together and named according to themes to develop six strategy objectives through deductive logic to enhance competencies of NUMs in public hospitals of the North West Province. The opportunities and strengths were considered to be existing capabilities but were included in themes for further development. The SWOT analysis used to develop objectives is presented in a key below using the codes Strengths (S) Numbered 1-65, Weaknesses (W) Numbered 1-95, Opportunities (O) Numbered 1-8, and Threats (T) Numbered 1-16.

Key

SWOT analysis

(S) 1-65

(W) 1-95

(O) 1-8

(T) 1-16

Table 5-5 outlines the five strategy objectives derived from the SWOT analysis, to enhance competencies of NUMs in public hospitals of the North West Province.

Table 5-5: Strategy objectives to enhance competencies of NUMs in public hospitals of the North West Province

Strategy objectives	SWOT analysis
1. To optimise the appointment of qualified NUMs through succession planning and/or recruitment based on qualifications and practice-based requirements	**S** –1-6;12-16;22-24;27-33;39-50 **W** – 1-6;7-12;21-27;29-31;34-37;39-58;91;94 **O** – 2-6 **T** – 2-16
2. To provide NUMs with organisational support and recognition from top management	**S** – 3-4;7-9;11-12;14;16-17;19;21;23;26-27;31-35;39-42 **W** – 46-47;51-52;56;63 **O** – 1;4-6;7-8 **T** – 2-3;12;16
3. To negotiate a common platform with regard to nursing management education that is responsive to health system needs	**S** – 1-2;5;7-33 **W** – 1-2;11;13;14-46 **O** – 2, 3 **T** – 4-9;13-15
4. To provide an enabling environment for NUMs for both clinical and administrative effectiveness	**S** – 3-6;34-38;41-65 **W** – 5-6;11-12;52-95 **O** – 1;4-6;7-8 **T** – 1;4-6;7-8
5. To create a learning environment that fosters NUM competence and dedication to lifelong learning	**S** – 1-50;63-65 **W** – 1-2;5-6;11;13-62;78-95 **O** – 1-8 **T** – 1-16

5.4.7 Functional tactics

The short-term strategy objectives were set in order to provide more specific guidance and a clear indication of the actions needed to translate the vision into action. Functional tactics consist of action plans to help achieve short-term objectives (Lazenby, 2014:330). In this study, functional tactics were developed from strategy objectives (see Paragraph 5.4.6 and Table 5-5) which were based on 65 strengths, 95 weaknesses, 8 opportunities, and 16 threats, identified in both the literature review and the empirical phase of the study. The functional tactics were intended to address the skills of an effective manager, namely, the Technical, Human, Conceptual, Leadership and Financial competencies to ensure that NUMs receive the necessary skills to ensure they are able to: 1) discharge the functions of management necessary to do their jobs effectively; 2) perform their roles correctly and become more managerially self-efficacious; and 3) increase the likelihood that NUMs will perform effectively into the future (see Section 1.10.1).

Table 5-6 below outlines functional tactics to enhance competencies of NUMs in public hospitals of the North West Province.

Key	Key
SWOT analysis **(S)** 1-65 **(W)** 1-95 **(O)** 1-8 **(T)** 1-16	Typology of skills **(TOS)** TOS 1 – Technical TOS 2 – Human TOS 3 – Conceptual TOS 4 – Leadership TOS 5 – Financial

Table 5-6: Functional tactics to enhance competencies of NUMs in public hospitals of the North West Province

Strategy objectives	Functional tactics
1. To optimise the appointment of qualified NUMs through succession planning and/or recruitment based on qualifications and practice-based requirements	**1.1 Strategies for formal succession planning (S –** 1, 2, 3, 4, 5, 6, 12, 13, 14, 15, 16, 22, 23, 24, 27 28, 29, 30, 31, 32, 33 39, 40, 41, 42, 43, 44, 45, 46, 47,48, 49, 50; **W –** 1, 2, 3, 4, 5,6, 7, 8, 9, 10, 11, 12, 21, 22, 23, 24, 25, 26, 27, 29, 30, 31, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46,47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 91, 94; **O –**2, **3,** 4, 5, 6; **T –** 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16; **TOS** 1, 2, 3, 4, 5) 1.1.1 Identify and mentor nurses that are interested in management positions (**S** – 6, 22, 23, 24, 30, 31, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50; **W** – 5, 6, 7, 8, 9, 10, 21, 22, 23, 24, 25, 26, 27, 29, 30, 31, 34, 35, 36, 37; **O** – 2, 3, 4, 5, 6; **T** – 2, 3, 5, 9, 10, 11, 12, 13, 14, 15, 16;) 1.1.2 Invite individuals or groups to discuss their realistic future goals at the organisation **(S** – 1, 2, 3, 4, 5, 6, 27, 28, 29, 30, 31, 32, 33, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50; **W** –39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55,

Strategy objectives	Functional tactics
	56, 57, 58, 91; **O** –2, 3, 4, 5; **T** – 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16) 1.1.3 Create an inventory list of existing skills, including managerial skills (**S** — 1, 2, 3, 4, 5, 6, 21, 22, 23, 24, 27, 28, 29, 30, 31, 32, 33; **W** – 1, 2, 3, 4, 5, 5, 7, 8, 9, 10, 21,22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58; **O** –2, 3, 4, 5; **T** –2, 3,9, 10, 11, 12, 13, 14, 15, 16) 1.1.4 Evaluate individual potential to guide in development of succession plans (**S** — 1, 2, 3, 4, 5, 6, 21, 22, 23, 24, 27, 28, 29, 30, 31, 32, 33; **W** – 1, 2, 3, 4, 5, 5, 7, 8, 9, 10, 21,22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58; **O** –2, 3, 4, 5; T –2, 3,9, 10, 11, 12, 13, 14, 15, 16) 1.1.5 Design succession plans based on, interest in management position, future goals and individual potential (**S** – 1, 2, 3, 4, 5, 6; **W** – 1, 2, 3, 4, 5, 5, 7, 8, 9, 10; **O** –2, 3, 4, 5; **T** – 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16)
	1.2 Strategy to optimise recruitment of NUMs (**S** – 1, 2, 3, 4, 5, 6, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50; **W** – 1, 2, 3, 4, 5,6, 7, 8, 9, 10, 11, 12, 52, 53, 54, 55, 56, 57, 58; **O** –2, 3, 4, 5, 6; **T** – 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16) 1.2.1 Develop guidelines/criteria for advertisement and selection into NUMs' positions based on educational requirements (**S** – 1, 2, 3, 4, 5, 6; **W** – 1,

Strategy objectives	Functional tactics
	2, 3, 4, 5, 5, 7, 8, 9, 10, 11, 12; **O** –2, 3, 4; **T** – 2, 3, 4, 5, 6, 7, 8, 9, 10,12, 13, 14, 15, 16) 1.2.2 Match the roles and responsibilities of the job to nursing management rather than clinical expertise (**S** – 1, 2, 3, 4, 5, 6; **W** – 1, 2, 3, 4, 5, 5, 7, 8, 9, 10, 11, 12; **O** –2, 3, 4; **T** – 2, 3, 4, 5, 6, 7, 8, 9, 10,12, 13, 14,15, 16) 1.2.3 Select from staff that were identified and mentored for succession planning when an NUM position becomes available (**S** – 4, 5, 6; **W** – 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12; **O** –5, 6; **T** – 10, 11, 12) 1.2.4 Offer incentives/higher salaries as a retention strategy (**S** – 1, 2, 3, 4, 5, 6; **W** – 1, 2, 3, 4, 5, 5, 7, 8, 9, 10, 11, 12; **O** –5, 6; **T** – 9, 10, 11, 12, 13)
2. To provide NUMs with organisational support and recognition from top management	**2.1 To provide NUMs with organisational support from top management** (**S** – 3, 4, 7, 9, 11, 12, 14, 16, 17, 19, 21, 23, 26, 27, 31, 32, 33, 34, 35, 39, 40, 41, 42, 46, 47, 51, 52, 56, 63; **W – 5, 6, 13, 14, 17, 23, 28, 32, 33, 38, 39, 40, 43, 44, 47, 48, 53, 55, 56, 59, 60, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77,** 84, 85, 86, 90,93,95; **O** – 1, 4, 5, 6, 7, 8; **T –** 2, 3, 12, 16; **TOS** 1, 2, 3, 4 & 5**)** 2.1.1 Align strategic goals of nursing units with strategic goals of the organisation (**S** – 17, 19, 21, 26, 41, 42; **W** – 38, 39, 40, 43, 47, 70, 71, 72, 73, 74, 75, 76, 77; O – 1, 7, 8; **T** – 3, 16; 2.1.2 Introduce information sharing sessions to keep NUMs informed on latest healthcare

Strategy objectives	Functional tactics
	developments (**S** – 7, 9, 11, 12, 14, 21, 23, 51, 52; **W** – 28, 32, 33, 84, 85, 86, 93, 95; **O** – 1, 2, 3, 5; **T** – 2, 3,12) 2.1.3 Orientate NUMS to their roles on appointment (**S** – 3, 4, 21, 23, 63; **W** – 59, 60, 84, 85, 86, 93, 95; **O** – 4, 5; **T** – 2, 3, 12) 2.1.4 Consult and engage NUMs on matters involving nursing units (**S** – 7, 9, 11, 12, 14, 21, 23, 51, 52; **W** – 28, 32, 33, 84, 85, 86, 93, 95; **O** – 1, 7, 8; **T** – 2, 3,12) 2.1.5 Develop mentorship capacity building programmes for NUMs to feel empowered and confident in the role (**S** – 3, 4, 21, 23, 63; **W** – 59, 60, 84, 85, 86, 93, 95; **O** – 4, 5, 6; **T** – 2, 3, 12,16) 2.1.6 Create a views toll or mechanism on the support of NUMs (**S** – 7, 9, 11, 12, 14, 21, 23, 51, 52; **W** – 28, 32, 33, 84, 85, 86, 93, 95; **O** – 1, 4, 5, 7, 8; **T** – 2, 3,12, 16) 2.1.7 Use mistakes as learning experiences not punitive measures (**S** – 7, 9, 11, 12, 14, 21, 23, 51, 52; **W** – 28, 32, 33, 84, 85, 86, 93, 95; **O** – 1, 2, 3, 5; **T** – 2, 3,12) 2.1.8 Eliminate harassment, incivility and bullying of NUMs by creating a platform for reporting (**S** – 7, 9, 11, 12, 14, 21, 23, 51, 52; **W** – 28, 32, 33, 84, 85, 86, 93, 95; **O** – 1, 2, 3, 5; **T** – 2, 3,12) **2.2 To provide NUMs with recognition from top management** (**S** – 3, 4, 41, 42, 46, 47; **W –** 53, 55, 56, 59, 60, 84, 85, 86,93,95; **O** – 1, 4, 5, 6; **T –** 2, 3; **TOS** 1, 2, 3, 4 & 5**)**

Strategy objectives	Functional tactics
	2.2.1 Provide employment wellness for NUMs by creating platforms for socio-emotional needs (**S** – 63, 64, 65; **W** – 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95; **O** – 1, 4,6; **T** – 2, 3; **TOS** 1, 2, 3, 4 & 5) 2.2.2 Celebrate NUMs' objective/goal achievements by praise, positive feedback and acknowledgements (**S** – 3, 4, 34, 35, 39, 40, 41, 42, 46, 47, 51, 52; **W** – 5, 6, 39, 40, 43, 44, 53, 55, 56, 59, 60, 84, 85, 86, 90, 95; **O** – 1, 67, 8; **T** – 2, 3) 2.2.3 Provide leadership support for NUMs by including them in governance structures of the organisation (**S** – 7, 9, 11, 12, 14, 21, 23, 51, 52; **W** – 28, 32, 33, 84, 85, 86, 93, 95; **O** – 1, 2, 3, 5; **T** – 2, 3,12) 2.2.4 Create a strong feeling of autonomy for NUMs by allowing transparency in decision making for nursing units (**S** – 63, 64, 65; **W** –7, 84, 85, 86; T – 2 & 3; **TOS** 1, 2, 3, 4 & 5) 2.2.5 Involve NUM in policy decisions of the organisation (**S** – 7, 9, 11, 12, 14, 21, 23, 51, 52; **W** – 28, 32, 33, 84, 85, 86, 93, 95; **O** – 1, 2, 3, 5; **T** – 2, 3,12) 2.2.6 Assist NUMs by listening and responding to employee concerns they bring forward (**S** – 3, 4, 7, 11, 12, 14, 16, 23, 26, 31, 32, 33, 34, 35, 41, 42, 46, 47, 51, 52; **W** –5, 6, 38, 39, 40, 43, 44, 53, 55, 56, 59, 60, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 74 76, 77, 84, 85, 86, 90, 93, 95; **O** – 1, 4, 5, 6, 7, 8; **T** – 2, 3, 12, 16; **TOS** 1, 2, 3, 4 & 5)

Strategy objectives	Functional tactics
3. To negotiate a common platform with regard to nursing management education that is responsive to health system needs	**3.1 Develop national competencies of NUMs (S** – 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19,20, 21, 22, 23, 24, 25, 26, 27,28, 29, 30, 31, 32, 33; **W** – 37, 38, 39, 40, 41, 42, 43, 44, 45, 46; **O** – 2, 3; **T** – 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16; **TOS** – 1, 2, 3, 4 & 5) 3.1.1 HE stakeholders to develop nursing management education curriculum that is aligned with the National Qualifications Framework (**S** – 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14,15, 16, 17, 18, 19,20, 21, 22, 23, 24, 25,26; **W** – 1, 2, 12, 13, 14, 15, 16, 17, 18, 19,20, 21, 22, 23, 24, 25, 26, 27,28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46; **O** – 2, 3; **T** 4, 5, 6, 7, 8, 9, 12, 13, 14, 15, 16) 3.1.2 Identify capacity gaps in the NUM workforce and provide opportunities for training and development (**S** – 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14,15, 16, 17, 18, 19,20, 21, 22, 23, 24, 25,26; **W** – 1, 2, 12, 13, 14, 15, 16, 17, 18, 19,20, 21, 22, 23, 24, 25, 26, 27,28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46; **O** – 2, 3; **T -** 4, 5, 6, 7, 8, 9, 12, 13, 14, 15, 16) **3.2 The HE stakeholders to develop new management education curriculum that will provide contemporary knowledge and skills relevant to health system needs** (**S –** 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19,20, 21, 22, 23, 24, 25, 26, 27,28, 29, 30, 31, 32, 33; **W –** 1, 2, 11, 13, 14, 15, 16, 17, 18, 19,20, 21, 22, 23, 24, 25, 26, 27,28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46; **O** – 2,

Strategy objectives	Functional tactics
	3; **T –** 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16; **TOS –** 1, 2, 3, 4 & 5**)** 3.2.1 Develop guidelines/criteria for selection into management education (**S** –1, 2, 5, 27,28, 29, 30, 31, 32, 33; **W** – 1, 2, 11, 39, 40, 41, 42, 43, 44, 45, 46; **O** – 2, 3; **T** – 4, 5, 6, 7, 14, 15) 3.2.2 Assign mentors/preceptors early in nursing management role for proper orientation into role (**S** –1, 2, 27,28,29, 30, 31, 32, 33; **W** – 1, 2, 11, 39, 40, 41, 42, 43, 44, 45, 46; **O** – 2, 3; **T** – 9, 10, 11, 12, 13, 14, 15)
4. To provide an enabling environment for NUMs for both clinical and administrative effectiveness	**4.1 Create clinical and administrative effectiveness** (**S** – 1, 2, 3, 4, 5, 6,34, 35, 36, 37, 38, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65; **W –** 5, 6, 11, 12, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63**,** 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95; **O** – 1, 4, 5, 6, 7, 8; **T** – 1, 2, 3, 9, 10, 11, 12, 13, 14, 15, 16; **TOS** - 1, 2, 3, 4 & 5) 4.1.1 Ensure adequate staffing to nursing units to improve NUMs' ability to accomplish quality nursing care (**S**–63, 64, 65; **W** – 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95; **O** – 1, 4, 5, 6, 7, 8; **T** – 1, 2, 3, 10, 11, 12, 13, 14, 15, 16) 4.1.2 Provide enough material resources to nursing units including information technology for NUMs to effectively perform their duties (**S** – 6, 63, 64, 65; **W** - 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95; **O** – 1, 7, 8; **T** – 1, 2, 3, 10, 11, 12, 13, 14, 15, 16)

Strategy objectives	Functional tactics
	4.1.3 Prevent low morale, burnout and turnover by providing support for the provision of quality nursing care (**S** – 6, 57, 58, 59, 60, 61, 62; **W** - 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95; **O** – 1, 7, 8; **T** – 1, 2, 3, 9,10, 11, 12, 13, 14, 15, 16) 4.1.4 Provide enough time for nurses to discuss patient care problems with their peers (**S** – 57, 58, 59, 60, 61, 62, 63, 64, 65; **W** –, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95; **O** – 1, 7, 8; **T** – 1, 2, 3, 9,10, 11, 12, 13, 14, 15,16) 4.1.5 Provide enough support for nurses to spend time with patients (**S** – 57, 58, 59, 60, 61, 62, 63, 64, 65; **W** –, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95; **O** – 1, 7, 8; **T** – 1, 2, 3,9,10, 11, 12, 13, 14, 15,16)
5. To create a learning environment that fosters NUM competence and dedication to lifelong learning	**5.1 Provide tools that support empowerment** (**S** – 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27,28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 63, 64, 65; **W** – 1, 2, 5, 6, 11,13,14,15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95; **O** – 1, 2, 3, 4, 5, 6, 7, 8; **T** – 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16; **TOS** – 1, 2, 3, 4 & 5) 5.1.1 Update NUMs on latest management developments through in-service education and workshops, as well as

Strategy objectives	Functional tactics
	networking with managers in other organisations (**S** – 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 63, 64, 65. **W** 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95; **O** – 1, 7, 8; **T** – 1, 2, 3, 9, 10, 11, 12, 13, 14, 15, 16) 5.1.2 Encourage incorporation of CPD points through attendance of workshops and symposia (**S** – 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 63, 64, 65. **W** 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95; **O** – 1, 7, 8; **T** – 1, 2, 3, 9, 10, 11, 12, 13, 14, 15, 16) 5.1.3 Create platforms for regular competency self-assessment and/or regular discussions on knowledge and ability to implement competencies (**S** – 1, 2, 3, 4, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33; **W** – 1, 2,13, 14,15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51,**O** – 2, 3, 4, 5, 7, 8; **T** - 4, 5, 6, 7, 8, 9, 10, 14, 15)

Strategy objectives	Functional tactics
	5.2 Create a career ladder and incentive structure for NUMs (**S** – 1, 2, 3, 4, 5, 27, 28, 29, 30, 31, 32, 33, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, **W** – 1, 2, 3, 4, 5, 6, 11, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 65, 66, 67, 68, ; **O** – 1, 2, 3, 4, 5, 6,; **T** – 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16; **TOS** – 1, 2, 3, 4 & 5) 5.2.1 Provide study leave for NUMs to further their studies (**S** – 1, 2, 27, 28, 29, 30, 31, 32, 33; **W** – 1, 2, 3, 4, 39, 40, 41, 42, 43, 44, 45, 46 65, 67, 68; **O** –2, 3, 4, 5, 6; **T** – 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16) 5.2.2 Offer incentives for those who have specialisation and Masters and Doctoral degrees (**S** – 1, 2, 27, 28, 29, 30, 31, 32, 33; **W** – 1, 2, 3, 4, 39, 40, 41, 42, 43, 44, 45, 46 65, 67, 68; **O** –2, 3, 4, 5, 6; **T** – 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16)

5.4.8 Implementation of a strategy to enhance competencies of NUMs in public hospitals of the North West Province

The implementation of a strategy to enhance competencies of NUMs in public hospitals of the North West Province can be described as being based on four pillars: the vision for competencies of NUMs which is “To create a healthy nurse workforce and community through excellence in leadership and management”. This is supported by: the mission, which is “To improve the health and healthcare provision of all communities in the North West Province, through dynamic and people driven leadership and competent management that supports the creation of positive practice environments”. When pursuing the strategic vision and mission, NUMs are expected to display the following values: Achievement, Care, Community, Customers, Environment, Excellence, Fairness, Innovation, Integrity, Leadership, Learning, Passion, People, Respect, Responsibility, Safety, and Teamwork which would be guided by the principles of Equity, Effectiveness, Efficiency, Quality, Access, Local accountability, and Sustainability. All these are addressed in the functional tactics. A strategy to enhance competencies of NUMs in public hospitals is expected to produce outcomes based on the skills of an effective administrator

through the application of the Technical, Human, Conceptual, Leadership and Financial competency subscales. The strategy priorities (objectives) are determined in line with the vision, mission, values and principles of the strategy with the core purpose of developing PPEs. The functional tactics are developed from strategy objectives and serve to enable execution of strategy objectives and to monitor development, evaluate performance, and initiate the necessary corrective adjustments. A graphic representation of a strategy to enhance competencies of NUMs in public hospitals of the North West Province is presented in Figure 5-2 below.

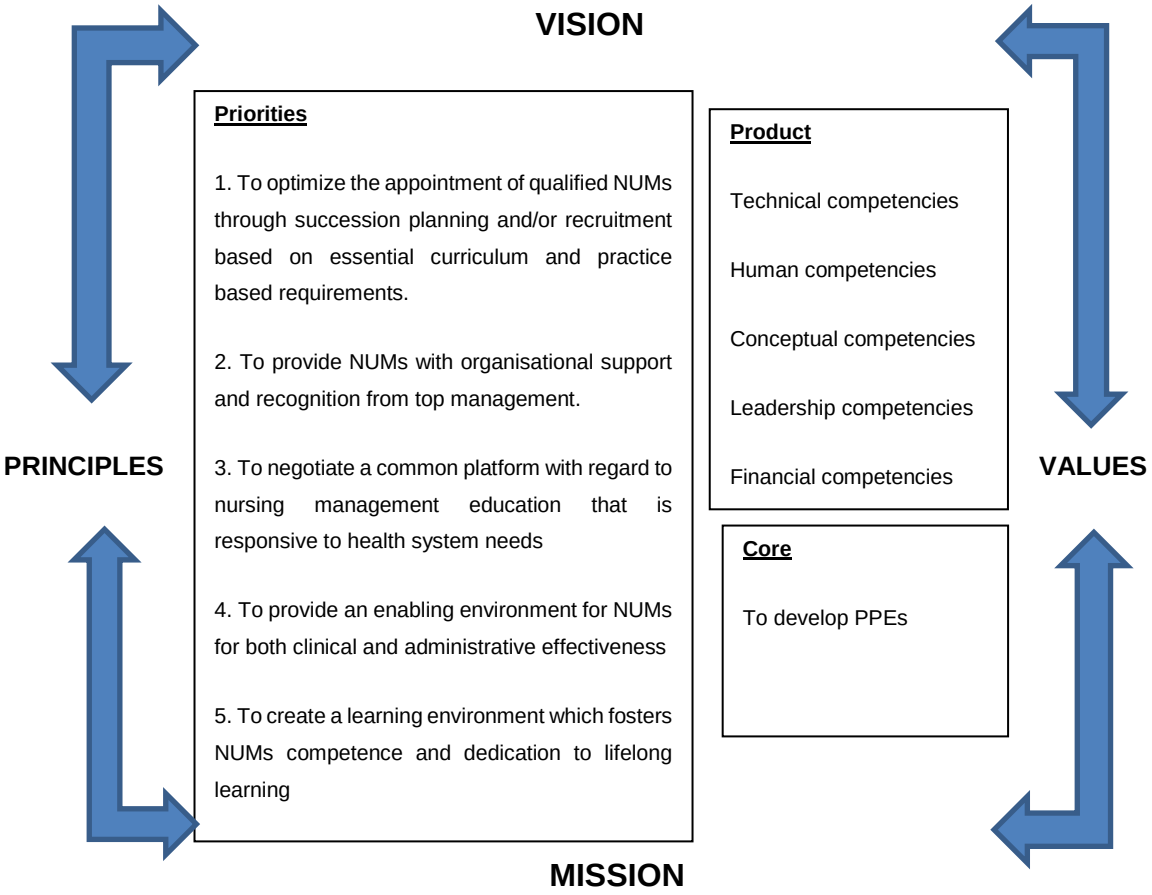

Figure 5-2: A graphic representation of a strategy to enhance competencies of NUMs

5.5 Summary

In this chapter, objective four of the study, namely "To develop a strategy to enhance competencies of NUMs in public hospitals of the North West Province" was realized. In the final chapter, an evaluation of the study is undertaken, summarizing limitations of the study and adding recommendations derived from this study.

CHAPTER 6
EVALUATION OF THE STUDY, LIMITATIONS AND RECOMMENDATIONS FOR PRACTICE, EDUCATION, RESEARCH AND POLICY

6.1 Overview of the chapter

In this chapter, the researcher evaluated the study with regard to achievement of the objectives. The contributions made to evaluation of NUMs' competencies through multi-source feedback are highlighted. Limitations to the study are identified and recommendations are made for practice, education, research and policy.

6.2 Introduction

The overall aim of the study was to develop a strategy to enhance competencies of NUMs in public hospitals of the North West Province. To achieve this aim, the following objectives were set:

- To evaluate NUMs' competency ratings according to the NSM, nursing staff, and NUM self-assessments.
- To determine an association between NUMs' competencies and personal and nursing unit demographics.
- To determine a relationship between NUMs' competencies and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion practice), and nursing staff's perceptions of the practice environment.
- To develop a strategy to enhance competencies of NUMs in public hospitals of the North West Province.

6.3 Evaluation of the study

The overall aim of the study was to develop a strategy to enhance competencies of NUMs in public hospitals of the North West Province. Developing a strategy to enhance competencies of NUMs in public hospitals of the North West Province was based on the objectives of the study, literature review, and empirical research; all of which resulted in identification of 65 strengths, 95 weaknesses, 8 opportunities and 16 threats. Opportunities and threats were identified from the literature review, while strengths and weaknesses were identified from empirical research. The

opportunities and strengths were identified to enhance the benefits of strategy development and build on the resources and capabilities already in existence, while threats and weaknesses were identified to address aspects that placed the organisation at a disadvantage. Functional tactics were developed to address how the strategy objectives could be implemented to enhance competencies of NUMs in public hospitals of the North West Province.

The focus of the study was evaluating competencies of NUMs. This was done through multi-source feedback, and the competencies were linked to personal and nursing unit demographics as well as nursing staff outcomes and their perception of the practice environment. Along with the identification of strengths and weaknesses by means of a survey questionnaire, data led to the development of a strategy that, when implemented, could enhance the competencies of NUMs in public hospitals of the North West Province. A graphic representation of the objectives and the resultant strategy are presented in Figure 6-1, followed by a discussion of the main findings.

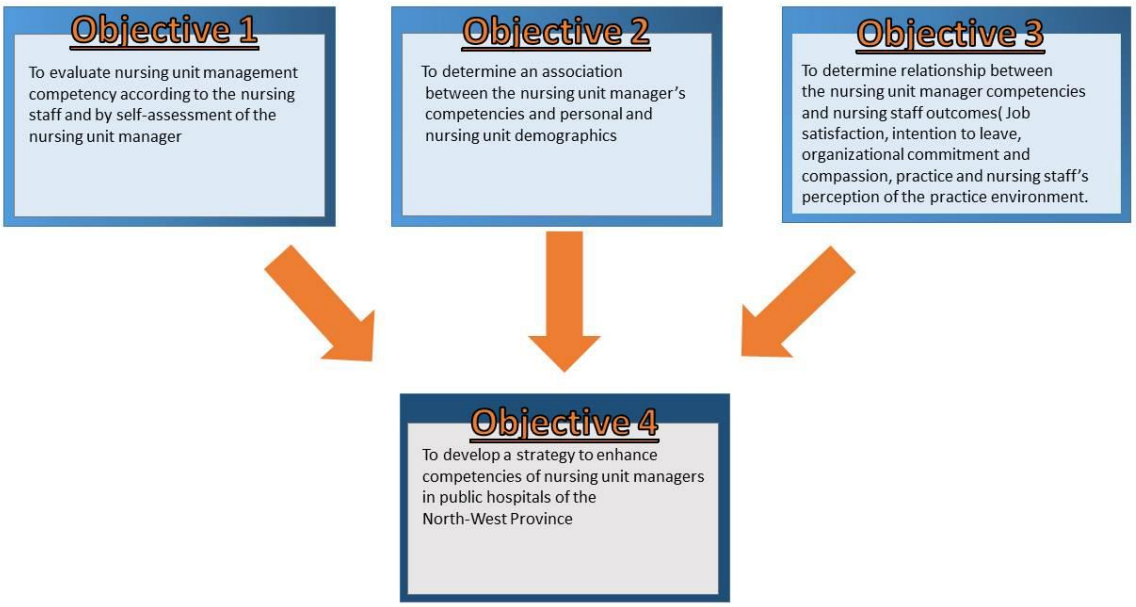

Figure 6-1: A graphic representation of the objectives for developing a strategy to enhance competencies of NUMs in public hospitals of the North West Province

In objective one, NSMs rated NUMs as competent in all technical competencies, except research and evidence-based practice, new technology, and case management. NUMs rated themselves competent in all technical aspects except research and evidence-based practice. Nursing staff rated NUMs incompetent in the same areas as NSMs, but also felt that NUMs were not competent in information systems and computers. NSM and NUM ratings of NUM competencies were similar, but nursing staff significantly differed with NUMs and NSMs in terms of NUMs' *ability to*

implement competencies. Nursing staff consistently rated NUMs lower than what NSMs and NUMs did.

The results of objective two indicated that NSMs perceived NUMs with an additional management qualification to be competent only in the Technical subscale, while NUMs perceived themselves to be competent in the Financial subscale. Nursing staff perceived an NUM with an additional management qualification to be competent in the ability to implement the Technical, Human, Conceptual and Leadership subscales. NSMs perceived an NUM with an additional management qualification at degree level more competent than an NUM with a diploma. Nursing staff and NUMs did not perceive the level of management qualification as important. On correlations, NUM competencies did correlate with hospital size and tenure in management position for NSMs, NUMs, and nursing staff.

For objective three, only nursing staff perceptions were used to evaluate the relationship between nursing staff outcomes and the practice environment, and their perception of the NUM's competencies (see Chapter 4). For job satisfaction, nursing staff were not satisfied with rewards aspects of their jobs but were satisfied with aspects that provided autonomy. For OC, nursing staff indicated that they were not inspired by their organisations and agreed that they found it difficult to agree with organisational policies. Although nursing staff indicated no commitment to their organisations, they were found to have CS. For the practice environment, elements of the nurse staffing and resource adequacy subscale were perceived as not present, while elements of the subscale Nursing Foundations for Quality of Care were highly present.

Achievement of objectives one, two and three contributed to the achievement of objective four. Objective four necessitated the development of a strategy using deductive and inductive logic (see Chapter 3, Section 3.5) to enhance competencies of NUMs in public hospitals of the North West Province (see Chapter 5). The development of strategy followed a strategy development process (see Section 5.2). A vision (see Section 5.4.1), mission (see Section 5.4.2), values (see Section 5.4.3), principles (see Section 5.4.4), assumptions (see Section 5.4.5), strategy objectives (see Section 5.4.6) and functional tactics (see Section 5.4.7) were developed. Five strategy objectives to enhance competencies of NUMs in public hospitals of the North West Province were formulated from 65 strengths, 95 weaknesses, 8 opportunities and 16 threats (see Table 5.2). These were obtained from the literature review and empirical research. The strategy objectives were based on the skills of an effective administrator which provided the theoretical framework of the study. The functional tactics were formulated from the strategy objectives in order to enable implementation of the strategy objectives.

In the North West Province, competencies of NUMs had been unexplored. No study had been conducted in the North West Province to evaluate competencies of NUMs through multi-source

feedback, with linking of these competencies to nursing staff outcomes and nursing staff's perceptions of the practice environment. The researcher believed that evaluating the competencies of NUMs through multi-source feedback would provide baseline data of competencies of NUMs in public hospitals of the North West Province. This would also provide for the identification of threats to nursing units and weaknesses (gaps) in NUM competencies, and allow for the development of a strategy to enhance competencies of NUMs in public hospitals of the North West Province.

In conclusion, this study developed a strategy to enhance the competencies of NUMs, and therefore contributed to a body of knowledge on the skills of NUMs. Hence, the researcher met the aim and objectives of the study.

6.3.1 Hypotheses testing

The hypotheses of the study are discussed in terms of the discussion above (see Chapter 1, Section 1.7)

H_0 1: There is no difference between the competency ratings of nursing unit managers by nursing service managers, nursing staff, and the self-assessment of nursing unit managers.

This hypothesis was rejected. There were significant differences between the competency ratings of NUMs by NSMs, nursing staff, and NUM self-assessments. Nursing staff perceived the *ability to implement* the overall Technical (w=0.81; p=0.00), Human (w=1.01; p=0.00), Conceptual (w=0.90; p=0.00) and Leadership (w=0.89; p=0.00) subscales lower than what NUMs reported. Nursing staff also differed with NSMs in the way NSMs rated NUMs in the *ability to implement* Technical (w=0.57; p=0.00), Human (w=1.08; p=0.00), Conceptual (w=0.99; p=0.00) and Leadership (w=0.84; p=0.00) subscales. Therefore, this study confirmed that there is a difference between competency ratings of NUMs by NSMs, nursing staff, and NUM self-assessments.

H_0 2: There is no association between nursing unit managers' competencies and personal and nursing unit demographics.

This hypothesis was rejected. There were significant associations between nursing unit managers' competencies and personal and nursing unit demographics. Nursing staff perceived additional management qualifications as impacting on NUMs' *ability to implement* Technical (d=0.66; p=0.16), Human (d=0.69; p=0.14), Conceptual (d=0.67; p=0.12) and Leadership (d=0.46; p=0.31) subscales. NSMs perceived NUMs with an additional management qualification on degree level as more competent than those with a diploma in the Human (d=0.79; p=0.27) and Leadership (d=1.00; p=0.20) subscales. NSMs, nursing staff and NUMs themselves found NUMs more competent with the bigger hospital size. NSMs perceived NUMs as more competent

the more advanced they were in years in terms of the Technical (r=0.32; p=0.22) subscale. Nursing staff perceived tenure in nursing management position more highly than what NSMs perceived of NUMs competence and what NUMs perceived of themselves in the Technical (r=0.53; p=0.02), Human (r=0.54; p=0.02), Conceptual (r=0.41; p=0.08) and Leadership (r=0.58; p=0.01) subscales. Nursing staff also associated years of experience as registered nurse more closely with improved competence in all NMCI *ability to implement* subscales. A large span of control was also associated with higher competence in the Technical, Conceptual and Leadership subscales by NSMs, the Human subscale by NUMs, and the Technical and Human subscales by nursing staff. Therefore, this study confirmed that there is an association between NUMs' competencies and personal and nursing unit demographics.

H_0 3: There is no relationship between the competencies of nursing unit managers and nursing staff outcomes.

This hypothesis was rejected. Positive medium and large correlations of practical and statistical significance were found between NUMs' *ability to implement* and global job satisfaction in the Human (r=0.44; p=0.00), Leadership (r=0.39; p=0.00) and Conceptual (r=0.49; p=0.00) subscales. In specific aspects of the job, job autonomy had positive medium and large correlations of practical and statistical significance for NUMs' *ability to implement* in the Technical (r=0.39; p=0.00), Human (r=0.42; p=0.00), Conceptual (r=0.46; p=0.00) and Leadership (r=0.55; p=0.00) subscales. Positive items of OC also correlated with NUMs' *ability to implement* in the Technical (r=0.31; p=0.00), Leadership (r=0.35; p=0.00), Human (r=0.45; p=0.00) and Conceptual (r=0.55; p=0.00) subscales. CS also had correlations of practical and statistical significance with *ability to implement* competencies of NUMs in the Technical (r=0.27; p=0.00), Human (r=0.25; p=0.01) and Conceptual (r=0.29; p=0.00) subscales. Therefore, this study confirmed that there is a relationship between NUMs' competencies and nursing staff outcomes.

H_0 4: There is no relationship between competencies of nursing unit managers and nursing staff's perception of the practice environment.

This hypothesis was rejected. Correlations were identified between competencies of NUMs and the perceptions nursing staff have of the practice environment in all subscales of the PES-NWI-R) with the Nurse manager ability, leadership, and support for nurses having the following correlations: Technical (r=0.37; p=0.00), Human (r=0.54; p=0.00), Conceptual (r=0.47; p=0.00) and Leadership (r=0.48; p=0.00), with the nursing foundations for quality of care displaying the following: Technical (r=0.47; p=0.00), Human (r=0.46; p=0.00), and Leadership (r=0.50; p=0.00). This study therefore confirmed that there is a relationship between competencies of NUMs and all subscales of the PES-NWI-R).

6.4 Significance of the study

This study evaluated competencies of NUMs through multi-source feedback in public hospitals of the North West Province. The NUM competency research done in the international arena indicate that most NUM competency research identified competencies by self-assessment of NUMs (Nistler 1992; Chase 1994; Mathena 2002; Care and Udod, 2003; Sherman *et al.,* 2007; Donaher *et al.,* 2007; Chase 2010; Luo *et al.,* 2016), and the NUM and the supervisor (Kleinman 2003; DeOnna 2006; Furukawa & Cunha 2011). In other studies, competencies required for NUMs were identified by supervisors alone (Duffield 1991a; Duffield 1994; Li & Wivatvanit 2016) or by nursing staff (Connelly *et al.,* 2003). Only one study linked the competencies of NUMs to patient and staff outcomes (Ten Haaf 2007), and one study applied 360° feedback, qualitatively evaluating first-line managers from the perspective of first-line managers themselves, registered nurses, assistant nurses, and heads of department (Skytt *et al.,* 2008).

In South Africa, few competency studies were identified. Competency studies identified were for middle or senior management (Belemu, 2000) and others were comparative studies between senior managers in private and public sectors (Pillay, 2008; Zechner, 2008; Pillay 2009a). Other studies were conducted in community health centres (Greathead, 2000), or on challenges (Smal, 2013) or activities of NUMs (Armstrong *et al.,* 2015). No study could be found that utilised multi-source feedback to evaluate the competencies of NUMs. DeOnna's (2006:101) recommendations for further study were that there should be additional feedback and insight from multiple stakeholders, including nursing staff. These should then be examined to increase an understanding of what spectrum of competencies compose the skill set of successful nurse managers. In support, Schmalenberg and Kramer (2009:61) also stated that "Only nurses can identify the supportive behaviours they experience and through valid measurement, provide the necessary feedback to nurse managers, who in turn have the power to change and alter that aspect of the work".

This study, therefore, added to the body of knowledge in that it provided a reflection of differences between the competency ratings of NUMs by NSMs, nursing staff, and NUM self-assessments. It also traced the link of these competencies with NUMs' personal and nursing unit demographics. A link between NUMs' competencies and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment, and compassion practice), and nursing staff's perception of the practice environment was also provided. It was important to fill this knowledge gap through multi-source feedback in order to have a baseline of NUM competencies within the study context.

The study also adds to the body of knowledge in that, although competencies of NUMs have been explored on an international level, they did not address competency ratings for this unique context. Also, on international level, competency ratings were at times limited to NUMs only,

NUMs and their supervisors, or nursing staff only, and did not include multi-source feedback. Lastly, a strategy was developed to enhance the competencies of NUMs in public hospitals of the North West Province. The implementation of the strategy can contribute to improved *knowledge and understanding* and *ability to implement*, and positive staff and patient outcomes, which may lead to achievement of better health outcomes in these provincial hospitals.

6.5 Limitations of the study

- The study was conducted in public hospitals of the North West Province; therefore, the findings may not be generalizable to all public hospitals in South Africa.

- This was a quantitative study that allowed participants to respond only to closed-ended questionnaires, adding a qualitative element by conducting interviews might have added more value and strengthened the results of the quantitative data.

- The construct validity of the job satisfaction and compassion fatigue instruments was not optimal, but reliability was acceptable.

- The results of the survey depended on the perception of participants. The ratings of different hospitals varied, which was taken into consideration during the statistical analyses.

- In addition to the limitations of participant perceptions, the study utilised multi-source feedback, with NUMs evaluated by NSMs and nursing staff. This may have created anxiety for NUMs due to fear of being under-evaluated, hence the low response rate from NUMs. However, when the study was explained to participants, it was confirmed that questionnaires were anonymous, and that no information would be divulged or made available to anyone else. Potential participants were reassured that no identities were revealed in the reporting or publication of research results and that no other person would be able to link any data to any hospital or nursing unit except the researcher, who would not divulge it to anyone. Participants were also assured that data would only be analysed at aggregate level, and the competency ratings of individual participants' would not be identifiable.

- The length of questionnaires, especially for nursing staff, may have contributed to the limited response rate. To prevent possible fatigue and minimise any inconvenience, all participants were given ten days in which to complete the survey.

- Only nurses were involved in the evaluation of NUM competencies, although multi-source feedback can also involve other healthcare workers and patients. As the survey was only in English, it may have been problematic for those not fluent in English, and the survey entailed a lot of nursing-related competencies, which other healthcare workers may not have

understood. Patients would also not have been in the position to evaluate the NUMs, as they are not consistently in the nursing unit as per inclusion criteria. Nurses were therefore regarded as experts in this study who had insight into the competencies of NUMs.

6.6 Recommendations

In this section, recommendations are given to enhance the competencies of NUMs in public hospitals of the North West Province. The recommendations are derived from the strategy for enhancing competencies of NUMs in public hospitals of the North West Province (see Chapter 5).

6.6.1 Recommendations for practice

The following recommendations are made for practice

- To design succession plans based on the interest nursing staff show in management positions, realistic future goals for groups or individuals within the organisation, skills inventory, and individual potential.

- To develop coaching and mentorship programmes for NUMs to build capacity, so they are able to identify and mentor nurses that are interested in management positions and mentor and introduce newly appointed NUMs into their new management roles.

- To provide leadership support for NUMs by including them in governance structures of the organisation, and in policy decisions, and creating a feeling of autonomy by providing them with decision-making authority within nursing units.

- To ensure adequate staffing and other resources (including information technology) to nursing units. Sufficient staff will enable the accomplishment of duties and enough time to discuss patient care problems with peers and spend time with patients. This will improve the ability of NUMs' to provide quality nursing care and positive nursing staff and patient outcomes.

- To encourage NSMs to conduct a gap analysis for NUM competencies in their respective hospitals and apply the relevant strategic objectives together with their functional tactics as necessary.

6.6.2 Recommendations for education

The following recommendations are made for education

- HE stakeholders should develop nursing management education curricula that are aligned with the National Qualifications Framework and Higher Education Qualifications

Subframework and provide contemporary knowledge and skills relevant to health system needs.

- HE stakeholders should develop a national criterion for selection into nurse manager education programmes.

6.6.3 Recommendations for research

The following recommendations are made for research

- Research should be initiated into the competencies of NUMs with a variety of approaches and/or interventions to identify competency gaps and actual competencies necessary for practice. These should then be utilised as a basis for building management capacity at unit level for all public hospitals in the North West Province and South Africa.

- After implementation of the strategy, a follow-up should be conducted in the form of research to determine the effectiveness of the strategy with regard to achievement of objectives and functional tactics.

6.6.4 Recommendations for policy

The following recommendations are made for policy

- To advocate for a management qualification for NUM positions.

- To develop guidelines/criteria for advertisement and selection into NUM positions based on academic management requirements and not clinical expertise.

- To offer incentives/higher salaries as a retention strategy and reward NUMs for good performance.

- The South African Nursing Council (SANC) must develop new scopes of practice that are relevant to the new nursing management qualification.

6.7 Summary

The purpose of this study was to explore and describe competencies of NUMs and develop a strategy to enhance competencies of NUMs in public hospitals of the North West Province. An overview of the aim and objectives confirmed that the objectives of the study were achieved. All null hypotheses were rejected. Limitations of the study were identified and recommendations for practice, education, research and policy were provided. The requirements for a doctorate in nursing management were fulfilled, which was to make a unique contribution to nursing

management as a strategy to enhance competencies of NUMs in public hospitals of the North West Province.

BIBLIOGRAPHY

Acts see South Africa.

Adatara, P., Kuug, A., Nyande, F., Opare, F.Y., Apaaye, M.A., Achaliwie, F. & Dotse, W. 2016. A cross sectional study to examine perspective of nursing unit managers on factors affecting the effective performance of their roles in the Volta Regional Hospital, Ghana. *Pyrex journal of nursing and midwifery*, 2(1):001-006 http://www.pyrexjournals.org/pjnm Date of access: 11 February 2016.

Aiken, L.C. & Harper-Harrison, A. 2012. Is there a fast track to new nurse manager preparation? *Nursing Management*, 43(7): 11-14. doi-10.1097/01.NUMA.0000413649.34848.bd Date of access: 18 August 2016.

Aiken, L.H. & Patrician P.A. 2000. Measuring organizational traits of hospitals: the revised nursing work index. *Nursing research,* 49(3):146–153.

Aiken, L.H., Cimiotti, J.P., Sloane, D.M., Smith, H.L., Flynn, L. & Neff, D.F. 2011. The effects of nurse staffing and nurse education on patient deaths in hospitals with different nurse work environments. *Med Care,* 49(12):1047-1053. December. doi:10.1097/MLR:0b013e3182330b6e

Aiken, L.H., Clarke, S.P., Sloane, D.M. & Lake, E.T. 2008. Effects of hospital care environment on patient mortality and nurse outcomes. *Journal of nursing administration,* 38(5):223-229. doi: 10.1097/01.NNA.0000312773. 4235.d7

Aiken, L.H., Clarke, S.P., Sloane, D.M., Sochalski, J., & Silber, J.H. 2002. Hospital nurse staffing and patient mortality, burse burnout, and job dissatisfaction. *Journal of American Medical Association,* 23/30288(16).

Aiken, L.H., Clarke, S.P., Sloane, D.M., Sochalski, J.A., Busse, R., Clarke, H., Giovannetti., P., Hunt, J., Rafferty, A & Shamian, J. 2001. Nurses' reports on hospital care in five countries. *Health affairs,* 20(3):43-53 doi:10.1377/hlthaff.20.3.43

Aiken, L.H., Sermeus, W., Van den Heede, K., Sloane, DM., Busse, R., McKee, M., Bruyneel, L., Rafferty, A., Griffiths, P., Moreno-Casbas, M., Tishelman, C., Scott, A., Brzostek, T., Kinnunen,J., Schwendimann,R., Heinen, M., Zikos, D., Sjetrie, IS., Smith, H.L. & Kutney-Lee, A. 2012. Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *British medical journal,* 344:e1717. doi: 10.1136/bmj.e1717.

Aiken, L.H., Sloane, D.M. & Lake, E.T. 1997. Satisfaction with inpatient acquired immunodeficiency syndrome care: A national comparison of dedicated and scattered-bed units - *Medical care,* 35(9):948-962.

Aiken, L.H., Sloane, D.M., Lake, E.T., Sochalski, J. & Weber, A.L. 1999. Organization and Outcomes of Inpatient AIDS Care. *Medical care*, 37:760-772.

Aiken, L.H., Smith, H.L. & Lake, E.T. 1994. Lower Medicare mortality among a set of hospitals known for good nursing care. *Medical care*, 32(8), 771-787.

Aitamaa, E., Leino-Kilpi, H., Iltanen, S. & Suhonen, R. 2016. Ethical problems in nursing management: The views of nurse managers. *Nursing ethics,* 23(6):646–658.

Al-Hussami, M. 2008. Study of Nurses' Job Satisfaction: The Relationship to Organizational Commitment, Perceived Organizational Support, Transactional Leadership, Transformational Leadership, and Level of Education. *European journal of scientific research,* 22(2):286-295.

American Nurses Association. 2013. Competency Model. Available from: https://www.dphu.org/uploads/attachements/books/books_5520_0.pdf Date of access: 10 December 2015.

Amos, M.A., Hu, J. & Herrick, C.A. 2005. The Impact of Team Building on Communication and Job Satisfaction of Nursing Staff. *Journal for nurses in staff development*, 21(1):10–16.

Armstrong, S.J. & Rispel, L.C. 2015. Social accountability and nursing education in South Africa. *Global health action,* 8:27879. http//dx.doi.org/10.3402/gha. v8.27879

Armstrong, S.J., Rispel, L.C. & Penn-Kekana, L. 2015. The activities of hospital nursing unit managers and quality of patient care in South African hospitals: a paradox? *Global health action,* 8:26243. http//dx.doi.org/10.3402/gha. v8.26243

Asamani, J.A., Naab, F. & Ofei, A.M.A. 2016. Leadership styles in nursing management: implications for staff outcomes. *Journal of Health Sciences*, 6(1):23-36.

Asiri, S.A., Rohrer, W.W., Al-Surimi, K., Da'ar, O.O. & Ahmed, A. 2016. The association of leadership styles and empowerment with nurses' organizational commitment in an acute health care setting: a cross-sectional study. *Biomedical central nursing*, 15(38):1-10. doi10.1186/s12912-016-0161-7

Atefi, N., Abdullah, K.L., Wong, L.P. & Mazlom, R. 2014. Factors influencing registered nurses perception of their overall job satisfaction: a qualitative study. *International nursing review*, 61(3):352-360.

Australian College of Nursing. 2015. White paper on Nurse Leadership. 14pp. http://www..acn.edu.au/wp_content/uploads/2015/10/acn_nurse_leadership_white_paper_2015web.pdf Date of access: 27 January 2017.

Babbie, E. 2010. *The Practice of Social Research*. 12th ed. Wadsworth: Cengage Learning.

Babbie, E. 2014. *The Practice of Social Research*. 13th ed. Wadsworth: Cengage Learning.

Baernholdt, M. & Mark, B. 2009. The nurse work environment, job satisfaction and turnover rates in rural and urban nursing units. *Journal of nursing management*, 17:994-1001.

Becker, H. S. 1960. Notes on the concept of commitment. *American journal of sociology*, 66(1):32-40.

Belasen, A. & Belasen, A.R. 2016. Value in the middle: cultivating middle managers in healthcare organizations. *Journal of management development*, 35(9): 1149-1162. https://doi.org/10.1108/JMD-12-2015-0173

Belemu, R.B. 2000. *The identification of management skills required by middle managers to effectively manage a public hospital in the Eastern Cape*. Port Elizabeth: PE Technikon. (Dissertation – MBA).

Benner, P. 1982a. Issues in competency based testing. *Nursing outlook*,30:303-309.

Berberoglu, A. & Secim, H. 2015. Organizational commitment and perceived organizational performance among health care professionals: empirical evidence from a private hospital in Northern Cyprus. *Journal of economics and behavioural studies*, 7(1):64-71. Date of access: 18 February 2018.

Berger, J., Polvka, B., Smoot, E. & Owens, H. 2015. Compassion Fatigue in Paediatric Nurses. *Journal of paediatric nursing*, 30:e11-e17.

Blaauw, D., Ditlopo, P. & Rispel, L.C. 2014. Nursing education reform in South Africa – lessons from a policy analysis study. *Global health action,* 7:26401. http://dx.doi.org/10.3402/gha.v7.26401

Blegen, M. A. 1993. Nurses' job satisfaction: A meta-analysis of related variables. *Nursing research*, 42(1):36 - 41.

Blignaut, A.J. 2012. *The relationship between the qualifications of professional nurses and their perception of patient safety and quality of care in medical and surgical units in South Africa.* Potchefstroom: NWU. (Dissertation – Magister Curationis).

Boamah, S.A. & Laschinger, H. 2016. The influence of areas of work life fit and work-life interference on burnout and turnover intentions among new graduate nurses. *Journal of nursing management,* 24:E164-E174.

Bobko, P. 2001. *Correlation and regression: Application for industrial organisational psychology and management*. 2nd ed. Sage, CA: Thousand Oaks (e-book).

Bonenberger, M., Aikins, M., Akweongo, P., & Wyss, K. 2014. The effects of health worker motivation and job satisfaction on turnover intention in Ghana: a cross-sectional study. *Human Resources for Health*, 12(1):43.

Booyens, S.W. 2014. *Dimensions of healthcare management*. 2nd ed. Cape Town: Juta.

Botes, A.C. 2006. *Validity, reliability and trustworthiness*. (*In* Rossouw, D., ed. *Intellectual tools: skills for human Sciences*. 2nd ed. Pretoria: Van Schaik. pp. 176-184).

Botma, Y., Greeff, M., Mulaudzi, F.M. & Wright, S.C.D. 2010. *Research in Health Sciences*. 1st ed. Cape Town: Pearson Education South Africa.

Bowling, A. 2014. *Research methods in health: Investigating health and health services.* 4th ed. Open University Press: McGraw-Hill House.

Boyatzis, R.E. 1982. *The competent manager: a model for effective performance*. New York: John Wiley & Sons.

Bradley E.H., Taylor L.A. & Ceullar C.J. 2015. Management matters: a leverage point for health systems strengthening in global health. *International journal of health policy management*, 4(7):411-415. doi: 10.15171/ijhpm.2015.101

Brekelmans, G., Maassen, S., Poell, R.F., Weststrate, Dr, J. & Geurdes, E. 2016. Factors influencing nurse participation in continuing professional development activities: survey results from the Netherlands. *Nurse Education today*, 40:13–19.

Brink, H., Van der Walt, C. & Van Rensburg, G. 2016. *Fundamentals of research methodology for healthcare professionals.* 3rd ed. Cape Town: Juta.

Brunetto, Y., Xerri M., Shriberg, A., Farr-Wharton, R., Shacklock, K., Newman, S. & Dienger, J. 2013. The impact of workplace relationships on engagement, well-being, commitment and

turnover for nurses in Australia and the USA. *Journal of advanced nursing*, 69(12):2786–2799. doi: 10.1111/jan.12165.

Brynard, J.D., Hanekom, S.X. & Brynard, P.A. 2014. *Introduction to research.* 3rd ed. Pretoria: Van Schaick.

Bulmer, J. 2013. Leadership aspirations of registered nurses. *Journal of nursing administration,* 43(3):130-134.

Cadmus, E. & Wisniewska E.K. 2013. Measuring first-line nurse manager work. *Journal of nursing administration,* 43(12):673-679.

Cammann, C., Fichman, M., Jenkins, Jr, D. & Klesh, J.R. 1983. *Assessing the attitudes and perceptions of organisational members*. (*In* Seashore, S.E., Lawler III, E.E., Mirvis, P.H., Cammann, C.E. *Assessing organizational change: a guide to methods, measures and practices*). NY: Wiley.)

Care, W. & Udod, S. 2003. Perceptions of first-line nurse managers. What competencies are needed to fulfil this role? *Nursing leadership forum*, 7(3):109-115.

Casale, M., Lane, T., Sello, L., Kuo, C. & Cluver, L. 2013. Conducting health survey research in a deep rural South African community: challenges and adoptive strategies. *Health research policy and systems*,11(14):1-11. http://www.health-policy-systems.com/content/11/1/14

Castaneda, G. A. & Scanlan, J. M. 2014. Job satisfaction in nursing: A concept analysis. *Nursing forum*, 49(2):130-138.

Cathcart, E.B. 2014. Relational work: at the core of leadership. *Nursing management. executive extra*, 45(6):44-46. doi-10.1097/01.NUMA.0000443943.14245.CF

Chase, L. 1994. Nurse manager competencies. *Journal of nursing administration*, 24(48):56-64.

Chase, L.K. 2010. *Nurse Manager Competencies*. Iowa: University of Iowa. (Thesis – PhD).

Chase, L.K. 2012. Are you confidently competent? *Nurse manager*, 43(5):50-53. doi: 10.1097/01.NUMA.0000413646. 50095.e4.

CHE **see** Council for Higher Education

Chen, S.Y., Wu, W.C., Chang, C.S. & Lin, C.T. 2015. Job rotation and internal marketing for increased job satisfaction and organisational commitment in hospital nursing staff. *Journal of nursing management,* 23:297–306.

Chinn, P.L. & Kramer, M.K. 2008. *Integrated theory and knowledge development in nursing*. 7th ed. Missouri: Mosby Elsevier.

Choi, S.P.-P., Cheung, K. & Pang S.M.-C. 2013. Attributes of nursing work environment as predictors of registered nurses job satisfaction and intention to leave. *Journal of nursing management,* 21:429–439.

Ciptono, W.S. 2007. Hierarchical level of managers' abilities. a moderator between quality management practices and company financial performance. *Gadjah Mada international journal of business*, 9(3):295-334.

Clark, M., Julmisse, M., Marcelin, N., Merry, L., Tuck, J. & Gagnon, A.J. 2015. Strengthening healthcare delivery in Haiti through nursing continuing education. *International nursing review,* 62:54–63.

Clinton, M., Murrells, T. & Robinsons, S. 2005. Assessing competency in nursing: a comparison of nurses prepared through degree and diploma programmes. *Journal of clinical nursing,* 14:82–94.

Coetzee, S. & Klopper, H. 2010. Compassion fatigue within nursing practice: a concept analysis. *Nursing and health sciences*,12:235–243.

Coetzee, S.K., Klopper, H.C., Ellis, S.M. & Aiken L.H. 2013. A tale of two systems: nurses practice environment, wellbeing, perceived quality of care and patient safety in private and public hospitals in South Africa: a questionnaire survey. *International journal of nursing studies,* 50:162–173.

Coetzee, S.K. & Laschinger, H.K.S. 2018. Toward a comprehensive, theoretical model of compassion fatigue: an integrative literature review. *Nursing and health sciences*, 20:4-15.

Coetzee, S.K, Laschinger, H.K.L. & Ellis, S. 2020. Compassion Practice Instrument: Development and psychometric testing of a measurement instrument for compassion fatigue and compassion satisfaction. *Journal of Nursing Scholarship*. (Submitted).

Connelly, L.M., Yoder, L.H. & Miner-Williams, D. 2003. A qualitative study of charge nurse competencies. *Medical and surgical nursing,* 12(5):298-306.

Corser, W.D. 1995. First-line managers. what do nurses expect? *Journal of nursing management*, 26(3):32–36.

Council on Higher Education. 2004. Institutional Audit Framework: April 2004. http://www.uct.ac.za/usr/ipd/HEQC/HEQC_IAframework.pdf Date of Access: 07 October 2019.

Council on Higher Education. Overview. https://nationalgovernment.co.za/units/view/90/council-onhighereducationche#:~:text=The%20of%20Council,training%20system%20in%20South%20Africa

Creswell, J.W. & Creswell J.D. 2018. *Research design: qualitative, quantitative and mixed methods approaches.* 5th ed. Sage. CA: Thousand Oak.

Cummings G.G., MacGregor, T., Davey, M., Lee, H.P., Wong, C., Lo, E., Muise, M. & Stafford, E. 2010. Leadership styles and outcome patterns for the nursing workforce and work environments: a systematic review. *International journal of nursing studies*, 47(3):363–385.

Cummings, G.G., Olson, K., Hayduk, L., Bakker, D., Fitch, M., Green, E., Butler, L. & Conlon, M. 2008. The relationship between nursing leadership and nurses' job satisfaction in Canadian oncology work environment. *Journal of nursing management*, 16(1):508–518. http://dx.doi.org/10.1111/j.1365-2834.2008.00897.x Date of access: 04 September 2016.

Curran, M.K. 2014. Examination of the teaching styles of nursing professional development specialists, part I: best practices in adult learning theory, curriculum development, and knowledge transfer. *The journal of continuing education in nursing*, 45(5):233-240. http://doi:10.3928/00220124-20140417-04 Date of access: 11 May 2018.

Curtis, E. & Drennan, J. 2013. *Quantitative health research: issues and methods: issues and methods*. UK: McGraw-Hill Education.

Curtis, E.A. & Glacken, M. 2014. Job satisfaction among public health nurses: a national survey. *Journal of nursing management,* 22:653–663.

Cziraki, K., McKey, C., Peachey, G., Baxter, P. & Flaherty, B. 2014. Factors that facilitate registered nurses in their first-line nurse manager role. *Journal of nursing management*, 22:1005-1014.

Daire, J., Gilson, L. and Cleary, S., 2014. Developing leadership and management competencies in low and middle-income country health systems: a review of the literature. *Cape Town: Resilient and Responsive Health Systems (RESYST)*.

Dawson, A.J., Stasa, H., Roche, M.A., Homer, C.S.E. & Duffield, C. 2014. Nursing churn and turnover in Australian hospitals: nurses perceptions and suggestions for supportive strategies. *Bio Medical Central Nursing,* 13(11):1-10. http://www.biomedcentral.com/1472-6955/13/11 Date of access: 17 June 2018.

De Vos, A.S. 2013. *Research at Grass Roots for the social sciences and human service professions*. Pretoria: Van Schaik.

DeCampli, P., Kirby, K.K. & Baldwin, C. 2010. Beyond the classroom to coaching: preparing new nurse managers. *Critical care nursing quarterly,* 33(2):132-137.

DeChurch, L.A., Hiller, N.J., Murase, T., Doty, D. & Salas, E. 2010. Leadership across levels: levels of leaders and their levels of impact. *The leadership quarterly*, 21:1069-1085.

DeOnna, J. 2006. *Developing and validating an instrument to measure the perceived job competencies linked to performance and staff retention of first-line nurse managers employed in a hospital setting*. Philadelphia: The Pennsylvania State University. (Thesis – PhD).

Department of Education (South Africa). 1997. Education White Paper 3: A Programme for Higher Education Transformation (WPJ-1997). *Government Gazette*, 18207.

Department of Health (South Africa). 1997. White Paper for the Transformation of the Health System in South Africa. *Government Gazette*, 17910. .

Department of Health (South Africa). 2011. Human Resources for Health: HRH strategy for the health sector, 2012/13–2016/17. Pretoria: Government Printer.

Department of Health (South Africa). 2011. Strategic plan for nursing education, training and practice 2012/13– 2016/17. Pretoria: National Department of Health.

Department of Health (South Africa). 2012. Regulations relating to the categories of hospitals under the National Health Act 61 of 2003. Regulation No. R185.of 2 March 2012. *Government Gazette,* 35101:R185. http://www2.saflii.org/za/legis/hist_reg/nha61o2003rangnr185590/nha61o2003rangnr185a2m2012665.pdf

Department of Health (South Africa) 2015. Strategic plan. National Department of Health. http://www.health.gov.za/index.php/2014-03-17-09-09-38/strategic-documents/category/229-2015str?download=1057:strategic-plan-2015

Department of Health (South Africa). 2015. *Ethics in health research: principles, processes and structures*. 2nd edition. Pretoria: Government Printer, p.14-17.

Department of Health (South Africa). 2019. National policy on nursing education and training. *Government* Gazette, 42380(544):69-83. https://www.gov.za/sites/default/files/gcis_document/201904/42380gon544.pdf

Department of Public Service and Administration (South Africa). 2001. Public Service Regulations: Government Notice No. R. 1 of 5 January 2001. http://www.dpsa.gov.za/dpsa2g/documents/acts&regulations/regulations1999/PSRegulations_13_07_2012.pdf

Department of Public Service and Administration (South Africa). 2007. Implementation of the Occupation Specific Dispensations (OSDs) for the occupations professional nurse, staff nurse and nursing assistant in the public service – File 18/2/P. Pretoria: Government Printer.

Dignam, D., Duffield, C., Stasa, H., Gray, J., Jackson, D. & Daly, J. 2012. Management and leadership in nursing: an Australian educational perspective. *Journal of nursing management*, 20:65-71.

DOE *see* Department of Education.

DOH *see* Department of Health.

Dolamo, B.L. & Peprah, E.O. 2011. *Contemporary Issues in health services management.* 1st ed. South Africa: Pearson Education.

Dolamo, B.L. 2014. Preparing the new Nurse Leader for the Twenty-First Century in South Africa. Inaugural lecture. University of South Africa, 22 July 2014.

Donaher, K. 2004. *The human capital competencies inventory for nurse managers: development and psychometric testing*. University of Massachusetts Boston.

Donaher, K., Russell, G., Scoble, K.B. & Chen, J. 2007. The human capital competencies inventory for developing nurse managers. *The Journal of continuing education in nursing*, 38(6):277-283.

Doria, H. 2015. Successful transition from staff nurse to nurse manager. *Nurse leader,* 13(1):78–81 https://doi.org/10.1016/j.mnl.2014.07.013 Date of access: 18 June 2017.

Douglas, M. 2008. Management roles in nursing: current issues, perspectives and responses. *Journal of nursing management*, 16:765-767.

DPSA *see* Department of Public Service and Administration

Drach-Zahavy, A. & Dagan, E. 2002. From caring to managing and beyond: an examination of the head nurse's role. *Journal of advanced nursing*, 38(1):19–28.

Drudy, V., Craigie, M., Francis, K., Aoun, S. & Hegney, D.G. 2014. Compassion satisfaction, compassion fatigue, anxiety, depression and stress in registered nurses in Australia: Phase 2 results. *Journal of nursing management*, 22:519-531.

Duffield, C. 1991a. Maintaining competence for first-line nurse managers: an evaluation of the use of literature. *Journal of advanced nursing*,16(1):55-62.

Duffield, C. 1991b. First-line nurse managers: issues in the literature. *Journal of advanced nursing,*16(10):1247-I253.

Duffield, C. 1992. Role competencies of first-line manager. *Journal of nursing management,* 23(6):49-52.

Duffield, C. 1994. Nursing unit managers: defining a role. *Journal of nursing management*, 25(4):63-67.

Duffield, C.M, Diers, D., O'Brien-Pallas, L., Aisbett, C., Roche, M.A., King, M. & Aisbett, K. 2011. Nursing staffing, nursing workload, the work environment and patient outcomes. *Applied nursing research*, 24:244–255.

Duffield, C. & Franks, H. 2001. The role and preparation of first-line nurse managers in Australia: where are we going and how do we get there? *Journal of nursing management*, 9:87-91.

Duffield, C., Roche, M., O'Brien-Pallas, L., Catling-Paull, C. & King, M. 2008. Staff satisfaction and retention and the role of the nursing unit manager. *Collegian,* 16:11-17. http://doi:10.1016/j.colegn.2008.12.004 Date of access: 16 June 2018.

Duffield, C.M., Roche, M.A., Blay, N. & Stasa, H. 2010. Nursing unit managers, staff retention and the work environment. *Journal of clinical nursing*, 20:23-33. http://doi:10.1111/j.1365-2702.2010. 03478.x Date of access: 14 May 2015.

Durham, W., Sykes, C., Piper, S. & Stokes, P. 2015. Conceptual frameworks and terminology in doctoral nursing research. *Nurse researcher,* 23(2):8-12.

El-Jardali, F., Dimassi, H., Dumit, N., Jamal. D. & Mouro, G. 2009. A national cross-sectional study on nurses' intent to leave and job satisfaction in Lebanon: implications for policy and

practice. *Bio Medical Central Nursing,*8:1–13. http://www.biomedcentral.com/1472-6955/8/3 Date of access: 14 February 2017.

Elwell, S.M. & Elikofer, A.N. 2015. Defining Leadership in a changing time. *Journal of trauma nursing,* 22(6):312-314.

Espinoza, D.C., Lopez-Saldana, A. & Stonestreet, J.S. 2009. The Pivotal role of the nurse manager in the healthy workplaces: implications for training and development. *Critical care nurse quarterly,* 32(4):327-334.

Farrell, G.A. 2001. From tall poppies to squashed weeds: why don't nurses pull together more. *Journal of advanced nursing,* 35(1):26 – 33.

Fawcett, J. 1995. *Analysis and evaluation of conceptual models of nursing*. 3rd ed. Philadelphia: F.A. Davis Company.

Fawcett, J. 1997. *The Structural hierarchy of nursing knowledge: components and their definitions.* (*In* King, I.M. & Fawcett J, (eds). *The Language of Nursing Theory and Metatheory*). Sigma Theta Tau International.

Feather, R.A., Ebright, P. & Bakas, T. 2015. Nurse manager behaviours that RNs perceive to affect their job satisfaction. *Nursing forum*, 50(2):125-136.

Fedoruk, M. & Pincombe, J. 2000. The nurse executive: challenges for the 21st century. *Journal of nursing management,* 8:13–20.

Fernandez, N., Dory, V., Ste-Marie., L.G., Chaput, M., Charlin, B. & Boucher, A. 2012. Varying conceptions of competence: an analysis of how health sciences educators define competence. *Medical education in review,* 46(4):357-365. doi:10.111/j.1365-2923.2011. 0483.x

Field, A.P. 2009. *Discovering statistics using SPSS*. 3rd ed. London: Sage

Field, A. 2016. *An adventure in statistics (the reality enigma).* 1st ed. London, United Kingdom: Sage.

Fields, D.L. 2002. *Taking the measure of work: a guide to validated scales for organizational research and diagnosis*. USA: Sage.

Figley, C.R. 1995. *Compassion fatigue: coping with secondary traumatic distress in those who treat the traumatized*. NY: Brunner/Mazel.

Figley, C.R. 2002. Compassion fatigue: psychotherapists' chronic lack of self-care. *Psychotherapy in practice,* 58(11):1433–1441. doi: 10.1002/jclp.10090

Fine, D.J. 2002. Establishing competencies for healthcare managers. *Healthcare executive,* 17(2):66-67.

Flinkman, M., Leoni-Kilpi, H. & Salanterä, S. 2010. Nurses' intention to leave the profession: integrative review. *Journal of advanced nursing,* 66(7):1422-1434. doi: 10.1111/j.1365-2648.2010. 05322.x

Flinkman, M., Isopahkala-Bouret, U. and Salanterä, S. 2013. Young registered nurses' intention to leave the profession and professional turnover in early career: a qualitative case study. *International Scholarly Research Notices*, *2013*. http://dx.doi.org/10.1155/2013/916061

Fowler, F.J. 2014. *Survey Research Methods*. 5th ed. Sage. USA: Thousand Oaks.

Furukawa, P. & Cunha, I. 2011. Profile and competencies of nurse managers at accredited hospitals. *Latino-American enfermagem*, 19(1):106-114. http://dx.doi.org/10.1590/S0104-11692011000100015 Date of access: 19 January 2015.

Gamble, J.E., Thompson, A.A. & Peteraf, M.A. 2013. *Essentials of strategic management: the quest for competitive advantage*. 3rd ed. Canda: McGraw-Hill.

Gillam, S. & Siriwardena, A.N. 2013. Leadership and management for quality. *Quality in primary care,* 21:253-259.

Gilson, L. and Daire, J. 2011. Leadership and governance within the South African health system. *South African health review*, *2011*(1):69-80.

Gray, D.E. 2014. *Doing research in the real world.* 3rd ed. London: Sage.

Greathead, E. 2000. Role competencies of first-line nurse managers in community health centres: A Delphi study. Cape Town: UCT. (Dissertation – Masters).

Grove, S.K., Burns, N. & Gray, J.R. 2013. *The practice of nursing research: appraisal, synthesis, and generation of evidence.* 7th ed. St. Louis: Elsevier, Saunders.

Grove, S.K., Gray, J.R. & Burns, N. 2015. Understanding nursing research: building evidence-based practice. 6th ed. USA: Elsevier, Saunders.

Gunawan, J. & Aungsuroch, Y. 2017. Managerial competence of first-line nurse managers: a concept analysis. *International journal of nursing practice,* 23:e12502. https://doi.org/10.1111/ijn.12502 Date of access: 15 April 2018.

Han, K., Trinkoff, A.M. & Gurses, A.P. 2015. Work-related factors, job satisfaction and intent to leave the current job among United States nurses. *Journal of clinical nursing,* 24:3224–3232, http://doi:10.1111/jocn.12987 Date of access: 14 February 2017.

Hayes, B., Bonner, A. & Pryor, J. 2010. Factors contributing to nurse job satisfaction in the acute hospital setting: a review of recent literature. *Journal of nursing management,* 18:804-814.

Hayes, B., Douglas, C. & Bonner, A. 2015. Work environment, job satisfaction, stress and burnout among haemodialysis nurses. *Journal of nursing management,* 23(5):588-598.

Hewko, S.J., Brown, P., Frazer, K.D., Wong, C.A. & Cummings, G.G. 2015. Factors influencing nurse managers' intent to stay or leave: a quantitative analysis. *Journal of nursing management* 23:1058–1066.

Higher Education Act 101 of 1997

Hlaďo, P., Pokorný, B. & Petrovová, M. 2017. Work ability of the Czech workforce aged 50+ and the relationship between selected demographic and anthropometric variables. *Kontakt,* 19:e145–e155. http://dx.doi.org/10.1016/j.kontakt.2017.05.001

Hlongwane, B. 2015. *The relationship between compassion fatigue, emotional work, and job stress among nurses within the eThekwini District.* Potchefstroom: NWU. (Dissertation – Magister Curationis).

Holtzhausen, J.D.V. 2017. *The influence of the practice environment on community service nurses' subjective well-being and compassion fatigue*. Potchefstroom: NWU. (Dissertation – Magister Curationis).

Homburg, V., Van Der Heijden, B. & Valkenburg, L. 2013. Why do nurses change jobs? an empirical study on determinants of specific nurses' post-exit destinations. *Journal of nursing management,* 21:817–826.

Hsu, C.P., Chiang, C.Y., Chang, C.W., Huang, H.C. & Chen, C.C. 2015. Enhancing the commitment of nurses to the organization by means of trust and monetary reward. *Journal of nursing management,* 23:567–576. https://bizfluent.com/facts-5589480-meaning-safety-workplace-.html Date of access: 21 May 2018.

Humphrey, A. 2005. SWOT analysis for management consulting, SRI Alumni Newsletter. *Retrieved from SRI International*, *33*(2):47-50.

Hunsaker, S., Chen, H., Maughan, D. & Heaston, S. 2015. Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. *Journal of nursing scholarship*, 47(2):186–194.

Jackson, S.L. 2016. *Research methods and statistics: A critical thinking approach*.5th ed. UK: Cengage Learning.

Jansson, I. & Forsberg, A. 2016. How do nurses and ward managers perceive that evidence-based sources are obtained to inform relevant nursing interventions? – an exploratory study. *Journal of clinical nursing*, 25(5-6):769-776 http://doi.org/10.1111/jocn.13095 Date of access: 18 June 2018.

Joinson, C. 1992. Coping with compassion fatigue. *Nursing,* 22(4):116-121.

Jones, C.W.L. & Hill, G.R. 2013. *Strategic Management: An Integrated Approach*. 5th ed. Canada: Cengage Learning

Kacmar, K.M., Carlson, D.S. and Brymer, R.A. 1999. Antecedents and consequences of organizational commitment: A comparison of two scales. *Educational and Psychological Measurement*, 59(6):976-994.

Kashani, M., Eliasson, A., Chrosniak, L. & Vernalis, M. 2010. Taking aim at nurse stress: a call to action. *Military medicine*,175(2):96-100.

Katz, R.L. 1955. Skills of an effective administrator*. Havard business review*, 33(1):33-42.

Kerridge, J. 2013. Why management skills are a priority for nurses. *Nursing times*,109(9):16-17.

Khamisa, N., Oldenburg, B., Peltzer, K. & Ilic, D. 2015. Work related stress, burnout, job satisfaction and general health of nurses. *International journal of environmental research and public health,* 12:652-666. doi:10.3390/ijerph120100652.

Kim, J. 2013. Structural equation modeling for humor, job satisfaction, job stress and intention to turnover. *Journal of Korean academy of nursing administration,* 19(2):265-272. http://dx.doi.org/10.11111/jkana.2013.19.2.265 Date of access: 18 June 2018.

Kirwan, M., Matthews, A. and Scott, P.A., 2013. The impact of the work environment of nurses on patient safety outcomes: a multi-level modelling approach. *International journal of nursing studies*, 50(2):253-263.

Kleinman, C.S. 2003. Leadership roles, competencies, and education: how prepared are our nurse managers? *Journal of nursing administration*, 33(9):451-455.

Kleinman, C.S. 2004. The Relationship between managerial leadership behaviors and staff nurse retention. *Hospital topics*, 82(4):2-9.

Klopper, H.C. 2008. The qualitative research proposal. *Curationis,* 31(4):62-72.

Klopper, H.C., Coetzee, S.K., Pretorius, R. & Bester, P. 2012. Practice environment, job satisfaction and burnout of critical care nurses in South Africa. *Journal of nursing management* 20:685-695.

Klopper, H.C. & Knobloch, S. 2010. *Validity, reliability and trustworthiness*. (*In* Jooste, K., ed. *The principles and practice of nursing and health care: ethos and professional practice, management, staff development and research*. Pretoria: Van Schaik. p. 317-325).

Kodama, Y., Fukahori, H., Sato, K. & Nishida, T. 2016. Is nurse managers' leadership style related to Japanese staff nurses' affective commitment to their hospital? *Journal of nursing management,* 24:884–892.

Kouzes, J.M. & Posner, B.Z. 2012. *The leadership challenge.* 5th ed. San Francisco, CA: Jossey-Bass.

Kovner, C.T., Brewer, C., Katigbak, C., Djukic, M. & Fatehi, F. 2012. Charting the course for nurses' achievement of higher education levels. *Journal of professional nursing,* 28(6):333-343.

Kovner, C. T., Brewer, C. S., Fatehi, F. & Jun, J. 2014. What does nurse turnover rate mean and what is the rate? *Policy, politics, & nursing practice,* 15(3–4):64-71.

Kramer, M. & Hafner, L.P. 1989. Shared values: impact on staff nurse job satisfaction and perceived productivity. *Nursing research,* 38(3):172-177.

Kramer, M. & Schmalenberg, C. 1991a. Job satisfaction and retention. insights for the 90's. Part 1. *Nursing*, 21(3):50–55.

Kumar, R. 2014. *Research methodology: a step by step guide for beginners.* 4th ed. London: Sage publications.

Kutney-Lee, A., Wu, E.S., Sloane, D.M. & Aiken, L.H. 2012. Changes in hospital nurse work environments and nurse job outcomes: an analysis of panel data*. International journal of nursing studies,* 50:195-201.

Lake, E.T. 2002. Development of the practice environment scale of the Nursing Work Index. *Research in nursing and health,* 25(6):176-88.

Lake, E.T. 2007. The nursing practice environment: measurement and evidence*. Medical care research and review,* 64(2):104S-122S.

Lake, E.T. & Friese, C.R. 2006. Variations in nursing practice environments: relation to staffing and hospital characteristics. *Nursing research,* 55(1):1-9.

Lambrou, P., Merkouris, A., Middleton, N. & Papastavrou, E. 2014. Nurses' perception of their professional practice environment in relation to job satisfaction: a review of quantitative studies. *Health science journal,* (8)3: 298-317.

Laschinger, H.K.S., Finegan, J., & Wilk, P. 2009. The impact of unit leadership and empowerment on nurses' organisational commitment. *Journal of nursing administration,* 39(5):228-235.

Laschinger, H.K.S., Borgogni, L., Cosiglio, C. & Read, E. 2015. The effects of authentic leadership, six areas of work life, and occupational coping self-efficacy on new graduate nurses' burnout and mental health: a cross-sectional study. *International journal of nursing studies,* 52:1080–1089.

Laschinger, H.K.S., Wong, C.A., Macdonald-Rencz, S., Burkoski, V., Cummings, G., D'Amour, D., Grinspun,D., Gurnham, M., Huckstep, S., Leiter, M., Perkin, K., Macphee, M., Matthews, S., O'Brien-Pallas, L., Ritchie,J., Ruffolo, M., Vincent, L., Wilk, P., Almost, J., Purdy, N., Daniels, F. & Grau, A. 2013. Part 1: the influence of personal and situational predictors on nurses' aspirations to management roles: preliminary findings of a national survey of Canadian nurses. *Journal of nursing management*, 21:217-203.

Lau, R., Cross, W., Moss, C., Campbell, A., De Castro, M. & Oxley, V. 2014. Leadership and management skills of general practice nurses: experience or education? *International journal of nursing practice*, 20:655-661.

Laurent, C.L. 2000. A nursing theory for nursing leadership. *Journal of nursing management*, 8:83-87.

Lauritsen, J.M. 2008. EpiData data entry: data management and basic statistical analysis system. Odense, Denmark: EpiData Association.

Lazenby, K. (Ed). 2014. *The strategic management process: A South African perspective*. 2nd ed. Pretoria: Van Schaik.

Leedy, P.D. & Ormrod, J.E. 2016. *Practical research. planning and design*. Boston: Pearson.

Leone, C., Bruyneel, L., Anderson, J.E., Murrells, T., Dussault, G., de Jesus, EH., Sermeus, W., Aiken, L. & Rafferty, A. 2015. Work environment issues and intention-to-leave in Portuguese nurses: A cross-sectional study. *Health policy,* 119:1584–1592. http://dx.doi.org/10.1016/j.healthpol.2015.09.006 [Date of access 19 August 2018].

Li, W. & Wivatvanit, S. 2016. A study of leadership competencies of first-line nurse managers in Shanghai, China using a Delphi technique. *Journal of health research*, 30(5):355-362. doi: 10.14456/jhr.2016.48

Louw, H. 2017. Defining plagiarism: Student and staff perceptions of a grey concept. *South African Journal of higher education*, 31(5):116-135.

Louw, L. & Venter, P. 2014. *Strategic management: developing sustainability in Southern Africa.* 3rd ed. SA: Oxford University Press

Lu, H., Barriball, K.L., Zhang, X. & While, A.E. 2012. Job satisfaction among hospital nurses revisited: a systematic review. *International journal of nursing studies,* 49:1017–1038.

Luo, W.Y., Shen, N.P., Lou, J.H., He, P.P. & Sun, J.W. 2016. Exploring competencies: a qualitative study of Chinese nurse managers. *Journal of nursing management*, 24:E87-E94.

Manning, V., Jones, A., Jones, P. & Fernandez, R.S. 2015. Planning for a smooth transition: evaluation of a succession planning program for prospective nurse unit managers. *Nursing administration quarterly*, 39(1):58-68. doi: 10.1097/NAQ.0000000000000072.

Maree, K. & Pietersen, J. 2016. *Surveys and the use of questionnaires*. (*In* Maree, K., ed. First steps in research. 2nd ed. Pretoria: Van Schaik. p. 174-190).

Mark, B.A.1994. The emerging role of the nurse manager. Implications for educational preparation. *Journal of nursing administration*, 24(1):48-55.

Mark, B.A., Salyer, J. & Wan, T.T. 2003. Professional nursing practice: impact on organizational and patient outcomes. *Journal of nursing administration*, 33(4): 224-34.

Marsden, P.V., Kalleberg, A.L. and Cook, C.R. 1993. Gender differences in organizational commitment: Influences of work positions and family roles. *Work and Occupations*, 20(3):368-390.

Martyn, M. 2003. The hybrid online model: good practice. *Educause quarterly*, 1:18-23.

Mathena, K A. 2002. Nursing manager leadership skills. *Journal of nursing administration*, 32:136-142.

Mathieu, J.E. 1991. A cross-level nonrecursive model of the antecedents of organizational commitment and satisfaction. *Journal of applied psychology*, *76*(5):607.

Mathieu, J.E. and Farr, J.L. 1991. Further evidence for the discriminant validity of measures of organizational commitment, job involvement, and job satisfaction. *Journal of applied psychology*, *76*(1):127.

McCallin, A., Bamford-Wade, A. & Frankson, C. 2009. Leadership succession planning: a key issue for the nursing profession. *Nurse leader,* 7(6): 40-44. http://doi:10.1016/j.mnl.2009.07.008 Date of access: 03 February 2017.

McCallin, A.M. & Frankson, C. 2010. The role of the charge nurse manager: a descriptive exploratory study. *Journal of nursing management*,18:319-325.

McCarthy, G., Tyrrell, M.P. & Lehane, E. 2007. Intention to 'leave' or 'stay' in nursing. *Journal of nursing management,* 15:248-255.

McClelland, D.C. 1973. Testing for Competence Rather than "Intelligence". *American psychologist*, 28(1):1-14.

McClure, M.M., Poulin, M., Sovie, M. & Wandelt, M. 1983. *Magnet hospitals: attraction and retention of professional nurses: American academy of nursing task force on nursing practice in hospitals.* Kansas City, MO: American Nurses Association.

McGuire, E. & Kennerly, S.M. 2006. Nurse managers as transformational and transactional leaders. *Nursing economics*, 24(4):179.

McKinney, P., Evans, J.T. & McKay, R. 2016. Improve manager competency with experiential learning. *Nursing management*, 47(10):46-49.

McLaren, S. 2013. *Planning and conducting surveys* (In Curtis, E.A & Drennan, J., eds. *Quantitative health research, issues and methods*. Mc Graw Hill education: Open University Press. p.176-196).

McMillan, J.H. and Schumacher, S., 2010. *Research in Education: Evidence-Based Inquiry*, MyEducationLab Series. *Pearson*.

McMillan, J. and Schumacher, S., 2014. Pearson New International Edition. *Research in Education. Evidence-Based Inquiry*, 7.

Meyer, J.P. & Allen, N.J. 1991. A three component conceptualization of organisational commitment. *Human resource management review,* 1(1):61-89.

Michaels, D.C., Reid, S.J. & Naidu, C.S. 2014. Peer review for social accountability of health sciences education: A model from South Africa. *Education for health*, 27(2):127-131.

Mokoka, E., Oosthuizen, M.J. & Ehlers, V.J. 2010. Retaining professional nurses in South Africa: Nurse managers' perspective. *Health South Africa Gesondheid*, 15(1):1–9.

Molefe, J. & Sehularo, L.A. 2015. Nurses' perceptions on factors contributing to job dissatisfaction in a public psychiatric hospital in North West Province, South Africa. *African journal for physical, health education, recreation and dance*, 21(2):472-482.

MooreMei, D.R., ChengAndrew, I. & Dainty, R.J. 2002. Competence, competency and competencies: performance assessment in organizations. Article in work study, 51 (6):314-319. doi 10.1108/00438020210441876.

Moreland, J.J. & Apker, J. 2016. Conflict and stress in hospital nursing: improving communicative responses to enduring professional challenges. *Health communication*, 31:815-823. http://doi.org/10.1080/10410236.2015.1007548 Date of access: 03 February 2017.

Mosadeghrad, A.M. & Ferdosi, M. 2013. Leadership, job satisfaction and organizational commitment in healthcare sector: proposing and testing a model. *Materia socio medica*, 25(2):121-126.

Mosadeghrad, A.M, Ferlie, E. & Rosenberg, D. 2008. A study of the relationship between job satisfaction, organisational commitment and turnover intention among hospital employees. *Health service management research*, 21:211-227. doi: 10.1258/hsmr.2007.007015.

Motsoaledi, A. 2010: Statement by the South African Minister of Health, at the National Health Leadersretreat. http://www.info.gov.za/speech/DynamicAction?pageid=461&sid=6736&tid=6881 Date of access: 17 February 2017.

Mouton, J. 2012. *Understanding social research*. Pretoria: Van Schaik.

Mouton, J. 2014. *Understanding social research*. Pretoria: Van Schaik.

Mowday, R.T., Steers, R.M. & Porter, L.M. 1979. The measurement of organizational commitment: technical report. *Organizational effectiveness research*, 15:1-46.

Muijs, D. 2012. *Doing quantitative research in education with SPSS*. 2nd ed. London: Sage.

Muller, M. 2009. *Nursing dynamics*. 4th ed. Johannesburg: Heinemann.

Muller, M., Bezuidenhout, M. & Jooste, K. 2013. *Healthcare service management*. 2nd ed. Cape Town: Juta.

Muller, M., Bezuidenhout, M. & Jooste, K. 2017. *Healthcare service management*. 2nd ed. Cape Town: Juta.

National Health Act 61 of 2003.

National Qualifications Framework Act 67 of 2008.

Nel, E., Müller, A. and Colyn, A., 2011. The competencies of the shift leader in the intensive care unit setting, in a private hospital group in South Africa. *Health SA Gesondheid (Online)*, *16*(1):1-10. doi*.10.4102/hsag.v16i1.425.

Neuman, W.L. 2014. *Social research methods: qualitative and quantitative approaches*. 7th ed. USA: Pearson Education.

Neuwenhuis, S.J. 2016. *Introducing qualitative research* (*In* Maree, K., ed. *First steps in research*. 2nd ed. Pretoria: Van Schaick. p. 50-69).

Nistler, C.J. 1992. The self-identified skills and competencies of first-line nurse managers. Minneapolis: University of Minnesota. (Dissertation – Master of Science).

Nsemo, A.D., John, M.E., Etifit, R.E., Mgbekem, M.A. & Oyira, E.J. 2013. Clinical nurses' perception of continuing professional education as a tool for quality service delivery in public hospitals Calabar, Cross River State, Nigeria. *Nurse education in practice*, 13:328-334.

Nursing Act 50 of 1978

Nursing Act 33 of 2005.

O'Brien-Pallas, L., Duffield, C. & Hayes, L. 2006. Do we really understand how to retain nurses? *Journal of nursing management*, 14:262–270.

O'Donnell, D.M., Livingston, P.M. & Bartram, T. 2012. Human resource management activities on the front line: A nursing perspective. *Contemporary nurse*, 41(2):198-205. https://doi.org/10.5172/conu.2012.41.2.198

Pallant, J. 2013. *SPSS Survival Manual. A step by step guide to data analysis using IBM SPSS*. 1st ed. McGraw Hill Education

Paliadelis, P.S. 2005. Rural nursing unit managers: education and support for the role. *The international electronic journal of rural and remote health research, education, practice and policy,* 5(1):325.

Paliadelis, P., Cruickshank, M. & Sheridan, A. 2007. Caring for each other: how do nurse managers 'manage' their role? *Journal of nursing management*, 15(8):830-837.

Patrician, P.A., Oliver, D., Miltner, R.S., Dawson, M. & Ladner K.A. 2012. Nurturing charge nurses for future leadership roles. *Journal of nursing administration*, 42(10):461-466.

Pegram, A.M., Grainger, M. & Sigsworth, J. 2014. Strengthening the role of the ward manager: a review of the literature. *Journal of nursing management*, 22:685–696.

Peterson, T.O. & Van Fleet, D.D. 2004. The ongoing legacy of R.L. Katz: An updated typology of management skills. *Management decision*, 42(10):1297-1308. https://doi.org/10.1108/00251740410568980 Date of access: 17 February 2019.

PHSDSBC *see* Public Health and Social Development Sectoral Bargaining Council

Pierce, E. 2013. *Designing and conducting quantitative research studies* (*In* Curtis, EA & Drennan, J., eds. *Quantitative health research, issues and methods*. Mc Graw Hill education: Open University Press. p.131-150).

Pietersen, J. & Maree, K. 2016. Standardisation of a questionnaire. (*In* Maree, K., ed. First steps in research. 2nd ed. Pretoria: Van Schaik. p. 238-247).

Pillay, R. 2008. Managerial competencies of hospital managers in South Africa: a survey of managers in the public and private sectors. *Human resources for health*, 6:4 doi:10.1186/1478-4491-6-4

Pillay, R. 2009a. Perceived competencies of nurse managers: a comparative analysis of the public and private sectors in South Africa. *African journal of business management*, 3(9):495-503, September. doi:10.5897/AJBM09.061.

Pillay, R. 2009b. Work satisfaction of professional nurses in South Africa: a comparative analysis of the public and private sectors. *Human resources for health*, 7:15 doi:10.1186/1478-4491-7-15

Polit, D.F. & Beck, C.T. 2017. Generating and assessing evidence for nursing practice. 10th ed. Philadelphia: Wolters Kluwer: Lippincott Williams & Wilkins.

Ponterotto, J.G. 2005. Qualitative research in counselling psychology: a primer on research paradigms and philosophy of science. *Journal of counselling psychology*, 52(2):126–136.

Pool, I.A., Poell, R.F., Berings, G.M.C. & ten Cate, O. 2015. Strategies for continuing professional development among younger, middle-aged, and older nurses: a biographical approach. *International journal of nursing studies*, 52: 939-950. http://dx.doi.org/10.1016/j.ijnurstu.2015.02.004

Pool, I.A., Poell, R.F., Berings, G.M.C. & ten Cate, O. 2016. Motives and activities for continuing professional development: an exploration of their relationships by integrating literature and interview data. *Nurse education today*, 38:22–28.

Porter, L.W., Steers, R.M., Mowday, R.T. & Boulian, P.V. 1974. Organizational Commitment, Job Satisfaction, and turnover among psychiatric technicians. *Journal of applied psychology*, 59(5):603-609.

Presidential Health Summit (South Africa). (2018, October 19-20). Strengthening the South African health system towards an integrated and unified health system. https://cisp.cachefly.net/assets/articles/attachments/77404_presidential_health_summit_2018_report.pdf Date of access: 03 July 2019.

Price, J.L. 1997. *Handbook of organisational measurement*. Iowa City, Iowa: University of Iowa, Department of Sociology.

Price, M. 2002. Job satisfaction of registered nurses working in an acute hospital. *British journal of nursing*, 11(4):275-280.

Public Health and Social Development Sectoral Bargaining Council (South Africa). 2007. Resolution 3 of 2007: Agreement on implementation of an occupational specific dispensation (OSD) for nurses. 1-9pp. http://www.denosa.org.za/DAdmin/upload/news/Res_3_of_2007-Part_1-Implementation_of_OSD_for_Nurses.pdf

Public Service Act 103 of 1994.

Pullen, R.L. 2016. Leadership in nursing practice. *Nursing made incredibly easy*, 14(3):26-31.

Punch, K.F. 2014. *Introduction to social research. Quantitative and qualitative approaches*. 3rd ed. London: Sage.

Purdy, N., Laschinger, HKS & Finegan, J. 2010. Effects of work environment on nurse and patient outcomes. *Journal of nursing management*, 18(8):901-913.

Rahim, M.A. 2002. Toward a theory of managing organizational conflict. *International journal of conflict management,* 13(3):206-235. https://doi.org/10.1108/eb022874 Date of access: 19 March 2019.

Redknap, R., Twigg, D., Rock, D. & Towell, A. 2015. Nursing practice environment: a strategy for mental health nurse retention. *International journal of mental health nursing*, 24:262–271. doi: 10.1111/inm.12126

Reynard, R. 2007. Hybrid learning: challenges for teachers. T.H.E Journal transforming education through technology. http://thejournal.com Date of access: 19 November 2018.

Riggs, M.L. and Knight, P.A. 1994. The impact of perceived group success-failure on motivational beliefs and attitudes: A causal model. *Journal of Applied psychology*, *79*(5):755.

Rispel, L.C. 2016. Analysing the progress and fault lines of health sector transformation in South Africa. (*In* Paradath, E., King, J., Mackie, E., Casciola, J. editors. South African Health Review 2016. Durban: Health Systems Trust).

Roche, M.A., Duffield, C., Dimitrelis, S. & Frew, B. 2015. Leadership skills for nursing unit managers to decrease intention to leave. *Nursing research and reviews,*5:57-64.

Roche, M.A., Duffield, C., Friedman, S., Twigg, D., Dimitrelis, S. & Rowbotham, S. 2016. Changes to nurses' practice environment over time. *Journal of nursing management*, 24:666–675.

Rolfe, G. 2013. *Philosophical basis for research* (*In* Curtis, E.A & Drennan, J., eds. *Quantitative health research, issues and methods*. 1st ed. Mc Graw Hill education: Open University Press. p. 11-28).

SAQA *see* South African Qualifications Authority

SAS Institute Inc. 2003. *SAS user's guide: statistics. Version 5*. Cary, N.C.: SAS Institute.

Saunders, M.N.K., Lewis, P. & Thornhill, A. 2016. *Research methods for business students*. 7th ed. Pearson Education: United Kingdom.

Schmalenberg, C. & Kramer, M. 2009. Nurse manager support: how do staff nurses define it? *Critical Care Nurse*, 29(4):61-69.

Schroeter, K., 2008. Competence literature review. *Competency & Credentialing Institute*, pp.1-21.

Scott, J.G., Sochalski, J. & Aiken, L. 1999. Review of magnet hospital research: findings and implications for professional nursing practice. *The journal of nursing administration*, 29(1):9-19.

Sefotho, M.M. 2015. A researcher's dilemma: philosophy in crafting dissertations and theses. *Journal of social sciences,* 42(1,2):23-36.

Sermeus, W., Aiken, L.H., Van den Heede, K., Rafferty, A.M., Griffiths, P., MorenoCasbas, M.T., Busse, R., Rikard Lindqvist, R., Scott, A.P., Bruyneel, L., Brzostek, T., Kinnunen, J., Schubert, M., Schoonhoven, L., Zikos, D. & RN4CAST consortium. 2011. Nurse forecasting in Europe (RN4CAST): rationale, design and methodology. *Biomedical central nursing,* 10(6):1-9.

Sharma, S.K. 2014. *Nursing research & statistics*. 2nd ed. New Delhi, India: Advision of reed Elsevier India Pvt Ltd, pp.233-240.

Sherman R.O., Bishop, M., Eggenberger, T. & Karden R. 2007. Development of a leadership competency model. *The journal of nursing administration*, 37(2):85-94.

Sherman, R, & Pross, E. 2010. Growing future nurse leaders to build and sustain healthy work environments at the unit level. *The online journal of issues in nursing*,15(1). doi: 10.3912/OJIN.Vol15No01Man01.

Sherman, R.O., Saifman, H., Schwartz, R.C. & Schwartz, CL. 2015. Factors that lead generation Y nurses to consider or reject nurse leader roles. *Nursing Plus Open*, 1:5-10.

Shirey, M.R. 2006. Authentic leaders creating healthy work environments for nursing practice. *American journal of critical care*, 15(3):256-267.

Simon, M., Müller, B.H. & Hasselhorn, H.M. 2010. Leaving the organization or the profession – a multilevel analysis of nurses intention. *Journal of advanced nursing*, 66(3):616-626. doi:10.1111/j.1365-2648.200%05204. x.

Skytt, B., Ljunggren, B., Sjöden, P., & Carlsson, M. 2008. The roles of the first-line nurse manager: perceptions from four perspectives. *Journal of Nursing Management*, 16:1012–1020.

Smal, E. 2013. *Challenges of the health care unit manager as leader-manager in the 21st century, the quantum age.* Pretoria: University of South Africa. (Dissertation – Master of Arts in Health Studies).

Sojane, J.S. 2012. *Relationship between leadership, job satisfaction and intention to leave amongst registered nurses in medical-surgical units in hospitals in the North-West and Free State Provinces*. Potchefstroom: NWU. (Dissertation – Magister Curationis).

Sojane, J.S., Klopper, H.C. & Coetzee, S.K. 2016. Leadership, job satisfaction and intention to leave among registered nurses in the North West and Free State provinces of South Africa. *Curationis*, 39(1):1-10. a1585.http://dx.doi.org/10.4102/curationis.v39i1.1585.

Sorenson, C., Bolick, B., Wright, K. & Hamilton, R. 2016. Understanding compassion fatigue in healthcare providers: a review of current literature. *Journal of nursing scholarship*, 48(5):56-465.

South African Qualifications Authority Act 58 of 1995.

South African Statistics. 2015. Mid-year population estimates. Statistical release P0302. Pretoria: Statistics SA.

Spector, P.E. 1997. *Job satisfaction: application, assessment, causes and consequences.* Sage, London: Thousand Oaks.

Spencer, L.M. & Spencer S.M. 1993. *Competence at work: models for superior performance.* New York: John Wiley & Sons.

SPSS Inc. 2013. *IBM SPSS Statistics Version 21, Release 21.0.0, Copyright© IBM Corporation and its licensors*. http://www-01.ibm.com/software/analytics/spss/ Date of access 20 June 2015.

Steers, R.M. 1977. Antecedents and outcomes of organizational commitment. *Administrative science quarterly*, 22(1):46-56, March.

Sveinsdottir, H. & Blondal, K. 2014. Surgical nurses' intention to leave a workplace in Iceland: a questionnaire study. *Journal of nursing management*, 22: 543–552.

Swearingen, S. 2009. A Journey to leadership: designing a nursing leadership development program. *The journal of continuing education in nursing*, 40(3):107-112.

Tekingündüz, S., Top, M. & Tengilimöglu, D. 2017. Effect of organisational trust, job satisfaction, individual variables on the organisational commitment in health services. *Total quality management & excellence,* 28(5-6):522-541.

Ten Haaf, P.L. 2007. *Nurse Manager competency and the relationship to staff satisfaction, patient satisfaction and patient care outcomes*. Minneapolis: Capella University (Thesis - Doctor of Philosophy).

Terranova, AB. 2008. *Job satisfaction and intention to leave the profession of athletic training.* Greensboro, NC: University of North Caroline. (Thesis – PhD). e-collection.

The American Organisation of Nurse Executives. 2005. Nurse executive competencies. *Nurse leader,* 15-22. doi:10.1016/j.mnl.2005.01.001

The American Organisation of Nurse Executives. 2011. *Nurse executive competencies*. P.1-10. https://inonl.org/wp-content/uploads/2017/11/aone_nec.pdf

Thompson, J.A. & Fairchild, R. 2013. Does nurse manager education really matter? *Nursing management*, 44(9):10-14.

Tipton, K.D. 2015. *Staff nurse perceptions of the management competencies first line nurse managers need to be successful.* Minneapolis: Capella University. (Theses – PhD).

Titzer, J.L. & Shirey, M.R. 2013. Nurse manager succession planning: a concept analysis. *Nursing forum*, 48(3):155-164.

Tuazan, N. 2009. The makings of a good manager. *Executive extra,* 40(8):52-53.

Tuckett, A., Winters-Chang, P., Bogossian, F. and Wood, M., 2015. 'Why nurses are leaving the profession… lack of support from managers': What nurses from an e-cohort study said. *International Journal of Nursing Practice*, 21(4):359-366.

Tummers L.G., Groeneveld S.M. & Lankhaar M. 2013. Why do nurses intend to leave their organization? A large-scale analysis in long-term care. *Journal of advanced nursing*, 69(12):2826–2838. doi:10.1111/jan.12249.

Twigg, D. & McCullough, K. 2014. Nurse retention: a review of strategies to create and enhance positive practice environments in clinical settings. *International journal of nursing studies,* 51:85-92.

Udod, S., Cummings, G.G., Care, W.D. & Jenkins, M. 2017. Role stressors and coping strategies among nurse managers. *Leadership in health services*, 30 (1): 29-43. https://doi.org/10.1108/LHS-04-2016-0015

Ulrich, B., Lavandero, R. & Early, S. 2014. Leadership competence: perceptions of direct care nurses. *Nurse leader,* pp.47-50. http://dx.doi.org/10.1016/j.mnl.2014.03.012

Upenieks, V. 2003. Nurse leaders' perceptions of what compromises successful leadership in today's acute inpatient environment. *Nursing administration quarterly*, 27(2):140–152.

Valiee, S., Peyrovi, H. & Nikbakht Nasrabadi, A. 2014. Critical care nurses' perception of nursing error and its causes: a qualitative study. *Contemporary nurse*, 46(2):206-213. http://doi.org/10.5172/conu.2014.46.2.206

Van Bogaert, P., Kowalski, C., Weeks, SM., Van Heusden, D. & Clarke, S.P. 2013. The relationship between nurse practice environment, nurse work characteristics, burnout and job outcome and quality of nursing care: a cross-sectional survey. *International journal of nursing studies,* 50:1667-1677.

Van den Heede, K., Florquin, M., Bruyneel L., Aiken L., Diya L., Lesaffre, E. & Sermeus W. 2013. Effective strategies for nurse retention in acute hospitals: a mixed method study. *International journal of nursing studies*, 50(2):185-194.

Van Dyk, J., Siedlecki S.L. & Fitzpatrick J.J. 2016. Frontline nurse managers' confidence and self-efficacy. *Journal of nursing management*, 24:533-539.

Van Wyk, A. 2015. *Burnout, empowerment, workplace relationships and the practice environment: an intervention programme for critical care nurses*. Potchefstroom: NWU. (Thesis - Philosophiae Doctor in Nursing).

Veličković, V.M., Višnjić, A., Jović, S., Radulović, O., Sargić, C., Mihajlović, A. & Mladenović, J. 2014. Organizational commitment and job satisfaction among nurses in Serbia: a factor analysis. *Nursing outlook*, 62:415-427. http://dx.doi.org/10.1016/j.outlook.2014.05.003.

Wagner, J.D., Bezuidenhout, M.C. & Roos, J.H. 2015. Communication satisfaction of professional nurses working in public hospitals. *Journal of nursing management,* 23:974-982.

Warshawsky, N.E. & Havens, D.S. 2014. Nurse manager job satisfaction and intention to leave. *Nurse economic*, 32(1):32-39.

Watson, R. 2013. *Issues and debates in validity and reliability* (*In* Curtis, EA & Drennan, J., eds. *Quantitative health research, issues and methods*. Mc Graw Hill education: Open University Press. p.313-330).

White R.W. 1959. Motivation reconsidered: the concept of competence. *Journal of psychological review*, 66(5):297-333.

Wong, C.A., Cummings, G.G. & Ducharme, L. 2013a. The relationship between nursing leadership and patient outcomes: a systematic review update. *Journal of nursing management*, 21:709-724.

Wong C.A., Laschinger, H.K.S., Macdonald-Rencz, S., Burkoski, V., Cummings, G., D'Amour, D., Grinspun,D., Gurnham, M., Huckstep, S., Leiter, M., Perkin, K., Macphee, M., Matthews, S., O'Brien-Pallas, L., Ritchie,J., Ruffolo, M., Vincent, L., Wilk, P., Almost, J., Purdy, N., Daniels, F.

& Grau, A. 2013b. Part 2: Nurses' career aspirations to management roles: qualitative findings from a national study of Canadian nurses. *Journal of nursing management*, 21:231-241.

Yahaya, R. & Ebrahim, F. 2016. Leadership styles and organizational commitment: literature review, *Journal of management development*, 35(2):190-216. https://doi.org/10.1108/JMD-01-2015-0004

Yang, J., Liu, Y., Huang, C. & Zhu L. 2013. Impact of empowerment on professional practice environments and organizational commitment. *International journal of nursing practice,* 19 (Suppl. 1):44–55.

Yoder, E. A. 2010. Compassion fatigue in nurses. *Applied nursing research*, 23(4):191-197. http://dx.doi.org/10.1016/j.apnr.2008.09.003

You, L.M., Aiken, L.H., Sloane, D.M., Liu, K., He, G.P., Hu, Y., Jiang, X.L., Li, X.H., Li, X.M., Liu, H.P. and Shang, S.M. 2013. Hospital nursing, care quality, and patient satisfaction: cross-sectional surveys of nurses and patients in hospitals in China and Europe. *International journal of nursing studies*, 50(2):154-161.

Zangaro, G.A. & Soeken, K.L., 2007. A meta-analysis of studies of nurses' job satisfaction. *Research in nursing and health,* 30(4):445–458.

Zechner, S.A. 2008. *Self-assessment of managerial competencies of nurse managers in South Africa.* Cape Town: UWC. (Dissertation – Magister Commercii).

Zori, S., Nosek, L.J. & Musil, C.M. 2010. Critical thinking of nurse managers related to staff RNs' perceptions of the practice environment. Journal of nursing scholarship, 42(3):305-313.

ANNEXURE A ETHICAL CLEARANCE CERTICATE – NWU

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

Private Bag X6001, Potchefstroom,
South Africa, 2520

Tel: (018) 299-4900
Faks: (018) 299-4910
Web: http://www.nwu.ac.za

Institutional Research Ethics Regulatory Committee
Tel: +27 18 299 4849
Email : Ethics@nwu.ac.za

ETHICS APPROVAL CERTIFICATE OF STUDY

Based on approval by **Health Research Ethics Committee (HREC)** on **12/07/2017** after being reviewed at the meeting held on **16/11/2016**, the North-West University Institutional Research Ethics Regulatory Committee (NWU-IRERC) hereby **approves** your study as indicated below. This implies that the NWU-IRERC grants its permission that provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: A strategy to enhance competencies of nursing unit managers in public hospitals of the North West Province
Study Leader/Supervisor: Prof SK Coetzee
Student: OR Appolus-12733067
Ethics number:

N	W	U	-	0	0	3	5	6	-	1	6	-	A	1
Institution				Study Number						Year			Status	

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Application Type: Single study
Commencement date: 2017-07-12 **Risk:** Minimal
Continuation of the study is dependent on receipt of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.

Special conditions of the approval (if applicable):

- Translation of the informed consent document to the languages applicable to the study participants should be submitted to the HREC (if applicable).
- Any research at governmental or private institutions, permission must still be obtained from relevant authorities and provided to the HREC. Ethics approval is required BEFORE approval can be obtained from these authorities.

General conditions:

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

- *The study leader (principle investigator) must report in the prescribed format to the NWU-IRERC via HREC:*
  - *annually (or as otherwise requested) on the monitoring of the study, and upon completion of the study*
  - *without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.*
- *Annually a number of studies may be randomly selected for an external audit.*
- *The approval applies strictly to the proposal as stipulated in the application form. Would any changes to the proposal be deemed necessary during the course of the study, the study leader must apply for approval of these amendments at the HREC, prior to implementation. Would there be deviated from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.*
- *The date of approval indicates the first date that the study may be started.*
- *In the interest of ethical responsibility the NWU-IRERC and HREC retains the right to:*
  - *request access to any information or data at any time during the course or after completion of the study;*
  - *to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process.*
  - *withdraw or postpone approval if:*
    - *any unethical principles or practices of the study are revealed or suspected,*
    - *it becomes apparent that any relevant information was withheld from the HREC or that information has been false or misrepresented,*
    - *the required amendments, annual (or otherwise stipulated) report and reporting of adverse events or incidents was not done in a timely manner and accurately,*
    - *new institutional rules, national legislation or international conventions deem it necessary.*
- *HREC can be contacted for further information or any report templates via Ethics-HRECApply@nwu.ac.za or 018 299 1206.*

The IRERC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the IRERC or HREC for any further enquiries or requests for assistance.

Yours sincerely

Linda du Plessis
Digitally signed by Linda du Plessis
DN: cn=Linda du Plessis, o=NWU, ou=Vaal Triangle Campus, email=linda.duplessis@nwu.ac.za, c=ZA
Date: 2017.07.31 13:09:04 +02'00'

Prof Linda du Plessis
Chair NWU Institutional Research Ethics Regulatory Committee (IRERC)

ANNEXURE B: ETHICAL CLEARANCE – NORTH WEST DEPARTMENT OF HEALTH

health
Department of
Health
North West Province
REPUBLIC OF SOUTH AFRICA

ni Sekame & First Street
New Office Park
Mahikeng, 2745
Private Bag X2068
MMABATHO, 2735

Enq: Nthabiseng Mapogo
Tel: 018 391 4504
Fax: 018 388 6202
NMapogo@nwpg.gov.za
www.nwhealth.gov.za

2030 NDP

POLICY, PLANNING, RESEARCH, MONITORING AND EVALUATION

Name of researcher : Ms. O. R. Appolus
North West University
Physical Address 14 HOFFMAN STREET
(Work/ Institution) POTCHEFSTROOM
2520

Subject : Research Approval Letter – A strategy to enhance competencies of nursing unit managers in public hospitals of the North West Province.

This letter serves to inform the Researcher that permission to undertake the above mentioned study has been granted by the North West Department of Health. The Researcher is expected to arrange in advance with the chosen facilities, and issue this letter as proof that permission has been granted by the Provincial office.

This letter of permission should be signed and a copy returned to the department. By signing, the Researcher agrees, binds him/herself and undertakes to furnish the Department with an electronic copy of the final research report. Alternatively, the Researcher can also provide the Department with electronic summary highlighting recommendations that will assist the department in its planning to improve some of its services where possible. Through this the Researcher will not only contribute to the academic body of knowledge but also contributes towards the bettering of health care services and thus the overall health of citizens in the North West Province.

Kindest regards.

Dr. FRM Reichel
Director: PPRM&E

03/08/2017
Date

Researcher

LEPAPHA LA BOITEKANELO
DEPARTMENT OF HEALTH
MMABATHO, 2735

03 AUG 2017

NORTH WEST PROVINCE
REPUBLIC OF SOUTH AFRICA

Date

Healthy Living for All

ANNEXURE C: ETHICAL CLEARANCE – PARTICIPATING HOSPITALS.

health
Department of
Health
North West Province
REPUBLIC OF SOUTH AFRICA

Cnr. Heystek & Bosch Str.
Private Bag X 82079

0300
Tel: (014) 590-5100 Ext. 5401
Fax: (014) 592-3789

www.nwhealth.gov.za

HOSPITAL: OFFICE OF THE CEO

TO : **MS OR APPOLUS**
NORTHWEST UNIVERSITY
SCHOOL OF NURSING

FROM : **HOSPITAL MANAGER**

DATE : **04 MAY 2017**

RE : **APPROVAL FOR RESEARCH IN A STRATEGY TO ENHANCE COMPETENCIES OF NURSING UNIT MANAGERS IN PUBLIC HOSPITALS OF THE NORTH WEST PROVINCE**

This letter serves to inform you (Ms O R Appolus) that permission to undertake the above mentioned study has been granted by the Hospital, in the North West Department of Health. You are expected to arrange in advanced with the units and issue thus letter as proof that permission granted by the Institution (Hospital).

This letter of permission should be signed and a copy returned to the hospital as a proof that you agree, bind yourself and undertakes to furnish the hospital with final research report.

Kind Regards,

Hospital Manager

C R Appolus
Ms O R Appolus

19 June 2017
Date

Page 1 of 1

health
Department of
Health
North West Province
REPUBLIC OF SOUTH AFRICA

506 South Street
Private Bag X 4
8600

Tel: (053) 928 9000 / 9100
Fax: (053) 928 9005 / 9007

www.nwhealth.gov.za

HOSPITAL

Enq:
Email:
Extension:

OFFICE OF THE CEO

22 February 2017

Health Sciences
NWU

Att: OR Appolus

Re: GOODWILL PERMISSION

We hereby grant conditional goodwill permission for your intended study, Ethics number NWU-00356-16-S1. This permission is subject to a final approval by the North West Department of Health Policy, Planning, Research, Monitoring and Evaluation Unit.

Thank you,

CEO

Healthy Living for All

health
Department of
Health
North West Province
REPUBLIC OF SOUTH AFRICA

All correspondence to be directed to:
The Clinical Manager
Hospital Complex
Private Bag A14
2570

Tel: (018) 406 4740
Fax: (018) 462 1923
Enq:

CLINICAL MANAGER'S OFFICE

26th April 2017

To : Me Ruth Appolus
North West University

Dear Madam

RE : A STRATEGY TO ENHANCE COMPETENCIES OF NURSING UNIT MANAGERS IN PUBLIC HOSPITALS OF THE NORTH WEST PROVINCE
Presenter – Me Ruth Appolus
Date – 20th April 2017

This letter serves to confirm that permission has been granted by Hospital Complex Patient Safety Group (PSG) for A strategy to enhance competencies of nursing unit managers in public hospitals of the North West Province study in Hospital Complex. The researcher is requested to submit regular study progress reports and final study report upon completion of the study.

Kind Regards

Clinical Manager
Hospital Complex

health
Department of
Health
North West Province
REPUBLIC OF SOUTH AFRICA

Lichtenburg road corner Danville,
Private Bag X2031
2735

Tel: (018) 383 2005
Fax: (018) 3833 2376
www.nwhealth.gov.za

PROVINCIAL HOSPITAL

To: Ms OR Appolus

From:
Acting CEO
Provincial Hospital

SUBJECT: REQUEST TO CONDUCT A RESEARCH: A STRATEGY TO ENHANCE COMPETENCIES OF NURSING UNIT MANAGERS IN PUBLIC HOSPITALS OF THE NORTH WEST PROVINCE

Please note that you letter was received and acknowledged. Your request to conduct a research study in Provincial hospital has been approved.

Regards

Acting CEO
Provincial Hospital

health
Department of
Health
North West Province
REPUBLIC OF SOUTH AFRICA

Cnr. Chris Hani &
Kruis Street
Private Bag X 938

2520
Tel: (018) 293 4416

2030 NDP

OFFICE OF THE CLINICAL MANAGER

20 June 2017

TO: Ms Ruth Appolus
North West University

FROM:
Acting Clinical Manager
Hospital

Dear Ms R Appolus

This is to inform you that the Hospital Patient Safety Group (PSG) that sat on 13/06/2017 has given you permission to proceed with your research **titled: "strategy to enhance competencies of nursing unit managers in public hospitals of North West Province"**, as presented to them on that day.

We wish you all the best with your study and look forward to sharing in the results of your findings.

Sincerely

OFFICE OF THE CLINICAL MANAGER
HOSPITAL
2017 -06- 20
PRIVATE BAG X 938
2520

ACTING CLINICAL MANAGER
HOSPITAL

Healthy Living for All

health
Department of
Health
North West Province
REPUBLIC OF SOUTH AFRICA

Magistrate Street
8584
Private Bag X 535
8584

Tel: (053) 994 8106
Fax: (053) 994 3777

2030 NDP

DISTRICT HOSPITAL

TO: MS RUTH APPOLUS

FROM:
CHIEF EXECUTIVE OFFICER
DISTRICT HOSPITAL

DATE: 23 MARCH 2017

Re: REQUEST TO CONDUCT RESEARCH .

Sir/ Madam,

Kindly be informed that permission to conduct research in our institution is herein approved.

Kind regards,

THE HOSPITAL CEO
P/BAG X535
TEL 053 994 1805/6/7/8
23 MAR 2017
NORTH WEST PROVINCE
REPUBLIC OF SOUTH AFRICA

Chief Executive Officer
District Hospital

Healthy Living for All

ANNEXURE D: NSM SURVEY QUESTIONAIRRE

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

NURSING SERVICE MANAGER SURVEY

FOR OFFICE USE:

Thank you for agreeing to complete the survey regarding the competencies of Nursing Unit Managers (NUMs). Please rate the NUMs regarding their: 1) knowledge and understanding of management competencies and 2) ability to implement specific competencies. Please indicate your answer by marking (x) for your response.

The NUM that is being rated is from Ward_____

A. COMPETENCIES OF NURSING UNIT MANAGERS

		Knowledge and understanding of competencies					Ability to implement competencies			
		Not competent	Need improvement	Competent	Exceed expectation		Not competent	Need improvement	Competent	Exceed expectation
1.	Nursing Practice Standards	1	2	3	4		1	2	3	4
2.	Nursing Care Delivery Systems	1	2	3	4		1	2	3	4
3.	Nursing Care Planning	1	2	3	4		1	2	3	4
4.	Clinical Skills	1	2	3	4		1	2	3	4
5.	Patient Acuity Systems	1	2	3	4		1	2	3	4
6.	Infection Control Practices	1	2	3	4		1	2	3	4
7.	Research and Evidence-based Practice	1	2	3	4		1	2	3	4
8.	New Technology	1	2	3	4		1	2	3	4
9.	Case Management	1	2	3	4		1	2	3	4
10.	Information Systems and Computers	1	2	3	4		1	2	3	4
11.	Regulatory Council Standards	1	2	3	4		1	2	3	4
12.	Effective Communication	1	2	3	4		1	2	3	4
13.	Effective Staffing Strategies	1	2	3	4		1	2	3	4
14.	Recruitment Strategies	1	2	3	4		1	2	3	4
15.	Retention Strategies	1	2	3	4		1	2	3	4
16.	Effective Discipline	1	2	3	4		1	2	3	4
17.	Effective Counseling Strategies	1	2	3	4		1	2	3	4
18.	Constructive Performance Evaluation	1	2	3	4		1	2	3	4
19.	Staff Development Strategies	1	2	3	4		1	2	3	4
20.	Group Process	1	2	3	4		1	2	3	4
21.	Interviewing Techniques	1	2	3	4		1	2	3	4
22.	Team-building Strategies	1	2	3	4		1	2	3	4
23.	Humor	1	2	3	4		1	2	3	4
24.	Optimism	1	2	3	4		1	2	3	4
25.	Nursing Theories	1	2	3	4		1	2	3	4
26.	Administrative / Organizational Theories	1	2	3	4		1	2	3	4
27.	Strategic Planning / goal development	1	2	3	4		1	2	3	4

28.	Ethical Principles	1	2	3	4		1	2	3	4
29.	Teaching / Learning Theories	1	2	3	4		1	2	3	4
30.	Political Process & Advocacy	1	2	3	4		1	2	3	4
31.	Quality / Process Improvement	1	2	3	4		1	2	3	4
32.	Legal Issues	1	2	3	4		1	2	3	4
33.	Decision-making	1	2	3	4		1	2	3	4
		Knowledge and understanding of competencies					**Ability to implement competencies**			
		Not competent	**Need improvement**	**Competent**	**Exceed expectation**		**Not competent**	**Need improvement**	**Competent**	**Exceed expectation**
34.	Power and Empowerment	1	2	3	4		1	2	3	4
35.	Delegation	1	2	3	4		1	2	3	4
36.	Change Process	1	2	3	4		1	2	3	4
37.	Conflict Resolution	1	2	3	4		1	2	3	4
38.	Problem-solving	1	2	3	4		1	2	3	4
39.	Stress Management	1	2	3	4		1	2	3	4
40.	Research Process	1	2	3	4		1	2	3	4
41.	Motivational Strategies	1	2	3	4		1	2	3	4
42.	Organization of Unit of Work and Workflow Process	1	2	3	4		1	2	3	4
43.	Policies and Procedures	1	2	3	4		1	2	3	4
44.	Staff Education	1	2	3	4		1	2	3	4
45.	Time Management	1	2	3	4		1	2	3	4
46.	Interdisciplinary Care Coordination	1	2	3	4		1	2	3	4
47.	Cost Containment and Cost Avoidance Practices	1	2	3	4		1	2	3	4
48.	Productivity Measurements	1	2	3	4		1	2	3	4
49.	Operational & Capital Budget Forecasting and Generation	1	2	3	4		1	2	3	4
50.	Cost Benefit Analysis	1	2	3	4		1	2	3	4
51.	Unit Budget Control Measures	1	2	3	4		1	2	3	4
52.	Financial Resource Procurement	1	2	3	4		1	2	3	4
53.	Financial Resource Monitoring	1	2	3	4		1	2	3	4

B. DEMOGRAPHIC DATA

Which best describes your Hospital size?

50-99 beds	100-199 beds	200-299 beds	300-399 beds	400-499 beds	500 or more beds

Which best describes your age?

Less than 25 years	25-34 years	35-44 years	45-54 years	55 years or more

Gender

Female		Male	

How long have you been in your current management position?

Less than one year	1-2 years	3-4 years	5-9 years	10 or more years

Which is your highest level of educational preparation?

Diploma	Degree	Masters'	Doctorate	Other

Do you have an additional management qualification?

Yes		No	

If yes, what is the level of your management qualification?

Diploma	Degree	Masters'	Doctorate	Other

How long have you practiced as an RN?

Less than one year	1-2 years	3-4 years	5-9 years	10 or more years

What is your span of control?

Less than 24 FTEs	25-49 FTEs	50-74 FTEs	75-99 FTEs	100 or more FTEs

Please list any other competencies that you believe are important for the nursing unit manager.

Do you wish to say anything else about this subject?

Thank you for completing the survey. Please put it in the supplied envelope, seal and drop in the designated box.

ANNEXURE E: NUM SURVEY QUESTIONAIRRE

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

NURSING UNIT MANAGER SURVEY

FOR OFFICE USE:

Thank you for agreeing to complete the survey regarding the competencies of Nursing Unit Managers (NUMs). Please rate the NUMs regarding their: 1) knowledge and understanding of management competencies and 2) ability to implement specific competencies. Please indicate your answer by marking (x) for your response.

The NUM that is being rated is from Ward_____

A. COMPETENCIES OF NURSING UNIT MANAGERS

		Knowledge and understanding of competencies					Ability to implement competencies			
		Not competent	Need improvement	Competent	Exceed expectation		Not competent	Need improvement	Competent	Exceed expectation
1.	Nursing Practice Standards	1	2	3	4		1	2	3	4
2.	Nursing Care Delivery Systems	1	2	3	4		1	2	3	4
3.	Nursing Care Planning	1	2	3	4		1	2	3	4
4.	Clinical Skills	1	2	3	4		1	2	3	4
5.	Patient Acuity Systems	1	2	3	4		1	2	3	4
6.	Infection Control Practices	1	2	3	4		1	2	3	4
7.	Research and Evidence-based Practice	1	2	3	4		1	2	3	4
8.	New Technology	1	2	3	4		1	2	3	4
9.	Case Management	1	2	3	4		1	2	3	4
10.	Information Systems and Computers	1	2	3	4		1	2	3	4
11.	Regulatory Council Standards	1	2	3	4		1	2	3	4
12.	Effective Communication	1	2	3	4		1	2	3	4
13.	Effective Staffing Strategies	1	2	3	4		1	2	3	4
14.	Recruitment Strategies	1	2	3	4		1	2	3	4
15.	Retention Strategies	1	2	3	4		1	2	3	4
16.	Effective Discipline	1	2	3	4		1	2	3	4
17.	Effective Counseling Strategies	1	2	3	4		1	2	3	4
18.	Constructive Performance Evaluation	1	2	3	4		1	2	3	4
19.	Staff Development Strategies	1	2	3	4		1	2	3	4
20.	Group Process	1	2	3	4		1	2	3	4
21.	Interviewing Techniques	1	2	3	4		1	2	3	4
22.	Team-building Strategies	1	2	3	4		1	2	3	4
23.	Humor	1	2	3	4		1	2	3	4
24.	Optimism	1	2	3	4		1	2	3	4
25.	Nursing Theories	1	2	3	4		1	2	3	4
26.	Administrative / Organizational Theories	1	2	3	4		1	2	3	4
27.	Strategic Planning / goal development	1	2	3	4		1	2	3	4
28.	Ethical Principles	1	2	3	4		1	2	3	4
29.	Teaching / Learning Theories	1	2	3	4		1	2	3	4
30.	Political Process & Advocacy	1	2	3	4		1	2	3	4
31.	Quality / Process Improvement	1	2	3	4		1	2	3	4

		Knowledge and understanding of competencies					Ability to implement competencies			
		Not competent	Need improvement	Competent	Exceed expectation		Not competent	Need improvement	Competent	Exceed expectation
32.	Legal Issues	1	2	3	4		1	2	3	4
33.	Decision-making	1	2	3	4		1	2	3	4
34.	Power and Empowerment	1	2	3	4		1	2	3	4
35.	Delegation	1	2	3	4		1	2	3	4
36.	Change Process	1	2	3	4		1	2	3	4
37.	Conflict Resolution	1	2	3	4		1	2	3	4
38.	Problem-solving	1	2	3	4		1	2	3	4
39.	Stress Management	1	2	3	4		1	2	3	4
40.	Research Process	1	2	3	4		1	2	3	4
41.	Motivational Strategies	1	2	3	4		1	2	3	4
42.	Organization of Unit of Work and Workflow Process	1	2	3	4		1	2	3	4
43.	Policies and Procedures	1	2	3	4		1	2	3	4
44.	Staff Education	1	2	3	4		1	2	3	4
45.	Time Management	1	2	3	4		1	2	3	4
46.	Interdisciplinary Care Coordination	1	2	3	4		1	2	3	4
47.	Cost Containment and Cost Avoidance Practices	1	2	3	4		1	2	3	4
48.	Productivity Measurements	1	2	3	4		1	2	3	4
49.	Operational & Capital Budget Forecasting and Generation	1	2	3	4		1	2	3	4
50.	Cost Benefit Analysis	1	2	3	4		1	2	3	4
51.	Unit Budget Control Measures	1	2	3	4		1	2	3	4
52.	Financial Resource Procurement	1	2	3	4		1	2	3	4
53.	Financial Resource Monitoring	1	2	3	4		1	2	3	4

B. DEMOGRAPHIC DATA

Which best describes your Hospital size?

50-99 beds	100-199 beds	200-299 beds	300-399 beds	400-499 beds	500 or more beds

Which best describes your age?

Less than 25 years	25-34 years	35-44 years	45-54 years	55 years or more

Gender

Female		Male	

How long have you been in your current management position?

Less than one year	1-2 years	3-4 years	5-9 years	10 or more years

Which is your highest level of educational preparation?

Diploma	Degree	Masters'	Doctorate	Other

Do you have an additional management qualification?

Yes		No	

If yes, what is the level of your management qualification?

Diploma	Degree	Masters'	Doctorate	Other

How long have you practiced as an RN?

Less than one year	1-2 years	3-4 years	5-9 years	10 or more years

What is your span of control?

Less than 24 FTEs	25-49 FTEs	50-74 FTEs	75-99 FTEs	100 or more FTEs

Please list any other competencies that you believe are important for the nursing unit manager.

Do you wish to say anything else about this subject?

Thank you for completing the survey. Please put it in the supplied envelope, seal and drop in the designated box.

ANNEXURE F: NURSING STAFF SURVEY QUESTIONAIRRE

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

NURSING STAFF SURVEYS

A. DEMOGRAPHIC DATA

Instructions: Please complete the demographic section by ticking x on the appropriate answer.

1. Gender

Male		Female	

2. Age

	Years

3. Marital Status

Single		Divorced		Widowed		Married		Living with spouse	

4. Nursing position

Professional Nurse		Enrolled Nurse		Enrolled Nursing Assistant	

5. Number of years working as a nurse:

	Years

6. Years worked at organization:

	Years

7. Highest qualification attained:

Certificate	Diploma	Degree	Post graduate Diploma	Master's Degree	PHD

8. How satisfied are you with your choice of nursing as a career?

Very dissatisfied	A little dissatisfied	Moderately satisfied	Very satisfied

9. How satisfied are you with your current job in this hospital?

Very dissatisfied	A little dissatisfied	Moderately satisfied	Very satisfied

B. COMPENTENCIES OF NURSING UNIT MANAGERS

Instructions: Thank you for agreeing to complete the survey regarding the competencies of Nursing Unit Managers which consists of one section: ability to implement and/or use specific competencies. Directions are provided for each section or question. Please indicate your answer by marking (x) for your response.

		Ability to implement and/or use			
		Not competent	Need improvement	Competent	Exceed expectation
1.	Nursing Practice Standards	1	2	3	4
2.	Nursing Care Delivery Systems	1	2	3	4
3.	Nursing Care Planning	1	2	3	4
4.	Clinical Skills	1	2	3	4
5.	Patient Acuity Systems	1	2	3	4
6.	Infection Control Practices	1	2	3	4
7.	Research and Evidence-based Practice	1	2	3	4
8.	New Technology	1	2	3	4
9.	Case Management	1	2	3	4
10.	Information Systems and Computers	1	2	3	4
11.	Regulatory Council Standards	1	2	3	4
12.	Effective Communication	1	2	3	4
13.	Effective Staffing Strategies	1	2	3	4
14.	Recruitment Strategies	1	2	3	4
15.	Retention Strategies	1	2	3	4
16.	Effective Discipline	1	2	3	4
17.	Effective Counseling Strategies	1	2	3	4
18.	Constructive Performance Evaluation	1	2	3	4
19.	Staff Development Strategies	1	2	3	4
20.	Group Process	1	2	3	4
21.	Interviewing Techniques	1	2	3	4
22.	Team-building Strategies	1	2	3	4
23.	Humor	1	2	3	4
24.	Optimism	1	2	3	4
25.	Nursing Theories	1	2	3	4
26.	Administrative / Organizational Theories	1	2	3	4
27.	Strategic Planning / goal development	1	2	3	4
28.	Ethical Principles	1	2	3	4
29.	Teaching / Learning Theories	1	2	3	4
30.	Political Process & Advocacy	1	2	3	4
31.	Quality / Process Improvement	1	2	3	4
32.	Legal Issues	1	2	3	4
33.	Decision-making	1	2	3	4
34.	Power and Empowerment	1	2	3	4
35.	Delegation	1	2	3	4
36.	Change Process	1	2	3	4
37.	Conflict Resolution	1	2	3	4
38.	Problem-solving	1	2	3	4
39.	Stress Management	1	2	3	4
40.	Research Process	1	2	3	4
41.	Motivational Strategies	1	2	3	4

		Ability to implement and/or use			
		Not competent	Need improvement	Competent	Exceed expectation
42.	Organization of Unit of Work and Workflow Process	1	2	3	4
43.	Policies and Procedures	1	2	3	4
44.	Staff Education	1	2	3	4
45.	Time Management	1	2	3	4
46.	Interdisciplinary Care Coordination	1	2	3	4

C. JOB SATISFACTION

With regard to your own feelings about how satisfied are you with your job, please indicate the degree of your agreement or disagreement with each statement by ticking x on one of the seven alternatives below each statement.

GLOBAL JOB SATISFACTION

		Strongly Disagree	Disagree	Slightly Disagree	Neither Disagree nor Agree	Slightly Agree	Agree	Strongly Agree
1	All in all, I am satisfied with my Job	1	2	3	4	5	6	7
2	In general, I don't like my Job	1	2	3	4	5	6	7
3	In general, I like working here	1	2	3	4	5	6	7
4	I feel that the health care facility provides a supportive work environment in which to work	1	2	3	4	5	6	7

How satisfied are you with the following aspects of your job?

		Very Dissatisfied	A little Dissatisfied	Moderately Satisfied	Very Satisfied
1	Work schedule flexibility	1	2	3	4
2	Opportunities for advancement	1	2	3	4
3	Independence at work	1	2	3	4
4	Professional status	1	2	3	4
5	Wages	1	2	3	4
6	Educational opportunities	1	2	3	4
7	Annual Leave	1	2	3	4
8	Sick leave	1	2	3	4
9	Study leave	1	2	3	4

D. PRACTICE ENVIRONMENT

Please indicate the extent to which you agree or disagree that each of the following features is present in your current job. Directions are provided for each section or question. Please indicate your answer by marking (x) for your response.

		Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
1	Adequate support services allow me to spend time with my patients	1	2	3	4
2	Physicians and nurses have good working relationships	1	2	3	4
3	A supervisory staff that is supportive of nurses	1	2	3	4
4	Active staff development or continuing education programs for nurses	1	2	3	4
5	Career development / clinical ladder opportunity	1	2	3	4
6	Opportunity for registered nurses to participate in policy decisions	1	2	3	4
7	Physicians value nurses' observations and judgments	1	2	3	4
8	Enough time and opportunity to discuss patient care problems with other nurses'	1	2	3	4
9	Enough registered nurses on staff to provide quality patient care	1	2	3	4
10	A nursing unit manager who is a good manager and leader	1	2	3	4
11	A nursing service manager who is highly visible and accessible to staff	1	2	3	4
12	Enough staff to get the work done	1	2	3	4
13	Physicians recognize nurses' contributions to patient care	1	2	3	4
14	Praise and recognition for a job well done	1	2	3	4
15	High standards of nursing care are expected by management	1	2	3	4
16	A nursing service manager is equal in power and authority to other top level hospital executives	1	2	3	4
17	A lot of teamwork between nurses and physicians	1	2	3	4
18	Opportunities for advancement	1	2	3	4
19	A clear philosophy of nursing that influences the patient care environment	1	2	3	4
20	Working with nurses who are clinically competent	1	2	3	4
21	Physicians respect nurses as professionals	1	2	3	4
22	A nursing unit manager who backs up the nursing staff in decision making, even if the conflict is with a physician	1	2	3	4
23	Management that listens and responds to employee concern	1	2	3	4
24	An active quality assurance program	1	2	3	4
25	Registered nurses are involved in the internal governance of the hospital (e.g. practice and policy committee)	1	2	3	4
26	Collaboration between nurses and physicians	1	2	3	4
27	An induction program for newly appointed nurses.	1	2	3	4
28	Nursing care is based on a nursing rather than a medical mode.	1	2	3	4
29	Registered nurses have the opportunity to serve on hospital and nursing committees	1	2	3	4
30	Physicians hold nurses in high esteem	1	2	3	4
31	Written, up-to-date care plans for all patients	1	2	3	4
32	Patient care assignments that foster continuity of care (i.e. the same nurse care for the patient form one day to the next)	1	2	3	4

E. INTENTION TO LEAVE

With respect to your own feelings about the intention to leave your job, please indicate the degree of your agreement or disagreement with each statement by ticking x on one of the five alternatives below each statement

		Strongly Disagree	Disagree	Hard to Decide	Agree	Strongly Agree
1	I plan on leaving my job within the next year	1	2	3	4	5
2	I have been actively looking for other jobs	1	2	3	4	5
3	I want to remain in my job	1	2	3	4	5

F. ORGANIZATIONAL COMMITMENT

With respect to your own feelings about the particular organization for which you are now working, please indicate the degree of your agreement or disagreement with each statement by ticking x on one of the seven alternatives below each statement

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Disagree nor Agree	Slightly Agree	Moderately Agree	Strongly Agree
1.	I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful	1	2	3	4	5	6	7
2.	I talk up this organization to my friends as a great organization to work for	1	2	3	4	5	6	7
3.	I feel very little loyalty to this organization	1	2	3	4	5	6	7
4.	I would accept almost any type of job assignment in order to keep working for this organization	1	2	3	4	5	6	7
5.	I find that my values and the organization's value are very similar	1	2	3	4	5	6	7
6.	I am proud to tell others that I am part of this organization	1	2	3	4	5	6	7
7.	I could just as well be working for a different organization as long as the type of work was similar	1	2	3	4	5	6	7
8.	This organization really inspires the very best in me in the way of job performance	1	2	3	4	5	6	7
9.	It would take very little change in my present circumstances to cause me to leave this organization	1	2	3	4	5	6	7
10.	I am extremely glad that I chose this organization to work for over other I was considering at the time I joined	1	2	3	4	5	6	7
11.	There's not too much to be gained by sticking with this organization indefinitely	1	2	3	4	5	6	7
12.	Often, I find it difficult to agree with this organization's policies on important matters relating to its employees	1	2	3	4	5	6	7
13.	I really care about the fate of this organization	1	2	3	4	5	6	7
14.	For me, this is the best of all possible organizations for which to work	1	2	3	4	5	6	7
15.	Deciding to work for this organization was a definite mistake on my part	1	2	3	4	5	6	7

G. COMPASSION PRACTICE

Please indicate how frequently, if ever, you have experienced these feelings or engaged in these behaviours while working with patients in the last 30 days. Directions are provided for each section or question. Please indicate your answer by marking (x) for your response.

		Never	Rarely	Sometimes	Often	Very Often	Always
1	I try to get to know patients as a whole (psycho-social-spiritual) person.	1	2	3	4	5	6
2	I feel good about the care I provide to patients.	1	2	3	4	5	6
3	I make a positive difference in the lives of patients.	1	2	3	4	5	6
4	I struggle to connect with patients.	1	2	3	4	5	6
5	I am unable to provide the kind of care to patients that I would like to.	1	2	3	4	5	6
6	I have no energy to invest in patients.	1	2	3	4	5	6
7	I doubt I make much difference in the lives of patients.	1	2	3	4	5	6
8	I encourage patients to share their thoughts and feelings with me.	1	2	3	4	5	6
9	I am able to meet the needs of patients.	1	2	3	4	5	6
10	Meeting patients' needs gives meaning and purpose to my life.	1	2	3	4	5	6
11	I struggle to open myself up to patients' suffering and sorrow.	1	2	3	4	5	6
12	I am unable to meet patients' needs the way I would like to.	1	2	3	4	5	6
13	I am unable to see meaning and purpose in caring for patients.	1	2	3	4	5	6
14	I notice when patients are upset, even if they don't say anything.	1	2	3	4	5	6
15	I provide holistic (psycho-social-spiritual) patient care.	1	2	3	4	5	6
16	I enjoy interacting with patients.	1	2	3	4	5	6
17	I feel satisfied when I am able to help patients.	1	2	3	4	5	6
18	I try to shield (protect) myself from patients' suffering and sorrow.	1	2	3	4	5	6
19	I feel that patients deserve better care than I can provide.	1	2	3	4	5	6

Thank you for completing the survey please put in supplied envelope, seal and drop in designated box.

ANNEXURE G: INFORMATION LEAFLET AND CONSENT FORM FOR NSM

HREC Stamp

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM FOR NURSING SERVICE MANAGER

TITLE OF THE RESEARCH PROJECT: A strategy to enhance competencies of nursing unit managers in public hospitals of the North West Province

ETHICS REFERENCE NUMBERS: NWU-00356-16-A1

PRINCIPAL INVESTIGATOR: Prof SK Coetzee

POST GRADUATE STUDENT: OR Appolus

ADDRESS: 11 Hoffman Street, Potchefstroom, 2520

CONTACT NUMBER: 018 299 1879

You are being invited to take part in a **research study** that forms part of my **fulfilment of the requirements for Doctor of philosophy in nursing**. Please take some time to read the information presented here, which will explain the details of this study. Please ask the researcher or person explaining the research to you any questions about any part of this study that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research is about and how you might be involved. Also, your participation is **entirely voluntary,** and you are free to say no to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part now.

This study has been approved by the **Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00356-16-A1)** and will be conducted according to the ethical guidelines and principles of Ethics in Health Research: Principles, Processes and Structures (DoH,

2015) and other international ethical guidelines applicable to this study. It might be necessary for the research ethics committee members or other relevant people to inspect the research records.

What is this research study all about?

- *This study will be conducted in large district, regional and provincial public hospitals of the North West Province to evaluate competencies of nursing unit managers and link them to staff outcomes and their perceptions of the practice environment in order to develop a strategy to enhance competencies of nursing unit managers.*

The objectives of this research are:

- *To evaluate nursing unit managers' competency ratings according to the nursing service manager, the nursing staff and by self-assessment of the nursing unit manager.*
- *To determine an association between the nursing unit managers' competencies and personal and nursing unit demographics.*
- *To determine the relationship between the nursing unit managers' competencies and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion fatigue), and their experience of the practice environment*
- *To develop a strategy to enhance nursing unit managers' competencies.*

Why have you been invited to participate?

- *You complied with the following inclusion criteria:*
  - *You are a nursing service manager in a large district, regional and provincial hospital in the North West province*
  - *You have nursing unit managers that are under your supervision*
- *You will be excluded from this study if:*
  - *You are on any type of official leave during data collection*
  - *You have been acting as a nursing service manager for less than six months*

What will your responsibilities be?

- *You will be expected to participate in a survey and complete a self-administered survey questionnaire to evaluate competencies of all nursing unit managers in your hospital on how well they know and understand competency statements and how well they can implement or use competency statements.*
- *The survey has 53 items where each will take about 5-15 minutes of your time. You have ten days in which to complete all surveys.*
- *A time that is convenient for you will be arranged to explain the research project*

Will you benefit anything from taking part in this research?

- *Giving feedback of the study to each hospital will provide direct benefits to nursing service managers, nursing unit managers and nursing staff and even the organisation as a whole.*
- *Sharing the strategy with hospitals and the researcher assisting with strategy implementation and evaluation will also be a direct benefit.*
- *Indirect benefits will be:*
- *Practice: Opportunity for further development, positive practice environments, improved staff outcomes, improved quality of care*
- *Education sector: align competencies required with curriculum*
- *Policy makers: standards for appointment and/or performance evaluation*
- *Further surveys on competencies of nursing unit managers and/or use of multi-source feedback*

Are there risks involved in you taking part in this research and what will be done to prevent them?

- *Risks include you may be feeling fatigued or bored during completion of surveys. To overcome this, you will have ten days in which to complete the survey at your least inconvenience. The researcher will allow and respect the right to decide whether or not to participate in the study without any prejudice.*
- *Time is very precious for you. Time constraints will be limited by having you complete only one survey.*
- *Should you experience any emotions and/or anxiety during completion of surveys, the researcher will arrange with the hospital for a counseling or debriefing session by a healthcare provider*
- *The researcher will ensure that you are spared any form of distress and do not come to any type of harm.*

What will happen in the unlikely event of some form of discomfort occurring as a direct result of your taking part in this research study?

- *Should you experience any discomfort as a result of partaking in this research survey, please contact the researcher, Ms Ruth Appolus so that necessary arrangements can be made.*

How will we protect your confidentiality and who will see your findings?

- *Anonymity of your findings will be protected by keeping all your findings private. Your privacy will be respected by making sure that your identity is not known with regard to your participation in the study. Your results will be kept confidential by the researchers. Your returned survey questionnaire will not have any identifying information. Only the researchers and statisticians will be able to look at your findings. Findings will be kept safe by locking hard copies in locked cupboards in the research director's office and for electronic data it will be password protected. Data will be stored for five years. If destroyed it will be through shredding.*

Who will have access to the data?

- *Only the research team will have access to data, however, confidentiality will be ensured.*

What will happen with the data or samples and findings?

- *The findings of this study will be used in future for publishing in official accredited scientific journals and presentations of findings will also be done at conferences*
- *Findings will also be shared with the North West Department of Health as well individual hospitals that took part in the study.*
- *The samples will not be used for any future studies. Should it happen that for an unlikely reason samples are used again, permission will again be asked from the Health Research Ethics Committee of the North West University.*
- *The data collected and informed consents signed and hospital/units codes will be filed and stored in locked cupboards in the research director's office.*
- *Electronically stored data will be password protected in the researchers` computer and all data collected will be destroyed and deleted after 5 years by way of shredding.*

How will you know about the results/findings of this research?

- *We will present the results of this research when the study has been completed by 2018. Presentations will also be done at the Department of Health research days in the North West Province and at all hospitals that took part in the study.*
- *You will be informed of any new relevant findings by the researcher*

Will you be paid to take part in this study and are there any costs for you?

- *No, you will not be paid to take part in the study because there will be no costs involved for you, if you do take part in this study. A token of appreciation will be given.*

Is there anything else that you should know or do?

- You can contact Professor SK Coetzee at 018 299 1829 or Ms OR Appolus at 018 2852030 or 12733067@nwu.ac.za if you have any further questions or have any problems.
- You can also contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206 or carolien.vanzyl@nwu.ac.za if you have any concerns that were not answered about the research or if you have complaints about the research.
- You will receive a copy of this information and consent form for your own purposes.

Declaration by participant

By signing below, I ……..……. agree to take part in the research study titled:…….

I declare that:

- I have read this information/it was explained to me by a trusted person in a language with which I am fluent and comfortable.
- The research was clearly explained to me.
- I have had a chance to ask questions to both the person getting the consent from me, as well as the researcher and all my questions have been answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be handled in a negative way if I do so.
- I may be asked to leave the study before it has finished, if the researcher feels it is in the best interest, or if I do not follow the study plan, as agreed to.

Signed at (*place*) .....…..……. on (*date*) ……...……. 20....

....

Signature of participant **Signature of witness**

Declaration by person obtaining consent

I *(name)* …… declare that:

- I clearly and in detail explained the information in this document to

  …….

- I did/did not use an interpreter.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I gave him/her time to discuss it with others if he/she wished to do so.

Signed at (*place*) .....…..……. on (*date*) ……...……. 20....

....

Signature of person obtaining consent **Signature of witness**

Declaration by researcher

I *(name)* …… declare that:

- I explained the information in this document to …….. **or** I had it explained by …… who I trained for this purpose.
- I did/did not use an interpreter
- I encouraged him/her to ask questions and took adequate time to answer them

  or I was available should he/she want to ask any further questions.
- The informed consent was obtained by an independent person.
- I am satisfied that he/she adequately understands all aspects of the research, as described above.
- I am satisfied that he/she had time to discuss it with others if he/she wished to do so.

Signed at (*place*) .....…..……. on (*date*) ……...……. 20....

....

Signature of researcher **Signature of witness**

ANNEXURE H: INFORMATION LEAFLET AND CONSENT FORM FOR NUM

HREC Stamp

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM FOR NURSING UNIT MANAGER

TITLE OF THE RESEARCH PROJECT: A strategy to enhance competencies of nursing unit managers in public hospitals of the North West Province

ETHICS REFERENCE NUMBERS: NWU-00356-16-A1

PRINCIPAL INVESTIGATOR: Prof SK Coetzee

POST GRADUATE STUDENT: OR Appolus

ADDRESS: 11 Hoffman Street, Potchefstroom, 2520

CONTACT NUMBER: 018 299 1879

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This study has been approved by the **Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00356-16-A1)** and will be conducted according to the ethical guidelines and principles of Ethics in Health Research: Principles, Processes and Structures (DoH,

2015) and other international ethical guidelines applicable to this study. It might be necessary for the research ethics committee members or other relevant people to inspect the research records.

What is this research study all about?

- *This study will be conducted in public hospitals of the North West Province to evaluate competencies of nursing unit managers and link them to staff outcomes and their perceptions of the practice environment in order to develop a strategy to enhance competencies of nursing unit managers.*

The objectives of this research are:

- *To evaluate nursing unit managers' competency ratings according to the nursing service manager, the nursing staff and by self-assessment of the nursing unit manager.*
- *To determine an association between the nursing unit managers' competencies and personal and nursing unit demographics.*
- *To determine the relationship between the nursing unit managers' competencies and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion fatigue), and their experience of the practice environment*
- *To develop a strategy to enhance nursing unit managers' competencies.*

Why have you been invited to participate?

- *You have complied with the following inclusion criteria:*
  - *You are a nursing unit manager in a large district, regional and provincial hospital in the North West province*
- *You will be excluded from this study if:*
  - *You are on any type of official leave during data collection*
  - *You have been acting as a nursing unit manager for less than six months*

What will be expected of you?

- *You will be expected to participate in a survey and complete a self-administered survey questionnaire to self-evaluate your own competencies on how well you know and understand competency statements and how well you can implement or use competency statements. You will also be evaluated with the same survey by your nursing service manager and all nursing staff supervised by yourself.*
- *The survey has 53 items which will take about 5-15 minutes of your time. You have ten days in which to complete the survey.*
- *A time that is convenient for you will be arranged to explain the research project*

Will you benefit anything from taking part in this research?

- *Giving feedback of the study to each hospital will provide direct benefits to nursing service managers, nursing unit managers and nursing staff and even the organisation as a whole.*
- *Sharing the strategy with hospitals and the researcher assisting with strategy implementation and evaluation will also be a direct benefit.*
- *Indirect benefits will be:*
- *Practice: Opportunity for further development, positive practice environments, improved staff outcomes, improved quality of care*
- *Education sector: align competencies required with curriculum*
- *Policy makers: standards for appointment and/or performance evaluation*
- *Further surveys on competencies of nursing unit managers and/or use of multi-source feedback*

Are there risks involved in you taking part in this research and what will be done to prevent them?

- *Risks include you may be feeling fatigued after completion of the survey. To overcome this, you will have ten days in which to complete the survey at your least inconvenience. Time is very precious for you.*
- *You may also feel victimized because you will be evaluated by your supervisor and nursing staff as well and also embarrassed if you don't understand competency statements. The researcher will ensure confidentiality by making sure that this information is not divulged or made available to any other person and no identity is revealed in reporting or publishing research results and that no other person can link any data to any participant except the researcher, who will not divulge such information.*
- *The researcher will also not use real identities of nursing units i.e. the units will be coded and will only be known to the researcher. Data will only be analysed at aggregate level, and the competencies of individual participants' will not be known*
- *The researcher will allow and respect the right to decide whether or not to participate in the study without any prejudice.*

What will happen in the unlikely event of some form of discomfort occurring as a direct result of your taking part in this research study?

- *Should you experience any discomfort as a result of taking part in this research survey, please contact the researcher, Ms Ruth Appolus so that necessary arrangements can be made.*

How will we protect your confidentiality and who will see your findings?

- *Anonymity of your findings will be protected by keeping all your findings private. Your privacy will be respected by making sure that your identity is not known with regard to your participation in the study. Your results will be kept confidential by the researchers. Your returned survey questionnaire will not have any identifying information. Only the researchers and statisticians will be able to look at your findings. Findings will be kept safe by locking hard copies in locked cupboards in the research director's office and for electronic data it will be password protected. Data will be stored for five years. If destroyed it will be through shredding.*

Who will have access to the data?

- *Only the research team, will have access to data, however, confidentiality will be ensured.*

What will happen with the data or samples and findings?

- *The findings of this study will be used in future for publishing in official accredited scientific journals.*
- *Presentations of findings will also be done at conferences*
- *Findings will also be shared with the North West Department of Health as well individual hospitals that took part in the study.*
- *The samples will not be used for any future studies. Should it happen that for an unlikely reason samples are used again, permission will again be asked from the Health Research Ethics Committee of the North West University.*
- *The data collected and informed consents signed and hospital/units codes will be filed and stored in locked cupboards in the research director's office.*
- *Electronically stored data will be password protected in the researchers` computer and all data collected will be destroyed and deleted after 5 years by way of shredding.*

How will you know about the results/findings of this research?

- *We will present results of this research when the study has been completed by 2018. Presentations will also be done at the Department of Health research days in the North West province and all hospitals that took part in the study.*
- *You will be informed of any new relevant findings by the researcher*

Will you be paid to take part in this study and are there any costs for you?

- *No, you will not be paid to take part in the study because there will be no costs involved for you, if you do take part in this study. A token of appreciation will be given.*

Is there anything else that you should know or do?

- You can contact Professor SK Coetzee at 018 299 1829 or Ms OR Appolus at 018 2852030 or 12733067@nwu.ac.za if you have any further questions or have any problems.
- You can also contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206 or carolien.vanzyl@nwu.ac.za if you have any concerns that were not answered about the research or if you have complaints about the research.
- You will receive a copy of this information and consent form for your own purposes.

Declaration by participant

By signing below, I ……..……. agree to take part in the research study titled:…….

I declare that:

- I have read this information/it was explained to me by a trusted person in a language with which I am fluent and comfortable.
- The research was clearly explained to me.
- I have had a chance to ask questions to both the person getting the consent from me, as well as the researcher and all my questions have been answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be handled in a negative way if I do so.
- I may be asked to leave the study before it has finished, if the researcher feels it is in the best interest, or if I do not follow the study plan, as agreed to.

Signed at (*place*) .....…..……. on (*date*) ……...……. 20....

....

Signature of participant **Signature of witness**

Declaration by person obtaining consent

I *(name)* …… declare that:

- I clearly and in detail explained the information in this document to

  …….

- I did/did not use an interpreter.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I gave him/her time to discuss it with others if he/she wished to do so.

Signed at (*place*) .....…..…… on (*date*) ……...……. 20....

....

Signature of person obtaining consent **Signature of witness**

Declaration by researcher

I *(name)* ……..…… declare that:

- I explained the information in this document to …….. **or** I had it explained by …… who I trained for this purpose.
- I did/did not use an interpreter
- I encouraged him/her to ask questions and took adequate time to answer them

  or I was available should he/she want to ask any further questions.
- The informed consent was obtained by an independent person.
- I am satisfied that he/she adequately understands all aspects of the research, as described above.
- I am satisfied that he/she had time to discuss it with others if he/she wished to do so.

Signed at (*place*) .....…..…… on (*date*) ……...…….. 20....

....

Signature of researcher **Signature of witness**

ANNEXURE I INFORMATION LEAFLET AND CONSENT FOR NURSING STAFF

HREC Stamp

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM FOR NURSING STAFF MEMBER

TITLE OF THE RESEARCH PROJECT: A strategy to enhance competencies of nursing unit managers in public hospitals of the North West Province

ETHICS REFERENCE NUMBERS: NWU-00356-16-A1

PRINCIPAL INVESTIGATOR: Prof SK Coetzee

POST GRADUATE STUDENT: OR Appolus

ADDRESS: 11 Hoffman Street, Potchefstroom, 2520

CONTACT NUMBER: 018 299 1879

You are being invited to take part in a **research study** that forms part of my **fulfilment of the requirements for Doctor of philosophy in nursing**. Please take some time to read the information presented here, which will explain the details of this study. Please ask the researcher or person explaining the research to you any questions about any part of this study that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research is about and how you might be involved. Also, your participation is **entirely voluntary,** and you are free to say no to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part now.

This study has been approved by the **Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00356-16-A1)** and will be conducted according to the ethical guidelines and principles of Ethics in Health Research: Principles, Processes and Structures (DoH,

2015) and other international ethical guidelines applicable to this study. It might be necessary for the research ethics committee members or other relevant people to inspect the research records.

What is this research study all about?

- *This study will be conducted in public hospitals of the North West Province to evaluate competencies of nursing unit managers and link them to staff outcomes and their perceptions of the practice environment in order to develop a strategy to enhance competencies of nursing unit managers.*

The objectives of this research are:

- *To evaluate nursing unit managers' competency ratings according to the nursing service manager, the nursing staff and by self-assessment of the nursing unit manager.*
- *To determine an association between the nursing unit managers' competencies and personal and nursing unit demographics.*
- *To determine the relationship between the nursing unit managers' competencies and nursing staff outcomes (job satisfaction, intention to leave, organisational commitment and compassion fatigue), and their experience of the practice environment*
- *To develop a strategy to enhance nursing unit managers' competencies.*

Why have you been invited to participate?

- *You also complied with the following inclusion criteria:*
  - *You are a nursing staff member in a large district, regional and provincial hospital in the North West province*
  - *You have a nursing unit manager that supervises you.*
- *You will be excluded from this study if:*
  - *You are on any type of official leave during data collection*
  - *You have been supervised by the nursing unit manager for less than six months*
  - *You are an agency staff or student.*

What will be expected of you?

- *You will be expected to participate in a survey and complete self-administered survey questionnaires to evaluate competencies of the nursing unit manager in your hospital unit on how well they can implement or use competency statements, your job satisfaction, practice environment, job turnover intention, organisational commitment and compassion fatigue.*
- *The survey has 6 different questionnaires which will all take about 60 minutes of your time, with the shortest being 2 minutes and the longest 15 minutes. You have ten days in which to complete all surveys.*
- *An arrangement will be made to explain the research project.*

Will you benefit anything from taking part in this research?

- *Giving feedback of the study to each hospital will provide direct benefits to nursing service managers, nursing unit managers and nursing staff and even the organisation as a whole.*
- *Sharing the strategy with hospitals and the researcher assisting with strategy implementation and evaluation will also be a direct benefit.*
- *Indirect benefits will be:*
- *Practice: Opportunity for further development, positive practice environments, improved staff outcomes, improved quality of care*
- *Education sector: align competencies required with curriculum*
- *Policy makers: standards for appointment and/or performance evaluation*

- *Further surveys on competencies of nursing unit managers and/or use of multi-source feedback*

Are there risks involved in you taking part in this research and what will be done to prevent them?

- *Risks include you may be feeling fatigued or bored after completion of surveys. To overcome this, you will have ten days in which to complete the survey at your least inconvenience.*
- *You may also feel distressed after completing the survey, if you should come to realise that you are experiencing poor nurse outcomes. You may also feel embarrassed to evaluate your nursing unit manager. The researcher will ensure confidentiality by making sure that this information is not divulged or made available to any other person and no identity is revealed in reporting or publishing research results and that no other person can link any data to any participant except the researcher, who will not divulge such information.*
- *The researcher will allow and respect the right to decide whether or not to participate in the study without any prejudice.*
- *The researcher will ensure that you are spared any form of distress and do not come to any type of harm.*

What will happen in the unlikely event of some form of discomfort occurring as a direct result of your taking part in this research study?

- *Should you experience any discomfort as a result of partaking in this research survey, please contact the researcher, Ms Ruth Appolus so that necessary arrangements can be made.*

How will we protect your confidentiality and who will see your findings?

- *Anonymity of your findings will be protected by keeping all your findings private. Your privacy will be respected by making sure that your identity is not known with regard to your participation in the study. Your results will be kept confidential by the researchers. Your returned survey questionnaires will not have any identifying information. Only the researchers and statisticians will be able to look at your findings. Findings will be kept safe by locking hard copies in locked cupboards in the research director's office and for electronic data it will be password protected. Data will be stored for five years. If destroyed it will be through shredding.*

Who will have access to the data?

- *Only the research team will have access to data, however, confidentiality will be ensured.*

What will happen with the data or samples and findings?

- *The findings of this study will be used in future for publishing in official accredited scientific journals and presentations of findings will also be done at conferences*
- *Findings will also be shared with the North West Department of Health as well individual hospitals that took part in the study.*
- *The samples will not be used for any future studies. Should it happen that for an unlikely reason samples are used again, permission will again be asked from the Health Research Ethics Committee of the North West University.*
- *The data collected and informed consents signed and hospital/units codes will be filed and stored in locked cupboards in the research director's office.*
- *Electronically stored data will be password protected in the researchers` computer and all data collected will be destroyed and deleted after 5 years by way of shredding.*

How will you know about the results/findings of this research?

- *We will present results of this research when the study has been completed by 2018.*
- *Presentations will also be done at the Department of Health research days in the North West Province and all hospitals that took part in the study.*
- *You will be informed of any new relevant findings by the researcher*

Will you be paid to take part in this study and are there any costs for you?

- *No, you will not be paid to take part in the study because there will be no costs involved for you, if you do take part in this study. A token of appreciation will be given.*

Is there anything else that you should know or do?

- You can contact Professor SK Coetzee at 018 299 1829 or Ms OR Appolus at 018 2852030 or 12733067@nwu.ac.za if you have any further questions or have any problems.
- You can also contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206 or carolien.vanzyl@nwu.ac.za if you have any concerns that were not answered about the research or if you have complaints about the research.
- You will receive a copy of this information and consent form for your own purposes.

Declaration by participant

By signing below, I ……..……. agree to take part in the research study titled:…….

I declare that:

- I have read this information/it was explained to me by a trusted person in a language with which I am fluent and comfortable.
- The research was clearly explained to me.
- I have had a chance to ask questions to both the person getting the consent from me, as well as the researcher and all my questions have been answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be handled in a negative way if I do so.
- I may be asked to leave the study before it has finished, if the researcher feels it is in the best interest, or if I do not follow the study plan, as agreed to.

Signed at (*place*) .....…..……. on (*date*) ……...……. 20....

....

Signature of participant **Signature of witness**

Declaration by person obtaining consent

I *(name)* …… declare that:

- I clearly and in detail explained the information in this document to

  …….

- I did/did not use an interpreter.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I gave him/her time to discuss it with others if he/she wished to do so.

Signed at (*place*) .....…..…… on (*date*) ……...……. 20....

....

Signature of person obtaining consent **Signature of witness**

Declaration by researcher

I *(name)* …… declare that:

- I explained the information in this document to …….. **or** I had it explained by …… who I trained for this purpose.
- I did/did not use an interpreter
- I encouraged him/her to ask questions and took adequate time to answer them

  or I was available should he/she want to ask any further questions.
- The informed consent was obtained by an independent person.
- I am satisfied that he/she adequately understands all aspects of the research, as described above.
- I am satisfied that he/she had time to discuss it with others if he/she wished to do so.

Signed at (*place*) .....…..…… on (*date*) ……...……. 20....

....

Signature of researcher **Signature of witness**

ANNEXURE J: EVIDENCE OF LANGUAGE EDITING

cumlaude
language practitioners

Director: CME Terblanche - BA (Pol Sc), BA Hons (Eng), MA (Eng), TEFL

22 Strydom Street
Baillie Park, 2531

Tel 082 821 3083
cumlaudelanguage@gmail.com

DECLARATION OF LANGUAGE EDITING

I, Ina-Lize Venter, hereby declare that I language edited the thesis,

A strategy to enhance competencies of nursing unit managers in public hospitals of the North-West Province,

for **OR Appolus (12733067)** for the purpose of submission for a doctoral degree at the North-West University. Changes and suggested changes to the text and bibliography were indicated in track change mode, and could be accepted or rejected at the discretion of the author. The final language edited version as sent to the author is available upon request.

Regards,



I Venter

SATI-accredited Language Practitioner (1001925)

for Cum Laude Language Practitioners (CC)