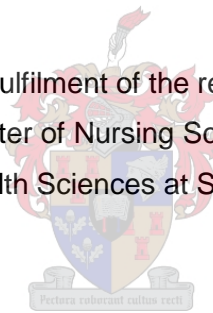# The Experiences of Critical Nurses regarding staffing management in Critical Care Units in private hospitals of the Cape Metropole

By

Ramona Anthonie

Thesis presented in partial fulfilment of the requirements for the degree of
Master of Nursing Science
in the Faculty of Health Sciences at Stellenbosch University

Supervisor: Mariana M Van Der Heever   September   2012

DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Signature: …………………………

Date:

ABSTRACT

Nurse managers are responsible to staff different hospital units and departments with sufficient, trained and experienced personnel. Most critical care units in the private healthcare in South Africa are staffed below maximum workload levels and additional staff is supplemented when needed.

Current staffing management strategies comprises the application of the patient acuity score, the utilisation of contracted agency staff and ward staff who assist occasionally in the critical care unit (CCU). The aim of the study was to explore the experiences of critical care nurses regarding staffing management within critical care units in private health care institutions in the Western Cape. The following objectives were set to:

- explore the experiences of CCNs regarding staffing management strategies such as
    - the patient acuity score
    - the employment of *ad hoc* agency staff and
    - the utilization of ward staff

A descriptive design with a qualitative approach was applied. A sample size of n=15 was drawn from a total population of N=377, using purposive sampling technique. A pilot-test was also completed. The trustworthiness of this study was assured with the use of Lincoln and Guba's criteria of credibility, transferability, dependability and confirmability. All ethical principles were met.

The findings of the study demonstrated that nurses perceive the workload in critical care units as heavy. The utilisation of the acuity score does not really assist in relieving the workload as managers tend not to consider the staffing requirements as predicted by the acuity score due to budget constraints. The enrolled nurses who assist occasionally in the critical care unit require supervision as well as ongoing development to ensure safe and quality patient care. Yet agency nurses were perceived as either extraordinary good or incompetent.

Key Words: Critical care unit, staff management, patient-nurse ratio.

OPSOMMING

Verpleegbestuurders het die verantwoordelik om verskillende hospitaaleenhede en departemente met voldoende opgeleide en ervare personeel te voorsien. Die meeste kritieke sorgeenhede in Suid-Afrika word met minder as dan die maksimum werkladingsvlak beman en addisionele personeel word aangevul wanneer nodig.

Huidige personeelbestuurstrategieë behels die toepassing van die pasiënt akuïteit telling, die gebruik van ingekontrakteerde agentskap-personeel en saalpersoneel wat per geleentheid in die kritiekesorgeenheid help. Die doel van die studie was om die ervaringe van kritieke-sorgverpleegsters ten opsigte van personeel bestuur binne die kritiekesorgeenhede in die privaat gesondheidsorginstellings in die Weskaap, te ondersoek. Die volgende doelwitte is gestel:

- Om die ervaringe van kritieke-sorgverpleegsters aangaande personeelbestuur-strategieë te ondersoek, soos:
  - die pasiënt akuïteit telling
  - die gebruik van agentskapverpleegpersoneel en
  - die gebruik van saal personeel, te ondersoek

'n Beskrywende kwalitatiewe studie is toegepas. 'n Steekproef van n=15 is uit 'n totale populasie van N=377 getrek deur die doelgerigte steekproeftegniek te gebruik. 'n Loodstoetsing van die semi-gestruktureerde vraelys is ook gedoen. Die betroubaarheid van hierdie studie was verseker deur van Lincoln en Guba se kriteria vir geloofwaardigheid, oordraagbaarheid, betroubaarheid en bevestigbaarheid gebruik te maak. Daar is aan alle etiese vereistes voldoen.

Die bevindings van die studie toon dat die verpleegpersoneel die werklading in die kritiekesorgeenheid as veeleisend ervaar. Die aanwending van die pasiënt akuïteit-telling dra nie werklik by tot verligting van die werklading nie, aangesien bestuurders weens begrotingsbeperkings neig om nie die personeelbenodigdhede soos deur die akuïteit-telling voorspel in ag neem nie. Die ingeskrewe verpleegsters wat per geleentheid in die kritieke-sorgeenheid hulp verleen, benodig toesig asook volgehoue ontwikkeling ten einde veilige en kwaliteit pasiëntsorg te verseker. Die agentskapverpleegpersoneel is egter as baie bekwaam of onbevoeg beskou.

Sleutelwoorde: kritieke-sorgeenheid, personeelbestuur, pasiënt-verpleegster-ratio.

ACKNOWLEDGEMENT

I would like to express my sincere thanks to:

- Our Heavenly Father, who through His grace gave me the strength, patience and perseverance to complete this research project.

- My husband, James for his patience and continuous support, encouragement and motivation to persevere in my academic endeavours.

- My family and friends for the prayers and undeniable support.

- Ms W. Pool, the librarian, thank you for always going the extra mile.

- Ms M. Cohen, for assistance and support.

- Ms L. Combrinck, for typing.

- Ms J. Santovito and Ms I Meyer for language editing and patience.

- Ms Lize Vorster for her willingness to assist with technical editing.

- All the nursing participants who were involved without whom this study would not have been possible.

- Ms M. Van Der Heever, my supervisor, for her support and guidance throughout the research project. Thank you.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

ABBREVIATIONS

BCEA   Basic Conditions of Employment

BACN   British Association of Critical Care Nurses

CAT   Computed axial tomography

CCN   Critical Care Nurse

CCSSA   Critical Care Society of Southern Africa

CCU   Critical Care Unit

CQI   Continuous Quality Improvement

Dr   Doctor

DRGs   Diagnosed-Related Groups

EN   Enrolled Nurse

ENAs   Enrolled Nursing Auxiliaries

HCU   High Care Unit

HDU   High-Dependency Unit

ICN   International Council of Nurses

MDGs   Millennium Development Goals

PCS   Patient classification systems

RN   Registered Nurse

SAMDC   South African Medical Council

SANC   South African Nursing Council

UN   United Nations

WPTPS   White Paper on Transformation of the Public Services

WHO   World Health Organization

CHAPTER 1: SCIENTIFIC FOUNDATION OF THE STUDY

1.1   INTRODUCTION

The general shortage of nurses and specifically of critical care nurses has been recognized worldwide (Scribante, Schmollgruber & Nel, 2004:111-115; Albarran & Scholes, 2005:1-3). Williams, Schmollgruber and Alberto (2006:394) confirm that staffing levels and working conditions in critical care units remain an important issue facing healthcare organizations in 51 countries of the world. Consequently, nursing staff have difficulty in providing quality nursing care that supports and responds to individual patient needs.

The quality of service delivery in healthcare organizations is primarily regulated by the healthcare legislation of the particular country as well as other health-related legislation and subsequent regulations. The South African White Paper on Transformation of the Public Services (WPTPS) (18340 Notice 1459 of 1997) is focused on quality improvement in the public sector. The WPTPS provides a policy framework and implementation strategy for the transformation of public service delivery to improve efficiency and effectiveness. *Batho Pele* means 'people first' is adopted maxim for quality improvement (Booyens, 2008b:263).

The South African Health Summit of 2001 focused on obtaining better health for all by using resources available in both the public and private sectors (Health Summit, 2001:32). In an effort to reach their 2015 Millennium Development Goals (MDGs), national governments and the international development community assist countries to restructure and improve healthcare organizations. MDGs were signed in September 2000 by world leaders of 191 United Nations (UN) member states to improve human and economic welfare by the year 2015 (World Health Organization, 2012:np). There are eight MDGs. The MDG that pertains to staffing management embodies the use of available resources. This includes the development of strategies to address the critical shortages of CCNs and ways to improve training of CCNs.

Despite the shortage of nurses, unit managers are challenged to balance staff, patients and other stakeholders in enhancing the quality and setting the standards for the healthcare sector (Shaw, 2004:np; foreword by the Director Health, Nutrition and Population Network, World Bank). In addition, nurse managers must provide the right number of nursing staff with adequate qualifications to render quality and safe nursing care (Warner, 2006:189-209). Nurse-to-patient ratio refers to the number of patients cared

for by a nurse, for example, one registered nurse (RN): two patients (Huber, 2010:624). In South Africa, a nurse- patient ratio of 1:1 is recommended in CCUs (Odendaal & Nel (2005:96).

California is the only state with mandated minimum nurse-to-patient ratios and its staffing policy recommends a nurse-patient ratio of 1:1 or 1:2 in CCUs (Huber, 2010:632).

Staffing refers to the appointment of people with the appropriate skills, abilities, knowledge and experience in the organization (Muller, Bezuidenhout & Jooste, 2008:537). The primary function of management is to staff different units and departments with sufficient, trained and experienced personnel while considering the unit budget (Muller et al., 2008:311). Staffing management according to Nash, Kniphfer, Kulinski and Sparks (2000: np) encompasses identifying and allocating unit-based human resources, in other words nurses, in the most effective way.

Critical care nursing, on the other hand, is the caring for seriously ill, hospitalized patients in the controlled environment of the critical care unit (CCU). Critical care nursing involves assisting, supporting and restoring the patient towards health, or easing the patient's pain and preparing him/her for a dignified death (World Federation of Critical Care Nurses, 2003:np).

A critical care unit can be defined as a specialized section of a hospital where comprehensive continuous care is provided for persons that are critically ill and who can benefit from treatment (Gale Encyclopedia of Surgery, 2004:np). A high care unit (HCU) also referred to as a high-dependency unit (HDU), is a unit in a hospital that offers specialist nursing care and monitoring to seriously ill patients. It provides greater care than is available on general wards but less than is given to patients in CCU (A Dictionary of nursing, 2008:np). Critical care units (CCUs) consist primarily of coronary units for the caring of cardiology patients, cardiothoracic units for the care of post-operative patients and general CCUs for the caring of patients with respiratory compromise (Elliot, Aitken & Chaboyer, 2007:16).

As a practicing critical care nurse, the researcher has however observed that despite the various strategies applied by nursing management to attain sufficient staffing in critical care units, the nurses on duty are often burdened with heavy workloads and a skill mix that does not match the seriousness of the illnesses of the patients in the unit. This heightens the possibility of medical legal hazards. Gillespie, Kyriacos and Mayers (2006:50) confirm the shortage of critical care nurses within the Western Cape in private

2

healthcare institutions. Through the proposed study the researcher will endeavour to determine the experiences of other critical care nurses regarding the staffing management of CCUs.

1.2   BACKGROUND AND RATIONALE

CCUs in South Africa must be accredited by the South African Medical Council (SAMDC) and critical care nurses must be registered with the South African Nursing Council (SANC). SANC is the legislative body that governs nursing practice in South Africa. By regulating nursing education and the practice of the nursing practitioner, SANC thus acts in the interest of the public. Duties performed by the CCN are based on the scope of practice as contained in Regulation 2598 (SANC, 1984 as amended). Regulation 2598, with regards to the scope of practice, stipulates the type and level of tasks that nurses are allowed to perform depending on their qualifications and whether they form part of the registered or enrolled categories of nursing staff with the SANC. The enrolled nurse is trained to perform basic nursing care and should work under the supervision of the registered nurse. Hence, the registered nurse remains accountable for tasks delegated to the enrolled nurse, particularly if these tasks are beyond the scope of practice of the enrolled nurse (Searle, 2006:131). In South Africa the shortage of staff results in 53% of enrolled nursing assistants and 40% of care givers acting beyond their scope of practice (Dorse, 2008: 67-68).

In South Africa healthcare is practiced in both the public and private sector. The private sector comprises of private facilities, namely hospitals, laboratories, service providers such as doctors and nurses, funding mechanisms, that is, medical schemes, life and short-term insurance and traditional health practitioners. The private sector regards healthcare services as a commodity to be sold for profit. Public sector healthcare, that is the state owned sector, has a duty to provide access to healthcare for all South Africans. The latter is a basic right contained in the Constitution of South Africa (Hassim, Heywood & Berger, 2007:164-165).

For many people, private health care portrays a picture of high quality services, individual attention and state of the art facilities (Hassim et al., 2007:166). Quality management refers to an approach recognized by companies that quality is determined by the needs and expectations of clients. Therefore, employees must be trained, consulted and empowered as this will enable them to better understand organizational processes (Booyens, 2008b:292). However, indicators show that the private sector also has a shortage of staff (nursing and medical), budget constraints due to the global recession and

an increase of litigation cases due to patients being more aware of their rights (Hassim et al., 2007:166). Through the continuous evaluation of client complaints and feedback, problems can be dealt with in a preventive or proactive way (Muller et al., 2008:510).

Private critical care nursing services are expensive. Medical aid rates differ as each scheme has negotiated different daily rates for specialized units in relation to the option-type plan and benefits available. The Classic Priority option plan of Discovery medical scheme compensates R7489.80 for accommodation in a CCU and R4409.70 for accommodation in a HCU. The Dimension Prime 2 Plan of Medihelp medical scheme reimburses R7874.30 for accommodation in a CCU and R4409.70 for HCU accommodation whereas Pro Classic of Pro Sano medical aid scheme compensates R8833.90 for CCU lodging and R4475.40 for HCU lodging (Apostoli, 2011:np). Since private healthcare is costly, patients who are admitted to private healthcare facilities have expectations relating to the manner in which their different needs will be met. The patient, therefore, expects only the best nursing care possible and, where applicable, value for money (Shaw, 2004:12). Meeting the expectations of such patients can, however, be hampered by the global and local shortages of nurses.

According to the World Health Organization (WHO), Sub-Saharan Africa faces the greatest health challenges. Sub-Saharan Africa has 11% of the world's population and 24% of the global burden of disease but only 3% of the world's health workers (WHO, 2006:np). The SANC's figures of nursing manpower are 115 244 RNs, 52 370 ENs and 63 472 enrolled nursing auxiliaries (ENAs) (SANC, 2010:np). Despite the total of 231 086 nurses in the public and private sectors, the shortage of nurses in South Africa is approaching 40 000. Departments such as CCUs, theatres and mental health are the hardest hit (Naidoo, 2010:np). According to Gillespie, Kyriacos and Mayers (2006:50-57), the total number of CCNs that are either trained or experienced in the Western Cape Province is exceptionally low in both the public and private sector.

The shortage of CCNs affects staffing of CCUs negatively. Financial and economic pressures on the healthcare industry have resulted in these organizations becoming more concerned about their market shares, being more competitive and maximizing reimbursements. This need for financial gain often leads to management implementing cost-saving measures pertaining to labour. These measures often include the reduction of staff through termination, the cutting of expenditure of funds for staff development and the use of ancillary nurses, who attended shorter training programmes and are less expensive than using registered nurses, in order to decrease expenditure on the personnel budget (Muller et al., 2008:230). However, the utilization of ancillary nurses in CCUs, irrespective

4

of them being well-trained and experienced, remains a concern since the liability of delegated tasks is on the supervising RN (Searle, 2006:131).

Despite the shortage of staff and budget constraints, staffing in a unit should be sufficient to address the workload created by patients and other activities in a specific shift. The unit workload is the sum of the patient care and non-patient care workload created during a shift. Non-patient care relates to activities which are not directly associated with patient care, that is staff development programmes, performance appraisals, counting narcotics and charting. Non-patient care, however, decreases the time spent on direct patient care (Booyens, 2008b:181). These activities all form part of the responsibilities of the nurse but are non-productive in terms of direct patient care. The total workload, meaning non–patient care and direct patient care, should be translated into the number of staffing hours as well as the competencies needed (the mix of staff) to address the workload (Cusack, Jones-Wells & Chrisholm, 2004:2). It is apparent that the number and mix of staff assigned to a nursing unit and a specific shift has major implications on both the quality and cost of care.

Staffing calculations based only on the number of patients in a unit fail to take into account the dependency of the patients and the complexity of care needed (O'Brien & Benger, 2007:17-22). It is therefore necessary to classify patients according to their acuity of illness. There are different patient classification methods available. The patient classification methods are used primarily to classify patients into groups that require similar nursing care and to assign a numerical score that indicates the amount of nursing required for a particular shift (Huber, 2010:503).

In the CCU where the researcher is currently working the acuity assessment tool is used to determine the staffing requirements for a particular shift by quantifying the acuity of each patient. The patient is assigned an acuity or complexity category to estimate how many hours of nursing care will be needed per shift. The various nursing activities required by one patient being evaluated are given a rating of one to five according to the level of activity. A one indicates that minor nursing care is required, three shows that moderate care should be given and a five means that more major nursing care should be given. The patient acuity form makes provision for 21 nursing activities. For example, should a patient score a 1 for each activity, the patient's total rating for a shift is 21, meaning that the patient is not severely ill and capable of self-care (Booyens, 2008a:342). The acuity assessment is done every 12 hours by the CCN who is nursing the patient during that particular shift. The patient should be scored as near as possible to the end of the day shift thus reflecting on the activities carried out during the day and at the end of the night shift

(reflecting on the activities carried out during the night). When this information is collected in the unit for every patient per shift, the total number of hours of care required will provide an indication of the number and type of nursing staff required on that unit for a particular 24-hour period (Booyens, 2008a: 341).

In spite of the application of the acuity assessment tool, feelings of frustration are still experienced when not enough nurses are on duty. A sudden influx of patients admitted to the CCU can cause an increase in the nursing workload. Generally, more nurses are required to admit a patient to a unit as well as to provide total patient care (Muller et al., 2008:311). The nursing management alleviates these shortages by hiring agency nurses and by allocating general ward staff to CCUs in times of crises. This could cause a predicament as it leaves the CCN with someone who might not be familiar with the unit or staff that may need guidance and training. Moreover, the researcher has experienced that the relief staff, especially the agency staff, are hired at the last minute and often would reject the call to come in as quickly as possible. Others would not answer the call while some would take a while (more than an hour) to arrive for duty.

Inexperienced care workers, agency staff and ward staff often perform tasks well beyond their scope of practice, meaning that when a mistake leads to a patient's death or impacts negatively on their health, the supervising CCN is often unfairly blamed (Bateman, 2009:568). According to Zondagh (2004:20-24) and Aiken et al., (2002:1987-1983) insufficient, inexperienced or untrained staff result in increased errors and patient risks. Nurses, in turn, value good working conditions, appropriate training and a fair workload (Aiken, Clarke, Sloane, Sochalski & Silber, 2002:1987-1993). Therefore, relief staff provided to CCUs that are understaffed could place an additional burden on the supervising RN in the unit. The researcher has encountered similar problems as a CCN.

Research globally has proven that sufficient staff in CCUs is needed to allow effective and safe patient care as mentioned by Zondagh (2004:20-24) and Aiken et al., (2002:1987-1983). Although there is a substantial amount of research literature worldwide on the staffing requirements necessary in critical care units to improve the health of patients, little information could be found on the topic in a developing country such as South Africa.

The need for research into staffing requirements and patient safety, the current lack of such research in CCUs in South Africa and the alarming increase in staff shortages has motivated the researcher to investigate this situation. The researcher hopes that the study will offer insight into the problem from a South African perspective to improve the quality of safe patient care and to retain nurses for the profession.

In addition to the above, the challenges facing CCNs in a developing country may be different to those in developed countries. In an attempt to address these issues, the researcher explored the experiences of CCNs regarding current staffing management in CCUs within private hospitals.

1.3   PROBLEM STATEMENT

As explained in the rationale, current staffing management strategies such as the patient acuity score, the contracting of agency staff and the utilization of ward staff who assist occasionally are not always sufficient. The staff reserved for a particular shift may experience frustrations and heavy workloads due to a lack of competent staff. Research indicates that higher quality nurse staffing is associated with improved patient outcomes (Lankshear, Sheldon & Maynard, 2005:163-174).

As mentioned previously, limited research exploring staff requirements and the influence on patient safety in South Africa was found. However, based on international studies and the researcher's personal experience, assumptions can be made that staff shortages are directly linked to poor nursing care.

1.4   RESEARCH QUESTION

What are the experiences of CCNs regarding staffing management of CCUs in private hospitals in the Cape Metropolitan area?

1.5   AIM

The aim of this study was to explore the experiences of CCNs regarding staffing management in **CCUs** in private hospitals in the Cape Metropolitan area.

1.6   OBJECTIVES

The objectives of the study are to determine staffing management strategies such as:
- the patient acuity score
- the employment of *ad hoc* agency staff and
- the utilization of ward staff

1.7   RESEARCH METHODOLOGY

A brief overview of the research methodology applied in this study is provided in the current chapter while a full report follows in chapter three.

1.7.1 Research Design

A descriptive design with a qualitative approach was applied to explore the experiences of CCNs regarding staffing management in CCUs of private hospitals.

1.7.2 Population and Sampling

The population for this study consisted of all CCNs working in three private hospitals in the Cape Metropolitan area. Purposive sampling was used to choose the participants and hospitals included in the study. Twelve in depth interviews were conducted with a variety of CCNs and three in depth interviews were held with the management staff of the CCUs.

1.7.2.1   Specific Sampling Criteria

- All registered nurses working in the CCUs of the participating hospitals.
- Enrolled nurses who work occasionally in the CCUs as relief staff.
- Critical care nurses who work in the critical care units of the participating hospitals via a nursing agency.

1.7.3 Pilot Study

A pilot study consisting of one interview was conducted with a participant that met with the criteria of the study. The pilot study revealed no pitfalls.

1.7.4 Instrumentation

The interviews were conducted using a semi-structured interview guide that was based on the objectives of the study and the literature reviewed.

1.7.5 Data Collection

Fifteen in depth interviews were conducted to explore the experiences of CCNs regarding staffing management in the private health sector. The researcher conducted the interviews with the assistance of a field worker. The interviews were electronically recorded and took take place at the hospitals or at a suitable venue determined by the participants.

1.7.6 Validity Testing of the Research

The interview guide was validated by the supervisor and the co-supervisor involved in the study. Both of them are trained in critical care nursing, nursing management and had previously guided students who conducted qualitative studies.

The researcher received training on how to conduct interviews from the supervisor. The researcher also read extensively on the art of how to conduct interviews, particularly the work of Pope (2006:15-18).

Furthermore, the trustworthiness of data was assured by the criteria of credibility, dependability, conformity and transferability as described by De Vos, Strydom, Fouche and Delport (2009:345).

1.7.7 Data Analysis

Data analysis was done according to the approach described by Terre Blanche, Durrheim & Painter, 2006:321-326). The researcher transcribed the interviews. A search for themes or recurring inconsistencies was undertaken.

1.7.8 Ethical Considerations

Permission to conduct research was obtained from the Health Research Ethics Committee at the Faculty of Medicine and Health Sciences, Stellenbosch University as well as from the heads of the participating hospitals.

At the beginning of each interview each participant was given a "participant information leaflet" regarding the study and written consent for participation in the study was obtained from each participant. Consent was also obtained for audio and written recording of the interviews.

The principles of anonymity, confidentiality, privacy and the right to self-determination were maintained throughout the study. The application of these principles is explained in chapter 3. All data were locked and stored in a safe place for at least five years. Only people directly involved in the study will have access to the data.

1.8   DEFINITION OF TERMS

An auxiliary nurse also known as an enrolled nursing assistant (ENA) is someone trained to perform elementary nursing care carried out under the supervision of a registered nurse (Nursing Act, Act 33 of 2005).

Care giver is someone who cares for children or dependent adults (The free dictionary, 2011).

Critical care unit is a specified area in a hospital where the patients needing specialized monitoring, interventions or organ support that requires intensive focus from nursing staff are admitted. It may also be referred to as an intensive care unit (Gale Encyclopedia of surgery, 2004:np).

Enrolled nurse also known as a staff nurse is someone trained to perform basic nursing care. They work under the direct or indirect supervision of the registered nurse (Nursing Act, Act 33 of 2005).

Private hospital is a hospital built, owned and managed by a company outside of the state healthcare sector (Hassim, Heywood & Berger, 2007:164).

Registered nurse also known as a professional nurse is someone who can practice independently (Nursing Act, Act 33 of 2005).

Shift leader is a registered nurse in charge of a critical care unit for a 12 hour shift (Booyens, 2008b:124).

Staffing refers to the recruitment of persons with the necessary skills, abilities, knowledge and experience in the workplace (Muller et al., 2008:537).

Unit manager is a registered nurse trained in nursing management and is in charge overall of the critical care unit (Booyens, 2008b:121).

1.9   STUDY OUTLAY

Chapter 1: Scientific Foundations of the Study

Chapter 1 portrays the background and motivation for the study. This chapter provides a brief overview of the literature, research question, study objectives, research methodology, definitions of terms and the study layout.

Chapter 2:   Literature Review

In chapter 2 relevant literature is reviewed and discussed.

Chapter 3: Research Methodology

In chapter 3 an in-depth description of the research methodology utilized is discussed.

Chapter 4: Data analysis, Interpretation and Discussion

In chapter 4 the results of the study are released, analyzed, interpreted and discussed.

Chapter 5: Conclusion and Recommendations

In chapter 5 the results according to the study objectives are concluded and recommendations are made based on the scientific evidence obtained in the study.

1.10   SUMMARY

Personnel are the most important but also one of the most expensive resources in the delivery of healthcare services. Since nurses form the largest part of the healthcare workforce and consequently of the hospital budget, they are often the target of labor reduction strategies regardless of the effect on patients, staff morale and turnover (Huber et al., 2010:643).

Staff management comprises the adequate provision and utilization of personnel while considering the unit budget (Muller et al., 2008:311). Management of personnel in CCUs is therefore the responsibility of the unit manager who is expected to avoid both over-staffing and under-staffing.

Staffing management remains a complex concern, however it is important to staff the various critical care units with adequate, trained staff to ensure quality nursing care.

The previous paragraph summarizes the rationale for the study. This chapter also provided a brief overview of the research methodology as applied in the study. The literature review in chapter 2 provides an in-depth understanding of staffing management strategies applied in critical care units.

CHAPTER 2: LITERATURE REVIEW

2.1   INTRODUCTION

Chapter 2 presents the findings from the review of pertinent literature that adds value and provides a better understanding of the research topic. The purpose of a literature review is to provide a strong knowledge base for the conduct of the research study resulting in the synthesis of evidence-based information to gain knowledge and ultimately to improve nursing practice (LoBiondo-Wood & Haber, 2010:59). The literature review aims to explore the staffing management strategies within CCUs.

The main issues underlying staffing strategies are to provide the right number of applicably qualified nursing staff to deliver high-quality, safe and cost-effective nursing care to a group of patients and their families (Warner, 2006:189-209). Therefore the management of each health institution has the responsibility of staffing the different units or departments with sufficient, appropriately trained and experienced categories of staff (Muller, Bezuidenhout & Jooste, 2008:311).

2.2   SELECTING AND REVIEWING OF THE LITERATURE

The literature review was completed over a period of 20 months. Search engines such as CINAHL and MEDLINE were utilized and ongoing support in this regard was provided by the librarian and the supervisor of the researcher. However, limited published research was found nationally compared to studies done internationally.

Material was selected from multiple electronic data bases (including Pubmed and Cochrane Library), periodicals, journals and different monographs (pamphlets and books) as well as by searching through different reference lists. Materials selected were less than 10 years old, except for some earlier seminal studies.

2.3   FINDINGS FROM THE LITERATURE REVIEW

The findings from the literature review will be described under the following headings:
- The South African Nursing Council (SANC)
- Ethics
  - The International Code of Ethics for Nurses
  - The South African Code of Ethics for Nurses
  - The Nurses' Pledge/ Code of Service
- Staffing Management Strategies:

- o Patient Classification Systems
- o Nurse -patient Ratios
- o Nursing Skill Mix
- o Patient Census
- o Non-productive Time
- o Budget
- o The Business Principles
- o Acuity Score
- o Agency and Ward Staff
- Quality assurance
- Conceptual theoretical framework

2.4 NURSING GOVERNANCE IN SOUTH AFRICA

The South African Nursing Council (SANC) is the legislative body that governs nursing practice in South Africa. By regulating nursing education and the practice of the nurse practitioner, SANC acts in the interest of both the public and the nursing fraternity. The scope of practice of all categories of nurses is guided by Regulation 2598 from the Nursing Regulations of the Nursing Act 33 of 2005 (Act 33, 2005:33-35). The scope of practice refers to the type and level of tasks that nurses are allowed to perform, depending on their qualifications (Regulation 2598, 1984:np). The range of actions contained in the scope of practice of nurses is extensive. It deals with the activities of the registered nurse from prenatal care through all stages of a person's lifespan including death at an advanced age.

2.4.1 Registered (professional) Nurses

According to the Nursing Act, Act 33 of 2005, section 31, a registered or professional nurse (RN) is a nurse who is qualified and competent to independently practice comprehensive nursing and is capable of assuming responsibility and accountability for such practice. The RN is the most highly educated of all the categories of nursing staff. The minimum requirements for registration as a registered nurse are described in Regulation 425 (1985:np). According to Regulation 425 (1985:np), the RN should complete 4 years of undergraduate training.

2.4.2 Enrolled Nurses

An enrolled nurse (EN) is defined as "a person educated to practice basic nursing in a manner and to the level prescribed" (Act 33, Section 31). The EN receives 2 years of education (Regulation 2175, 1993:np).

The scope of practice of the enrolled nurse is limited to the execution of a nursing care plan that has been planned and initiated and is supervised by a registered nurse. The enrolled nurse may not (except in emergencies) perform the duties of a registered nurse.

2.4.3 Enrolled Nurse Auxiliary

An enrolled nurse auxiliary (ENA) (Section 33, Act 33) is "a person educated to provide elementary nursing care in a manner and to the level prescribed" (Act 33, 2005:4, 25). The ENA is required to complete 1 year of training (Regulation 2176, 1993:np). The scope of practice of the enrolled auxiliary nurse limits them to assisting registered nurses, registered midwives and enrolled nurses with nursing or midwifery regimens which have been planned and initiated by the registered nurses. The enrolled auxiliary nurse works under the direct or indirect supervision of the registered nurse or registered midwife (Regulation 2598, 1984:np).

2.4.4 Critical Care Nurses

The critical care nurse is defined as a registered practitioner who is capable of providing comprehensive patient care for acutely ill patients who require complex interventions in a highly technical setting (World Federation of Critical Care Nurses, 2005:np). Fundamental to critical care nursing is the provision of comprehensive nursing care and treatment to patients who are critically ill. Critical care nursing also concerns the implementation of safe nursing care and ensuring that nursing care is only delegated to competent practitioners as stated in Regulation 1046 of the Nursing Act 33 of 2005 (Act 33, 2005:26). Critical care nurse (CCN) training is a post-registration qualification that assists with the establishment of CCNs as clinical specialists. Critical care training is available to registered nurses only. The training is provided at both public and private colleges as well as at universities; with colleges offering training at a diploma level (1 year) and universities at a degree level (2 years). Regulation 212, as set by SANC, governs this qualification (Regulation 212, 1993:np). Regardless of the extended role and function of the CCN, there is a defined scope of practice that enunciates the role of these nurses as specialists (Schmollgruber, 2007:247-248). Since there are limitations for the specific scope of practice of CCNs, the Critical Care Society of South Africa supports the CCN by providing guidelines for nurses as well as doctors working in CCUs (Regulation 212, 1993:np). The Critical Care Society of Southern Africa (CCSSA) was established in South Africa in the late 1970s. CCSSA is a non-profit organization for professional doctors and nurses in critical care medicine. The society is managed by volunteers from the professional community (CCSSA, 2012:np).

2.5   QUALITY OF CARE PROVIDED BY CCNS IN SOUTH AFRICA

According to Jooste (2008:320), nursing personnel directly affect the quality of healthcare provision. Providing quality nursing care is challenging owing to the current shortage of CCNs. Putting the patient first and maintaining quality of care is a major challenge facing the CCN in healthcare delivery today. Quality refers to excellence within in a given service and excellence is defined as the standards and criteria as anticipated by the patient, service providers and funders (Jooste, 2008:263). Muller et al., (2008:534) went one step further and define quality not only as the degree of excellence, but the extent to which an organization meets clients' needs and exceeds their expectations. This translates as "doing the right thing, right the first time" and "doing it better next time". Patients today are more aware of their rights (Hassim, Heywood & Berger, 2007:166) and demand only the best nursing care to meet their individual needs. However, research indicates that more than 75% of RNs believe that the nursing shortage leads to poor quality of patient care as well as less time to spend with patients (American Association of Colleges, 2011:np). Nurses working in understaffed CCUs have a higher probability of burnout and of making fatigue related mistakes (Bhagwanjee & Scribante, 2007:1311-1314).

In addition, the shortage of CCNs is further exacerbated by a moratorium imposed by SANC in 2005 on the development of new curricula and the opening of nursing schools, thus preventing private hospitals from training more students (Hediger, 2010:4). The aim was to curb fly-by-night training institutions which were exploiting students and issuing worthless certificates. Unfortunately, the moratorium also had an impact on legitimate institutions, hence contributing to the challenge facing healthcare today. The ban is still in place and it is unsure when it will be lifted (Nurses from India cure staff shortage, 2011: np). The Minister of Health, Dr Aaron Motsoaledi has suggested the re-opening of nursing colleges to ease the shortage of nurses but SANC still has to agree (Nursing shortage to ease if colleges reopen, 2012:np).

2.6   ETHICS

The word 'ethics' derives from the Greek word, *ethikos,* meaning "moral, showing character" while the word 'morals' derives from the Latin 'moralis'. Both words pertain to the customs, traditions or character typical to a group of people. Accordingly, the concept of ethics has various meanings. Sometimes it refers to the practices or beliefs of a particular group of individuals, for example nursing or medical ethics. It also sometimes refers to the standards and behaviour expected of a group as defined in the group's code of professional conduct (Pera & Van Tonder, 2011:5).

The nursing standards of practice and ethical codes in a country are controlled by a nursing council; however, the values and norms are generated by the members of the profession over a period of time. In nursing an ethical code is vital as it provides the guidelines to each member on exactly how to protect their reputation, professional integrity and status (Searle, 2006:89). Nursing codes not only guide members of the profession but also protect the public they serve. In practice, codes of ethics have limitations and cannot provide answers to everyday moral dilemmas; though they do postulate the overall professional responsibility, interaction with patients and other professionals and accountability (Pera & Van Tonder, 2011:9).

Therefore staffing management of critical care units should be congruent with the ethical codes underlying the profession, meaning that the staff on duty for a particular shift should be such that it enables the nurse to sustain the overall professional responsibilities, interactions with patients and accountability mentioned by Pera and Van Tonder (2011:9) in the previous paragraph. Consider the example of a ward nurse with inadequate knowledge and skills who is often told to work in CCU. The nurse raises an objection with the direct senior but is always told that there is a shortage of staff. Patient safety could therefore be compromised due to her lack of knowledge and the employer, i.e. management, failed to provide the appropriate mix and number of CCNs per shift (Pera & Van Tonder, 2011:284).

2.6.1 Codes of Ethics

2.6.1.1   The South African Code of Ethics for Nurses

Similarly to the International Council of Nurses (ICN) Code of Ethics, the South African Nursing Council (SANC) expects all its members to practice their profession in an ethical manner. Therefore, the professional code of ethics is based on personal morality which is also basic to the rules of nursing practice. Kindness, goodness, integrity, justice and non-maleficence are the cornerstones of the ethical code. The ICN Code of Ethics has a corresponding standpoint (Searle, 2006:98).

According to the S.A Code of Ethics for nurses, the nurse should be reliable, responsible and accountable for acts and omissions. Moreover, nurses should adhere to the laws and legislation related to the health profession. This alludes to the fact that the unit manager has a legal responsibility for quality control of nursing practice at the unit level, including the reporting of dangerous understaffing (Searle, 2006:98-100). For example, the unit manager can fill a sick call with a part-time nurse who is available to work extra shifts (Huber, 2010:639). As a result, the unit manager demonstrated ethical adherence to the

code through ensuring sustainable staffing totals per shift. The code of ethics demands the ethical management of hospitals and yet the current totals or tendency to utilize ancillary nurses or nurses who have undergone shorter training programmes does not demonstrate adherence to the code (Muller et al., 2008:230).

According to Gillespie, Kyriacos and Mayers (2006:50-57), the number of critical care nurses, either trained or experienced, in the Western Cape Province, is exceptionally low in both the public and private sector. A study done by Dorse (2008:51- 53) confirmed the shortage of both trained and experienced CCNs in the Western Cape Province and revealed that 53% of enrolled nursing assistants and 40% of care givers act beyond their scope of practice (Dorse, 2008:67).   However, the registered nurse remains accountable for tasks delegated to the enrolled nurse particularly if these tasks are beyond the scope of practice of the enrolled nurse (Searle, 2006:131).

2.6.1.2   The Nurses' Pledge/ Code of Service

The ethical foundation of the nursing profession in South Africa is entrusted in the Nurses' Pledge. The pledge is derived from the Florence Nightingale Pledge and has been in use since the establishment of nurse training in South Africa in 1883 (Muller, 2006:4; Searle, 2006:11). Once taking the pledge, usually after completion of their basic training, the nurse and midwife enter into a verbal agreement with the community. This pledge reflects the nurse's responsibility and mode of interaction with patients when rendering nursing care. The essence of the pledge is demonstrated in the following phrase: "I solemnly pledge myself to the service of humanity and will endeavour to practice my profession with conscience and with dignity" (Muller, 2006:4).

2.6.1.3   The International Code of Ethics for Nurses

The International Council of Nurses (ICN) developed a Code of Ethics for nurses in 1953. This code has been revised several times with the most recent revision completed in 2005 (The International Code of Ethics for nurses, 2011:np). The ICN Code of Ethics is based on four fundamental responsibilities, namely, to promote health, to prevent illness, to restore health and to alleviate suffering.

The responsibilities that relate to staffing and patient safety are captured in the following issues addressed in the ICN Code of Ethics (2011:np). The ICN Code of Ethics (2011:np) specifies that nurses should promote an environment where human rights are respected. The code also states that nurses should use their own judgement concerning individual competencies that relate to accepting or delegating tasks. Moreover, the code avers that the nurse has to implement safety measures to protect individuals in their care.

In addition to the four fundamental responsibilities mentioned above, the ICN Code of Ethics also comprises of four main elements which are reflected in the standards of ethical conduct; namely, nurses and people, nurses and practice, nurses and the profession and nurses and co-workers. The following guidelines regarding the implementation of elements contained in the ICN Code of Ethics that relate to staffing and patient safety were found:

- Nurses should provide care that displays respect for the human rights of all patients.
- The nurse should develop and monitor environmental safety in the workplace.
- The nurse is responsible for the establishment of standards of care that promote safety and quality patient care.
- Unit managers should identify and monitor the unit-specific competencies of all nurses.
- The unit manager is ultimately responsible for setting standards for nursing practice and management. These standards should be consistent with the ethical values and behaviour of all regulations and the ICN.

2.6.1.4   Staffing Management and the International Code of Ethics

The ICN Code of Ethics for nurses (2011:np) emphasizes the pivotal role of the nurse whose primary commitment is to ensure an environment that is safe and conducive to the rendering of quality nursing care. Inherent to the latter is the acceptance and delegation of tasks that are consistent with the scope of practice of the various categories of nurses. Translating the elements and inherent values of the code of ethics to staffing management is a key role for nurse managers. The nurse manager is accountable for effective management of patient flow, the nursing care environment and has a leadership role particularly related to staffing and patient care services. For example, the use of a staffing management plan will provide a structured way to identify patient needs as well as the allocation of personnel in the most effective and efficient manner (Huber, 2010:632). This is especially difficult in practice due to the global shortage of staff in CCUs (What is the nursing shortage and why does it exist? 2011:np).

Regardless of the shortage of nurses the CCN has the responsibility to provide safe, quality nursing care. To meet the needs of the patient and the increased responsibilities, the CCN has to delegate tasks to non-RNs or non-nursing members as reflected in chapter 2, sections p, q, and r of Regulation 2598 (Regulation 2598, 1984:np). Delegation is transferring duties, tasks and responsibilities to another person while remaining responsible and accountable (Muller, 2006:143; Muller et al., 2008:524). For example, basic, routine nursing care activities can be done by ancillary staff and telephones can be

answered by administration staff. This will leave the RN free to provide more complex nursing care where needed (Muller et al., 2008:313). The appropriate use of delegation requires the RN to consider the scope of practice of each team member as she is held accountable for delegated tasks (Searle, 2006:131). The legal burden attached to delegation diminishes the RN's willingness to delegate and several RNs continue to perform tasks that should be delegated to non-RNs (Zerwekh & Claborn, 2006:313; Booyens, 2008b:113).

2.7   THE PATIENT CLASSIFICATION SYSTEMS

Patient classification is defined as the categorization or grouping of patients according to an assessment of their nursing care requirements over a 24- hour period (Zerwekh & Claborn, 2006:354).

There are various patient classification methods available, used primarily to classify patients into groups requiring similar nursing care and to assign a numerical score that indicates the amount of nursing required. However, staffing calculations based only on the number of patients fail to take account of the dependency of patients and the complexity of care needed (O'Brien & Benger, 2007:17-22). It is therefore necessary to classify patients according to their severity of illness. An overview of the various forms of patient classification systems follows.

2.7.1 The Therapeutic Intervention Scoring System (TISS)

This is an example of a patient classification system used in CCUs. The TISS was developed to determine severity of illness, to establish nurse: patient ratios and to assess current bed use. Patient classification systems (PCS) are the timely matching of patient needs to caregiver skills in an organized way. The measure of nursing workload that is created for each patient is referred to as the patient acuity (Huber, 2010:505). TISS assigns a score to each procedure performed on a patient; thus the greater the number of procedures performed on a patient, the greater the score and the higher the intensity of nursing care required. The TISS provides valuable information on the acuity of patients in CCU, but is not an accurate indicator of total nursing workload (Adomat & Hewison, 2004:299-308).

2.7.2 The Prospective Payment System

In contrast to the TISS, the prospective payment system, a form of managed care, informs the organization the amount of money reimbursed for a patient with a particular diagnosis. Diagnosed-Related Groups (DRGs) are based on the medical diagnosis of a patient and

the established categories are the same across all hospital institutions. The amount of money the healthcare institution receives for a particular DRG must cover the cost of supplies, tests, procedures and staff needed to care of the patient during their hospital stay. Limitations are that it does not consider comorbidities of patients (Jooste, 2008:313-316). Comorbidity is defined as two or more co-existing medical conditions or disease processes that are additional to an initial diagnosis (Mosby's Medical Dictionary, 2012:np).

Regardless of the nursing model used, the primary purpose of all these systems is to make predictions about the amount and level of skill mix required per shift. Therefore, staff should be trained and competent for the model to be efficient or of benefit in CCUs (Cacace & Schmid, 2009:np).

2.8   NURSE-PATIENT RATIOS

Huber (2010:625) defines the nurse-patient ratio as the number of patients cared for by one nurse. It is the ratio of registered nurses assigned to each patient per 12- hour shift e.g., a nurse cares for only one patient (1:1 ratio) or two patients (1: 2 ratio) during each shift.

The intensive care society in England in their report on 'Standards for nurse staffing in CCUs', (2010:np) adopted a nurse-patient ratio of 1:2 for CCUs. Staff allocation was based on the premise that another nurse will be available to manage the unit. Consequently, a seriously ill patient will need care from the chief nurse as well as other staff members (wound care, turning and pressure care). The opposite is also true where occasionally a CCU patient needs less attention and is able to manage certain self-care tasks themselves.

In the United States of America, 27 states have nurse-population ratio laws with California's ratio being 1 registered nurse for every 2 patients in CCU (National Nurses United, 2011: np). Nurses support these legally-enforced ratios and 96% felt that patients will receive poor quality care if the ratios were abolished (Wise, 2007:np).

In South Africa nursing unions lobbied to legally enforce nurse-patient ratios in an attempt to relieve working conditions for a diminishing and increasingly aging nursing population. Nursing experts of the private sector (Nursing managers of the Netcare and Mediclinic hospital groups), the Gauteng Health Department (standards compliance chief, Dr Sue Armstrong) and an international patient-ratio researcher (Christine Zondagh of Charisma Nursing Solutions) found it to be too costly and in the end detrimental to patient care. Instead they suggested 'activity based' guidelines aimed at the development of sufficient

and appropriate competency levels of nursing staff. These are currently being developed by the National Department of Health (Bateman, 2009:565).

Nonetheless, some guidelines for nurse-patient ratios do exist in South Africa. The recommended ratio for CCUs ranges from 1:1 to 1:2 (The South African Society of Anaesthesiologists, 2011:np). Odendaal and Nel (2005:96) also suggest a nurse-patient ratio of 1:1 in CCU.

Ratios are important but must be flexible to accommodate the nurses' level of experience, the patients' characteristics (e.g. acuity level) and the quality of interaction of the multidisciplinary team (Rischbieth, 2006: 397- 404). Several major international studies have found that inappropriate nurse staffing, that is more ENs than RNs, is associated with increased mortality, hospital acquired infections, falls, pressure ulcers, lengths of stay, medication errors, post-operative complications and serious adverse events such as cardiac or respiratory arrest (Estabrooks, Midodzi, Cummings, Ricker & Giovannetti, 2005:74-84; Rafferty, Clarke & Coles, 2007: 175–182; Tourangeau, Doran, McGillis & Hall, 2007:32–44; Garrett, 2008:1191–1204; Sochalski, Konetzka, Zhu & Vollp, 2008:606–613). The above-mentioned studies provided evidence that utilization of trained critical care staff is associated with better patient outcomes. According to Kane, Shamliyan, Mueller (2007: np), there is strong evidence that inappropriate nurse staffing (less RNs and more ENs) is associated with increased lengths of stay, failure to rescue, nosocomial infections (urinary tract infection, post-operative infection, pneumonia), pressure ulcers and mortality. The above-mentioned study provided evidence that regulated staffing is associated with better patient outcomes.

Another factor that influences ratios in CCU is the allocation of nursing care activities. This includes the type and amount of nursing care to be executed as well as the categories and skills of CCNs working in CCU (Muller, 2006:147). There is evidence that surgical patients have a greater chance of survival when nursed by a degree level trained CCN (Estabrooks et al., 2005:74-84).

Finally, the findings from a systematic review completed by Lankshear, Sheldon and Maynard (2005:163-174) on staffing management once again confirm that improved patient outcomes are linked to more and better staffing.

A discussion will follow of additional factors that should be considered in staffing management. These factors are patient census, skill mix, patient outcomes, allowing for non- productive time, and the adequacy of the budget (Tappen, 2001:253-266).

2.8.1 Nursing Skill Mix

In addition to identifying the type of patient care and the adequate number of staff, the unit manager must ensure that an appropriate mix of staff are available to meet the daily needs of the unit and organizational goals. Staff skill mix is, within a group, the ideal ratio of experienced or trained registered nurses to those less experienced or trained in order to provide effective nursing care (Booyens, 2008b:292). Once the workload is predicted, the skill mix required for each shift is determined. Unit managers now have to allocate staff to match the patient acuity with the objective to reduce adverse events and poor outcomes. Patient acuity is the assessment of the patient's nursing care needs in a 24-hour period while also considering severity of patient disease. Healthcare organizations in many countries use patient classification systems, as discussed in paragraph 2.1.2, to determine nursing staff mix (Zerwekh & Claborn, 2006:354-355).

Different views are held regarding the staff mix needed in patient care units. In several healthcare institutions, more non-professional (ENs and ENAs) than registered nurses (RNs) are employed as a means to cut costs. Managers claimed that RNs are expensive and their skills can be used more effectively if routine care like mouth care be rendered by non-professional staff. However, this can have catastrophic results especially in a CCU with a high acuity index where more RNs are needed to nurse critically ill patients (Muller et al., 2008:313). Alonso-Echanove, Edwards and Richards (2003:916-925) found a higher rate of catheter infection of CCU patients when nursed by non-critical care trained nurses. Therefore, the effective and appropriate use of available nurse resources will create a safer health care system, that is, using the appropriate skill level to meet the patient's needs (Hinshaw, 2008:S4-S10; Talsma, Grady, Feetham, Heinrich & Steinwach, 2008:S15-S21).

Systems to formally assess skill and then match the allocation of nurses (permanent and agency) to patients have not been described. A number of studies have demonstrated that current practice regarding staffing management is chaotic (Zondagh, 2004:20-24; Bateman, 2009:568). For instance, some critically ill patients must receive care that is so complex that nursing expertise is required. This is more difficult if an agency nurse has not before worked in a specific CCU. Agency staff or staff from other units spends more time to acquaint themselves with the policies, procedures and guidelines specific to the CCU. For example, the agency nurse may be regarded as ventilator-competent but is she competent to troubleshoot independently or is she competent to simply watch the ventilator if it alarms? (Rischbieth, 2006:397-404). There is currently a number of individual nursing workforce models most of which relate only to employed registered

nurses (Hurst, 2003:np) and not to agency nurses. The global shortages of nurses will lead to the utilization of more agency staff despite it being an expensive exercise (Australian Health Workforce Advisory Committee, 2002:1; De Reave, 2003:348-350; Janiszweski Goodin, 2003:335-343).

2.8.2 Nurse Staffing, Patient Outcomes and Management

Staffing is to provide a comprehensive team of nurses who will fulfill the nursing needs and demands of patients in a nursing unit (Meyer, Naude & Van Niekerk, 2004:149; Huber, 2010:625). An outcome however refers to the expected results of medical treatment and nursing care that was delivered (Searle, 2006:229; Muller et al., 2008:532). Management is a process whereby human, financial, physical and information resources are allocated to achieve organizational goals, objectives and outcomes (Muller et al., 2008:531).

According to Tourangeau, Cranley and Jeffs (2006:4-8), favorable nurse staffing is characterized by a low nurse-patient ratio, a skill mix that displays more registered nurses on duty per shift, the proportion of baccalaureate prepared nurses (namely degree level qualified) and nurse experience. A study done by Person, Allison, Kiefe, Weaver, Williams and Centor (2004:4-12) confirmed that a lower patient mortality rate was associated with a higher level of registered nurses.

The evaluation of patient care needs and consequently of the nursing workload is a prerequisite for the adequate allocation of staff in CCUs. An oversized team becomes more expensive, whereas reduced staff may suggest a decrease in care quality, prolonged hospitalization that increases the cost of patient treatment (Aiken et al., 2002:1987-1993; Guccione et al., 2004:411-6). Hence, the unit manager has to provide the appropriate mix and number of nursing staff for each shift.

Regardless of the complexity of staffing problems, the unit manager is expected to provide optimal staffing to ensure adequate and safe nursing care for all patients 24 hours a day. Moreover, the local, national and global shortage of nurses as well as the financial and economic pressures on the healthcare industry has resulted in healthcare organizations becoming more concerned about their financial success and sustainability (Muller et al., 2008:436).

The unit manager is also accountable for managing the unit in the most cost-effective way without compromising quality nursing care. To achieve this is rather challenging especially where there is a perceived lack of funds to finance nursing positions that are necessary. For instance, the unit manager knows a certain shift needs five nurses, but has funds for

only three (What is the nursing shortage and why does it exist?, 2011:np). Once the staffing shortage for the unit has been established, the next step is to inform the nursing service manager, who determines the personnel requirements in the private sector (Muller, 2006:193). Considering what is explained in 'What is the nurse shortage and why does it exist?' (2011:np) and what Muller (2006:193) postulates, the shortage of nurses is not only linked to a decrease in the availability of nurses but also to the availability of finances.

The unit manager is also responsible for providing sufficient qualified nursing personnel to meet the needs of patients in the CCU. It is therefore important that staff rendering nursing care in CCU be knowledgeable in critical care nursing and have the necessary skills and experience to execute their duties. However, there is evidence that a large proportion (75%) of nurses working in CCU are inexperienced and do not hold a critical care nursing qualification, while poor competency among CCNs is more common than expected (Scribante & Bhagwanjee, 2007:1315-1319). The utilization of non-critical care trained nurses to care for patients with central venous catheters was found to be associated with a higher rate of catheter infection than when these patients were cared for by nurses who are critical care trained (Alonso-Echanove, Edwards & Richards, 2003:916-925).

Nurse staffing was also reported to influence nurse job outcomes such as job dissatisfaction and burnout (Gunnarsdottir & Rafferty, 2006:np; Aiken, Clarke & Sloane 2002: 1987-1993). Burnout is defined as a severe form of distress, displaying itself in depression, frustration and loss of productivity (Muller et al., 2008:519). Booyens (2008b:291) refers to it as a condition whereby a person becomes discouraged at work as a result of stress and overload. A more recent study also found that nurses in short-staffed hospitals were 50% more likely to experience burnout and 75% are more likely to report poor or fair quality care than nurses in well-staffed hospitals (Kanai-Pak, Aiken, Sloane & Poghosyan, 2008:3324-3329). O' Brien-Pallas and Hayes (2008:3338-3346) are of the opinion that unless issues in the nursing workplace are dealt with, the physiological and psychological stress in the work environment will persist.

2.8.3 Patient Census

Census is referred to as the total number of patients admitted to the hospital as well as their average length of stay (Mosby's Medical Dictionary, 2009:np). The census of a unit can vary in a given shift and from one day to the next. Concomitant variations in the admission rate and length of stay could maintain a constant census, while allowing work volume to change significantly.

Furthermore, it is expected of the unit manager to avoid both understaffing and overstaffing as the unit census varies. This suggests that if nursing staff are sent home early because of a decreased census, a sudden influx of admissions can create a severe shortage as the shift progresses (Muller et al., 2008:311-312).

2.8.4 Non-productive Time

Non-productive time is defined as time not directly associated with manufacturing operations or performance of a job or task (Business dictionary, 2012:np). In planning of staffing, consideration should be given to time spent on those necessary activities which are not related to patient care such as in-service training; collecting medicine from the pharmacy; transporting patients; waiting for elevators and vacation, sick, compassionate and educational leave (Muller et al., 2008:314).

Some types of non-productive time can be anticipated and planned for while others cannot. For example, personnel are allowed time off when there is an over-supply as a result of reduced patient load during holidays (Muller, 2006:263).

2.8.5 Budget

Limited resources and soaring healthcare costs have strained all healthcare delivery systems. In the quest to deliver optimal patient care, the unit manager has the dual responsibility to provide sufficient staff for safe patient care while considering the budget (Muller et al, 2008:314).The budget is a comprehensive plan for the attainment and utilization of financial resources over a period of time, expressed in formal, numerical terms (Lotz, Lourens & Marx, 2006:np). Administrators, also known as management, usually determine the budget for each department (Muller, 2006:190).

In budgeting, unit managers must articulate the needs of the unit to ensure sufficient funds for adequate nursing staff, supplies and equipment. Items are budgeted for in capital and operational budgets. Capital budgets provide for the purchase of buildings or major equipment, such as a computed axial tomography (CAT) scanner (Booyens, 2008b:157). At unit level the unit manager may request replacement beds or computers (Zerwekh & Claborn, 2006:368). Operational budgets include estimates for personnel expenses which represent two thirds or more of the total budget. Included in this budget are daily expenses such as the cost of electricity, repairs and maintenance (Booyens, 2008b:157).

The largest expenditure of the budget is the personnel budget as mentioned by Booyens (2008a:157) and Muller et al. (2008:311). However, nurses are often the target of labor reduction strategies regardless of the effect on patients, staff morale and turnover (Huber

et al., 2010:643). Muller et al., (2008:230) are of the opinion that a reduction in nursing staff will lead to heavier workloads on the remaining overworked staff. Consequently, management has to implement actions to retain the overworked staff, often without considering their quality of work life (Ehlers, Oosthuizen, Bezuidenhout, Monareng & Jooste, 2003:25).

2.8.6 The Business Principles

The South African healthcare services are first and foremost determined by the National Health Act (Act 61 of 2003) as stipulated in Chapter 1. Private healthcare organizations are regulated by the Companies Act (Act 61 of 1973), the Medical Schemes Act (Act 131 of 1998), the Council for Medical Schemes Levies Act (Act 58 of 2000) as well as the principles of corporate governance related to financial management. The principles of corporate governance are described in what is referred to as the King 111 Report. The purpose of the King 111 Report is to promote the highest standard of participative corporate governance with integrity in South Africa (King 111 report, 2009:6).

The King 111 report (2009:11-33) avers that leaders should be responsible and adhere to the universally accepted ethics and values congruent with the principles of good governance. The report also advocates that companies should not operate independently from societies. Consequently, the expectations of all stakeholders should be considered in decision-making and strategy. Innovation, fairness and collaboration are key aspects of any transition to sustainability. Innovation provides new ways of doing things, including profitable responses to sustainability whereas fairness is vital as social injustice is unsustainable and collaboration is often required for large scale transformation. However, collaboration should not amount to anti-competitiveness. Social transformation and redress of the consequences of apartheid are important as healthcare should be available to all South African citizens (The Constitution of South Africa, 1996:np). Integrating sustainability and social transformation in a strategic and rational way will lead to greater opportunities, efficiencies and benefits for both the company and society. The King Report requires companies to implement the practice of sustainability reporting. At present, sustainability reporting should be integrated with financial reporting (King 111, 2009:11-33).

2.9   STAFFING STRATEGIES IN THE PRIVATE SECTOR

Johnson (2007:458-468) defines a staffing strategy as the actions undertaken to determine the organization's future human resources needs, recruit and select qualified applicants and meet the needs of the organization. According to Jooste (2008:294),

strategy is an organization's plan for allocating resources and achieving a sustainable competitive advantage. The current staffing management strategies such as the acuity score and the contracting of agency staff and ward staff that occasionally assist in the CCU will be discussed in the following paragraphs.

2.9.1 Acuity Score

Acuity is the scoring of complexity in a patient's condition (Craig & Huber, 2007:199-210) and Huber (2010:504) maintains that nurse classifications of patient acuity are called acuity patient classification systems (PCS). According to Booyens (2008a:342), the acuity assessment tool is used to quantify the acuity of each patient. The patient can be assigned an acuity or complexity category to estimate how many hours of nursing care will be needed per shift. The various nursing activities required by one patient being evaluated are given a rating of one to five according to the level of activity. The acuity assessment is done every 12 hours by the CCN who is nursing the patient during the current shift. The patient should be scored as near as possible to the end of a shift thus reflecting on the activities carried out during the day or during the night. When this information is collected in the unit for every patient per shift, the total number of hours of care required will provide an indication of the number and type of nursing staff required in that unit for a particular 24-hour period (Booyens, 2008a:341).

The acuity assessment tool has been developed and validated to assist hospitals in staff planning and measures patient acuity and dependency (Hurst, Smith, Casey, Fenton, Scholfield & Smith, 2008:26-34). Indicators such as patient flow and seasonal changes are included in the tool. The tool is beneficial when indicating the number of nurses needed but does not consider skill mix or the ratio of RNs to non-RNs needed to render quality nursing care. The British Association of Critical Care Nurses (BACN), 2010:np) suggests the use of the acuity tool to solely determine staffing levels only if validated in a larger range of CCUs.

However, not all critical care units utilize the patient acuity tool as explained by Booyens (2008a:341-342). The proposed study does not focus on the utilization of a specific patient acuity tool but on the various strategies used for day to day staffing management.

2.9.2 Agency and Ward Staff

Agency staff refers to nurses who are directly employed by an external nursing agent and work for premium pay, without any benefits (Marquis & Huston, 2007:422).

Agency staff, ward staff and inexperienced care workers often perform tasks well beyond their scope of practice, meaning that when a mistake leads to a patient's death or impacts negatively on a patient's health, the supervising CCN is often unfairly blamed (Bateman, 2009:568). According to Zondagh (2004:20-24) and Aiken et al., (2002:1987-1983), insufficient, inexperienced or untrained staff result in increased errors and patient risks.

The practice of recruiting agency and ward staff to alleviate workload crises is not new. The latter is confirmed by Huber (2010:634) who explains variable staffing which is a general staffing method where units are staffed below maximum workload levels and additional staff is supplemented when needed. Supplemental staffing resources, also referred to as the staffing pool, are defined as a group of nurses who complement the core staffing unit. This includes per diem nurses, float pool nurses, part-time nurses keen to work extra hours, seasonal and agency nurses (Huber, 2010:638). The use of staffing pools that generally work for premium pay but receive no benefits continues in periods of staffing shortages (PricewaterhouseCoopers, 2007:np).

Regardless of the numerous challenges faced by organizations, patient care should never be "compromised at the expense of a tight budget, bottom line" (Hurst, 2003:np; Ball, Walker, Harper, Sanders & McElligott, 2004:62- 68).

2.10   QUALITY ASSURANCE

Quality assurance is the guarantee of compliance with the predetermined standards thus providing some measure of quality to consumers (Muller et al., 2008:534; Zerwekh & Claborn, 2006:531). In nursing, the goal of quality care is to ensure quality while meeting the desired goals (Booyens, 2008a:326).

The unit manager and staff members are accountable to the patient and management for the delivery of quality nursing care (Muller, 2006:220). Ideally, everyone in an organization should participate in quality control because each person benefits from it. Accountability requires evidence that quality services have in fact been provided. Consequently, the development of continuous quality improvement (CQI) programmes in an organization is vital. Quality healthcare service delivery is related to the accessibility of care, the relevance and applicability of care, the continuity of care, the compliance with patient views, the safety of the care setting and the aptness of service delivery (Muller et al., 2008:492).

Regardless of the variety of staff working in healthcare organizations, the workforce must be well-educated in order to provide quality nursing care and improved patient outcomes (Department of health, 2008b:np).

2.11   CONCEPTUAL FRAMEWORK

A conceptual framework is the description of the phenomena of interest in terms of abstract, yet related concepts (Burns & Grove, 2009b:135). The conceptual framework was developed by the researcher through the identifying and defining of concepts and the proposing of relationships among these concepts, as explained by Brink, Van Der Walt & Van Rensburg (2011:24). By developing a framework within which ideas are structured, the researcher was able to link the findings from the literature to the body of knowledge used in nursing, as advised by Burns and Grove (2009b:155). The applied conceptual framework guided the researcher in exploring the multifaceted staffing management strategies required to ensure adequate, trained staff in the CCU. Figure 2.1 shows the contextual and inter-related factors of staffing strategies impacting the patient, staff and the organization (hospital).
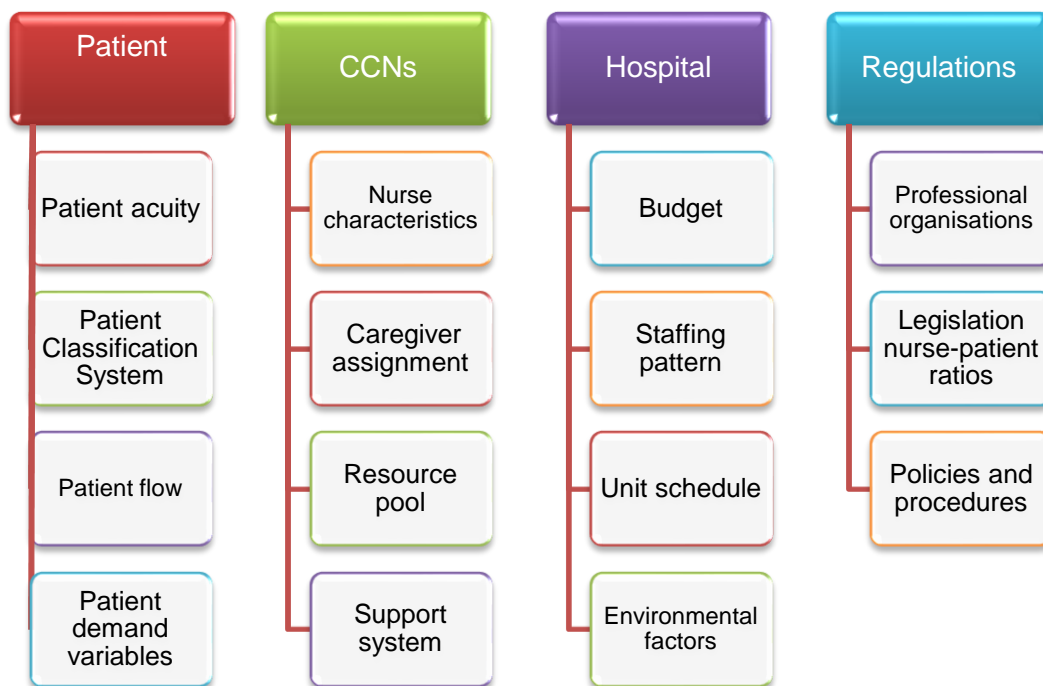
Figure 2.1: Framework for Staffing Management

A discussion on the various elements contained in the framework follows.

2.11.1 The Hospital

SANC (The Rights of Nurses, 2010:np) requires that hospitals ensure a safe work environment, namely efficient nursing staff and an environment free from hazards and danger.

2.11.2 The Patient

The patient is central to healthcare delivery and healthcare services. Consequently, the patient has a right to safe nursing care and the CCN has the legal and moral responsibility to provide a safe and sound environment (The Patients' Right Charter, 2012:np).

2.11.3 Legislation

Critical care nurses are guided by various rules and regulations while practicing nursing, for example, Regulation 2598 and The Nursing Act, Act 33 of 2005 as explained in paragraph 2.4.

The Basic Conditions of Employment Act (BCEA) 1997 (Act 96 of 1997) protects the CCN against unfair labour practices and occupational health and safety hazards. It comprises rules such as that CCNs should work a maximum of 40 hours per week, have benefits like leave (annual, sick, maternity, family responsibility) and be provided with a safe working environment (Act 96 of 1997). The legislative body that controls nursing practice in South Africa, SANC, stipulates the training requirements for critical care nursing and registration with the SANC. A CCN who is undergoing training for an additional qualification keeps the title of a professional nurse as a student rank qualification is deemed unacceptable (Nursing Act, Act 33 of 2005:33). Furthermore, Regulation No 32 states that the CCN must hold a valid SANC license prior to practicing nursing (Regulation no. 32, 1964:np).

2.11.4 Critical Care Nurses

The CCN, whether enrolled or registered, functions under the jurisdiction of the SANC. The registered nurse, as an independent practitioner, accepts accountability and responsibility for his/her actions (Regulation 2598, 1984:np; Regulation 387, 1985:np).

2.11.5 Staffing Management Outcomes

Management outcomes are a multifaceted process aimed at providing quality healthcare, enhancing nursing outcomes and cost containment (Huber, 2010:562). The definitions of staffing, management and outcomes have been explained in paragraph 2.7.2.

It is evident, through the literature reviewed, that staff management focuses on the way nursing staff are placed and utilized. If nursing leaders do not execute this function well,

the unit outcomes such as safety and quality patient care, financial results and organizational outcomes (job satisfaction, retention of CCNs) are affected negatively (Booyens, 2008b:179; Huber, 2010:624).

However, if nurse managers address the concerns regarding staffing management as mentioned, positive outcomes can be attained. Research suggests that Magnet hospitals demonstrate improved patient outcomes and higher nurse satisfaction than non-magnet hospitals (Marquis & Huston, 2007:290). Magnet hospital status refers to a hospital that maintains well-qualified nurse executives in a decentralized environment, with organizational structures that emphasize open, participatory management. According to Upenieks (2003:43-44), these magnet hospitals also offer autonomous, self-managing, self-governing climates that allow nurses to fully practice their clinical expertise, flexible staffing, adequate staffing ratios and clinical career opportunities. Figure 2.2 illustrates the outcomes of staffing management.

Figure 2.2: Framework for Staffing Management Outcomes

As illustrated above, certain elements will be discussed.

2.11.6 Patient Outcomes

A reduced nursing workforce in CCUs is linked with poor patient outcomes, such as an increased length of stay, complications and mortality (Estabrooks, Midodzi, Cummings, Ricker & Giovannetti, 2005:74-84; Rafferty, Clarke & Coles, 2007: 175-182; Tourangeau,

Doran, McGillis & Hall, 2007:32-44; Garrett, 2008:1191-1204; Sochalski, Konetzka, Zhu & Vollp, 2008:606-613).

2.11.7 Staff Outcomes

CCUs that are poorly staffed lead to nurses facing burnout, job dissatisfaction, resignations, high turnover and, more critically, have an adverse impact on patient outcomes (Pera & Van Tonder, 2011:133).

2.11.8 Organisational Outcomes

Pera and Van Tonder (2011:284) explain that understaffing in CCUs lead to poor patient safety and nursing care. Consequently, there is an increase in patient complaints, litigation and ultimately financial damages incurred by the organization.

2.12   SUMMARY

The literature review conducted has shown that nurse managers are faced with the challenge of managing critical care services within an environment where funds are limited combined with a local, national and global shortage of nurses. Consequently, nurse managers are obliged to keep abreast with the latest trends regarding staffing strategies. Staffing is also influenced by the system selected to render nursing care because some nursing care models require a higher ratio of RNs to other nursing staff. The different patient classification systems (PCS) to determine the number and skill mix of CCNs per shift have been discussed. It is evident through research that staffing and patient classification systems (PCS) contribute to the effective use of human resources but that the impact and effects on patient outcomes should be evaluated continuously. Critical care nurses constitute the most important part of the critical care environment and directly influence patient safety as they deliver very individualized patient care (Savitz, Jones & Bernard, 2005:np). The unit manager, therefore, has to use a comprehensive approach congruent with available nurse skill and patient demand by using skill matching of both permanent and agency staff. Such measures will reduce adverse effects and poor patient outcomes. Research globally has proved that sufficient staff in CCUs is needed to provide effective and safe patient care as mentioned by Zondagh (2004:20-24) and Aiken et al., (2002:1987-1983).

The conceptual framework provided explains staffing management and the impacts thereof on the patient, staff and the organization.

Chapter 3 discusses the research methodology that was used to explore staffing management strategies in CCUs of private hospitals in the Cape Metropole.

CHAPTER 3:   RESEARCH METHODOLOGY

3.1   INTRODUCTION

The preceding chapters provided a description of the background to the study including a comprehensive literature review regarding staffing management strategies in critical care units both globally and nationally.

The goal of this chapter is to describe the research methodology that was applied to determine the experiences of critical care nurses regarding staffing management within critical care units.

Research methodology refers to the research process employed by the researcher to solve the research problem or to answer the research question (Mouton, 2009:56). Therefore, this chapter describes the goal and objectives set for the study, and includes the research design, population, sampling, setting, the gathering of data and data analysis.

3.2   AIM OF THE STUDY

The aim of the study was to explore the experiences of critical care nurses regarding staffing management within critical care units of private healthcare institutions in the Cape Metropole.

3.3   OBJECTIVES

The objectives set for this study were to determine the experiences of CCNs regarding staffing management strategies such as:

- the patient acuity score
- the employment of *ad hoc* agency staff
- the utilization of ward staff

3.4   RESEARCH METHODOLOGY

3.4.1 Research Design

A research design is a blueprint or plan for conducting the study that increases the probability that the study results are accurate reflections of reality (Mouton, 2009:54; Burns & Grove, 2009b:218). The research design indicates the steps that will be followed in conducting the research. This study entailed a descriptive design with a qualitative approach to explore staffing management in private hospitals in the Cape Metropole.

33

Burns and Grove (2007a:61) define qualitative research as a structured way of describing life experiences and the meaning thereof. A descriptive design was used to expand theory, determine current problems in practice and to identify what others in similar situations are doing as recommended by Burns and Grove (2009b:237). According to De Vos, Strydom, Fouche and Delport (2009:270), this approach enables the researcher to comprehend and explain the meaning that participants give to their everyday lives.

Burns and Grove (2009b:529) also confirm that the application of this approach enables researchers to distance themselves from their preconceived ideas regarding a topic under study and to have more insight into the perceptions of the participants.

3.4.2 Population and Sampling

The term population refers to all elements that meet the sample criteria for inclusion in a study (Burns & Grove, 2009b:42). The population for the study consisted of N=377 CCNs who were critical care trained or experienced. The details of the total population such as the names and contact numbers of the critical care nurses were obtained via the selected hospitals' unit managers once ethical approval had been obtained to conduct the study. These reports generated from the unit managers revealed a total population of N=377 CCNs.

Since the researcher is a critical care trained nurse who works via a nursing agency in private healthcare institutions, the study was conducted in three private hospitals in the Cape Metropole in the Western Cape Province. Consequently, the information required for population and sampling was easily accessible. To prevent bias, the private hospital where the researcher is currently employed as an agency nurse was excluded from the study. Bias, according to LoBiondo-Wood and Haber (2010:574), refers to any influence that produces a distortion in the results of a study.

A sample, however, represents the selected participants included in a study (Burn & Grove, 2009b: 42). Sampling involves the choosing of all elements to participate in a study (Burns & Grove, 2009b:35). The sampling method utilized in this study was purposive sampling. According to Burns and Grove (2009b:355), purposive sampling is the deliberate selection by the researcher of all elements to be included in the study. This sampling approach allowed the selection of "information-rich" participants who provided insight and new meaning pertaining to the purpose of the study, as advised by Burns and Grove (2009b:355).

The principle researcher consciously selected the sample according to the following inclusive sampling criteria; registered nurses working in critical care units; enrolled nurses that work occasionally in critical care units as relief staff; participants needed to have worked at least two years to ensure that they had enough experience with staffing management in the critical care setting and could provide in depth information.

According to Burns & Grove (2009b:361), the sample size is determined by the saturation of the data. Data saturation is when no new information is gained and consequently redundancy is achieved. Polit and Beck (2006:274) suggest that a sample size of 10 or fewer is adequate in qualitative research; subsequently a sample size of (n=9) was drawn. Redundancy can be achieved with a small number of participants as long as they provide in-depth information (Polit & Beck, 2006:273). Hence, what determined the sample size was the dense and rich description of the experiences of CCNs regarding staffing management strategies in the private healthcare sector. Individual interviews were conducted with the following categories of staff:

- two permanently employed critical care registered nurses working in the CCUs of any of the participating hospitals,
- two RNs working at any of the participating hospitals on a casual or contracted basis via a nursing agency,
- two permanently employed enrolled nurses working in the wards of any of the participating hospitals and who are used as relief staff in the critical care units,
- a management figure employed at each of the three participating hospitals, for example a unit manager or senior CCN.

The above-mentioned categories were included since with qualitative research the aim is to obtain a sample that represents all the important subgroups of the population (Skinner, 2007:323). Skinner (2007:323) further states that with qualitative research sampling should include a full range of possible characteristics of interest. During the interviews it became clear that some of the registered nurses employed via nursing agencies spoke very freely about frustrating staffing issues. Yet other registered nurses working via agencies were reluctant to talk about frustrating staffing issues although they voluntarily consented to participate in the study. In addition, the information obtained from the experienced enrolled nurses differed from those who were less experienced. Furthermore, conflicting information was also obtained from the permanently employed registered nurses. Consequently, additional enrolled, permanently employed and agency employed registered nurses were selected to ensure saturation of data.

The following table displays the final categories of participants that were selected:

Table 3.1: Final categories of participants

	Hospital 1	Hospital 2	Hospital 3
UM	1	1	1
RN (permanent)	1	2	1
RN (agency)	1	1	1
Enrolled Nurse	1	2	2
Total = 15	4	6	5

3.4.3 Instrumentation

Individual interviews and a self-compiled, semi-structured interview guide were used to direct the interviews during data collection. An interview guide is a list of questions and probes used to direct interviews (LoBiondo-Wood & Haber, 2010:80).

According to De Vos et al., (2009:296) a semi-structured interview guide allows for the researcher to obtain multiple responses to set questions and allows for detailed responses. The semi-structured interview guide gives the researcher and participant more flexibility in comparison with an unstructured interview guide (LoBiondo-Wood & Haber, 2010:574).

The semi-structured interview guide was based on the objectives of the study and was validated by the supervisor and co-supervisor of the study before data collection commenced. The researcher, having been employed as a critical care nurse for a number of years, also used her own experience in the development of the semi-structured interview guide.

The interview guide consisted of a list of 4 open-ended questions concerning the experiences of nurses regarding staffing management in CCUs. One question dealt with general staffing management experiences specific to the critical care situation. The other 3 questions dealt respectively with the nurse's experiences relating to the patient acuity score, floating ward staff and agency staff.

3.4.3.1   Pilot-test

Brinks, Van der Walt & Van Rensburg (2012:174) relate that a pilot-test is done to determine whether ambiguous instructions or wording exist and whether the participants understand the questions in the instruments. An interview with one participant was conducted to test the interview guide.

However, as stated in chapter one section 1.6.3, no pitfalls were encountered with the semi-structured interview guide during the pilot-test.

3.4.4 Validity

Validity in qualitative research is concerned with the accuracy and truthfulness of the scientific findings (Brink et al., 2011:118). Lincoln and Guba's model (1985:290) was applied to ensure trustworthiness in this study. This model refers to trustworthiness as the "truth value" of the study's findings or how accurately the investigator interpreted the experiences of participants. Criteria to ensure trustworthiness include credibility, transferability, dependability and conformability.

3.4.4.1 *Credibility*

Credibility refers to the degree to which findings and the research methods that are used can be trusted (De Vos et al., 2009:353).

Two strategies to ensure credibility were used, namely peer debriefing and member checking. Peer debriefing is a session held with objective peers to review and explore various aspects of the inquiry. All interviews were audio-taped and transcribed verbatim and transcriptions were checked for accuracy against the tapes. To further enhance credibility, a thick, in depth description of the research process including sample selection, research setting, data collection and data analysis was given.

Member checking is a process through which participants verify data and the interpretation thereof (Lincoln & Guba, 1985:304). Therefore the transcription of each interview was presented to the participant involved for verification and filling in of missing information. The identified themes were presented to and verified by all participants.

3.4.4.2 *Transferability*

Transferability refers to the extent to which findings can be applied or generalized in other research studies (De Vos et al., 2009:346). Transferability of a qualitative study may be problematic. To enable transferability this study was based on a theoretical framework as advised by De Vos et al., (2009:346). Consequently, the researcher could refer back to the original theoretical framework and indicate how data collection and analysis were guided by concepts and models. Furthermore, a thick description of the setting, procedure and participants was provided for other researchers to determine whether the findings are transferable to another setting or context as advised by Brink et al., (2012:173).

3.4.4.3   Dependability

Dependability of a study requires an audit. To facilitate dependability an enquiry auditor, usually a peer, validates the processes and procedures used by the researcher in the study and establishes whether these are acceptable, in other words, dependable (Brink et al., 2012:173).

In this study the research methodology for data collection and analysis were verified by the researcher and a field worker.

The researcher and the fieldworker discussed the transcripts and clarified differences of opinions to ensure that the interpretation of the transcripts was consistent with the recorded interviews.

In addition, the themes and sub-themes were also verified with the fieldworker.

3.4.4.4   Conformability

Conformability refers to the degree to which general findings are supported by the data and not by the biases of the researchers (Brink et al., 2012:173). Raw data from tape recordings was used for data analysis and tape recordings were transcribed verbatim to ensure conformability.

Furthermore, the similarity between the themes and the transcripts was checked by the supervisor of the study. Where the supervisor disagreed with a theme or sub-theme identified by the researcher both reread the transcripts until they were in agreement with the various themes and sub-themes.

3.4.5 Ethical Aspects

According to Burns and Grove (2009b:189), researchers have an ethical responsibility to recognize and protect the human rights of research participants. Researchers are guided by three fundamental principles: respect for persons, beneficence and justice. These in turn correspond to the participants' human rights like the right to self-determination, privacy, anonymity, confidentiality, fair treatment and protection from discomfort and harm (Brink et al., 2012:34). In this study the researcher adhered to these principles as follows:

3.4.5.1   The Principle of Respect for Persons

The participant's right to autonomy was respected since participation in the study was voluntary and participants were informed that they had a right to refuse to participate or withdraw from the study at any time, as advised by Brink et al., (2012:35).

3.4.5.2   The Principle of Beneficence

This principle entails a means of securing the well-being of the participant who has the right to be protected from discomfort and harm (Brink et al., 2012:35-36). Participants might not have been comfortable sharing information regarding staffing strategies with outsiders.

3.4.5.3   Confidentiality and Anonymity

The participants were ensured that the information they shared would be held in confidence. Neither the institution nor the participants were referred to by name. Pseudonyms were used when direct quotes from the raw data were utilized. All data is locked away and will be stored in a safe place for at least five years. Only the researcher and the supervisor involved have access to the data.

3.4.5.4   Informed Consent

Burns and Grove (2007a:216) refer to *informing* as the disclosure of essential ideas and content of the study to the prospective participant. However, consent is the prospective participant's agreement to participate in the study. A consent form is a written document that is signed by participants. The participants were all informed about the essential details fundamental to the study before signing the consent form, thus informed written consent was obtained from each participant.

In addition, permission to conduct the study was obtained from the Health Research Ethics Committee at the Faculty of Health Sciences of Stellenbosch University as well as the heads of the participating hospitals. Permission to audio-tape discussions was obtained from the participants prior to the interview sessions.

3.4.6 Data Collection

Data collection refers to the precise, organized gathering of information related to the research purpose, objectives, questions or hypotheses of the study (Burns & Grove, 2009b:43). Data collection was conducted by the researcher who received training on how to conduct interviews by the supervisor involved in the study. The researcher was assisted by a field worker who has a master's degree in nursing and experience in qualitative data collection procedures and analysis.

The principle researcher approached unit managers of the designated CCUs once authorization was obtained to enter the healthcare institution. The study was introduced to the unit managers and the principle researcher got permission to approach CCNs. Lists of CCNs' names and information regarding nurses' shifts, gender and years of service were

obtained from the unit managers. The principle researcher approached CCNs that met the sample criteria. On approaching the CCNs, the principle researcher firstly confirmed that the potential participants met the sample criteria (mentioned in section 3.5.2) and then explained the interview process to the participants. Thereafter, informed consent was obtained from the participants for the interviews as well as for the recording thereof. According to Brink, Van der Walt and Van Rensburg (2006:145), interviews are useful to obtain data from participants in descriptive studies.

Each interview lasted about one hour or less. Most of the interviews were conducted in the offices of the unit manager at the various CCUs. A few interviews were conducted in the nurses' tea rooms. The participants regarded the venues at the hospitals as convenient and all the unit managers at the various hospitals involved consented that their offices be used for this purpose. Fifteen participants were interviewed between November 2011 and March 2012. No interviews were conducted in December 2011. The ten week data collection period was due to the availability of the participants. Their work commitments and personal obligations prevented their immediate availability.

The researcher applied to conduct the study at the various hospitals and one nursing agency once ethical approval had been granted. Only one of the three participating private hospitals agreed within one week to participate in the study. The second hospital agreed to be involved in the study in February 2012 while the third group consented to participate in March 2012. Therefore, the process of data collection was also delayed by the time period within which consent was received from the hospitals.

Interviews were conducted in simple English to ensure that all participants understood the questions. Some participants answered in Afrikaans as they were more comfortable expressing themselves in their home language.

During the interview the researcher used probing words to encourage the participants to elaborate on the topic. Interview skills such as summarization, reflecting and clarification were used during the interview to ensure that the researcher understood responses.

The interviews were audio-taped by means of a tape recorder. A second tape recorder was available as advised by De Vos et al., (2009:310) as a precautionary measure should a technical failure of equipment occur. The field worker was informed of her role which included the writing of field notes. According to Polit and Beck (2006:307), field notes signify the observer's efforts to record information as well as synthesize and understand the data. The researcher wrote field notes immediately after each interview. Speziale and

Carpenter (2007:43) explain that these notes can be very useful during data collection and analysis.

As stated under *population and sampling* in section 3.5.2, nine individual interviews were initially conducted with various categories of staff. However, saturation of data did not occur after completion of the nine interviews. Additional interviews were scheduled for the various categories of staff and data collection continued until data saturation occurred. For the purpose of the study, 6 more individual interviews were conducted before data saturation occurred.

Burns and Grove (2009b:510) postulate that there are power issues in an interview. The researcher has the power to shape the interview schedule while the participant has the power to choose the level of responses they will provide. Therefore each interview followed a fairly similar pattern. Participants were made to feel at ease by posing a broad question such as "Describe for me your experience with ..." or "Tell me about ..." The response from this type of question allowed participants to speak freely about their experiences regarding staffing management in the CCU.

3.4.7 Data Analysis and Interpretation

According to De Vos et al., (2009:333) data analysis is a process of bringing order, structure and meaning to the collected data. Interpretive analysis involves providing a thick description of the characteristics, processes, transactions and contexts of the phenomenon being studied. The aim of data analysis is to make the strange familiar and the familiar strange, in other words, an account of data close enough to the context for people to recognize it but far enough so it would assist them to see the phenomenon in a new perspective (Terre Blanche, Durrheim & Kelly, 2006:322-323). Data was evaluated for usefulness, themes and patterns (Burns & Grove, 2007a:88). A computer program, Atlas.ti, was used to assist with the data analysis.

The transcriptions of the interviews were done on the same day as the particular interview took place. In cases where this was not possible it was done within 24 hours of recording. The researcher listened repeatedly to the tape recordings to ensure that all data was captured. Observations and experiences were recalled while listening to the tapes. During the process of analyzing and reading the transcripts the researcher applied the principle of 'bracketing'.

Bracketing is the identification of personal preconceived ideas and opinions about the phenomenon under study. These preconceived ideas about the phenomenon under

investigation were then bracketed or set aside. This enabled the pursuit of important issues concerning the phenomenon as experienced by the participants, rather than leading the participant to issues that seemed important to the researcher (LoBiondo-Wood & Haber, 2010:104).

There are numerous qualitative analytic styles varying from quasi-statistical styles to immersion/crystallization styles. Quasi-statistical style is the use of predetermined categories and codes that are applied to the data whereas immersion/crystallization style comprises immersing oneself with the data, reflecting on it and writing an interpretation based on intuition rather than a specific analytic technique. Furthermore, Terre Blanche et al., (2006:322) describe a generic process incorporating both experience-near and a distanciated method of data analysis. Qualitative analysis typically comprises five analytic steps as explained by Terre Blanche et al., (2006:322).

3.4.7.1   Familiarization and Immersion

This step refers to the process whereby the researcher familiarizes and immerses him/herself with the data. A transcribing computer program, Express Scribe V5.01 was used to transcribe recorded interviews verbatim. Thereafter, tape recordings were listened to repeatedly. Observations and experiences were recalled while listening to the tapes. Memos were made throughout the process to record emerging ideas. Transcriptions and field notes were read and reread in order to become familiar with the data and get a sense of an interview as a whole. The researcher was, therefore, able to grasp the lived experiences of the participants regarding staffing management in the critical care units. Although this stage is still part of the empathic understanding it is moving to a more distanced understanding (Terre Blanche et al., 2006:322-323).

3.4.7.2   Inducing Themes

This process involves the identifying of specific principles, themes and general rules underlying the data. This process is referred to as the "unpacking" of data (Terre Blanche et al., 2006:322-323). At this stage the various factors were recognized concerning what was typical or alike with regards to the phenomenon being studied. Consequently, data was broken down, examined and compared to determine patterns, similarities and differences in the data. Themes and sub-themes were generated from the data and were labelled describing the data.

This stage is therefore moving towards looking at material from the outside but is still based on what participants have shared. Such data analysis involves a number of

dimensions such as strange and familiar, description and interpretation and part and whole (Terre Blanche et al., 2006:322-323).

3.4.7.3   Coding

This refers to the breakdown of data into meaningful, labelled pieces with the view to later cluster the 'bits' of coded material (Terre Blanche et al., 2006:324-326). For the purpose of the study participants were coded numerically. Thereafter, codes were grouped together with the general idea of placing the data collected under headings and subsequently linking the various components. However, as the data was better understood, the themes and sub-themes identified were not regarded as the final product and codes changed.

3.4.7.4   Elaboration

This process suggests the obtaining of finer subtleties of meanings, finding the connection between meanings, identifying commonalities and differences while considering generalities and uniqueness which were not captured in the original coding system. The process of coding, elaborating and recoding should continue until no new insights appear to emerge (Terre Blanche et al., 2006:326). Redundancy as explained in 3.4.2 can be achieved with a fairly small number of participants as long as in-depth information is provided (Polit & Beck, 2006:273).

3.4.7.5   Interpretation and Checking

This refers to the written report of the phenomenon being studied. The report presents the analyzed themes as sub-headings. One way of checking interpretation is to discuss it with other people. It is important to talk to people who are familiar with the topic as well as those who are not, as the latter may be able to provide a fresh perspective (Terre Blanche et al., 2006:326). Hence the researcher compiled a written account of the interpretations that emerged from the data analysis and verified this with the fieldworker.

During the introductory phase of each interview the researcher tried to create a more relaxed environment by posing all questions in a similar pattern, as advised by Burns and Grove (2009b:510). The aim was to learn more about the participants and to ensure that the inclusive criteria were maintained. The data derived from the initial phase of data analysis was rather numeric and was consequently described using descriptive statistics. According to Burns and Grove (2009b:470), descriptive statistics are used to describe and summarize data and to create meaning for the readers.

Although all research reports lead to more questions, there comes a point when a conclusion will be reached. Kelly in Terre Blanche et al., (2006:326) provides a number of views to indicate that this point is reached, namely when:

- new thoughts are not contributing to a deeper understanding that has been developed
- all questions that have been asked in the beginning of the research have been answered in the interpretation phase
- the interpretation matches the data that has been collected
- a large number of questions have been asked relating to the interpretation without creating any doubt
- new material adds to the accounts rather than breaks it down
- the interpretation has been shared with numerous peers, the mentor, the supervisor and the interpretation has provided answers to their questions.

This point is also called *saturation* or *exhaustion* and refers to the extent whereby the researcher after interpretation of data provides an account of rich experiences. Consequently the researcher was able to claim that the interpretation of data had been exhausted and that he or she had acquired a satisfactory sense of understanding the results. (Kelly in Terre Blanche et al., (2006:326).

3.5   SUMMARY

This chapter comprises of a detailed report regarding the goal and objectives, the research design, population and sampling, and the ethical principles that were applied in the study. A detailed account of the data collection and data analysis processes as well as the steps taken to ensure the trustworthiness of the information obtained was also provided.

An in-depth description of the data analysis and the interpretation of the research findings will be presented in chapter 4.

CHAPTER 4: DATA ANALYSIS AND INTERPRETATION

4.1   INTRODUCTION

This chapter contains a presentation and discussion on the findings of the study. Data was analysed to describe the experiences of critical care nurses with regards to staffing within the CCUs of the private healthcare institutions as obtained during the interviews.

The raw data was transcribed verbatim that is word for word to authenticate the trustworthiness of the data collected. Inductive reasoning was applied to build themes from bottom up. Inductive reasoning is the process of developing generalisations from specific observations. Consequently, this type of reasoning enables the researcher to obtain information through observation and make generalisations based upon these facts (Brink et al., 2012:5).

Data was analysed according to the approach proposed by Terre Blanche et al., (2006:322). This approach was described in chapter 3, section 3.5.8.

The data is presented in two sections. Section A concerns a discussion of the biographical data that arose during each interview whilst Section B focuses on the themes that emerged from the raw data. To ensure privacy of the participants each participant was assigned a number.

4.2   SECTION A: BIOGRAPHICAL DATA

4.2.1 Age

The ages of the participants ranged between 35 to 57 years. One (n=1) participant was 35 years old. The majority (n=9) of the participants were in the age group between 40 to 49 years and 5 participants were between 50 to 57 years of age.

4.2.2 Gender

There were n=15 participants of whom nine (n=9) were females and two (n=2) males. This could be explained by the fact that the nursing profession is characterised by a female dominated workforce (Shields, Hall & Mamun, 2011:457- 464). This is reaffirmed by the data base of the SANC's geographical distribution report of 2009. This report reveals 103 848 females and 7 451 males registered as professional nurses in South Africa. The Western Cape specifically has 13 678 females and 641 males registered as professional nurses (SANC, 2010: np).

4.2.3 Marital Status

Thirteen (n=13) participants' were married with dependants. Two (n=2) participants were single and had no dependants. Mrayyan (2005:47) confirms that nurses working in private hospitals are mostly married. Furthermore, Altuntas (2010:np) explains that married nurses had more positive attitudes towards their profession than single nurses, which is consistent with the literature reporting that married nurses were more satisfied with their jobs compared to the single nurses.

4.2.4 Highest Qualifications in Critical Care Nursing

Eight (n=8) participants were in possession of a diploma in critical care nursing, two participants completed a diploma in general nursing and five participants had experience in critical care nursing. This is evocative of how few nurses are trained in critical care nursing. Gillespie, Kyriacos and Mayers (2008:50-57) confirms a shortage of trained or experienced CCNs in the Western Cape. In addition, Bhagwanjee and Scribante (2008:02) report a national deficit of 7 920 CCNs in South Africa.

4.2.5 Years of Experience in Critical Care Nursing

The length of employment of participants varied from between 5 and 33 years as a critical care nurse. Only n=1 participant had worked in CCU for 5 years, whilst n=14 of the participants had worked in CCU on a contractual or permanent basis for 10 years and more. It is interesting to note that most of the participants preferred to work at one private healthcare institution when working through the agency.

4.3   SECTION B: THEMES THAT EMERGED FROM THE INTERVIEWS

Six themes emerged from the interviews namely workload, application of the patient acuity score, experiences of float staff, the role of agency staff, business principles and staff development in the CCU.   Sub-themes emerged from the six major themes. The six themes and sub-themes are displayed in table 4.1. The first theme, workload included heavy, non-nursing tasks, leadership indifference and support, retention and quality nursing care in CCUs. The second theme, application of the patient acuity score, has four subthemes namely staff requirements, patient allocation, scoring points and business principles. The third theme, the experiences of float staff included the following sub-themes, CCU frightening, distribution of workload, support or burden, support or lack thereof, development and disapproval for their presence in the CCU. The fourth theme, the role of agency staff, comprised of six subthemes namely qualifications, control or lack thereof, float pools, support, scape goats and stepchild or not. The fifth theme, the business principles involves three sub-themes; the frustration experienced by CCNs, ENs

versus RNs as well as a plea for support to resolve such issues. Finally, the sixth theme, staff development comprised of training amid challenges in the CCU.

Table 4.1: Themes and Sub- themes that Emerged

THEMES	SUBTHEMES
Workload	Heavy
	Non-nursing duties
	Leadership indifference
	Leadership support
	Quality support
	Retention
Patient acuity score	Staff requirements
	Patient allocation
	Scoring points
	Business principles
Float staff	CCU frightening
	Distribution of workload
	Support or burden
	Development
	Disapproval for presence in the CCU
Agency staff	Qualifications
	Control or lack thereof
	Float pools
	Support
	Scape goats
	Stepchild or not
Business principles	Frustrations
	Enrolled nurses versus registered nurses
	Plea for support
Staff development	Training amid challenges

47

4.4   WORKLOAD

This theme comprises the opinions of the CNN as it relates to the workload.

4.4.1 Workload: Heavy

Overall participants experienced the workload in the CCU as heavy and stressful. Since there is a shortage of qualified CCNs, support is not always available and the CCN often has to cope with a heavy workload. The participant in the second quotation below, a unit manager admitted that the workload is heavy, irrespective of whether the assignment to one staff member includes one or two patients. The support staffs that are provided are often enrolled nurses and not registered nurses. Considering the scope of practice explained in chapter 1, section 1.1 the RN on duty remains responsible for supervision that relates to the practices of these nurses, meaning that their presence does not really reduce the workload.

> "The work load is tremendous but you, no matter how many extra staff you bring in, cause even your agency staff that you bring in are also ENs, there is just a "x" amount of RNs say for instance in the Western Cape, you can't get more than five or ten extra on your pool staff, so you just have to take the work load, it's extremely stressful, that's all, you do your best, that's all" (Participant 2).

> "I've [unit manager] assigned somebody to do two patients or one and that is an extremely heavy assignment for them, I'm very aware of that… I can say that I know that there are times when I drive hard, because there is a difficult assignment" (Participant 1).

It is evident when the CCU is short staffed; the already overworked CCN carries an extra load of stress while having to cope with a heavy workload.

Several participants mentioned that previously all CCUs had a full quota of staff because there were no nursing agencies. Currently, the bulk of staff in the CCU is agency staff. Generally, the CCUs are staffed with less than the maximum staff required and additional staff is obtained via nursing agencies when needed. The unit manager therefore decides when and how many extra staff will be hired. The participants experienced caring for two ventilated patients and being shift leader as heavy and stressful. It is important to note that the unit manager is in charge of the critical care unit while the shift leader is in command of a specific 12-hour shift only. The participants were of the opinion that the nurses hired for a particular shift is insufficient. Comments that attested to this were:

"You initially didn't' have agencies, so you had your full quota of staff… now it became a nightmare in that the amount of permanent staff is less and your agency is your bulk" (Participant 9).

"…you do get sometimes that the next person can't cope, because it's too much, they have to do maybe like two staffs work." (Participant 5).

"There's often times where you are shift leader, you run the shift, you take a patient, there was a time last year that one staff member had two ventilated, I [shift leader] had a ventilator and I ran the shift, you carry on" (Participant 11).

The findings above suggested that the tendency to employ the minimum amount of staff in the CCU causes difficulty especially if it is expected of the shift leader to be in command of a shift and care for a ventilated patient.

4.4.2 Workload: Non- nursing Tasks

Another key problem was that participants felt frustrated with the amount of time wasted on non-nursing tasks. Participants suggested that the utilization of a sweeper or security guard could assist in answering the telephone or the doorbell. If the non-nursing tasks can be completed by support staff the CCN will be available for critical care patients.

"I say just send me the cleaner who can answer the phone and open the door that's   all I need. You know you spend your whole day running backwards and forwards, that sort of support system would have made a difference on the night duty if they can find me a security person to answer the phone, a sweeper, anything! (Participant 10).

Owing to the participants' experience that the completion of non-nursing tasks aggravates the workload, it is important to create a safe environment that comprises of the right number and categories of staff.

4.4.3 Workload: Leadership Indifference

Several participants indicated that despite their hard work, management seem to be indifferent to their pleas for support in the CCU. In the past the CCN cared for one ventilated patient or two high care patients. However, the current trend is to allocate a ventilated patient and another patient or three patients to one CCN. Some participants were concerned and felt it had a negative impact on patient care. Participants also mentioned that management should do more to create a supportive environment for permanent staff. The lack of response or support from management leads to feelings of frustrations as mentioned by these participants.

"You sometimes have three patients, of which one can be also ventilated, others have two, you can get another patient and it can sometimes for the patient's sake, it's not good, for me there is still nothing done, especially if it comes to permanent staff." (Participant 5).

"We [management] can't get somebody, so just get down and do the damn job and stop moaning!" (Participant 10).

"…if what I've mentioned that fall on ears that hear them, hear the cries for help, then by all means management must shift, listen to the people, they must hear what the people have to say with regards to the workload and the frustrations that they experience" (Participant 11).

The wording in the last two quotations indicates the indifference of management towards the workload as well as the frustration of management with the staff shortage and the effect thereof on the workload. It also indicates a plea that management should consider the voice of the staff with regard to the workload and the accompanying frustrations.

4.4.4 Workload: Leadership Support

In contrast, some participants disagreed and verbalized that certain unit managers are in fact supportive when the CCU is understaffed. Some participants noted that when the unit is understaffed the unit manager is prepared to nurse a patient or work as a shift leader.

"Unit manager will step in any time, she is absolutely excellent, if you don't have staff and you just going on, you admitting, admitting , she will come run the shift, or she will take a patient and run the shift and she has contingency plans in place where she will actually go the extra mile" (Participant 2).

Another participant pointed out that the unit manager tried to be always available for staff in the CCU. In contrast, the unit manager was of the opinion that the more she does for staff the more they expect in return. The unit manager felt her involvement with staffing issues result in her doing the work in the end.

"I [unit manager] try and be there for them always, but I sometimes get the idea that the more I do, the more they expect of me. I'm a sucker for that one, because when I get involved, I will do the work" (Participant 4).

According to the participants' experiences the support to the CCN is of importance as no support may lead to unhappiness and being unable to cope with their daily tasks.

4.4.5 Workload: Quality Nursing Care

Participants in general were uncomfortable with the workload since the heavy workload and staff shortages prevent them from rendering quality nursing care. In addition, participants noted that communication is also compromised as the CCN spend less time with patients and more time to execute nursing duties.

> "I hope what I've done and not find that at six o'clock at night I've still got three patients that I haven't even said good morning to, let alone good afternoon you know? That's too much. Then you, then you just feel like you're not doing your job, why are we here because that's not how we work you know?" (Participant 10).

Occasionally participants revealed incidences where they had to nurse six high care patients on a 12-hour shift. The situation forces them to improvise and concentrate to provide at the most basic nursing care for their patients. These situations however do not allow them time to do their job to perfection and with pride.

> "I've worked in units where I have looked after up to six high care patients for the day. Which as far as workload goes, basically in that situation it means that you're not doing what you supposed to do with your patients. You're not, you covering the basics and that's it. You're not giving proper patient care" (Participant 12).

The findings above indicated that the CCN sometimes found it challenging to provide quality nursing care should they be allocated two or more patients. Subsequently, participants recognized that the workload is impeding on the provision of quality nursing care.

4.4.4 Workload: Retention

The participants also revealed that the heavy workload have a negative effect on the retention of CCNs. Participants were of the opinion that most of the staff were demotivated as a result of factors such as the heavy workload, the shortage of permanent, qualified CCNs, an inapt financial remuneration and the lack of career opportunities. Several participants considered it best to resign after marriage. The participants felt that working in the critical environment is stressful. Subsequently, they had difficulty to leave work related problems behind and the alternative to rather leave nursing was in the best interest of their families and ultimately the patients. A few participants mentioned that the stress level in the CCU is worsening and the remaining staffs that are keen and hardworking is in the process of leaving.

> "You know a lot of nurses actually go out of nursing after getting married or having kids because they don't want to be frustrated when they get home; and that's what happens,

ninety nine percent of the time you take out your frustration that you build up at work, you take it out at home and that's where families start breaking up.." (Participant 11).

"It's [pressure] getting worse. So the staff that was still willing to work and work hard, is now going to leave too" (Participant 10).

Regardless the challenges management is faced with, the brain drain of CCNs will persist unless issues such as the workload, stress and staff shortages are dealt with.

4.5   APPLICATION OF THE PATIENT ACUITY SCORE

The above findings indicated that the heavy workload impedes quality nursing care and the retention of CCNs in the CCU. Moreover, participants felt that nursing critically ill patients is not stressful; it is the staff shortages and insurmountable workload that creates a stressful environment. Several participants mentioned that a scoring tool should be used to predict the amount of staff needed per shift which matched the patients' acuities. Responses of participants were mixed regarding the application of the patient acuity score. Mainly four aspects were commented on such as the determination of staff requirements, patient allocation, scoring points and business principles.

4.5.1 Patient Acuity Score: Staff Requirements

The patient acuity score was viewed by some participants as valuable with decision making that relates to staffing requirements. Participants felt that the patient acuity score is good to use as it predicts the personnel needed as well as classify patients as CCU or HC (high care). Another participant felt that staffing remains a problem; irrespective of the application acuity tool and that it is difficult to get enough staff to accommodate the expectations of patients. The different opinions are illustrated in the following observations.

"…look that form [patient acuity score] was actually a good form, then you will know your number of patients which is like your ICU patients and your HC patients and then according to that you can know how many personnel you need for that and that used to… is that enough now or do I need more and do I need less than that?" (Participant 5).

"Staffing is always a problem, to get enough staff that is competent to look after the expectations of your patients; I mean you got to look at the acuities of your patients" (Participant 4).

It is evident that the patient acuity score assist in determining the acuity of patients as well as the number of staff needed per shift.

Some participants were either not familiar or competent in completing the patient acuity scoring form. It is interesting to note that most of the participants that were inexperienced with the utilisation of the patient acuity scoring form were float staff that occasionally work in the CCU. One participant revealed that she never completed the patient acuity score form while another participant mentioned she knew very little about the patient acuity score form. The participant was aware that the allocated patient was scored as HC. However, the participant did not ask why and how the patient scoring was done for fear of rebuff.

> "Ek het nog nie so ´n vorm in gevul nie" (Participant 6).

> Translated response: "I have never completed such a form"   (Participant 6)

> "I don't know much about it, I just know the patients I was looking after, was a score that was actually a HC patient, I don't know how they really score it, I didn't ask them, I didn't want to ask too many questions" (Participant 3).

In conclusion, the patient acuity score is a valuable tool when predicting staff needs but not all staff is trained regarding the appropriate use of the tool.

4.5.2 Patient Acuity Score: Patient Allocation

Overall participants were of the opinion that the patient acuity score should be more realistic; nurse managers should consider factors such as staff skill mix, patient census, patient care needs and the type of CCU.

Participants explained that in general ventilated patients are nursed as 1:1 and the ratio of HC patients that is assigned to registered nurses (referred to as sister in the CCU) and enrolled nurses are 2:1 or sometimes 3:1 as mentioned by another participant.

> "As a general rule our ventilated patients get one on one and all high care patients is one sister   to two patients, or one staff nurse to two patients" (Participant 10).

> "High care can be one to three at times but most of the times its one to two" (Participant 9].

According to one participant, a unit manager, the patient acuity score is used in combination with other approaches to allocate patients and staff. The participant mentioned important factors to be considered when determining staffing totals for a shift. These factors include staff skill mix, staff traits, staff competency as well as the emotional needs of the patient and their families.

"I don't just use the patient scoring system to allocate, purely because things that the scorings, the acuity scores cannot see, so for this reason, I don't only use that, so you can't say that it's the scoring system that influences patient allocation. And for me a lot of it is in matching your staff, knowing your staff, knowing who's competent and then included in that is the patients emotional needs, the patients families emotional needs, matching the patient to the staff member, and you use the acuity along with all the other things" (Participant1).

The conclusion is made that the participant does not regard the acuity tool alone fit to accommodate the emotional needs of the patient and the family. The individual attributes and competencies of the staff members should however be used in combination with the patient acuity tool if holistic caring is to be provided.

4.5.3 Patient Acuity Tool: Scoring Points

One participant disagreed with some of the mark allocation of the patient acuity score form. The participant viewed the patient acuity score as unrealistic and drawn up by persons that do not have insight or worked in a high care or CCU.

"I've used it in a number of hospitals, so ya, I know it. I don't necessarily agree with all the points, I think their maybe something that should be included into the acuity score which should make it a more realistic, I think it's kind of been drawn up with people that don't really have insight to people working in a ICU / HC unit" (Participant 12).

Another participant observed that depending on the type of scoring system you use, there is no indication of the nursing activities in the CCU on ground level. Therefore, it looks good on paper only as shown below.

"In fact the point system depends on which one you use; it doesn't to me bring what's happening on floor level to what's on paper because the point scoring looks good" (Participant 9).

The findings above also indicated that the appropriate use of the patient acuity score is complex and requires expert co-ordination of each shift to ensure patient safety. Even though some participants had previously used the patient acuity scoring tool, most of them were in agreement that it fails due to an inability to accommodate all the activities that is required per patient. Consequently, not enough staff is scheduled.

Participants were of the opinion that there is a lack of congruency between the actual workload in the unit and the scoring on the acuity tool that indicates the amount or qualifications of the specific staff member that is required. To accommodate the actual workload in the unit, quite often ancillary staff is utilised to alleviate the situation which is

not ideal. One example given was the caring of a non-ventilated patient with an intra-cranial catheter in situ, on inotropic support with another patient. Such an assignment can pose a challenge for the nurse as the patients might be unstable and require careful monitoring. Unfortunately the ENA sometimes had to care for the patient due to a shortage of staff.

> "It doesn't, it should actually but it doesn't really assist us. It should actually, because you should be looking at your acuities, and sometimes you have a non-ventilated patient with an ICP [Intra cranial pressure] in with inotropes, but you still being doubled up (giggle) because you knew you can't double up that. And sometimes unfortunately you may have to give that to an ENA, because you got nobody else" (Participant 2).

The participant is of the opinion that an acuity tool should present a more authentic picture of the critical sick patient. The matter is confirmed by the following quotation.

> "…it fails every time because you can't look at those numbers and say okay now I only need three staff nurses and one RN to look after these patients but when you on the ground it's a nightmare because those numbers doesn't pinpoint the actual physical happening that is on floor level" (Participant9).

4.5.4 Patient Acuity Tool: Business Principles

Other participants were of the opinion that management seem to overlook the actual predictions of the patient acuity tool regarding staffing that is required in an effort to contain costs. Participants noted that the patient acuity score is a wonderful tool if you have the staff to match the amount of critically ill patients. They further explained that if you have ten patients all with an acuity of twenty you will need fifteen staff members. However, only seven staff members will be employed as a cost saving measure by management. In contrast, staffs are told by management to cope with minimum staff on duty and stop complaining. This is reflected in the quotation below.

> "It's a wonderful tool if you have the staff to fill the numbers. If you have ten patients all with the acuity of twenty. So therefore you actually need fifteen staff, that's great if they would give us fifteen staff. They give us seven and say get on with it. [Laughter]. You know it's nice to have the acuity but it doesn't match the staffing" (Participant 10).

Furthermore, not all CCUs used the patient acuity score. At one of the hospitals the Therapeutic Intervention Scoring system (TISS) was initially used and later abandoned. Reasons provided for the discontinuation of the tool was that the patient profiles have changed. At present a scoring system is used whereby the number of staff and patients are entered into a computer data base which calculates the staffing needs in the CCU. It

was also mentioned that the scoring system was set to change to cost per event on request from the medical aids. For example, if the patient had undergone an uncomplicated caesarean section or had a tonsillectomy he or she will be charged accordingly. However, staff training is necessary before the new system can be implemented.

> "No we used it [TISS] then. We are going to have to look at some sort of way of scoring the patients because we moving to cost per event which is coming from the medical aids." Discovery I think is spear heading it. The cost per event, so if you've got an uncomplicated caesarian section that's how much it should cost, if you've got tonsils that need to come out, that's how much that costs. So ja we've got to go next week to a training session on how this is all going to come into place (Participant 8).

In conclusion, the experiences of CCNs regarding the patient acuity score have negative and positive characteristics. Although some participants may have valued the utilisation of the tool, others viewed it as unrealistic especially if there is no association between workload and nursing care activities. On the other hand, management leaders seem to focus on cost saving measures rather than planning staff according to the tool. Recent research had found that nurse staffing needs in CCU should be based on patient acuity rather than absolute number of patients (Kiekkas, Brokalaki, Manolis, Samios, Skartsani & Baltopoulus, 2008:34-41). Therefore the conclusion is made that adjusting the predictions of the patient acuity that relates to staffing requirements in order to suit the budget might be a reason why some participants feel that the tool is not efficient.

4.6   FLOAT STAFF: CCU FRIGHTENING

Regardless the use of the patient acuity score, the CCNs felt frustrated as the CCU was understaffed. Allocation of float staff in particular six aspects were commented on such as CCU frightening, distribution of workload, support or burden, support or lack thereof, development and disapproval for their presence in the CCU.

Owing to the shortage of CCNs, it has become the norm utilising float staff (mostly enrolled nurses) in understaffed units. Currently enrolled nurses who are normally assigned to work in general wards are requested to relieve in the CCUs in crisis situations as explained in chapter 1 section 1.1. Several participants mentioned that working in the CCU occasionally is frightening especially if you usually work in the general ward. This is reflected in the quotation below.

"It's very frightening to go and work there, especially if you come from the ward, staff planning is, I sometimes, I don't know if people is scared to work there, that there isn't enough staff there, that they ask the ward staff to go work there" (Participant 3).

Participants revealed that the last few patients they cared for were uncomplicated cases such as a non-ventilated, post-operative hysterectomy patient who was easily managed. Therefore, the EN experienced the workload as acceptable as most of time they were assigned patients that are similar to ward patients. These patients were however not ready to be transferred to the ward. On the other hand participants were frightened by the alarms of the machinery in the critical care setting since they were not knowledgeable or experienced to deal with it.

"The last few patients that I had was just straight, um, hysterectomy, like gynae patients, which was sort of like…it wasn't ventilated, it wasn't difficult patients, which I felt comfortable with. But it's just that I think that the machines and all that noise that it's making, it was sort of like ward patients, but not ready for the ward" (Participant 3).

4.6.1 Float Staff: Distribution of Workload

Another key aspect that emerged was the distribution of workload.

Some participants experienced the distribution of the workload as unfair. Participants alleged that relieving in the CCU and nursing two high care patients is frustrating since the qualified RN only care for one critically ill patient. They were of the opinion that the high care patient is sometimes more ill than the critically ill patient nursed by the RN. Moreover, float staff do not report the unfair distribution or heavy workload for fear of reprisal. In addition, most of the staff working in the CCU is agency staff as permanent staff that is allocated to a specific CCU point-blank refused to relieve in other CCUs.

"…working in a ward set up and being posted out from the ward into ICU and then having to be working the full shift and working with two patients where they've got qualified sisters working as well and they only take one patient, that's a bit of frustration. And a lot of the time the high care patients that they hand over to the staff nurses are more ill than the ICU patients that the sisters are looking after. So where the distribution of work is concerned it can be somewhat unfairly distributed and people don't normally open up their mouths because most of the staff that work in ICU are agency staff, because permanent people [they blatantly refuse to go work there and they work in other units]" (Participant 11).

The above findings suggested that there was an unequal distribution of the workload due to a nurse patient ratio of 1:2 for float staff and a 1:1 ratio for RNs.

4.6.2 Float staff: Support or Burden

Whenever enrolled nurses from the ward setting are reassigned to the CCU in crises times, these nurses spend more time on performing tasks and the registered nurse (RN) spend more time supervising them. Overall participants described that all new staff were orientated regarding the routine in the CCU, they were supervised especially when administering medication, completing forms and recording of observations.

> "…especially if they're new in the unit, we just like orientate them around the work things that we do and then you have to supervise them, even with our permanent staff [ENs] as well, you need to supervise them, especially with medication that you have to issue; you have to be with them in this regard. Then we just supervise and see that they understand how to fill in the forms and how to write the observations" (Participant 5).

Subsequently, the unit manager must ensure that the daily routine and list of responsibilities are clear and concise to guide staffs who are less familiar with the CCU.

Another participant who is in command of a surgical unit did not support the idea of float staff as a means to alleviate the workload. The participant mentioned that the use of inexperienced staff causes additional stress on the shift leader, impedes quality patient care and often has a negative cost implication. The participant also explained that most of the float staffs are not familiar to the unit, are not experienced or trained CCNs, does not reason like CCNs and are not knowledgeable of the unit specific infection prevention principles.

> "I very rarely use staff who are from outside, it's always a challenge because, it puts so much pressure on the shift leader, it can affect the quality of the care delivered to the patients. It is often a cost implication that is actually not beneficial, so I don't like using "floats", who don't know the ICU who are not ICU people, or ICU thinking people. Because of the surgical ICU, even getting a care giver from outside is a problem for me because you don't know my infection prevention principles, you don't know what it means going from bed to bed and hand washing and spraying and the infection prevention principles, and you don't have that sort of training outside. In a ward even, even somebody from medical ICU is different" (Participant 1).

In contrast to the above findings, several participants preferred the assistance of float staff in crisis situations than having to cope with a heavy workload. They also mentioned that orientation and education is vital in a stressful environment like the CCU. The participant revealed that she tried to manage the inexperienced staff member by assigning the person

to pressure care duties that is less risky. Some participants experienced it as challenging to support float staff while others found it frustrating. An important reason was that at least the patient is cared for.

> "You have to educate them from the start, and re-orientate them to the unit, and some people find it frustrating, I find it challenging, in fact lets go with it, let rather you look after the patient, even if all you going to do is turn and rub and I give the medication, at least then the patient gets care, where some people get so frustrated with having to support the person, that it frustrates them" (Participant 2).

Furthermore, one participant, an enrolled nurse who has critical care nursing experience and relieves in the critical care units occasionally verbalised that support and orientation during these occasional relieving sessions is necessary since the CCU is not her normal work environment. Yet there is not enough staff to assist with orientation.

> "Ek werk nie elke dag in die setup nie, so ek is nie so familiarized met die goed nie, so ek sal like dat iemand net weer vir my tou wysmaak, dit en dit word nou en so, want baie keer is daar nie genoeg staff om jou te wys nie, so jy val sommer in die diep kant in" (Participant 7).

> Translated response:
> "I don't work in this setup every day, so I am not familiarized with things, so I would like someone to show me around because most of the time there is not enough staff to show you around, therefore you are thrown in the deep end" (Participant 7).

The responses reflected how the participants experienced the workload. It is evident that in an unexpected crisis or intense period caused by staff shortages, the critical care environment became extremely stressful. The inexperienced float staff was overwhelmed by the complexity of care required in the CCU while the experienced float staff coped and felt the workload was fairly distributed.

4.6.3 Float Staff: Support or Lack thereof

Several participants who work occasional as relieve staff in the CCUs reflected that support from the permanent critical care nursing staff is minimal. This lack of support is especially prevalent when the units are very busy and the workload is heavy despite the usage of supplemental staff. During the busy periods, permanent staff would ignore float staff as they are loaded with their own patient assignments. Therefore, the critical care staffs are not available to assist float staff in the CCU. The person in command of a shift, the shift leader should ideally be available to assist all staff that requires assistance.

> "…you often can't get help from people who are also loaded, because all the assignments should be full, so it's difficult that you got a nurse whose floating who should be assisting you. And you've got a shift leader who's on the floor who should also be all over…" (Participant 1).

Another participant also mentioned that if there is a lack of support in the CCU, the nurse is responsible to request such help. The participant felt it was necessary to ask questions until the information became clear. The experienced participant was not willing to perform tasks she felt incompetent with. It was further explained that the obtainment of information from the RN, the shift leader or whoever has the knowledge or insight is paramount.

> "I will ask questions until it come out from my ears, I won't leave a thing, you know just, I won't do a thing willy-nilly. I will just if I don't know something, I will go to the sister or to the shift leader or whoever is available that knows what they are doing and I will ask them what to do, how to go about it and all of that. Get more insight and to be more knowledge hungry, that's how I am and some people feel that is intimidating to them" (Participant 11).

In contrast, some participants maintained they enjoyed a more supportive relationship in the CCU. Moreover, support of the less experienced nurse is reassuring and gives a sense of security. One specific participant had a good work rapport and felt comfortable with an individual staff member in the CCU who tends to be supportive. On the other hand the inexperienced participant dreaded the day the individual nurse would not be on duty for fear of insecurity.

> "I know a lot of people in ICU, but I felt very comfortable with one staff member, I will go and work there when she is on duty, but I mean surely one day, she won't be there, she helps you a lot, she explains everything, to you, and just knowing that she is there, you actually feel safe" (Participant 3).

A few participants, both experienced and inexperienced also mentioned that they normally speak to the unit manager and once they voiced their grievances they felt relieved.

> "I've got someone that I go to and I speak and I normally speak to the unit manager and once that venting has been done, then I feel much better about it" (Participant 11).

Another participant, a unit manager reflected that she practiced an open-door policy. The latter however, proves to be detrimental as it did not permit private time. On the other hand the participant believed it was better to be available when staff required emotional support to prevent conflict.

"…from an emotional prospective, my [unit manager] door is always open, often to my detriment, it's an open door, there's no private time, they can come in and I choose to have it like that. Because so often you can put out a fire, when people need me and especially in the ICU, I think they take so much pressure of having to work with each other" (Participant 1).

The above findings suggested that support systems should be in place and accessible to nursing staff. In addition, staff shortages hamper in-service training, especially orientation programmes in terms of the unit layout, policies and procedures of the inexperienced nurse.

The permanently employed critical care nurse admitted that they are not always available to orientate the floating or relieve staff due to time constraints. They however advised them to come for orientation when the CCU is not busy.

"When we're busy, we [permanent staff CCU] don't have the time at that moment to orientate them [float staff]. Sometimes we tell them, why you don't come maybe for a day when it's not so busy and you would like to know, then we can orientate them. That's why they say we don't want to work there because the nursing staff there and the nurses don't have the time sometimes to teach us and thing like that. So most of the time the ward staff don't want to come and work here" (Participant 5).

4.6.4 Float Staff: Development

Several participants were of the opinion that the occasional opportunities to work in the CCU have a positive impact on personal development and patient safety. Participants, both experienced and inexperienced explained that the nursing tasks that they performed in the CCU were on a higher level and that their competencies were broadened by the experienced gained in CCU.

"Jy tel baie ondervinding op in die ICU en amper so in die saal, jy is ´n punt voor vir hulle, want dit wat jy hier doen in ICU, doen hulle nie nou nie hier in die saal nie, so…" (Participant 6).

Translated response:
"You gain a lot of experience working in ICU and you sort of have an advantage because what you do in the ICU, they don't do in the ward, so…" (Participant 6).

4.6.5 Float staff: Disapproval for Presence in CCU

Finally, a few participants reported that especially the more senior nursing staff disregarded the qualifications of float nurses. The experienced enrolled nurses, who often

61

work as relieve staffs in the CCU, felt that the highly experienced RNs with master's degrees tend to look down on the EN.

> "Sometimes they just like nitpick on you because they see you've got white epaulettes, that means that you don't have the experience, you don't know what you are doing and then they start looking down on you. It's almost as to say that they judge you from the color of the epaulettes… sometimes when you get those highly experienced sisters with masters degrees and everything in ICU, they tend to look down on you as a staff nurse" (Participant 11).

According to the responses it appeared that when these prejudiced staffs were on duty, the critical care environment became tense. This indicates an increase in work pressure on the enrolled nurse who has to cope with a stressful environment.

One participant also noted that even doctors disrespected them as they did not have enough knowledge in comparison with the RN. The participant reported that certain doctors prefer RNs in the CCU instead of enrolled nurses.

> "The doctors look at the epaulets and the one doctor if he walks in and he doesn't see at least two red epaulets on the floor, he will freak out. He will demand one of the RNs do a round with him and he takes maybe up to two hours" (Participant 4).

While there were differences of opinions, participants agreed that float nurses can play a role to meet staffing deficits in the CCU. The managers in leadership positions are challenged to ensure patient safety and quality nursing care by matching the right skill mix of nurses to the needs of patients.

4.7   THE ROLE OF AGENCY STAFF

The current theme overlaps with the float nurse as discussed in the previous paragraphs of 4.3.3. Similar to float staff, agency staff is utilised to supplement the number of staff in the short-staffed CCU.

4.7.1 Agency Staff: Qualifications

Several participants expressed concerns about the qualifications of the agency nurse or lack thereof. They revealed that agency staffs tend to be dishonest about their experiences and qualifications that relate to critical care training. Participants revealed that certain agency nurses would verbalize that they are experienced or critically care trained. However, when working in the CCU the standard of nursing rendered by them is not of an acceptable standard. Yet, certain participants mentioned that some agency staff is recognized and trusted.

"Agency staff, there is some agency staff that, they can tell you that they're ICU experienced or even ICU trained, and then you experience when they come into your unit, they not up to standard. But I can't say that most of the staff that I work with agency is like good or you can rely on them, because you do get them. They say they can do the thing, but then you also have to maybe come and see that they haven't done those things, maybe it's the environment they work in for the first time, but we have like our agency staff that we know and we trust them" (Participant 5).

In another incident it was found that the agency nurse knew the compensation for working in the ward will be less than in critical care. In addition, the agency staff may not necessarily have the qualifications or the experience to work in the CCU.   However, the incentive for a higher remuneration motivates them to work in the CCU.

"Obviously as agency staff you know you going to get paid more if you go to ICU than if you go to the ward. So you don't necessarily have the qualifications or the experience to work in ICU, but you going there because you are getting paid more" (Participant 12).

The findings above demonstrated that certain participants perceive the agency nurse as dishonest. These participants were of the opinion that the agency nurse is working in the CCU for financial reasons only.

One more reason cited for the dishonesty regarding the competency of the agency nurse was fear of cancellation of scheduled shifts. Participants stated that the agency nurse rather seeks assistance from float staff. This is done to ensure that permanent staff does not identify their lack of knowledge and ultimately cancel their shifts as is reflected in the quotation below:

"Daai ene gaan nie na die permanente staff wat daar werk nie. Hulle gaan mos nou uitvind, okay nee maar hier, ons gaan jou nie more weer book nie, want jy weet in elk geval niks, ons gaan eerder iemand kry wat meer ken en weet wat gaan hier aan" (Participant 7).

Translated response:
"That one doesn't go to the permanent staff in the CCU. They will find out, okay no but we won't book you tomorrow because you don't know anything. We will rather get someone who knows what is happening here" (Participant 7).

In contrast, other participants experienced the situation differently. They felt agency staff adds value with their body of knowledge and expertise. One participant mentioned that a shift leader on night duty was needed. The agency nurse who worked in the CCU for

63

almost twenty years, is highly qualified and in command on night shift. The participant was also happy with the agency nurse running the shift as such. Overall participants agreed that agency staff is extraordinarily good, responsible and dedicated to their work.

> "I use an agency shift person at night, who's been working in the ICUs here for almost 20 years. She's highly qualified, and she knows the ICU very well. "… in my dire need for a competent person on night duty to run shift, she accepted…so I am so happy with her running the shift as such" (Participant 1).

> "You know there are some extraordinary good, extraordinarily responsible people who know what they're doing, who are very good at what they're doing and who are dedicated to what they're doing and they're going to come do the job" (Participant10).

Regardless the reasons embarked on for doing agency work, the agency nurse has a positive role to play in the understaffed CCU. Therefore, the agency nurse should attain the best evidence to apply to practice with the goal of improving patient outcomes.

4.7.2 Agency Staff: Control or Lack thereof

Another key aspect that emerged was the lack of control over the competencies of agency staff. Although nurses recruited by agencies are required to provide an employment record and evidence of competencies, an accurate assessment of their level of skills may be difficult to ascertain. Participants were of the opinion that there is no system in place whereby the nursing agencies monitor their respective staff. The participant mentioned that anybody could report for duty; no specific system exists that verifies the identification of the agency nurse that turns up for duty at a hospital. In addition, the participant was concerned that if the unit gets busy they are forced to employ unknown staff. This can create a problem as it is not ideal to utilize inexperienced staff in the CCU.

> "There is no system in place where the agencies monitor the staff, all the agencies. I have worked in other hospitals where anyone can rock up and…so I think as far as agency staff go, it's sometimes sort of a touch and go thing. When the unit gets very busy and they have to call in staff that they don't know, and then there is a potential for problem there" (Participant 12).

Yet, another participant mentioned that some nursing agencies have systems in place to monitor staff competency. The participant preferred the utilization of a specific nursing agency that has a facilitator on site. As a result, agency nurses are orientated and followed up to ensure they are suitable to work in the CCU.

"Why we prefer [name of agency omitted], is because no candidate, or assignee as they call it, may work in our ICU without having been orientated by them, there's a person, a facilitator / trainer on site, who will follow up the candidate and make sure that they are suitable to work in our ICU" (Participant 1).

4.7.3 Agency Staff: Float Pools

Even with the limitations as mentioned, some hospitals have created their own internal supplemental staff by hiring per-diem employees and creating float pools. Per-diem staff generally have the flexibility to choose when they want to work (Marquis & Huston, 2007:422-423). Generally participants mentioned that they do their own networking resulting in a core group of agency staff. Therefore, if there is a shortage of staff in the CCU the loyal agency nurse will report for duty on short notice. A few participants explained that some hospitals preferred a staff bank of specific agency nurses. As a result these agency nurses work permanently at one hospital through the nursing agency. Comments that attested to this were:

"She [previous unit manager] did a lot of networking and with a result that we have also quite a core group of agency staff who're loyal. If we're in a tight pinch and they weren't down to work, we sms a lot [laughing] and if we sms them, then there is some loyalty that they will help us. So there are ties that we have (Participant 8).

"As far as agency staff, I think most hospitals like to sort of build up like a staff bank that they have. Certain staff that work through the agency permanently there. So they sort of like permanent agency staff" (Participant 12).

4.7.4 Agency Staff: Support

In addition, participants mentioned that the nursing agency provide little or no support to arrange staff for a CCU. Generally the unit manager in command of a CCU schedules the required agency staff in advance. However, a sudden increase in the patient census of the CCU may create a situation where more nurses are required. Participants experienced little help from the nursing agency in these situations. Subsequently, the unit manager or shift leader has to arrange the additional agency staff themselves.

"We don't get a lot of help from the agency. I can count on one hand the number of staff they had to find me this year. We find the staff and we let them know that they keep working" (Participant 8).

A few other participants were frustrated with the amount of time spend searching for agency staff. It was explained that a specific nursing agency was utilized merely because

it provide agency staff while others are less efficient or tend to ignore the request to arrange staff.

> "It takes a lot of time to sit on the telephone and phone people [agency staff] and get feedback. I make use of only one agency that I phone and use at the moment, because the others don't give. …at this stage just say sorry we haven't got, they don't even come back and tell you, you phone them and ask them and that's it. You got to phone them back and ask have you got somebody" (Participant 4).

4.7.5 Agency Staff: Scapegoats

Interestingly, participants also revealed that agency staff is sometimes unfairly blamed for the mistakes of the staff permanently employed at the hospital. The latter led to feelings of anger.

> "But one thing I don't like is that when something goes wrong then, it's not the agencies fault, I hate that, it's not the agency staff. It's more the permanent staff's fault and then the blame goes to the agency" (Participant 4).

A permanently employed staff member revealed in the above quotation that owing to the stressful critical care milieu the CCN is most likely to make mistakes and blame coworkers for fear of reprisal. Blame can leave people feeling destitute, which in turn creates a desperate need for explanation and leaves people distressed and vulnerable.

4.7.6 Agency Staff: Stepchild or not

Finally, one participant, a unit manager was of the opinion that the agency nurses experience a sense of belonging. They, the agency staff, are comfortable in the sense that they would verbalize their opinions during handover rounds and in meetings. They also felt entitled to team building sessions and end of year functions and became upset when excluded from it.

> "When its people that have been here a long time, I expect they part of the team, because in our meetings in the morning, we have handover review every day and then agency staff also participates in that meeting, they quite verbal, just as verbal as my full time staff, so I often don't see a separation between them, if we have a team building, the agency staff feel very entitled to it, in fact they are very upset when they excluded, like when we have an annual staff party, and we didn't get tickets for agency staff and they're quite offended cause they belong, they feel that they belong here" (Participant 1).

Overall agency staff is recognized as part of the team in the CCU and are valued as such.

4.8   THE BUSINESS PRINCIPLES

This theme comprises the business principles as experienced by the CCN, their frustrations, enrolled nurse versus registered nurse and plea for support. This current theme overlaps with workload, a theme discussed in 4.3.1. Several hospitals reduced their staff as a cost saving measure. This indicates an increase in the workload of the CCN. Subsequently the CCN has to care for two or more patients. However, the hospital benefits from the CCU tariffs received or claimed for each patient. This alludes that the nurse to patient ratio is 1:2 or 1:3 but the company claims compensation for each patient who received care.

4.8.1   The Business Principles: Frustrations

Participants spoke freely about their frustrations as it relates to the cost saving measures at the cost of CCNs. Occasionally concerned participants mentioned that staff is cut to the bone while shareholders are paid. The participant believed the money goes into the wrong direction and should be invested in hospital staff.

> "It's the more we can cut and the less we can run on no matter what. Ja and shareholders word "hulle betaal" ja, [laughter] that is that's how it feels ja, the money, the money, the money goes into the wrong direction instead of it getting drives back into…" (Participant 9).

Another participant mentioned that the hospital management expects them to be very precise regarding the acuity and the allocation of the budget. The participant understood that the hospital is run as a business therefore the cost should be kept low. Moreover, since CCN's have additional qualifications their remuneration is higher. Consequently, the total expenditure of maintaining a CCU is costly.

> "We were nailed on the acuity and the allocation of the budget, it's always the budget, you can understand it's a business, every hospital is a business, we got to keep it as low as possible, and every ICU staff is expensive. And if they compare us to the other wards maybe, and I think that's where they look first. They look at wow ICU's budget is this big and the expenditure for the staff salaries" (Participant 4).

4.8.2   Business Principles: Enrolled Nurses versus Registered Nurses

Several participants disagreed with the strategies applied by management to employ staff. These strategies include utilizing enrolled nurses instead of registered nurses (RN) since the enrolled nurses are less costly than the RN.

> "Sometimes when we doing bookings for the staff we have to look and see if it's a vent patient or non-vent patient, and then I get (name omitted) name and an EN who is useless,

but because she's an EN, and she cost less than [name omitted], I will then have to take the EN staff member "(Participant 2).

A similar view was shared by another participant as shown below. The quest to maintain a low expenditure with regard to labour also include hiring an experience critical care nurse (CCN) instead of a trained CCN

"There is a reason that they will rather book an EN over a RN, and rather an experienced RN over a qualified RN, it is entirely bottom line what am I going to pay you" (Participant12).

Participants did not agree with the tendency of management to utilize experienced CCN and enrolled nurses to care for critical care patients while the patient is charged the full CCU tariffs as if the patient was nursed by a qualified critical care trained nurse.

"Their expectations and what they bill the patient because you can't bill a patient the ICU rate for nonexistent care and that is what's happened" (Participant 9).

The above findings are indicative and elements of exploitation that relates to the utilisation of experienced CCN's (not trained CCN) and enrolled nurses in critical care nursing. However, the patient is expected to pay for care that might have been of a lower standard.

Other participants experienced it differently and noted that even if experienced or trained CCNs are available, management will rather request lower cost staff (enrolled nurses) which might ultimately compromise patient safety. Enrolled nurses are hired although RNs are available. Again the driving force is to maintain a low expenditure with regard to labour. This is eminent in the following quotation.

"Slowly but surely the labor is more lower cost, so it feels to me like it's a saving because there's a lot of RNs that can, that can fill the gaps because it's not a case of there is none and therefore they must now employ the lower grade, the cheaper labor " (Participant 9).

Since RNs are more competent one participant would have preferred to have more RNs on duty. Yet the management at the hospital does not encourage the hiring of too many RNs as it has a negative impact on the budget.

"Oh yes, definitely, just to take the work load off, however again management don't want that [more RNs], they say that we top heavy, and they pull our budget down, although we would like it (Participant 2).

Regardless the restrictions of the budget, participants concluded that if management reduce the number of staff to perilous levels, they should accept a lower standard of nursing care.

> "Bottom line is then they must like, okay we are happy in this country or wherever we are with a low standard. So then it's fine to have the lower rank nursing staff in the unit but then they must cut on their…" (Participant 9).

Another participant was of the opinion that management should have extra staff on duty to accommodate emergency situations. Although such a measurement might not be cost effective, it will create a safe environment for patients and staff alike.

> "And have an extra staff member on duty, in case of an emergency, I know it's extra, it doesn't maybe benefit the company, or you know if it's not maybe cost effective, but are there really costs, can you really put costs to a patient?" (Participant 3).

It is evident that the business principles are implemented as a cost saving measure by management.

4.8.3 The Business Principles: Plea for Support

The participants were asked for suggestions on how to improve staffing management in CCUs. A number of participants responded that the employment of permanent staff; especially RNs will alleviate the shortage of staff in the CCU.

> "Meer personeel, definitief" (Participant 7).

> Translated response: "Especially more staff" (Participant 7).

> "Se maar soos train, en experience, kan hulle [bestuur] nie ´n vas gestelde getal in daai saal he nie?" (Participant 6).

> Translated response:
> "Like trained and experienced, can't they [management] employ a set amount of staff in the CCU? (Participant 6).

A few participants also mentioned that management tend to first and foremost please doctors when they request more staff. The participants suggested that doctors have authority and power and that should they request more and better staffing; management should be more committed to support the idea of more and better staffing.

> "So they [doctors] the only ones that have the pull, because they bring so much money to us, they have the pull. They [management] listen to them" (Participants 2).

Finally, several participants experienced a sense of powerlessness when reflecting on the budget and its impact on quality patient care. The participant in the quotation below, a unit manager verbalised that the nurses work hard; over and above the normal nursing tasks, they are also responsible for documentation as well as managing potential negative outcomes.

> "We obviously drive a quality standard. I drive them hard to have my documentation in order, and then to focus on risk management" (Participant 1).

Ensuring a safe and rewarding work environment for each CCN is an unrelenting task for the unit manager. However, it is the responsibility of all in the organisation to ensure a safe environment conducive to quality nursing care. Patient safety should not be compromised at the expense of a tight budget, bottom-line. Institute of medicine

4.9   STAFF DEVELOPMENT: TRAINING AMID CHALLENGES

Although training was provided by the hospital and the nursing agency; participants were of the opinion that not enough was done to educate staff. Several participants mentioned that even if they are short staffed, basic in-service training should be provided. Training sessions could last from ten to fifteen minutes if enough staff is on duty.

> "And more education in ICU as well, you know we are so short staffed, just to try and do basic in-service training is difficult, because you don't get a chance. They try that ten, fifteen minutes, and then your patients get neglected during that time, but if you have more maybe, availability of staff, then maybe more of us can go off and have in-service training as well" (Participant 2).

A few participants have a problem with the lack of in-service training opportunities. They explained that it cannot be expected of nurses to learn when no one teaches them.

> "How do they expect us as nurses to learn when they don't give us the teaching opportunities, when they don't give us learning opportunities, where they don't tell or sit with us? I'm not expecting anyone to offer or to sacrifice their time for my benefit but at least we learn from one another" (Participant 11).

One more participant mentioned that there is no formal in-service training available at present. However, spot training is done in general.

> "Nothing [in-service training] that's formal at the moment. Yes, on- the- spot training" (Participant 4).

The findings above indicated a well-educated workforce is a healthcare providers' greatest asset and is associated with quality nursing care and improved patient outcomes.

Participants also noted that the nursing agency should enforce compulsory training programmes as this will enhance the competencies of the agency employed critical care nursing staff. Interestingly, one participant, a unit manager explained that the hospital where she was employed had a workshop and that she was willing to sponsor an agency EN but the agency would not contribute financially.

> "We had a workshop at [name of hospital omitted] and I wasn't entitled to send him [agency EN], the sad thing is that I pay the R50 for him, but I can't pay for him for that day. And they're agency, they wouldn't do that either, they would pay for him for that day" (Participant 1).

Owing to the shortage of staff, relieve staff cannot be assigned alongside the more experienced nurses. This in turn, cause less time for consultation with co-workers in a stressful critical care environment. Several participants indicated that there are near misses if a ward staff member is used.

> "There are near misses, we get a staff member come from a ward they don't know that when a patient mobilizes to the bathroom and gets back in bed, the blood pressure cuff needs to be set to go off hourly again. So then they try to set the blood pressure for three hours without wondering why it hasn't changed. So there are a few things that can go wrong" (Participant 8).

The above finding indicated that more should be done by management to safeguard the patient against adverse events in the CCU.

4.10 SUMMARY

In this chapter the results of the study was presented and discussed. The biographical details as well as the factors related to staffing management were presented. Six clusters of themes emerged.

The findings confirmed that the participants experienced the staffing strategies implemented by management as frustrating. Challenges including the patient scoring tools, heavy workload, the business principles, utilization of inexperienced or non-trained supplemental staff and the lack of staff development, made it difficult for the CCN to render safe and quality patient care. Moreover, the distribution of the work load, the inappropriateness of the budget allocation, the lack of experience or training of

71

supplemental staff and little or no staff development were some negative aspects that surfaced during the analysis of the data.

Several participants were of the opinion that the exposure to working in CCUs contributed to enhanced clinical skills and confidence in the CCU even with the current limitations. Float staff experienced working in the CCU frustrating especially if there is no support from the more experienced or trained CCN. In contrast, agency staff was viewed as either extraordinarily good or incompetent.

Frustration with in-service training provided by the hospital and nursing agency were cited as well and several staff felt education is important for professional development.

In conclusion, chapter 5 provides a concise overview of the key findings, demonstrating the realization of the study objectives.   Chapter 5 further contains appropriate recommendations based on the findings of the study, a description of the limitations and draws together the final conclusions of this study.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1   INTRODUCTION

Grounded in the study findings, Chapter 5 draws conclusions regarding staffing management in CCUs as experienced by CCNs within the private sector. The conclusions are discussed according to the study objectives, subsequently demonstrating the achievement thereof. Based on the empirical evidence, recommendations toward the improved provision of staff in the CCUs are also presented. Chapter 5 describes certain limitations and draws together the final conclusions of the study.

5.2   DISCUSSION AND RECOMMENDATIONS

The aim of the study was to explore the experiences of critical care nurses regarding staffing management within CCUs in private healthcare institutions. The discussion on the findings of the study in relation to each study objective is now provided:

5.2.1 Objective 1: The application of the patient acuity score as experienced by critical care nurses

According to Hurst, Smith, Casey, Fenton, Scholfield and Smith (2008:26-34) the patient acuity scoring tool assist in staff planning as well as measures patient acuity and dependency (see chapter 2, section 2.11 of the conceptual framework). Segregating patients into acuity classifications allows the staffing pattern to be developed based on the resource requirements of the specific mix of patients forecasted for the unit (Finkler, Kovner & Jones, 2007:np).

The strategies implemented by management to provide adequate staffing directly influences the experiences of the CCN's on staffing management. Therefore, some of the opinions discussed here might overlap with the facts discussed in the discussion of the other two objectives. Both positive and negative opinions relating to the application of the patient acuity score within CCUs were revealed.

The application of the patient acuity score to determine staffing requirements in the CCU generated mixed responses. One participant viewed the patient acuity score as a good tool in predicting the number of staff needed per shift and classifying patients into different categories. The latter is demonstrated in the following quotations: "good form…know your number of patients which is… ICU patients and your HC patients… know how many personnel you need" (see chapter 4, section 4.5.1). Yet, some participants, mostly enrolled

73

nurses were never exposed to the patient acuity score form and apparently "never completed such a form" (see chapter 4, section 4.5.1). Muller et al., (2008:312) suggest a valid and reliable patient acuity classification tool is an ideal mechanism for predicting and determining the cost of nursing care. However, staff in the CCU should be trained in the use of such a tool for it to be beneficial.

Even though the patient acuity score assisted in predicting the number of staff needed per shift, finding qualified staff remains a problem as cited by one participant, "to get enough staff that is competent" (see chapter 4, section 4.5.1). Hinshaw (2008:np) and Talsma et al., (2008:np) indicate that an adequate number of competent nurses is necessary to deliver quality and safe patient care. Although certain participants regard the tool as efficient some participants responded that the business principles implicate the final decisions about categories of staff that need to be hired for a shift. Therefore is seems as though the business principles influences the effectiveness of the tool; especially the utilisation of enrolled nurses as a substitute for the more expensive registered nurse. This is evident in the following phrases, "…EN, and she cost less" and "…rather book an EN over a RN, and rather an experienced RN over a qualified RN, it is entirely bottom line what am I going to pay you" (see chapter 4, section 4.8.2).

Consequently since the staffing requirements that are predicted by the acuity tool are adjusted to accommodate the budget (see chapter 4; section 4.8.2) dissatisfaction regarding the patient allocation was also raised. Participants experienced the caring of two or more patients challenging as explained by one participant, "You sometimes have three patients…others have two…you can get another patient…it's not good" (see chapter 4, section 4.4.2). The recommended nurse-patient ratio in the CCU is 1:1 or 1:2 (Odendaal & Nel, 2005:96; Wise, 2007:27-28 & The South African Society of Anaesthesiologists, 2011:np) as previously mentioned (chapter 2, section 2.8).

Aiken, Clarke, Sloane, Sochalski, and Silber (2002:1987-1993) had found that each patient over a 4:1 ratio increased the odds of nurse burnout by 23% and job dissatisfaction by 15%. Consequently, the unit managers must ensure that sufficient staff is available to meet the needs of staff and patients. Moreover, Marquis and Huston (2007:434) state that employees have the right to a fair workload.

Furthermore several participants raised their concern with the utilization of the patient acuity score as the sole basis to predict the staffing requirements for a shift. One participants cited the following, "I don't only use that… matching your staff, knowing your staff, knowing who's competent… included in that is the patients emotional needs, the

patients families emotional needs, matching the patient to the staff member, and you use the acuity along with all the other things" (see chapter4, section 4.5.2). Recent research suggests that nurse staffing requirements in CCU be based on patient acuity rather than absolute number of patients (Kiekkas, Brokalaki, Manolis, Samios, Skartsani & Baltopoulus, 2008:34-41). Therefore, considering the findings of Kiekkas et al. (2008:34-41) and the findings of the current study; the tendency of nursing management to adjust the staffing predictions provided by the acuity score in order to accommodate the budget proves to be ineffective.

The ineffectiveness of tempering with the staffing predictions of the acuity tool transpires in inadequate staffing in the CCU. The staff members in these units, irrespective of the utilisation of the acuity tool have an increased workload and experiences stress as revealed by this participant, "The workload is tremendous… it's extremely stressful…you do your best" (see chapter 4, section 4.4.1). Ramanujam, Abrahamson and Anderson (2008: 144 -150) did an analysis on job demands and patient safety perceptions and found that as the job demands increase the nurses' patient safety perception decreases. They postulate that the nurse's personal control over practice increases their ability to assure patient well-being.

However, the nursing staff as predicted by the acuity tool has non-nursing duties as well. Occasionally participants had feelings of frustrations regarding the amount of time wasted on non-nursing duties instead of providing nursing care (see chapter 4, section 4.4.2. Booyens, 2008b:181 explain that a significant amount of nursing time is spent on non-nursing duties. Gurses, Carayon and Wall (2009:422-443) confirm that by answering telephone calls, looking for missing equipment as well as insufficient bedside stock is time consuming.

Regardless the heavy workload, participants felt that they have chosen to work in the CCU and they enjoy the challenges it poses. However, it is the critical care environment that creates stress. The stress is aggravated if there is no or lack of support from management leaders as shown in the following phrase, "do the damn job and stop moaning" (see chapter 4, section 4.4.2). Buonocore (2004:170-181) explain that the first component for a staff-supportive environment is effective and proactive leadership. Team culture refers to the 'workplace fiber' of shared norms, values, beliefs and expectations of the CCU staff while a supportive culture emphasizes teamwork and interdisciplinary collaboration.

Yet, some participants revealed that the unit manager of the units where they work is very supportive and "will step in any time, she is absolutely excellent… has contingency plans

in place where she will actually go the extra mile" (see chapter 4, section 4.4.2). Consequently the rendering of support to nurses in the CCU is either a highly regarded function of the unit manager or it is seemingly ignored as is revealed in the previous paragraph. According to the American Association of Critical-Care Nurses (2005:187–197), nurse manager support is one of the role functions of nurses in leadership positions. Therefore, they have the responsibility for establishing and sustaining healthy work environments.

The findings of this study as indicated in chapter 4, section 4.4.3 and 4.4.4 reflect that the insurmountable workload impedes quality nursing care and the retention of nurses. Overall participants had similar views with regards to the high turnover rate and retention. Key aspects emerged such as the heavy workload and the shortage of permanently employed qualified CCNs. According to O' Brien- Pallas, Thomson, McGillis Hall, Pink, Kerr and Wang (2004:np) nurses working in units with a productivity of more than 80% had lower nurse job satisfaction, higher abseentism and a higher intention to resign.

Finally, numbers alone do not ensure improved patient care since not all CCNs have similar clinical experience and skills. The unit manager has to ensure patient safety while considering the patient acuity, the number of patients, the experience of staff and support structures that are available for staff.

5.2.2 Objective 2: Opinions of critical care nurses regarding the utilization of ward staff

According to the study findings another common staffing and scheduling alternative is the use of supplemental nursing staff such as ward staff and agency staff (discussed in chapter 2, section 2.9.2). The practice of utilising float (meaning enrolled nurses working in the wards who occasionally relieve in the CCU; in this study) staff between departments in response to shifting demands is not a new phenomenon. According to Baughman (2005:9) it was noted as early as 1976 in Canada. This was implemented by hospitals in the United States of America and Canada as a cost saving measure to combat spiralling health costs.

Both positive and negative opinions were revealed in terms of the workload and support systems within the CCU. Most participants explained that, "it wasn't difficult patients…I felt comfortable…it was sort of like ward patients" (see chapter 4, section 4.6.1). Participants were thus able to cope with the workload if assigned stable high care patients irrespective their experience in the CCU. In contrast, several other participants were dissatisfied and stated, "a lot of the time the high care patients…more ill than the ICU patients" (see chapter 4, section 4.6.1). Most participants revealed that they experience feelings of

frustrations and anxiousness when they have to care for critically ill patients in an unfamiliar clinical setting.

In addition, several participants viewed the utilisation of ward staff that is inexperienced to the CCU as detrimental. This is evident in the following phrase "…it can affect the quality of the care delivered to the patients. It is often a cost implication…not beneficial" (see chapter4, section 4.6.1). According to Rischbieth (2006:397-404) a nurse may be regarded as an expert in one department and a novice in another. Furthermore, Alonso-Echanove, Edwards, Richards, Brennan, Venezia and Keen (2003:916-925) found there is an increase incidence of blood stream infections when float nurses nursed patients who had a central venous catheter in situ for more than 60% of the time. The researchers also explained that this does not reflect individual practice but uncertainty and lack of detailed awareness of the relevant procedures and policies of the specific CCU.

Yet, several participants were of the opinion that the use of float staff in understaffed CCUs is of assistance. It is however important to have effective communication, education and orientation mechanisms in place to enable holistic and safe patient care (see chapter 4, section 4.6.1).

Inadequate orientation and training was found as the most common cause of half the sentinel events reviewed (Joint Commission on Accreditation of Healthcare Organizations, 2004a:5-6). A sentinel event is defined as an unexpected event involving serious physiological and psychological injury or death. If a situation presents a risk of serious injury, it also may be termed an adverse event (JACHO, 2010b:np). Therefore, a sentinel event results in untended harm to the patient by an act of commission or omission rather than by an underlying disease or condition of the patient. One example is the prevalence of nosocomial (hospital-acquired) infections in hospitals. According to Booyens (2008b:277) 42% of surgical patients acquire urinary tract infections. Weaving and Cooper (2006:18-19) recommend that all healthcare staff, including support staff need to be trained in infection control. Moreover, float staff not familiar with the infection control programme of the hospital will have difficulty to identify the risks of acquiring or transmitting infections among patients. One participant revealed it, "…affect the quality of the care delivered to the patients. …don't know my infection prevention principles" (see chapter 4, section 4.6.3).

However, the findings of the study demonstrated that the float nurses experience a sense of job satisfaction when they were assigned to stable critically ill patients as revealed by one participant, "You gain a lot of experience working in ICU" (see chapter 4, section

4.6.2). According to McClure (2005:198-201) when the organisational climate enhances the empowerment of individual employees, nurses express greater job satisfaction and patients achieve better outcomes. Organisational climate refers to the perceptions that employees share about their environment and includes safety of nurses and patients, support of life-long learning and leadership.

Yet, not all the ward staff members who relieve occasionally in the CCU had positive experiences. Another key point derived was that ward staff felt they were abused. Some participants felt incompetent and displayed a lack of self-confidence. Participants felt they were exploited as they had to care for high care patients that according to them, are more ill than the critically ill patient nursed by the registered nurse (see chapter 4, section 4.6.1). Furthermore, participants even mentioned that certain registered nurses and doctors disrespected them as they were not knowledgeable enough (see chapter4, section 4.6.2). They have experienced the doctors in the CCU to be not very welcoming to enrolled nurses who work as float staff as demonstrated, "…he [doctor] doesn't see at least two red epaulets [registered nurse]…he will freak out…demand one of the RNs" (see chapter 4 section 4.6.4).

5.2.3 Objective 3: Opinions of critical care nurses regarding the employment of adhoc agency staff

Similar to float staff, agency staff is utilised to meet staffing deficits in the CCU as previously mentioned (see chapter 2, section 2.9.2). Several participants had mixed feelings regarding the role of agency staff in crises time. One participant revealed, "…they not up to standard" and on the other hand noted "…we know and we trust them" (see chapter 4, section 4.7.1). The utilisation of nurses who are not familiar with the CCU and the hospital policies hold increased the risks that relates to patient safety. The latter is confirmed by Estabrooks, Midodzi, Cummings, Ricker and Giovannetti (2005:74-84) who reported an increase rate on patient mortality with the utilisation of temporary or causal nursing staff.

Furthermore some participants reported that they have come across agency nurses who tend to be dishonest about their abilities and experience in critical care nursing. These agency nurses would state that they are able and experienced in critical care nursing while the converse is true. The participants were of the opinion that the fundamental reason why agency nurses embark on critical care nursing is financial gain. According to Smith (2004:149) a competitive salary is an incentive for CCNs to stay in the CCU.

In contrast to the above findings, several participants noted that agency staff is, "…some extraordinary good, extraordinarily responsible people who know what they're doing" (see chapter 4, section 4.7.1). The experienced CCN is known for their wealth of knowledge and ability to make rapid, accurate and complex decisions. Batcheller, Burkman, Armstrong, Chappell and Carelock (2004:200-205) confirm the nurses' ability to recognise subtle cues and to initiate appropriate intervention is enhanced by their level of experience and expertise. As a result, the CCN attained the best evidence to apply to practice with the goal of improving patient outcomes.

In addition, the findings of the study showed that there are not always mechanisms in place to appraise the competencies of agency staff. One participant cited "…anyone can rock up" (see chapter 4, section 4.7.2). Rischbieth (2006:397:404) explain that if the nurse is 'ventilator-competent' does it mean she is competent to manage all aspects of ventilation or should it alarm supervision from co-workers is required as previously mentioned (chapter 2, section 2.8.1).

However, an alternative to agency nurses exists. The Institute Of Medicine's (2004:np) report, that reflects on issues surrounding a safe work environment recommends using internal nursing "float pools" that are employed by the hospital. Float pool staff are trained to work in multiple units so that they can work during periods of high census or staff shortages. Although the utilisation of float pools may still result in nurses assigned to units with which they are less familiar, they received the same training as the permanent staff. Subsequently, unit managers will have sufficient staff to provide safe and quality nursing care (Huber, 2010:625).

5.3   LIMITATIONS

The study was conducted in the private healthcare institutions of the Western Cape Metropolitan Area and excluded the wider population of public healthcare institutions. Data were collected from three private health care institutions respectively representing three different hospitals groups. One hospital group refused participation. Moreover, critical care nurses working in the public sector may have different views on the topic under study.

During the interview phase it soon became evident that the opinions of the unit managers differed from that of the shift leaders and the opinions of the agency nurses. The unit managers tend to use wording such as 'staffing is problematic' or 'staffing is challenging'. When they were probed to elaborate on those words, they would explain their own efforts on how they struggled to find staff or how they would indulge in critical care nursing physically during crises times. The agency nurses and shift leaders however spoke openly

about their frustration with the workload, coping with staffs that are not that competent as well as the business principles and how it influences decision making that relates to staffing requirements.

Finally, when considering the response or lack there off in certain sections of the data, the sensitivity of the research question may be viewed as a limitation. The participants did not respond as well as was expected in certain instances. An example is questions pertaining to the utilisation of float staff. Some unit managers were initially claiming that they do not utilise enrolled nurses from the ward as relieve staff or that these nurses are used very seldom. When posing the question to the shift leaders or agency nurses it became evident that the utilisation of ward nurses as relieve staff is indeed a common practice. Personal concerns or sensitivity regarding the research topic might have played a role.

5.4   RECOMMENDATIONS

The following recommendations were made to address staffing management challenges in critical care units of private health care institutions. Recommendations were based on the critical care nurses' experiences and perceptions regarding staffing management in the CCU. The recommendations also include the resources that the participants have identified to improve staffing management in the critical care setting.

5.4.1 Effective Communication

According to Pilcher (2009:45-46) improved communication is associated with risk avoidance, underlying the key role that nurses play in the multi-disciplinary team while Muller (2006:221) noted that effective communication is vital for adequate management of the CCU. The way in which communication ensues also determines the relationship among staff members, their attitude and the working climate.

Moreover, it is expected of the nurse management leader to encourage participation and open communication among all levels of nurses within an organization (American Nurses Credentialing Center, 2010:np). Nurse leaders must be visible, accessible, communicate with staff and develop professionally to achieve the highest quality of care for patients as endorsed by the Magnet accreditation program.

5.4.2 Supportive Work Environment

Nursing management leaders have the responsibility to staff units with sufficient, trained staff to provide safe and quality nursing care (Huber, 2010:625). However, nurse managers must increase staffing when patient acuity rises while considering the budget. In addition, managers should know their resources such as nursing pools, students currently

enrolled in nursing schools, usual length of employment of new hires, peak staff resignation months and times when patient census is highest (Marquis & Huston, 2007: 351). This will prevent valuable time wasted by phoning staff to come and work in crises time.

Private health care groups should reconsider the profound utilization of ancillary staff, whether these nurses have experience in the critical care setting or not. Regulation 2598 of the SANC and Searle (2006:131) are both very specific that the supervising registered nurse will be held accountable for the mistakes committed by ancillary nurses.

Mentorship

Mentorship appears to be of great importance in the CCU as shown in the study findings. A mentor, also called preceptor is a competent and experienced nurse who assists another nurse by giving quality nursing care through guidance and training (Smith, 2006:9).

Owing to the shortage of staff, there is no time to work alongside the more experienced nurses. Manias, Aitken and Dunning (2005:355) explain that the inexperienced nurse is often confronted with unrealistic expectations and experiences enormous stress. Nurses that are stressed tend to make mistakes which can have a negative impact on patient safety.

According to Ridge (2005:30) orientation programmes should be focused on the staff member's particular needs and a standardised curriculum. These orientation programmes are designed to enhance critical thinking skills; patient care management and the enhancement of self-esteem that are directly related to higher retention levels of staff. Mentorship programmes should be purpose driven with time lines for follow up, feedback and updates. Timelines should be realistic in nature. The allocation of tasks or duties should be within the scope of practice of the nurse.

5.4.3 Staff Development

Staff development comprises of the analysis of learning requirements to ensure that employees possess the necessary knowledge and skills to perform satisfactorily in their organisation. Performance appraisal is one method to identify employees' key skills and competencies as well as their developmental needs (Muller et al., 2008:528). Therefore the developmental needs of the float staff as well as agency nurses should receive attention on a regular basis.

The findings of the study revealed that the attainment of theoretical and practical knowledge is important to enhance competency. The more competent the nurses become, the higher their commitment to the company. The latter will result in a lower staff turnover rate and fewer agency nurses need be hired (Whelan, 2006:201). In addition, all practicing nurses have a duty to remain professionally competent (Searle, 2006:197).

The Department of Health (DoH, 2008b:np) concluded that a well-educated workforce is a healthcare providers' greatest asset and that it is associated with quality nursing care and improved patient outcomes.

5.4.4 Magnet Accreditation

Quality nursing management involves the attainment of an organisation's missions and goals in terms of effective patient and staff outcomes (Booyens, 2008b:179). This corresponds with the Magnet program that requires hospitals to demonstrate nursing excellence in patient, nurse and organisational results (American Nurses Credentialing Center, 2010:np). According to Laschinger, Almost and Tuer-Hodes (2003:410-422) the identification of factors contributing to work conditions that attract and retain highly qualified committed nurses, such as those found in magnet hospitals, i.e. competitive salaries; an empowering work environments, autonomy, control over practice environment and positive nurse-physician relationships, can be put in place by nursing administrators for work redesign to promote professional nursing practice.

Moreover, Curtin (2003:np) suggest that this will create a safe environment that enhances safe and quality nursing care as previously mentioned (chapter 2, section 2.11.5). Consequently, private hospitals in South Africa should strive for Magnet accreditation and should establish a work environment that is beneficial for both agency and permanently employed staff.

5.4.5 Policies

Marquis and Huston (2007:434) postulate that nurses will be more satisfied in the CCU if staffing and scheduling policies as well as procedures that relate to staffing are clearly communicated to all employees. They further explain that written policies provide for greater consistency and fairness.

Policies regarding staffing and scheduling should be reviewed and updated periodically to enable both permanent and agency staff to access opportunities for personal development such as in-service training sessions and team building.

In addition, unit managers should develop policies that focus on outcomes rather than constraints or rules that limit responsiveness to individual staff needs. Regular meetings between CCNs, both agency and permanently employed will not only improve the relationship between the two parties but will enhance clinical and organisational outcomes. The CCN must be able to voice her concerns without fear of reprisal. It is therefore recommended that CCNs should be allowed representation at hospital managerial meetings as in the practice with Magnet accredited hospitals. Collier (2010:np) in a study regarding opinions on job satisfaction of agency staff also recommended that agency staff be allowed presentation on managerial meetings.

5.5   CONCLUSION

In this chapter the findings of the study were discussed in relation to the study objectives.

The aim of the study was to explore the experiences of CCNs regarding staffing management in CCUs within in the private sector.

With regard to the experiences that relate to the patient acuity tool; as discussed in chapter 2, section 2.9.1 the application of the patient acuity tool have both positive and negative characteristics. The findings of the study suggest that the patient acuity scoring tool is ideal to predict the nursing resources needed to staff CCUs effectively. In addition, it captures patient care hours, patient acuities and patient activities.

However, the patient acuity tool according to the participants does not holistically capture the patients' needs to enable psychosocial, environmental and health management support. In addition, according to the participants, the acuity tool does not assist with providing staffs for non-nursing duties. Therefore some participants verbalised the need for support staff such as a secretary to assist with non-nursing duties, enabling nursing staff to focus on delivering direct patient care. This suggests support must be available during both office and after hours.

Regardless the difficulties inherent in patient acuity tools, they remain a method of controlling the staffing function of management. Finally, staff should be trained to use the tool effectively while the unit manager is responsible to periodically evaluate the system for accuracy or initiating change. Yet, the responses of the nurses regarding the dismissal of the true predictions of the tool on staffing requirements in order to curb expenditures, raises questions about why these tools are indeed present if not used accordingly.

Owing to the shortage of nurses, supplemental staffs such as float nurses, mostly enrolled nurses are used to increase the amount of staff available for patient care in the CCU. Overall participants revealed that the experienced float nurse assist to meet the staffing shortages in crises time. Several float nurses enjoyed working in the CCU as they obtained more knowledge which led to the enhancement of clinical skills. However, the findings of the study had shown that support towards and the developmental needs of the float nurse seem to require attention.

Similar to float staff, agency staff is utilised to alleviate the shortage of staff in the CCU. The flexibility offered by agency staff may address the staffing gaps, but it is important to ensure a supportive environment to enable safe and quality patient care. While agency staff provides scheduling relief, their continuous use is expensive and can result in poor continuity of patient care and increases the risk to patients' safety. Regardless of how the unit manager chooses to deal with the shortage of staff, patient care must never be jeopardised.

It is evident that CCNs in the Western Cape Metropolitan Areas experience both positive and negative aspects of staffing management within CCUs of the private sector. Consequently, the findings of the study suggest the need to revise and implement scheduling policies and practices to provide a more supportive work environment for critical care nurses in general but most of all a safe nursing environment.

Further research is recommended since, as explained in the section on limitations, other CCNs working in the public sector hospitals were not included in the study.

REFERENCES

A dictionary of nursing. 2008. Encyclopedia.com. [Online]. Available: http:// www. encyclopedia.com. [2011, 9 May].

Adomat, R & Hewison A. 2004. Assessing patient/category/dependency systems for determining the nurse/patient ratio in ICU and HDU: a review of approaches*. Journal of Nursing Management*, 12:299-308.

Aiken, L., Clarke, S., Sloane, D., Sochalski, J & Silber J. 2002. Hospital nurse staffing and patient mortality, nurse burnout and job satisfaction. *Journal of American Association,* 288:1987-1993.

Albarran, J & Scholes, J. 2005. Blurred, blended or disappearing: the image of critical care nursing. *Nursing Critical Care,* 10:1-3.

Alonso-Echanove, J., Edwards, J., R., Richards, M., J., Brennan, P., Venezia, R.A., Keen, J. 2003. Effect of nurse staffing and antimicrobial-impregnated central venous catheters on the risk for bloodstream infections in intensive care units. *Infection control and hospital epidemiology*, 24 (12):916-925.

Altuntas, S. 2010. Factors influencing Turkish hospital nurses' attitudes towards their profession: A descriptive survey. [Online]. Available: http://www.readperiodicals.com/201004/2168653931.html. [2012, 31 July].

American Association of Colleges of Nursing. 2011. Nursing Shortage. [Online]. Available: www. Aacn.nche.edu/media-relations/fact-sheets/nursing-shortage. [2011, 14 November].

American Association of Critical-Care Nurses. 2005. AACN standards for establishing and sustaining healthy work environments: a journey to excellence. *American Journal of Critical Care.*14 (3):187–1partm97.

American Nurses Credentialing Center. (2010). Frequently asked questions about the ANCC's Magnet Recognition Program. [Online]. Available: http://www.nursecredentialing.org/Magnet/Magnet-Program-FAQ.aspx. [2012, 15 July].

Apostoli, G. 2011. Medical aid rates of a private hospital. Cape Town.

Australian Health Workforce Advisory Committee. 2002. The Critical Care Nurse Workforce in Australia 2001-2011. *AHWAC Report* 2002.1, Sydney, Australia.

Ball, C., Walker, G., Harper, P., Sanders, D & McElligott, M. 2004. Moving on from patient dependency and nursing workload to managing risk in critical care. *Intensive and Critical Care Nursing,* 20:62- 68.

Batcheller, J., Burkman, K., Armstrong, D., Chappell, C & Carelock, J. 2004. A practice model for patient safety: The value of the experienced nurse. *Journal of Nursing Administration*, 34 (4):200-205.

Bateman, C. 2009. Legislating for nurse/patient ratios 'clumsy and costly'- experts. *South African Medical Journal, 99* (8):565-568.

Baughman. 2005. The nursing resource team: An innovative approach to staffing. A report submitted to the Secretariat Ministry of Health and long-term care. [Online]. Available: www.nhsru.com/documents/Nursing%20Resource%20Team%20Report%20Augus t%202005.pdf. [2012, 1 July].

Bhagwanjee, S & Scribante, J. 2007. National audit of critical care resources in South Africa – Unit and bed distribution. *South African Medical Journal*, 97(12):1311-1314.

Booyens, S., W. 2008a. *Dimensions of nursing management*. 2nd edition. Landsdowne: Juta.

Booyens, S., W. 2008b. *Introduction to health service management*. 3rd edition. Cape Town: Juta & Co Ltd.

Brink, H., Van der Walt, C & Van Rensburg, G. 2012. *Fundamentals of research methodology for health care professionals*. 3rd edition. Cape Town: Juta and Co Ltd.

British Association of Critical Care Nurses (BACN). 2010. Standards for nurse staffing in critical care. [Online]. Available: www.baccn.org.uk. [2012, 18 February].

Buonocore, D. 2004. Leadership in action – creating a change in practice. *American Association of Critical Care Nurses Clinical Issues*. 15:170–181. doi: 10.1097/00044067-200404000-00002.

Burns, N & Grove, S., K. 2009b. *The practice of nursing research. Appraisal*, *synthesis and generation of evidence*. 6th edition. St Louis: Saunders Elsevier Publishers.

Burns, N & Grove, S., K. 2007a. *Understanding nursing research. Building an evidence_based practice*. 4th edition. St Louis: Saunders Elsevier Publishers.

Cacace, M & Schmid, A. 2009.The role of diagnosis related groups (DRGs) in healthcare system convergence. [Online]. Available: http://www.biomedcentral.com/content/pdf/1472-6963-9-S1-A5.pdf. [2012, 3 May].

Care giver definition. [Online]. Available: www.the free dictionary.com. [2011, 12 May].

Chaboyer, W., Dunn, S., V & Najman, J. 2000. Developing Speciality Knowledge: the case of Australian Critical Care.

Collier, V. 2011. Agency Nurses' perceptions of job satisfaction within Critical Care Units in Healthcare institutions. [Online]. Available: http://scholar.sun.ac.za/bitstream/handle/10019.1/656. [2011, 4 May].

Craig, K & Huber, D. L. 2007. Acuity and case management. Part 11. *Professional Case Management,* 12 (4):199- 210.S.

Curtin, L. 2003. An integrated analysis of nurse staffing and related variables: Effects on patient outcomes. [Online]. Available: http://www.nursingworld.org/. [2012, 15 July].

Cusack, G., Jones-Wells, A & Chrisholm, L. 2004. Patient intensity in ambulatory oncology research center: A step forward for the field of ambulatory care. *Nursing Economics,* 22 (2). Janetti Publications, Inc.

Department of Health. 2008b. A high quality workforce: NHS Next stage review. Department of Health. London.

De Reave, P. 2003. Commentary: a European perspective. *Journal of Advanced Nursing*, 43:348-350.

De Vos, A., S., Strydom, H., Fouche, C., B & Delport, C., S., L. 2009. Research at *grass roots. For the social sciences and human service professions*. 3rd edition. Pretoria: Van Schaik Publishers.

Dorse, A. J. 2008. Legal and ethical aspects of nursing practice in selected private hospitals in the Western Cape Metropolitan area. [Online]. Available: http://scholar.sun.ac.za/handle/10019.1/3337. [2011, 19 July].

Ehlers, V., J, Oosthuizen, M., J, Bezuidenhout, M., C, Monareng, L., V & Jooste, K. 2003. Post- basic nursing students' perceptions of the emigration of nurses from the Republic of South Africa. *Health SA Gesondheid*, 8 (4):24-37.

Elliot, D., Aitken, L & Chaboyer, W. 2007. *ACCNN's (Australian College of Critical Care Nurses) Critical Care Nursing*. Australia: Elsevier.

Estabrooks C., Midodzi W., Cummings G., Ricker, K & Giovannetti, P. 2005. Impact of hospital characteristics on 30-daymortality. *Nursing Research*, 54 (2):74–84.

Finkler, S., A., Kovner, C., T & Jones, C., B. 2007. *Financial management and executives.* 3rd edition. Philadelphia: Saunders.

Gale Encyclopedia of Surgery. 2004. Definition of intensive care unit. [Online]. Available: http://health.yahoo.net/galecontent/intensive-care-unit#definition. [2011, 24 November].

Garrett, C. (2008).The effects of nurse staffing patterns on medical errors and nurse burnout. *Association of perioperative Registered Nurses (AORN) Journal*, 87 (6):1191–1204.

Gillespie, R., Kyriacos, U & Mayers, P. 2006. The critical care nursing workforce in Western Cape hospitals- a descriptive survey. *Southern African Journal of Critical Care,* 22 (2): 50-56.

Guccione, A., Movena, A., Pezzi, A & Iapichino, G. 2004.The assessment of nursing workload. *Minerva Anestesiol*, 70 (5):411-6.

Gunnarsdottir, S., Rafferty A, M in Dubois C., A., McKee, M & Nolte, E (Eds). 2006.

Enhancing working conditions. Human resources for health in Europe (chapter 9). European Observatory on Health Systems and Policies Series. WHO.

Gurses, A., P., Carayon, P & Wall, M. 2009. Impact of performance obstacles on intensive c nurses' workload, perceived quality and safety of care, and quality of working life. *Health Services Research*, 44 (2):422-443.

Hassim, A., Heywood, M & Berger, J. 2007. *Health and democracy. A guide to human rights, health law and policy in post-apartheid South Africa*. Cape Town: Cred Communications (Pty) Ltd.

Health-e News Service: Staffing strategies. 2006. [Online]. Available: http://www.health-e.org.za/uploaded/cb1f388f3b351708d915c12cfb4fc3cf.pdf. [2011, 10 December].

Hediger, L. 2010. Medi-Clinic Family. Bridging the nursing gap. Cape Town: Paarl web.

Hinshaw, S. 2008. Navigating the perfect storm: balancing a culture of safety with workforce challenges. *Nursing Research*, 57:1S:S4-S10.

Huber, D. L. 2010. *Leadership and nursing care management*. 4th edition. St Louis: Saunders Elsevier Publishers.

Hurst, K. 2003. Selecting and applying methods for estimating the size and mix of nursing teams: A Systematic Review of the Literature Commissioned by the Department of Health.   Leeds: Nuffield Institute of Health, Leeds, UK.

Hurst, K., Smith, A., Casey, A., Fenton, K., Scholfield, H & Smith, S. 2008. Calculating staffing requirements. *Nursing Management*, 15 (4), 26-34. [Online]. Available: http://www.aukuh.org.uk/members/documents/1AcuityDependencyTool ImplementationResourcePack.pdf [2012, 29 February].

Janiszweski Goodin, H. 2003. The nursing shortages in the United States of America: an integrative review of the literature. *Journal of Advanced Nursing,* 43:335-343.

Johnson, R., W. 2007. Patient safety and quality: An evidence- based handbook for nurses. *American Journal of Critical Care*, 16 (5):458- 468.

Joint Commission on Accreditation of Healthcare Organizations (JACHO). 2004a. Systems analysis. Ensure that your float staff and contracted staff are providing safe care. Joint Commission Perspectives on Patient Safety, 4(7), 5-6. [Online]. Available: http://www.nysna.org/practice/positions/floating.htm. [2012, 9 July].

Joint Commission on Accreditation of Healthcare Organizations (JACHO). 2010b. Definition of a sentinel event. [Online]. Available: http://www.jointcommission.org/sentinel_event.aspx. [2012, 2 August].

Jooste, K. 2008. *Leadership in health services management*. Lansdowne: Juta.

Kanai-Pak, M., Aiken, L, H., Sloane, D, M & Poghoshyan, L. 2008. Poor work environments and nurse inexperience are associated with burnout, job dissatisfaction and quality deficits in Japanese hospitals. *Journal of Clinical Nursing*, 17 (24):3324-3329.

Kane, R., I., Shamliyan, T, Mueller, C et al. 2007. Nursing staffing and quality of patient care. Evidence Report/ Technology Assessment No. 151 (Prepared by the Center under Contract No. 290- 02- 0009). Rockville, MD. Agency for Healthcare Research and Quality (AHRQ). March 2007. AHRQ Publication No. 07- E005.

Kiekkas, P., Brokalaki, H., Manolis, E., Samios, A., Skartsani, C & Baltopoulus, G. 2008. Patient severity as an indicator of nursing workload in the intensive care unit. *Nursing in Critical Care*, 12 (1):34-41.

King Committee on Corporate Governance. 2009. King Report on corporate governance for South Africa (Summary). King 111. [Online]. Available: http://www.auditor.co.za/Portals/23/king%20111%20saica.pdf. [2012, 2 April].

Lankshear, A., J., Sheldon, A & Maynard, A. 2005. Nurse staffing and health care outcomes: a systematic review of the international research evidence. *Advance in Nursing Sciences*, 28 (2):163-174.

Laschinger, H., K, Almost, J & Tuer-Hodes, D. 2003. Workplace empowerment and magnet hospital characteristics: making the link. *Journal of Nursing Administration,* 33 (7-8):410-22.

Lincoln, Y., S & Guba, E., G. 1985. Naturalistic inquiry. Beverly Hills, CA: Sage.

LoBiondo- Wood., G & Haber, J. 2010. *Nursing research. Methods and critical appraisal for evidence- based practice.* 7th edition. St Louis: Mosby Elsevier.

Lotz, H., Lourens, P & Marx, A. 2006. *Financial Health Management.* Study guide for NSFT 121 ET. Potchefstroom: The Platinum Press.

Manias, E., Aitken, R & Dunning, T. 2005. 'Graduate nurses' communication with health professionals when managing patients' medications. Journal of Clinical Nursing, 14 (3):354-355.

Marquis, B., L & Huston, C., J. 2007. *Leadership roles and management functions in nursing: Theory and application.* 5th edition. Philadelphia: Lippincott, Williams & Wilkins.

McClure, M. 2005. Magnet hospitals: Insights and issues. *Nursing Administration Quarterly*, 29 (3):198-201.

Meyer, S., Naude, M & Van Niekerk, S. 2004. The Unit Manager: A Comprehensive Guide. Sandton: Heinemann Higher and Further Education.

Mosby's Medical Dictionary, 8th edition. © 2009. Elsevier. [Online]. Available: http://medical-dictionary.thefreedictionary.com/census. [2011, 14 November).

Mosby's Medical Dictionary, 8th edition. © 2009. Elsevier. [Online]. Available: http://medical-dictionary.thefreedictionary.com/Comorbidities. [2012, 19 March].

Mouton, J. 2009. *How to succeed in your Master's and Doctoral studies. A South African guide and resource book.* Pretoria: Van Schaik Publishers.

Mrayyan, M.T. (2005). Nurse Job satisfaction and retention: comparing public to private hospitals in Jordan. *Journal of Nursing Management,* 13 (1):40-50.

Muller, M. 2006. *Nursing dynamics.* 3rd edition. Sandown: Heinemann.

Muller, M., Bezuidenhout, M & Jooste, K. 2008. *Healthcare service management.* Cape Town: Juta and Co Ltd.

Naidoo, Y. 2010. Nurse shortage cripples health system. [Online]. Available: http://ips-news.net/news.asp?idnews=43975. [2010, 13 August].

National Nurses United: Safe RN-to-patient staffing ratios. [Online]. Available: www.nationalnursesunited.org/issues/entry/ratios. [2011, 14 November].

Non-productive time. 2012. [Online]. Available: http://www.businessdictionary.com/definition/non-productive-time.html#ixzz1oLZfoMbT. [2012, 28 February].

Nursing shortage to ease if colleges reopen. [Online]. Available: www.iol.co.za/business/business-news/nursing-shortage-to-ease-if-colleges-reopen-1.1038914. [2012, 28 March].

O'Brien, A & Benger, J. 2007. Patient dependency in emergency care: do we have the nurses we need? *Journal of Clinical Nursing* 16, 2081- 2087.

O' Brien- Pallas, L & Hayes, L. 2008. *Journal of Clinical Nursing*, 24:3338-3346.

Odendaal, V & Nel, W., E. 2005. Support to critical care nursing personnel. *South African Journal of Critical Care*, 21 (2):95- 100).

Pera, S., A & Van Tonder, S. 2011. *Ethics in healthcare*. 3rd edition. Lansdowne: Juta.

Person, S., D., Allison, J., J., Kiefe, C., I., Weaver, M., T., Williams, O., D & Centor, R., M. 2004. Nurse staffing and mortality for medicare patients with acute myocardial infarction. *Medical Care,* 42:4- 12.

Pilcher, T. 2009. Collaboration and teamwork in critical care. *Nursing in Critical Care,* 14 (2): 45-46.

Polit, D., F & Beck, C., T. 2006. *Essentials of nursing research. Methods*, *appraisals and utilization*. 6th edition. USA: Lippincott, Williams & Wilkins.

Pope, Catherine (Editor); Mays, Nicholas. 2006. *Qualitative Research in Health Care*. 3rd edition. London, GRB: BMJ Books. [Online]. Available: http://site.ebrary.com/lib/stellenbosch/Doc?id=10159115. [2012, 20 June].

PricewaterhouseCoopers Health Research Institute. 2007. What works: Healing the healthcare staffing shortage. [Online]. Available: www.pwc.com/extweb/pwcpublications.nsf/docid/674DIE79A678A0428525730D006B74A9. [2012, 9 March].

Rafferty, A. M., Clarke, S. P., Coles, J. 2007. Outcomes of variation in hospital nurse staffing in English hospitals: cross sectional analysis of survey data and discharge records. *International Journal of Nursing Studies*, 44 (2):175–182.

Ramanujam, K., Abrahamson, K & Anderson, J., G. 2008. "The influence of workplace demands on nurses' perception of patient safety". *Nursing and Health Sciences*, 10 (2):144 -150.

Ridge, R., A. 2005. 'A dynamic duo: development and you.' *Nursing Management*, 37 (7): 28-35.

Rischbieth, A. 2006. Matching nurse skill with patient acuity in the intensive care units: a risk management mandate. *Journal of Nursing Management*, 14 (5):397- 404.

Savitz, L., A., Jones, C., B & Bernard, S. 2005. Quality indicators sensitive to nurse staffing in acute care settings. In advances in patient safety: From research to implementation (AHRQ Publication No. 05-0021-4). Rockville, MD: Agency for Healthcare Research and Quality. [Online]. Available: http://www.ahrq.gov/downloads/. [2012, 24 February].

Searle, C. 2006. *Professional practice. A Southern African nursing perspective.* 4th edition. Pietermaritzburg: Heinemann.

Scribante, J & Bhagwanjee, S. 2007. National audit of critical care resources in South Africa: Nursing profile. *South African Medical Journal*, 97 (12):1315-1319.

Scribante, J., Schmollgruber, S & Nel, E. 2004. Perspectives on critical care nursing: South Africa. Connect. *The World of Critical Care Nursing,* 3:111-115.

Shaffer, F., A. 2003. Stepping beyond "yesterday thinking" preparing nurse managers for a new world order. *Nurse Leader,* 1(4):33–37.

Shaw, C., D. 2004. Toolkit for accreditation programs. The International Society for Quality in Health Care (ISQua): Australia. [Online]. Available: www.isqua.org. [2010, 15 May].

Shields, L., Hall, J & Mamun, A., A. 2011. The 'gender gap' in authorship in nursing literature. *Journal of Royal Society of Medicine*, 104 (11):457–464.

Skinner, D. 2007. *Qualitative Methodology: An Introduction.* In Ehrlich, R & Joubert, G. (Eds) *Epidemiology: A Manual for South Africa.* 2nd edition. Cape Town: Oxford University Press.

Smith, C. 2004. Time for change-time to engage. *Nursing Critical Care,* 9:149.

Smith, L., S. 2006. 'The joys and responsibilities of preceptors' Medical/Surgical Insider. Fall 2006:9-10.

Sochalski, J., Konetzka, R.T., Zhu, J & Vollp, K. 2008. Will mandated nurse staffing ratios lead to better patient outcomes? *Medical Care*, 46 (6), 606–613.

South Africa: Nurses from India cure staff shortage. 2011. [Online]. Available: allafrica.com/stories/2008072257.html. [2011, 13 September].

South Africa. 1997. 'Batho Pele- People First'. The White Paper on Transforming Public Service Delivery. (WPTPS), no. 18340 Notice, 1459 of 1997.

South Africa (Republic). Nursing Act 33 of 2005. Pretoria: Government Printers.

South African Nursing Council. 1984. Government Notice No. R 2598 as amended by No. R 1469 of July 1987, No. R 2676 of November 1990, No. R 260 of February 1991. Regulations relating to the Scope of Practice of persons who are registered or enrolled under the Nursing Act, 2005. Pretoria: South African Nursing Council.

Streubert Speziale, H. J & Carpenter, D. R. 2007. *Qualitative research in nursing advancing the humanistic approach*. 4th edition. Philadelphia: Lippincott Williams & Wilkins.

Talsma, A., Grady, P., A., Feetham, S., Heinrich, J & Steinwach, D., M. 2008. The perfect storm: patient safety and nursing shortages within the context of health policy and evidence-based practice. *Nursing Research*, 57:1S:S15-S21.

Tappen, R. M. 2001. *Nursing leadership and management concepts and practice.* 4th edition. Philadelphia: FA Davids.

Terre Blanche, M, Durrheim, K & Painter, D.2006. *Research in Practice. Applied Methods For The Social Sciences*. 1st ed. Cape Town, University Press.

The ICN (International Council of Nurses) ethical code for nurses. [Online]. Available: www. icn.ch. [2011, 01 September].

The Institute of Medicine (IOM) report, *Keeping Patients Safe: Transforming the Work Environment of Nurses*. 2004. Committee on the Work Environment for Nurses and Patient Safety, Board on Health Care Services, Page A, ed. Keeping patients safe: transforming the work environment of nurses. Washington, DC: National Academies Press.

The Patients' Right Charter. 2012. [Online]. Available: http://www.doh.gov.za/docs/legislation/patientsright/chartere.html [2012, 8 March].

The South African Society of Anaesthesiologists: Nurse/patient ratios. 2011. [Online]. Available: http://www.wccmf.co.za/guidelines.htm. [2011, 14 November].

Tourangeau, A., Cranley, L., A & Jeffs, L. 2006. Impact of nursing on hospital patient mortality: A focused review and related policy implications. *Quality and safety in healthcare*, 15 (91):4-8.

Tourangeau, A., Doran, D., McGillis Hall, L. et al. (2007) Impact of hospital nursing care on 30-day mortality for acute medical patients. *Journal of Advanced Nursing*, 57:32–44.

Upenieks, V., V. 2003. What is the attraction to magnet hospitals? *Nursing Management*, 34 (2):43-44.

Warner, M. 2006. Personnel staffing and scheduling. In R. Hall (Ed.), *Patient flow: Reducing delay in healthcare delivery*, pp.189-209. Los Angeles: Springer.

Weaving, P & Cooper, T. 2006. 'Infection control is everyone's business'. *Nursing Management*, 12 (10):18-19.

What is the nursing shortage and why does it exist? [Online]. Available: www.truthaboutnursing.org. [2011, 14 November].

Whelan, L. 2006. 'Competency assessment of nursing staff.' *Orthopaedic Nursing*, 25 (3): 198-204.

Williams, G., Schmollgruber, S & Alberto, L. 2006. Consensus forum: Worldwide guidelines on the critical care nursing workforce and education standards. *Critical Care Clinics,* 22: 393-406.

Wise, S. 2007. Undermining the ratios. Workplace Research Centre, University of Sydney, Australia.

World Federation of Critical Care Nurses. 2003. *Constitution of the World Federation of Critical Care Nurses*. [Online]. Available: http://www.wfcnn.org/pages/constitution.html. [2010, 9 October].

World Federation of Critical Care Nurses. 2005. Declaration of Madrid: Position statement on the provision of critical care nursing education. WFCCN, Buenos Aries. [Online]. Available: http://en.wfcnn.org/pub_education.php. [2012, 28 February].

World Health Organization (WHO). 2006. Global burden of disease risk factors. The World Bank group. [Online]. Available: www.dcp2.org. Publications [2010, 23 April].

World Health Organization (WHO). 2012. Millennium Development Goals. [Online]. Available: http://www.who.int/topics/millennium_development_goals/en/. [2012, 4 April].

Zerwekh, J & Claborn, J., C. 2006. *Nursing today: Transitions and trends.* 5th edition. Canada: Saunders Elsevier Publishers.

Zondagh, C. 2004*.* Safe and adequate nurse staffing. *Nursing Update*, June: 20-24.

APPENDICES

APPENDIX A: SEMI-STRUCTURED INTERVIEW GUIDE

RESEARCH INTERVIEW GUIDE

TITLE:

The experiences of critical care nurses regarding staffing management in private hospitals of the Cape Metropole.

The interview will be guided by the following open-ended questions:

1) Describe your experiences of current staff management in CCU.

     Probing words: coping with workload, frustrations and advantages.

2) Describe your experiences on guidance with the patient acuity score.
   1. **Probing words**: inexperienced, unsure and confident.
3) How do you experience working with floating ward staff in CCU. Please explain your views on both experience and qualification of such staff.
   2. **Probing words**: stressful, need supervision and eager to learn.
4) Do agency staff assist in shortage of staff in CCU and why? Describe your experiences/views.
   3. **Probing words**: assist, need assistance and indispensable.

APPENDIX B: INFORMATION LEAFLET AND CONSENT FORM

PARTICIPATION INFORMATION LEAFLET AND CONSENT FORM

PRINCIPAL INVESTIGATOR:

Ramona Anthonie

ADDRESS:

4 Impala Street

Rugby

7405

CONTACT NUMBER

 078 5632041

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the researcher any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Your participation is **entirely voluntary** and you are free to decline 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.

This study has been approved by the Health Research Ethics Committee at Stellenbosch University and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

TITLE OF RESEARCH PROJECT:

The experiences of critical care nurse regarding staffing management in critical care units in private hospitals of the Cape Metropole.

AIM:

To explore staffing management in critical care units in private hospitals of the Cape Metropole.

PARTICIPATION:

Participation in this research study is strictly voluntary and involves the participation in individual interviews that will take about one (1) hour to conduct.

PROTECTION OF THE SUBJECTS:

Anonymity will be ensured by not referring to the institution or participant by name. Pseudonyms will be used when direct quotes from the raw data are utilized. Therefore, it will not be possible to match the participant's identity with the completed report.

All the information obtained from this research study will remain confidential. Only the researcher, statistician and research supervisor will have access to the collected data. To protect the subjects' confidentiality the collected information will be stored in sealed boxes in a locked storage cupboard with controlled access by other persons.

There will be no identifying information of the participants on the tape recorded interviews or transcribed notes and the health institutions where the study will be done in any publication, report or presentation resulting from this research.

BENEFITS:

Although there are no immediate benefits to the participant in this research study the result of the study may benefit nursing practice by providing insight into staffing management strategies in critical care units in the private sector from a South African perspective. There will be no financial or other benefits for the participant.

RISKS:

There are no risks associated with this research study, the participant may experience some discomfort as it will take time being interviewed.

DECLARATION BY PARTICIPANT:

By being interviewed, I agree to take part in a research study entitled, "The experiences of critical care nurses regarding staffing management in critical care units in private hospitals of the Cape Metropole".

I declare that:

1. I have read or had read to me the information and consent form and it is written in a language with which I am comfortable.
2. I may ask questions per telephone. I may contact the researcher: Ramona Anthonie tel. 078 5632041.
3. I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
4. I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

Signed at.…………………………………..on……………...…………………………….

……………………………………………. …………………………………………………

Signature of participant   Signature of witness

DECLARATION BY INVESTIGATOR:

I, Ramona Anthonie, declare that:

1. I explained the information in this document to the participant by means of the information leaflet.
2. I was available to answer questions per telephone: 0785632041.
3. I did not use a translator.

Signed at…………….……………………..on……………...…………………………….

…………………………………………… ……………………………………………

Signature of investigator   Signature of witness

APPENDIX C: PERMISSION OBTAINED FROM SELECTIVE AGENCY

Gmail
by Google

ramona anthonie <ramonanth@gmail.com>

Consent to conduct interviews with agency staff

Alicia Naidoo <src.ct@charismanursing.co.za>   Wed, Nov 23, 2011 at 7:13 AM
To: ramona anthonie <ramonanth@gmail.com>

Dear Mrs Athonie

I have perused the documents provided.

You may interview our staff for the purpose of your study. Our assignees are not based at our offices.
You will need the permission of the nursing managers to conduct the interview at their hospitals.

Regards,

Alicia Naidoo

Branch Manager

CHARISMA!
care2care

Charisma Healthcare Solutions - a division of Adcorp Staffing Solutions (Pty) Ltd.

ADCORP

5 Bothasig Medi Center • 171 Vryburger Avenue • Bothasig 7441

Tel.:   +27 21 558 2999

Cell: +27 74 699 2740

Fax: 086 506 4572

Email: src.ct@adcorp.co.za

Web: www.charismanursing.co.za

APPENDIX D: REQUESTING PERMISSION TO CONDUCT STUDY AT LIFE HEALTHCARE FACILITY

9/5/12   Gmail - Consent for research at your institutionn

Gmail
by Google

Consent for research at your institutionn

Dorse, Alta <Alta.Dorse@lifehealthcare.co.za>   Tue, Oct 25, 2011 at 4:31 PM
To: ramona anthonie <ramonanth@gmail.com>

Dear Ramona,

I hereby approve your research **The experiences of critical care nurses regarding staffing management of critical care units in the Cape Metropole** at our facility. Please let me know how I can assist you.

Best wishes, I know it is a valuable topic in ICU's currently.

Regards

Alta Dorse
Nursing Manager

Life **Vincent Pallotti Hospital**
Orthopaedic Hospital
Sports Science Orthopaedic Surgical Centre

Tel: + 27 21 506 5158
Fax: + 27 21 506 5187
Mobile: + 27 82 461 6988
Email: alta.dorse@lifehealthcare.co.za
Website: www.lifehealthcare.co.za

SAVE PAPER - THINK BEFORE YOU PRINT

From: ramona anthonie [mailto:ramonanth@gmail.com]
Sent: 25 October 2011 11:47 AM
To: Dorse, Alta
Subject: Fwd: Consent for research at your institutionn

[Quoted text hidden]

Life Healthcare Group (Pty) Ltd
Registration number: 2003/024367/07
This message and any attachments are confidential and intended solely for the addressee. The following link will display the full disclaimer: http://www.lifehealthcare.co.za/disclaimer/
The following link displays the list of Directors: http://www.lifehealthcare.co.za/IR/directors.aspx

https://mail.google.com/mail/u/0/?ui=2&ik=f7de0f6c19&view=pt&search=inbox&msg=1333b7e9e262...   1/1

101

APPENDIX E: PERMISSION OBTAINED FROM MELOMED HOSPITAL

Gmail

Consent for research at your institution

Renee JVRensburg <renee@melomed.co.za>   Tue, Dec 20, 2011 at 6:45 AM
To: ramonanth@gmail.com

Dear Ramona

Please see attached consent for the research.

If you have any further queries or comments, please do not hesitate to contact the writer.

Kind Regards

Renee Janse Van Rensburg

Nursing Services Manager

Melomed Gatesville

MELOMED HOSPITAL HOLDINGS LTD

Tel: +27 21 637 8100 Fax: 086 645 0596

Website: www.melomed.co.za
Melomed Gatesville, Temple Road, Gatesville, 7764
P.O. Box 204, Gatesville, 7766
Email: renee@melomed.co.za
Melomed24 Ambulance Services: 0800 786 000

Disclaimer:

The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited. If you received this in error, please contact the sender and delete the material from any computer.

From: Mr Chohan [mailto:chohan@melomed.co.za]
Sent: Thursday, December 15, 2011 12:31 PM
To: 'Renee JVRensburg'; 'Allie RC'
Subject: RE: Consent for research at your institution

I have no objections.

Yours Faithfully

Mr. Chohan

102

APPENDIX F: REQUESTING PERMISSION TO CONDUCT STUDY AT NETCARE FACILITY

Netcare Blaauwberg Hospital

Tel: +27 (0) 21 554 9000
Waterville Crescent, Sunningdale, South Africa
PO Box 11419, Bloubergrant, 7443, South Africa
www.netcare.co.za

LETTER CONFIRMING KNOWLEDGE OF NON-CLINICAL FOCUS RESEARCH TO BE CONDUCTED IN THIS NETCARE FACILITY

Dear _Ms Ramona Anthony_ (Name of applicant)

Re _The Experience of Critical Care Nurses regarding Staffing management in Critical Care Units in Private Hospital of the Cape Metropole_ (Title of research)

We hereby confirm knowledge of the above named research application to be made to the Netcare Research Committee and in principle agree to the research application for
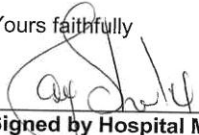
Netcare _Blaauwberg_ Hospital, subject to the following:

i) That the research may not commence prior to receipt of FINAL APPROVAL from the Academic Board of Netcare (Research Committee).

ii) That the researcher will notify the Academic Board of Netcare (Research Committee) of the proposed date of commencement of the project, in writing.

iii) A copy of the research report will be provided to Netcare once it is finally approved by the tertiary institution, or once complete.

iv) Netcare has the right to implement any Best Practice recommendations from the research.

That the Hospital Management reserves the right to withdraw the approval for research at any time during the process, should the

v) research prove to be detrimental to the subjects / Netcare or should the researcher not comply with the conditions of approval.

We wish you success in your research.

Yours faithfully

Signed by Hospital Management

_31/10/2011_
Date

Nursing Service Management
(Specify designation)

Netcare Hospitals (Pty) Ltd T/A Netcare Blaauwberg Hospital
Directors:
J Du Plessis, V E Firman, R H Friedland, M I Sacks, I Soomra
Company Secretary: L Kok **Reg. No.** 1996/006591/07

APPENDIX G: PERMISSION OBTAINED FROM NETCARE RESEARCH COMMITTEE

Netcare Limited

Tel: + 27 (0)11 301 0000
Fax: Corporate +27 (0)11 301 0499
76 Maude Street, Corner West Street, Sandton, South Africa
Private Bag X34, Benmore, 2010, South Africa

RESEARCH COMMITTEE FINAL APPROVAL OF RESEARCH

Approval number: UNIV-2012-0002

Ms R Anthonie

E mail: ramonanth@gmail.com

Dear Ms Anthonie

RE: THE EXPERIENCE OF CRITICAL CARE NURSES REGARDING STAFF MANAGEMENT IN CRITICAL CARE UNITS IN PRIVATE HOSPITALS IN THE CAPE METROPOLE

The above-mentioned research was reviewed by the Research Committee's delegated members and it is with pleasure that we inform you that your application to conduct this research at Netcare Blaauwberg Hospital, has been approved, subject to the following:

i) Research may now commence with this FINAL APPROVAL from the Academic Board of Netcare (Research Committee).

ii) All information with regards to Netcare will be treated as confidential.

iii) Netcare's name will not be mentioned without written consent from the Academic Board of Netcare (Research Committee).

iv) All legal requirements with regards to patient rights and confidentiality will be complied with.

v) Insurance will be provided and maintained for the duration of the research. This cover provided to the researcher must also protect both the staff and the hospital facility from potential liability

vi) In accordance with MCC approval, that medicine will be administered by or under direction of the authorised Trialist

vii) The research will be conducted in compliance with the GUIDELINES FOR GOOD PRACTICE IN THE CONDUCT OF CLINICAL TRIALS IN HUMAN PARTICIPANTS IN SOUTH AFRICA (2000)

viii) Netcare must be furnished with a STATUS REPORT on the progress of the study at least annually on 30th September irrespective of the date of approval from Academic Board of Netcare (Research Committee) as well as a FINAL REPORT with reference

---

Executive Directors: R H Friedland *(CEO)*, V E Firman *(CFO)*, V L J Litlhakanyane

Non-Executive Directors: S J Vilakazi *(Chairman)*, T Brewer, A P H Jammine, J M Kahn, M J Kuscus, H R Levin, K D Moroka, M I Sacks, N Weltman
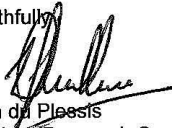
Company Secretary: L Bagwandeen **Reg. No.** 1996/008242/06

104

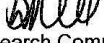to intention to publish and probable journals for publication, on completion of the study.

ix)   A copy of the research report will be provided to Netcare once it is finally approved by the tertiary institution, or once complete.

x)   Netcare has the right to implement any Best Practice recommendations from the research.

xi)   Netcare reserves the right to withdraw the approval for research at any time during the process, should the research prove to be detrimental to the subjects/Netcare or should the researcher not comply with the conditions of approval.

We wish you success in your research.

Yours faithfully

Prof Dion du Plessis
Full member: Research Committee & Medical Practitioner evaluating research applications as per Management and Governance Policy
Date: 9/2/2012

Shannon Nell
Chairperson: Research Committee
Network Healthcare Holdings Limited (Netcare)
Date: 23/2/2012.

105

APPENDIX H: ETHICAL APPROVAL FROM STELLENBOSCH UNIVERSITY

UNIVERSITEIT·STELLENBOSCH·UNIVERSITY
jou kennisvennoot · your knowledge partner

20 October 2011   **MAILED**

Mrs RFG Anthonie
Department of Nursing
2nd Floor
Teaching Block

Dear Mrs Anthonie

The experience of critical care nurses regarding staffing management in critical care units in private hospitals of the Cape Metropole.

 ETHICS REFERENCE NO: N11/08/247

RE : AMENDMENT

Your letter dated 7 October 2011 refers.

The Chairperson of the Health Research Ethics Committee approved the amended documentation in accordance with the authority given to him by the Committee.

The following amendments were approved:
1. Change of interview type and changes to the protocol.

Please note: Provide copies of the letters from the study hospitals to allow their staff members to be interviewed.

Yours faithfully

MRS MERTRUDE DAVIDS
RESEARCH DEVELOPMENT AND SUPPORT
Tel: 021 938 9207 / E-mail: mertrude@sun.ac.za
Fax: 021 931 3352

20 October 2011 15:44   Page 1 of 1

Fakulteit Gesondheidswetenskappe · Faculty of Health Sciences

Verbind tot Optimale Gesondheid · Committed to Optimal Health
Afdeling Navorsingsontwikkeling en -steun · Division of Research Development and Support
Posbus/PO Box 19063 · Tygerberg 7505 · Suid-Afrika/South Africa
Tel.: +27 21 938 9075 · Faks/Fax: +27 21 931 3352