**UNIVERSITY OF KWAZULU-NATAL**

**SCHOOL OF NURSING AND PUBLIC HEALTH**

# THE INFLUENCE OF INTRAPERSONAL CHARACTERISTICS OF INDIVIDUAL NURSES ON THEIR WORK PERFORMANCE: A PREDICTIVE CORRELATIONAL STUDY IN A SELECTED PROVINCE IN SOUTH AFRICA

Thesis submitted to the School of Nursing, Faculty of Health Sciences, University of KwaZulu-Natal in fulfilment of the academic requirements for the degree

Doctor of Philosophy (Nursing)

by

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12 March 2015

**DECLARATION**

I, Nelouise-Marié Geyer, declare that

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Date: 12 March 2015

# DEDICATION

This study is dedicated to the nurses who care enough to make a difference to the lives of those they care for.

**ACKNOWLEGEMENTS**

*"Not all those who wander are lost"*

*J.R.R. Tolkien, The Fellowship of the Ring*

This is a journey that I never planned to undertake, but as they say the only impossible journey is the one you never undertake. Completion of this journey would not have been possible without the amazing support of many people. My sincere thanks and gratitude goes to the following people for their support to prevent me from getting lost on the journey:

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## ABSTRACT

### Background

Conflicting reports on the quality of nursing care highlighted the need to understand the influence of nurses' intrapersonal characteristics on their work performance and caring behaviours.

### Aim

The aim of the research was to describe the influence of selected intrapersonal characteristics of individual nurses' on their work performance and caring behaviours.

### Objectives

The research questions of the study were 1) What is the distribution and influence of demographic variables on nurses' work performance and patients' perceptions of caring behaviours? 2) What is the distribution of selected intrapersonal characteristics among nurses working in clinical settings in hospitals? 3) What is the self-assessment of their work performance by nurses working in clinical settings in hospitals'? 4) How do patients perceive the caring behaviours of nurses in clinical settings in hospitals? 5) Is there a relationship between nurses' intrapersonal characteristics and their self-assessment of work performance and caring behaviours of nurses as perceived by patients? 6) What model can be developed to test the influence of selected intrapersonal characteristics on work performance and caring behaviours of nurses? 7) What predictions can be made about the relationship between intrapersonal characteristics with the work performance and caring behaviours of nurses?

### Method

A quantitative, cross-sectional survey, predictive, correlation model-testing design with multi-layered and stratified sampling was used. The population was professional nurses and patients in medical and surgical wards in public and private hospitals. A questionnaire

including the 6-DSNP, NPVS-R, STEM, CSES, EQ-short and the Kanungo Job Involvement instruments was completed by nurses. Patients completed the CBI instrument. Descriptive and inferential statistics were generated.

**Results**

The professional values of nurses were the only selected intrapersonal characteristic with a statistically significant positive relationship with nurses' work performance and caring behaviours. While some of the other selected intrapersonal characteristics had statistically significant relationships, effect sizes were small, making them not of practical importance. If nurses have high professional values (NPVS-R), NPVS-R as predictor for work performance (6-DNSP) is two to three times that of any other predictor that can be added to the equation at the 10% level of significance.

**Conclusion and Recommendations**

Professional values influence the work performance and caring behaviours of nurses. Recommendations are provided for individual nurses, practice, education, management and research.

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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| 6-DSNP | Six-Dimension Scale of Nursing Performance |
| AACN | American Association of Critical Care Nursing |
| AIC | Akaike information criterion |
| AIDS | Acquired Immunodeficiency Syndrome |
| ANCC | American Nurse Credentialing Center |
| CBI | Caring Behaviours Inventory |
| BCC | Browne-Cudeck criterion |
| CFA | Confirmatory Factor Analysis |
| CFI | Comparative Fit Index |
| COHSASA | Council for Health Service Accreditation of Southern Africa |
| CSES | Core Self-evaluations Scale |
| DF | Degrees of Freedom |
| DPSA | Department of Public Service and Administration |
| ECSS | Empathetic Communication Skills Scale |
| EI | Emotional Intelligence |
| EFA | Exploratory Factor Analysis |
| EISA | Ethics Institute of South Africa |
| EQ | Empathy Quotient |
| EQ-Short | Empathy Quotient Short form |
| ETS | Empathetic Tendency Scale |
| FPNL | Forum for Professional Nurse Leaders |
| HCM | Two-tailed (non-directional) test of probability |
| HIV | Human Immunodeficiency Virus |
| IOM | Institute of Medicine |
| MEIS | Multi-factor Emotional Intelligence Scale |
| MSCEIT | Mayer-Salovey-Caruso EI Test |

| | |
|---|---|
| MSE | Mean squared error |
| NBPRC | (Ontario) Nursing Best Practice Research Centre |
| NIOSH | National Institute of Occupational Safety and Health |
| NPVS | Nurses Professional Values Scale |
| NPVS-R | Nurses Professional Values Scale – Revised |
| OSD | Occupational Specific Dispensation |
| PPE | Positive Practice Environments |
| PQM | Personal Qualities Assessment |
| RNAO | Registered Nurses Association of Ontario |
| RSMEA | Root Mean Square Error of Approximation |
| SANC | South African Nursing Council |
| SEM | Structural Equation Modelling |
| STEM | Situational Test of Emotion Management |
| STEU | Situation Test of Emotional Understanding |
| UNDP | United Nations Development Programme |
| WHO | World Health Organization |

# CHAPTER 1

## INTRODUCTION AND OVERVIEW OF THE STUDY

# CHAPTER 1

# INTRODUCTION AND OVERVIEW OF THE STUDY

## 1.1 INTRODUCTION

In our daily lives at work and the communities where we live, we find different personalities and see how people interact differently with each other. Intrapersonal characteristics determine who we are, and in turn determine how each of us communicate and interact with others. Intrapersonal characteristics influence one's ability to communicate and express empathy effectively; to understand, relate and respond to other people in different environments through good relationships; working in teams; making critical decisions; and many more.

In nursing it is essential to have a pre-determined degree of knowledge and technical skill to provide safe, quality care but there is no doubt that intrapersonal characteristics would influence how we relate and work with other people, including our patients and colleagues. National and international research has established that the work environment impacts on work performance, and caring behaviours and productivity. Intrapersonal characteristics also impact on work performance and caring behaviours, but have not been explored in such detail – hence the reason for this study. The quality and safety of healthcare service delivery, which is influenced by both these phenomena, has been in the public eye for some years, exacerbated by a global shortage of nurses, midwives and other healthcare workers with its resultant impact on the strength of health systems. Healthcare practitioners, similar to other human beings, have different intrapersonal characteristics that may influence the way that they perform their duties in the workplace. This study focused on the influence that intrapersonal characteristics of professional nurses have on their work performance and caring behaviours.

## 1.2 BACKGROUND TO THE STUDY

The global shortage of human resources for health undermines the quality and safety of delivery of healthcare services all over the world. In an attempt to address this challenge the 2006 World Health report produced by the World Health Organization (WHO) was dedicated to the analysis of and strategies to address health worker shortages. Adequate and ***motivated*** staff with the appropriate educational preparation and tools to deliver safe healthcare services of high quality, is an essential component of healthcare systems to ensure the achievement of the health goals of nations (WHO, 2006). Globally, nurses represent the largest number of health workers in health systems and the responsibility to ensure healthcare service delivery therefore rests on their shoulders.

The South African health system is a nurse-based health system challenged by an extensive and changing burden of disease; poor health outcomes, particularly mother and child care; serious shortages of health professionals and a variety of other factors (UNDP, 2010; Department of Health, 2011a). In this challenging work environment with a shortage of healthcare professionals, it has become common practice to read about poor patient care and cases of malpractice or negligence by all categories of healthcare practitioners, but mostly by nurses and midwives. This is not a new phenomenon, as the Ethics Institute of South Africa (EISA) reported in 2001 on the serious misconduct, staff and patient abuse, bribery and other ethics violations in a large tertiary public hospital in South Africa that is not conducive to professional and responsible patient care or job satisfaction (Landman, Mouton & Nevhutalu 2001). In addition, the South African Nursing Council (SANC) statistics on the cases heard by the Professional Conduct Committee of the Council during July 2003 to May 2013 (see Table 1.1) indicated that the largest single proportion (47%, n=394) of cases were related to poor basic nursing care (SANC, 2008; SANC, 2013a).

Table 1.1: SANC Professional conduct cases July 2003 – May 2013 (SANC, 2008; SANC, 2013a).

| Type of offence | Number of persons | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2008-2012 | 2013 | Total |
| Education related | 0 | 3 | 6 | 5 | 0 | 5 | 2 | 0 | 21 |
| Fraud/forgery | 0 | 11 | 3 | 7 | 12 | 3 | 0 | 0 | 36 |
| Maternity related | 5 | 28 | 34 | 26 | 33 | 9 | 21 | 3 | 159 |
| Medication related | 4 | 54 | 39 | 13 | 24 | 9 | 7 | 3 | 153 |
| Physical assault of colleague | 0 | 3 | 2 | 6 | 1 | 3 | 1 | 1 | 36 |
| Physical assault of patient | 0 | 8 | 5 | 2 | 3 | 1 | | | |
| Poor basic nursing care | 28 | 142 | 90 | 40 | 72 | 22 | 17 | 9 | 410 |
| Section 36* | 0 | 15 | 5 | 7 | 13 | 7 | 0 | 0 | 47 |
| Sexual abuse of patient | 0 | 4 | 15 | 7 | 3 | 2 | 0 | 0 | 31 |
| Theft/Fraud/Forgery | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 6 |
| Total | 37 | 270 | 199 | 113 | 163 | 61 | 0 | 0 | 899 |

**Cases related to substance abuse or other impairment heard in camera*

Practice environments have become a point of debate on various platforms, including the popular media (Oosthuizen, 2012), where this phenomenon has also been noted. Media reports on poor nursing and midwifery care include stories about yelling, slapping and swearing at patients (Kruger, 2011) and court cases on poor care provision (De Bruin, 2011). The shortage of nurses and the reports in the public media of poor nursing care supported by the high number of cases heard by SANC were some of the issues highlighted at the National Nursing Summit called by the Minister of Health in April 2011. At the Summit both the President of the country and the Minister of Health recognised that there is a shortage of nurses and that the working environment of nurses, midwives and nurse educators is not acceptable in many areas.

Various studies have been conducted in both the private and public sectors in South Africa indicating mounting discontent amongst nurses with a number of aspects related to their work and working environment. These aspects include their remuneration, workload, lack of career

advancement, poor working conditions, lack of resources in the workplace, lack of safety and security, organisational climate and a lack of educational opportunities (Kekana, Du Rand & Van Wyk, 2007; Klopper, Coetzee, Pretorius & Bester, 2012; Moola, Ehlers & Hattingh 2008; Xaba & Phillips, 2001). These are some of the reasons that have been highlighted as grounds for nurses leaving the health services for employment outside health or even to international destinations (Xaba & Phillips, 2001). This phenomenon is not unique to South Africa and is supported by international research (Aiken, Clarke, Sloane, Sochalski & Silber, 2002).

Yet there also is information, mostly anecdotal, on good nursing and midwifery care received by members of the public in the same hospitals reportedly providing poor nursing care. This is almost never published in the public media. A South African study indicated that oncology nurses still experience high levels of job satisfaction, personal growth and inner peace in spite of the absence of certain Herzberg's motivators (Van Rooyen, Le Roux & Kotze, 2008). Frederick Herzberg, a psychologist, found that certain characteristics of a job are consistently associated with job satisfaction (achievement, recognition, the work, responsibility, advancement and growth) while others are associated with job dissatisfaction (company policies, supervision, relationships at work, conditions at work, salary, status and security) (Newell, 1995). The finding of the study amongst oncology nurses was ascribed to their personal view of life and death, as well as what they gained from their patients, suggesting that intrapersonal characteristics may influence the work performance and caring behaviours of nurses. This raised the question of what the relationship between nurses' intrapersonal characteristics, their work performance and caring behaviours is.

## 1.3 WORK PERFORMANCE AND CARING BEHAVIOURS

The increasing attention that work performance and caring behaviours of nurses was receiving in the public media and at Nursing Council required a better understanding of the issues that

influence work performance and caring behaviours. Work performance and caring behaviours are influenced by two aspects, namely work environment and intrapersonal characteristics as indicated in Figure 1.1 (RNAO, 2008; Spence Laschinger & Finegan, 2008). Work environment is briefly discussed first.

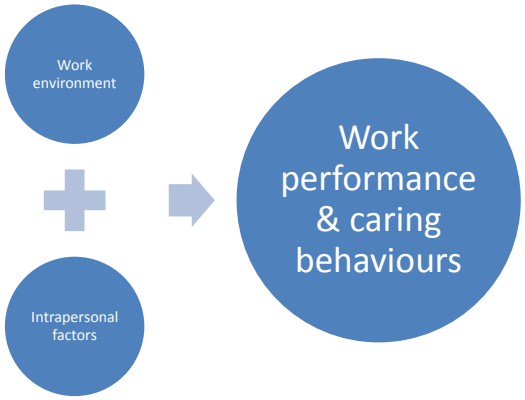


Figure 1.1 Phenomena influencing work performance and caring behaviours

### 1.3.1 Healthy work environments

Healthy and safe workplaces are essential components of safe, quality healthcare services. Nurses like any other employed people spend at least one-third of their day, and in most cases half of their day, in the workplace. A healthy, safe work environment for the staff of healthcare institutions would also be healthy and safe for patients. There is increasing pressure on healthcare systems and personnel to decrease healthcare costs, while the expectation remains that high quality and safe care would be delivered (IOM, 2001). However, the shortage of nurses challenges the goal of safe, healthy work places and quality patient care. Ultimately it creates an environment where nurses do not want to stay, thus creating a downward spiral in terms of motivation, staff retention and quality of care (Aiken, Sloane, Busse, McKee, Bruyneel, Rafferty, Griffiths, Moreno-Casbaqs, Tshelman, Scott, Brzostek, Kinnunen, Schwendimann, Heinen, Zikos, Sjetne, Smith & Kutney-Lee, 2012; Klopper et al., 2012). Healthy work environments [or Positive Practice Environments (PPE)] are defined by various stakeholders

(Alli, 2008; Leeds, Grenvill & Lanark District Health Unit, 2009; South Africa, 1993). The WHO defines a healthy workplace as a place where

> …everyone works together to achieve an agreed vision for the health and well-being of workers and the surrounding community. It provides all members of the workforce with physical, psychological, social and organizational conditions that protect and promote health and safety. It enables managers and workers to increase control over their own health and to improve it, and to become more energetic, positive and contented (Burton, 2010).

Healthy work environments for nurses are defined more specifically by other organisations (AACN, no date; ANCC, no date; RNAO, 2008). The Registered Nurses Association of Ontario (RNAO) defines a healthy workplace as practice settings that maximise the health and well-being of the nurse, quality patient outcomes, organisational performance and societal outcomes (RNAO, 2008).

Healthy work environments are globally mooted as an important strategy to attract and retain competent, experienced nurses – an essential component of healthy and safe working environments. Healthy work environments are cost-effective healthcare settings that support excellence and decent work, have the power to attract and retain staff and to improve patient satisfaction, safety and outcomes (Global Health Workforce Alliance, no date). Characteristically such settings ensure the health, safety and well-being of staff; support quality patient care and improve the motivation, productivity and performance of individuals and organisations (Baumann, 2007). A large study in several countries indicated that organisational behaviour and the retention of a qualified and committed nurse workforce can improve safety and quality of hospital care (Aiken et al., 2012). There is sufficient information on the challenges of work environments that contribute to poor nursing care and consequently the negative impact on the quality of nursing care, patient safety and patient outcomes. Workplace issues such as workplace violence (Spence Laschinger, Leiter, Day & Gilin, 2009), requirements of multi-skill settings (De Frias & Schaie, 2001), job dissatisfaction (Berry, Gillespie, Gates & Schafer, 2012;

Klopper et al., 2012); and ethical challenges (Landman, Mouton & Nevhutalu, 2001; Pera & Van Tonder, 2011; Ulrich, Taylor, Soeken, O'Donnel, Farrar, Danis & Grady 2010) leading to labour discontent (Akinbobola, 2011), moral distress (Hamric, Davis & Childress, 2006) and low probability of staying at the same workplace (Cho, Lee, Mark & Yun, 2012; Coetzee et al., 2013) further impact on the nursing shortage and nurses' burnout (Aiken et al., 2002, Alarcon, Eschleman & Bowling, 2009, Klopper et al., 2012, Spence Laschinger & Leiter, 2006). In 2012 already it was reported that on a national level in South Africa, 54.4% (634 of 1166) nurses were planning to leave their hospitals in the next year (Coetzee et al., 2013).

While adequate staffing with the right categories of staff improve patient outcomes and nurse well-being, these are not the only factors influencing a healthy work environment. Other factors that promote safe working environments include sufficient stock and equipment, well-structured policies, procedures and systems which allow nurses to play a participatory role and value their contributions, effective managers with good leadership skills, good relationships between nurses and physicians, and educational level of nurses, amongst others (Aiken et al., 2003; Coetzee et al., 2013; Klopper et al., 2012; Spence Laschinger & Leiter, 2006). A healthy and positive work environment is therefore characterised by innovative policy frameworks focused on recruitment and retention of staff; strategies for continuing education and upgrading of skills and competencies; adequate employee compensation; innovative recognition programmes; sufficient equipment and supplies; safe and clean working environments; developing and sustaining compassionate, visionary and inspirational leadership in nursing; total organisational participation and collaborative practice with true collaboration (Baumann, 2007).

These issues also influence the views of patients who are the end users of health and nursing care. Taking into consideration the proverb that states 'they do not care how much you know until they know how much you care' it is recognised that the quality of care and nurses' work

performance is often judged by their caring behaviours rather than their competence, particularly by patients and the public media. Nursing is seen as a caring profession, and indeed a desire to help, to care for others, a sense of achievement in contributing to others' wellness and self-validation (recognition and appreciation) as individuals. These are roles which have been identified as motivation to enter nursing and sustain practitioners in their careers as nurses or nurse managers (Newton, Kremser, Jolly & Billet, 2009). However, work environments also influence the ability of nurses to care due to emotional distress after entry into the healthcare environment (Jones, Smith & Johnston, 2005), especially by nursing students (Van der Wal, 2006) and newly qualified nurses as they establish their professional identities (Deppoliti, 2008). It has therefore been recommended that patients be consulted when work performance is measured to obtain an objective and more balanced view on work performance (Consumer-Purchaser Alliance, 2011; Deppoliti, 2008). The finding of Ludikhuize et al. supports this view (Ludikhuize, Dongelmans, Smorenburg, Gans-Langelaar, Jonge & Rooij, 2012). They found that care providers usually rate the care they provided to patients in the hours before a life-threatening event as good, while independent experts were more critical of the care provided, particularly on how well-timed the identification of the patients' need for life support was (Ludikhuize et al., 2012). Inviting patients to evaluate nurses' caring behaviours might therefore be a good idea to ensure a more balanced view of nurses' work performance.

### 1.3.2 Intrapersonal characteristics impacting on work performance and caring behaviours

The second aspect that influences work performance and caring behaviours that is discussed, is intrapersonal characteristics. While it has been highlighted that the workplace has an influence on the work performance and caring behaviours of nurses, the literature also revealed that less has been published on the influence of the intrapersonal characteristics of nurses on their work

performance and caring behaviours, particularly in South Africa. The available literature highlights several intrapersonal characteristics and instruments that measure the influence of specific intrapersonal characteristics on nurses' work performance and caring behaviours that could be used for a study in South Africa. The characteristics selected for this study is briefly discussed in this section.

#### 1.3.2.1 Professional values

Professional values in nursing are described as the core values developed over time that give meaning and direction to the profession of nursing (Shih, Lin, Smith, Liou, Chiang, Lee & Gau, 2009). Reading the media reports and listening to the debates taking place at nursing conferences as well as the 2011 South African Nursing Summit, emphasises the importance afforded to the professional values of nurses and midwives. Professional values accepted and supported by the profession and individual nurses, shape standards for nursing practice. They provide a framework which influences the behaviour of the profession and its members (Kubsch, Hansen & Huyser-Eatwell, 2008). The transfer to and internalisation of the professional values by neophytes in the nursing profession form the foundation of professional development. This socialisation process applied during nursing education involves change in personal values as well as the internalisation of the professional values of the profession (Shih et al., 2009; Özcan, Akpinar, & Ergin, 2012).

Evidence suggests that professional values are cultivated and increasingly grow amongst undergraduate students (Leners, Roehrs & Piccone, 2006). Furthermore, there was a significant difference in perceived professional values according to the level of nursing education, position or title, and members of professional organisations. Personal experience in nursing also contributes to nurses' perception of professional values. The highest level of perceived professional values was found among RN-BSN students (Kubsch Hansen & Huyser-Eatwell,

2008). As professional values influence the behaviour and therefore also work performance and caring behaviour of nurses, and considering the negative reporting on poor care provision in South Africa, there could be a relationship between nurses' professional values and their work performance and caring behaviours. The Nurses' Professional Values Scale – Revised (NPVS-R) developed by Weis and Schank was used to measure nurse's professional values in this study (Weis & Schank, 2009).

#### 1.3.2.2 Personality

In the literature related to the focus of this study, there is reference to the influence of personality of individuals on their lives. The concept of personality refers to the combination of characteristics or qualities that form an individual's distinctive character (Oxford Dictionaries, 2014). Genetically all people differ, leading to diversity in the workplace that determines how role players such as nurses interact with each other and with their patients. There is evidence that personality characteristics such as self-esteem and locus of control directly influence work performance (Bono & Judge, 2003; Bowling, 2007; Van Wyk, Boshoff & Celliers 2003).

The Core Self-evaluations Scale (CSES) is a direct and relatively brief measure of a broad, integrative personality characteristic consisting of self-esteem, generalised self-efficiency, neuroticism and locus of control which is called core self-evaluations. This instrument has been used extensively in research amongst nurses, for example related to burnout (Spence Laschinger & Finegan, 2008) and conflict management (Almost, Doran, McGillis Hall & Spence Laschinger, 2010). The instrument has been used in a wide variety of working environments and in one study in South Africa to explore the relationship between Core Self-Evaluations and Black Consciousness amongst adult Zulus in Zululand (Dodd & Snelgar, 2011). It provides a good basis for predicting typical levels of work performance as individuals with higher levels of

core self-evaluations tend to be more successful in their careers and cope better with challenges (Judge & Hurst, 2007b; Judge, 2009).

#### 1.3.2.3 Emotional intelligence (EI)

Emotional intelligence (EI) is becoming an increasingly popular concept in professional settings, especially for the service professions. EI is a mixture of emotional and interpersonal competencies that affect one's behaviour, thinking and interaction with other people. There are two distinct types of EI, namely ability (capacity that spans the border between reason and feeling) and trait (array of non-cognitive abilities related to success such as self-control);the measurement methods of these two concepts differ (Austin, 2010). An analysis of the literature suggests that the demands of current nursing practice require EI skills in order to establish relationships with patients and members of the multidisciplinary team (McQueen, 2003). It is essential that nurses who are working in a highly stressful occupation develop competencies of EI and understand how to effectively handle conflict and difficult patients or colleagues. This will play a significant role in relationship management, appropriate conflict management and the ability to alleviate stress and conflict in the workplace (Morrison, 2008).

A range of studies have been published related to the EI of teachers (Di Fabio & Palazzeschi, 2008) and Chinese business students (Margavio, Margavio, Hignite & Moses, no date) as well as medical students (Borges, Stratton, Wagner & Elam, 2009; Brannick, Wahi, Arce, Johnson, Nazian & Goldin, 2009; Carr, 2009). These studies seem to suggest that EI is an important element for successful work performance and caring behaviours in healthcare, and specifically patient care, where work performance and caring behaviours consist of nurturing and interaction with patients. New tests such as the Situational Test of Emotion Management (STEM) and Situation Test of Emotional Understanding (STEU) provide instruments with assessments that are freely available in the public domain (Austin, 2010). STEM was selected for utilisation in this

study based on the clinical patient care units selected where management of emotions plays an important role in the day-to-day management of nursing care.

#### 1.3.2.4 Empathy

Nursing has since time immemorial been described as a caring profession and therefore the concern about the media reports on nursing care that not only impacts negatively on the image of the profession, but also draws attention to poor and unsafe care. Empathy is central to the nursing role and over time was found to be associated with improved patient outcomes and greater satisfaction with care *(*Ward, Cody, Schaal & Hojat, 201*2).* Empathy is described as the ability to understand and share the feelings or thoughts of others and to stand in the shoes of such person(s) (Özcan, Akpinar & Ergin, 2012). While some international studies found that a decline in empathy occurs with continued exposure to clinical practice (Guan, Jin & Qian 2012; Ozcan, Oflaz & Cicek, 2010; Özcan, 2012), it has also been found that practitioners in clinical practice who exhibit an empathetic attitude increase the quality of care and have a positive impact on the healing process (Ozcan, Oflaz & Sutcu Cicek, 2010; Ward et al., 2012). Furthermore, quality relationships based on fairness and empathy play a pivotal role in creating positive safety climates and work environments (Squires Rourangeau, Spence Laschinger & Haynes, Kushniruk, Straus, Grimshaw, Mcgillis Hall, Dubrowski, Di Pietro, Newman, Almost, Nguyen, Carryer, & Jedras, 2010). Empathy was therefore identified as one of the intrapersonal characteristics to be measured in this study and the instrument used was the Empathy Quotient Short Form (EQ-Short) (Wakabayashi, Baron-Cohen, Wheelwright, Goldenfield, Delaney, Fine, Smith, & Weil, 2006).

#### 1.3.2.5 Job involvement

Job involvement, described as the degree of importance of one's job to one's self-image, was found to be related to organisational identification. Organisational identification is an important

attitude of employees which influences nurses' performance, motivation and job satisfaction in the workplace as it provides employees with a sense of identity. Organisational identity in turn is determined by the job dimensions (external factors) and job involvement (internal factor) which reflects a person's level of participation in his or her work identification (Katrinli, Atabay, Gunay & Guneri, 2008). While staff members are committed primarily to their job and not the organisation, commitment to the organisation produced effective teamwork in the clinics (Freund & Drach-Zahavy, 2007). An increased awareness of nurse supervisors of the effect of their behaviours towards nurses can increase nurses' performance through increased job involvement and organisational identification (Katrinli et al., 2008). As job involvement is highly correlated with self-esteem and with the level of participation in work (Katrinli et al., 2008) it could be expected that the greater the job involvement of nurses, the more likely it is that the organisation will become part of their identity which would in turn contribute to better patient outcomes and safe, healthy workplaces. With job involvement identified as an important concept correlated with different work behaviours and outcomes which include work performance, absenteeism and turnover (Katrinli et al., 2008), it was identified as a concept for measurement in this study. To assess job involvement, Kanungo's Job Involvement Scale was identified for use in this study (Kanungo, 1982).

#### 1.3.2.6 Demographic characteristics

Having considered a wide range of scientific resources related to work performance, it is not only the interrelatedness of all these variables that is striking, but also the frequent reporting of links of demographic characeristics with work performance and intrapersonal characteristics. These demographic characteristics include age, sex, status, work-family conflict and social support (Akinbobola, 2011; Cortese, Colomo & Ghislieri 2010; Li, Lin & Chen 2007; Nabirye et al., 2011; Nyambegera, Daniels & Sparrow, 2001; Yang, Kao & Huang 2006); the number of

children a nurse has, experience of the nurse (public versus private) and the clinical units (obstetrics versus other units) where nurses work (Nabirye et al., 2011).

Experience and its influence on competence and work performance is also alluded to in studies reporting that personal demographics influence how competence is applied in the clinical situation (Taylor, 1995; Zhang et al. 2001) and the time it takes to internalise professional values (Kubsch, Hansen & Huyser-Eatwell, 2008; Shih et al., 2009). Another personal factor linked with intrapersonal characteristics are the level of nursing education of the nurse (Aiken et al. 2003; Kubsch, Hansen & Huyser-Eatwell, 2008).

Based on these reported influences in the literature selected demographic characteristics (sex, marital status, age, number of children, sole bread winner, single parent, sector and shift of employment, experience and education) of professional nurses and patients (sex, marital status, age and education) were included in the study to determine if these aspects have an influence on nurses' work performance and caring behaviours in South Africa.

### 1.3.3 Measuring work performance and caring behaviours

To determine the influence of nurses' intrapersonal characteristics on their work performance and caring behaviour required identification of suitable instruments for their measurement. The instrument identified for the measurement of nurses' work performance was Schwirian's 6-Dimension Scale of Nursing Performance (6-DSNP) used in a variety of studies in New Zealand (Roud, Giddings & Koziol-McLain, 2005), Uganda (Nabirye, Brown, Pryor & Maples, 2011) and the USA where it was developed (Schwirian, 1978).

An instrument that has been used with great success to assess caring behaviours is the Caring Behaviours Inventory (CBI). The CBI is an empirical tool developed by Wolf et al. (Wolf, Giardino Osborne & Amborse, 1994) and has been used in several research studies to measure nurse caring (Burtson & Stichler, 2010; Mlinar, 2010; Palese, Tomietto, Suhonen, Efstathiou,

Tsnagari, Merkouris, Jarosova, Leino-Kilpi, Patiraki, Karlour, Balogh & Papastavrou, 2011; Peery, 2010). The CBI has been used in nurse and patient populations. Based on the previous discussion that patients be consulted when work performance of healthcare professionals is measured, it was decided to invite patients to complete this instrument to evaluate the caring behaviours of the nurses providing their care (Consumer Protection Alliance, 2011; Ludikhuize et al., 2012).

### 1.3.4 Theoretical support for this study

As pointed out, healthcare is challenged by the shortage of all categories of health professionals and therefore institutions are continuously in competition with each other to limit turnover and to attract and retain the best clinical practitioners in the quest to improve healthy work environments, patient satisfaction and quality of care. Establishing a healthy work environment for nurses, which also creates a safe and healthy environment for patients, is complex and multidimensional. The literature describes both workplace and intrapersonal characteristics influencing the work performance and caring behaviours of nurses. All these characteristics are interlinked. While various studies have been done to identify system factors that influence nurse performance and caring behaviour, less is known about intrapersonal characteristics and how these affect the professional practice of nurses, especially in South Africa. Nurses' performance and caring behaviour has direct effects on patient satisfaction (Tzeng, Ketefian & Redman, 2002; Vahey, Aiken, Sloane, Clarke & Vargas, 2004) with the result that recruiting and retaining competent and experienced nurses are crucial for quality healthcare delivery and patient outcomes (Aiken, Cimiotti, Sloane, Smith, Flynn, & Neff, 2011). For this reason it becomes necessary to identify and better understand the influence of intrapersonal characteristics of nurses on their work performance and caring behaviours.

The studies highlighted in the literature considered for this study, identified valid and reliable instruments that have been used with success globally in other nursing populations which could be used in a South African study. Instruments identified and used in this study include evaluating work performance, caring behaviours, professional values, personality, emotional intelligence, empathy and job involvement.

## 1.4 STATEMENT OF PROBLEM INVESTIGATED

The increasing reports about poor nursing and midwifery care in the media and by patients raise concern. This is confirmed by the growth in numbers of nurses who are found guilty of poor nursing or midwifery care during professional conduct hearings at SANC. However, these reports are contradicted by anecdotal information provided by patients that have received good nursing or midwifery care in the same hospitals that reportedly provide poor care.

There is evidence that the performance of nurses and other healthcare workers is influenced by physical and psycho-social work environment factors which incorporate individual practitioner factors, such as intrapersonal characteristics (RNAO, 2008). The evidence available highlights that professional values play an important role in clinical decision making (Mlinar, 2010; Zamanzadeh, Azimzadeh, Rahmani & Vakuzadeh, 2010) with personality (Judge, 2009; Strauser, O'Sullivan & Wong, 2010) and personal demographics (Akinbobola, 2011; Cortese, Colomo & Ghislieri 2010; Li, Lin & Chen 2007; Nabirye et al., 2011; Nyambegera, Daniels & Sparrow, 2001; Yang, Kao & Huang 2006) contributing to the variety of responses of nurses to similar work environments. Furthermore, emotional intelligence is necessary to establish relationships with patients and members of the multidisciplinary team (McQueen, 2003; Morison, 2008; Towell, Nel & Müller, 2013) while empathy is associated with improved patient outcomes and satisfaction (Deppoliti, 2008; Jones, 2005; Van der Wal, 2006) and job involvement, reflecting a person's psychological identification and self-esteem, influences

participation and performance in their work (Katrinli et al., 2008; Permarupan, Mamun & Saufi, 2013; Takase, Maude & Manias 2006).

The extent to which demographics and intrapersonal characteristics influence South African nurses' work performance and caring behaviours is not known. A better understanding of how the demographics and intrapersonal characteristics influence work performance and caring behaviours, will contribute to improved management and support of current staff and selection of new recruits into nursing.

This led to the following research questions:

- What is the distribution and influence of demographic variables on nurses' work performance and patients' perceptions of caring behaviours?
- What is the distribution of selected intrapersonal characteristics among nurses working in clinical settings in hospitals?
- What is the self-assessment of their work performance by nurses working in clinical settings in hospitals'?
- How do patients perceive the caring behaviours of nurses in clinical settings in hospitals?
- Is there a relationship between nurses' intrapersonal characteristics and their self-assessment of work performance and caring behaviours of nurses as perceived by patients?
- What model can be developed to test the influence of selected intrapersonal characteristics on work performance and caring behaviours of nurses?
- What is the influence of intrapersonal characteristics on the work performance and caring behaviours of nurses?

## 1.5 AIM AND OBJECTIVES OF THE RESEARCH

The aim of the research was to develop predictions about the influence of intrapersonal characteristics of professional nurses on their work performance and caring behaviours.

The objectives of the research were to:

1.5.1 Describe the distribution and influence of nurses' demographic variables (sex, marital status, age, number of children, sole bread winner, single parent, sector and shift of employment, experience and education) on their work performance and patients' demographics (sex, marital status, age and education) on their perception of nurses' caring behaviours.

1.5.2 Describe the distribution of selected intrapersonal characteristics among professional nurses working in clinical settings in hospitals.

1.5.3 Describe and analyse the self-assessment of work performance of professional nurses in clinical settings in hospitals.

1.5.4 Describe and analyse the caring behaviours of professional nurses in clinical practice in hospitals as perceived by patients during the execution of their care by nurses.

1.5.5 Determine the correlation between intrapersonal characteristics, and professional nurses' self-assessment of work performance and the caring behaviours of professional nurses as perceived by patients.

1.5.6 Test the hypothetical model of the influence of selected intrapersonal characteristics on work performance and caring behaviours of nurses.

1.5.7 Determine the influence of intrapersonal characteristics on the work performance and caring behaviours of nurses.

## 1.6 HYPOTHESES

A hypothesis is a formal statement of the expected relationships between two or more variables in a specific population, in this case professional nurses working in clinical practice (Burns & Grove, 2011). The hypotheses for this study were:

There is no relationship between nurses' intrapersonal characteristics and their work performance and caring behaviours.

1.6.1 $H_{01}$ - There is no relationship between demographic data and nurses' self-assessment of work performance and patients' perceptions of caring behaviours.

1.6.2 $H_{02}$ - There is no relationship between nurses' self-assessment of work performance and patients' assessment of caring behaviours.

1.6.3 $H_{03}$ - There is no relationship between professional values and nurses' self-assessment of work performance and patients' assessment of caring behaviours.

1.6.4 $H_{04}$ - There is no relationship between personality and nurses' self-assessment of work performance and patients' assessment of caring behaviours.

1.6.5 $H_{05}$ - There is no relationship between emotional intelligence, nurses' self-assessment of work performance and patients' assessment of caring behaviours.

1.6.6 $H_{06}$ - There is no relationship between empathy, nurses' self-assessment of work performance and patients' assessment of caring behaviours.

1.6.7 $H_{07}$ - There is no relationship between job involvement, nurses' self-assessment of work performance and patients' assessment of caring behaviours.

## 1.7 MODEL FOR THIS STUDY

While it is acknowledged that all the components and determinants influencing work performance and caring behaviours are interrelated, this study focused only on the influence of

intrapersonal characteristics of professional nurses on their work performance and caring behaviours. This study explored and described the distribution of selected demographics of nurses (sex, marital status, age, number of children, sole bread winner, single parent, sector and shift of employment, experience and education) and patients (sex, marital status, age and education), intrapersonal characteristics of nurses (professional values, personality, emotional intelligence, empathy and job involvement); nurses self-assessment of work performance; patients' perception of the caring behaviours of nurses and the relationship between these demographics and intrapersonal characteristics on work performance and caring behaviours. The hypothetical relationships between the variables are demonstrated in Figure 1.2

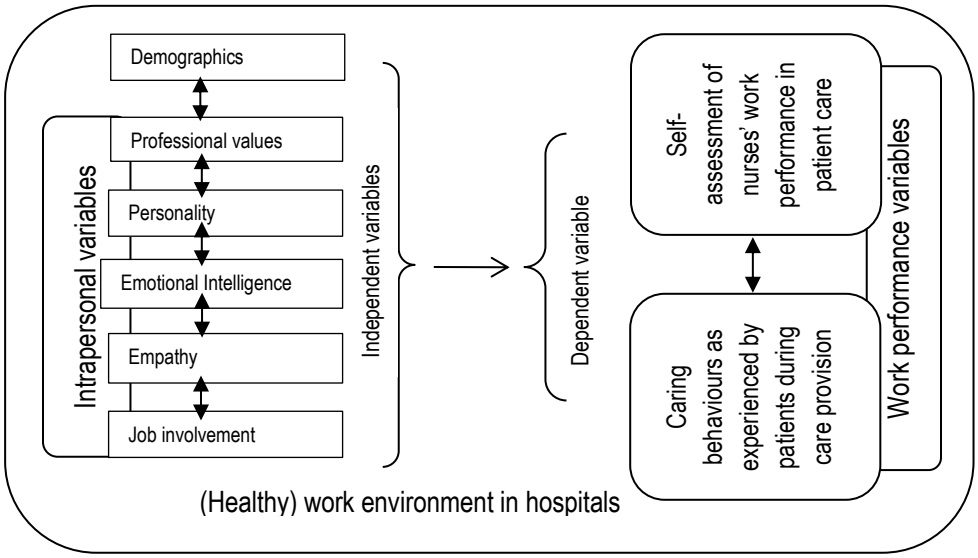


Figure 1.2 Conceptual map for this study

## 1.8 SIGNIFICANCE OF THE STUDY

In addressing the global health challenges related to health worker shortages, the WHO highlights that it is essential to 'get the right workers with the right skills in the right place doing the right things' (WHO, 2006). The report proposes various strategies to address these challenges, including the need to focus on existing staff. Work performance and caring behaviours of current nurses should be enhanced and strategies implemented to achieve better

compatibility between nurses and patients and nurses and their work environments in order to improve work performance and caring behaviours. It has been highlighted that caring behaviours of nurses determine a consistent degree of patient satisfaction, which contributes to making patients feel safe and well cared for (Tzeng, Ketefian & Redman, 2002; Vahey et al., 2004). The unique contribution of the study is that it explains and makes predictions about the relationship between and influence of nurses' intrapersonal characteristics on their work performance and caring behaviours, on which limited information is available in the literature. This study provided a better understanding of the influence of intrapersonal characteristics of nurses on their work performance and caring behaviours that could guide development and support programmes in the workplace, as well as recruitment of staff or students for the nursing profession.

## 1.9 RESEARCHER'S ASSUMPTIONS

In this section the theoretical and methodological assumptions as well as concept clarification are discussed.

### 1.9.1 Theoretical assumption

The conceptual map for this study is informed by the *Conceptual Model for Healthy Work Environments for Nurses* (RNAO, 2008). The Registered Nurses Association of Ontario (RNAO) developed a best practice guideline for creating healthy workplaces, namely the *Healthy Work Environments Best Practice Guidelines: Workplace Health, Safety and Well-being of the Nurse,* that when applied, would serve to support the excellence in service that nurses are committed to delivering in their day-to-day practice. This guideline is one of a set of six best practice guidelines developed by the RNAO, to assist with creating healthy and safer workplaces that will benefit not only nurses but also other healthcare professionals, patients, organisations and the communities where they practice (RNAO, 2008). This Comprehensive Conceptual Model

provides an organising framework for the healthy work environment best practice guidelines and is briefly described next.

The *Comprehensive Conceptual Model for Healthy Work Environments for Nurses* presents the individual (micro level), organisational (meso level) and external (macro level) system determinants of a healthy workplace in Figure 1.3 as the three outer circles. Three components cut across the three circles representing physical or structural policy, the cognitive/psycho/social/cultural and the professional/occupational workplace components that are influenced at the three levels. At the core of these circles are the expected beneficiaries of healthy work environments. The dotted lines within the model indicate the synergistic interactions among all levels and components of the model. The individual's, in this study the nurse, functioning is influenced by interactions between the nurse and her/his environment.

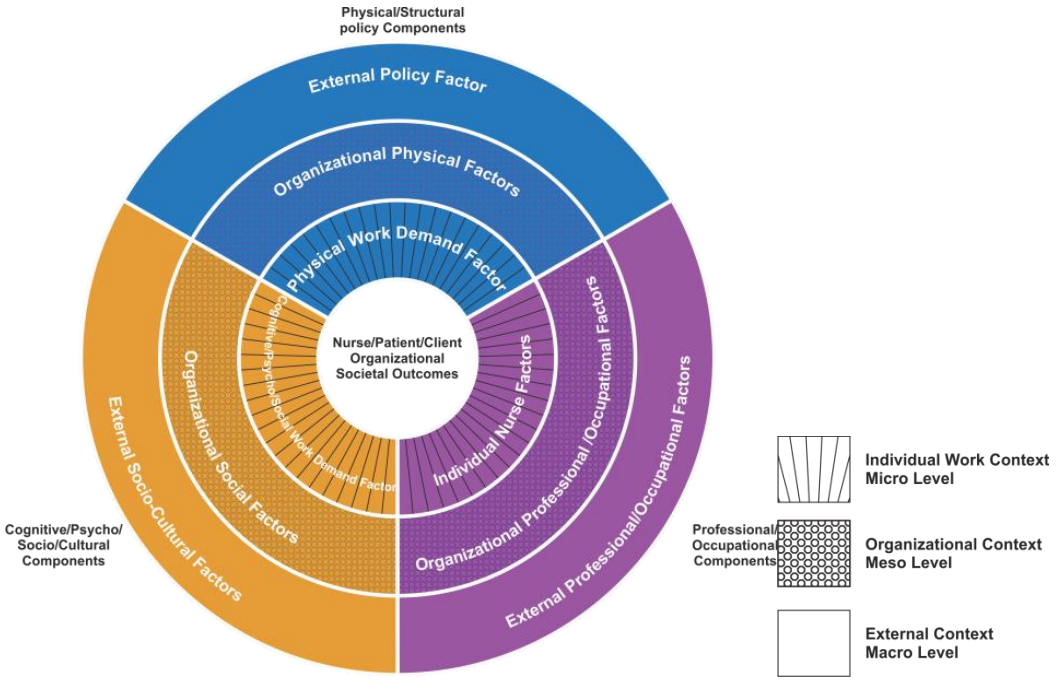


Figure 1.3 Conceptual Model for Healthy Work Environments for Nurses – Components, Factors and Outcomes (RNAO, 2008)

The physical/structural policy component at individual level reflects the physical work demand factors which include components such as workload, shift work, workplace health and safety. At the organisational level this component reflects the physical characteristics and environment in which nurses work, organisational structures and processes to respond to the physical work demands, equipment to assist with service delivery, health and safety policies in the workplace and security personnel. At the external level, this component includes factors outside the organisation which influence the workplace such as healthcare delivery models, healthcare reform (for instance the re-engineered primary healthcare system and National Health Insurance in South Africa), legislation and funding (RNAO, 2008).

The cognitive/psycho/social/cultural component at the individual level comprises the cognitive, psychological and social capacity and effort, such as clinical and communication skills, required by the work done in the organisation. It includes the relationships of the team members, role clarity, job security and emotional demands of the job. At the organisational level, the component refers to organisational stability, labour relations, communication practices and structures and a culture of continuous learning and support. At the system level consumer trends, changing roles in families, population diversity, providers and changing demographics influence what happens in the workplace (RNAO, 2008).

The professional/occupational component of the model is the section that would be different for different categories of health workers in the workplace. At the individual level, the individual nurse factors include the personal attributes and/or acquired skills and knowledge of the nurse which determine how she/he responds to the physical, cognitive and psycho-social demands of work. Included are commitment to patient care, the organisation where the nurse works and the profession; personal values and ethics; reflective practice; resilience, adaptability and self-confidence; and family/work/life balance. The organisational level reflects the nature and role of

the profession. For this study it is nursing. Included among these factors are the scope of practice, level of autonomy and control over practice, and intra-disciplinary relationships. At the external level, policies and regulations at the provincial, national and international levels shape the health and social policy in the country (RNAO, 2008). The description of this section indicates that intrapersonal characteristics influence the work nurses do, influence their environments and their response to the environment.

The assumptions underlying the model are (RNAO, 2008):

(i) healthy work environments are essential for quality, safe patient care;

(ii) the model is applicable to all practice settings;

(iii) individual, organisational and external system level factors are the determinants of healthy work environments for nurses and midwives;

(iv) factors at all three levels impact the health and well-being of nurses and midwives, quality patient outcomes, organisational and system performance, and societal outcomes either individually or through synergistic interactions;

(v) at each level, there are physical/structural policy components, cognitive/psycho/social/cultural components and professional/occupational components; and

(vi) the professional/occupational factors are unique to each profession, while the remaining factors are generic for all professions/occupations.

This study focuses on the individual nurse factors, specifically selected intrapersonal characteristics, in the professional/occupational component of the model to determine the influence of these characteristics on nurses' work performance and caring behaviours.

These characteristics, work performance and caring behaviours will be discussed in more detail in Chapter 2.

### 1.9.2 Clarification of key concepts

*Caring behaviours* – behaviours that reflect the respectfulness, empathy and compassion with which nurses execute their skills and knowledge in the provision of patient care (adapted from Palese et al., 2011; Wu, Larrabee & Putman, 2006).

*Demographic variables* – are specific variables collected in the study to describe the sample (Burns & Grove, 2009). In this study the demographic variables include sex, marital status, age, number of children, sole bread winner, single parent, sector and shift of employment, experience and level of education.

*Emotional intelligence (EI)* – is a mixture of emotional and interpersonal competencies which broadly refers to the ability to perceive emotions in one's self and others. It affects one's behaviour, thinking and interaction, enabling one to understand, use and manage such information in productive ways in healthcare delivery (Brannick et al., 2009). For this study the focus was on emotion management, a branch of strategic emotional intelligence referring to an individual's ability to appropriately manage positive and negative emotions (Burrus, Betancourt, Hotlzman, Minsky, MacCann & Roberts, 2012).

*Empathy* – a process of understanding, recognising and sharing of the feelings and thoughts of others without changing one's own lifestyle and perspective (Özcan, Akpinar & Ergin 2012; RNAO, 2008).

*Healthy work environment* – practice settings that maximise the health and well-being of the nurse, quality patient outcomes, organisational performance and societal outcomes (RNAO, 2008). Healthy work environments are cost-effective healthcare settings that support excellence and decent work, have the power to attract and retain staff and to improve patient satisfaction, safety and outcomes. Characteristically such settings ensure the health, safety and well-being

of staff; support quality patient care; improve the motivation, productivity and performance of individuals and organisations (Global Health Workforce Alliance, no date).

*Intrapersonal characteristics* – refers to the psychological dynamics that occur inside the mind of a person without reference to the individual's exchanges with other persons or events (http://www.lexic.us/definition-of/intrapersonal). In this study intrapersonal characteristics include professional values, personality, emotional intelligence, empathy and job involvement.

*Job involvement* – reflects the cognitive state of an individual's psychological identification with the job and is highly correlated with self-esteem and the level of participation in work (adapted from Katrinli et al., 2008).

*Nurse/nurses* – refers to nurses registered with SANC as professional nurses in terms of section 31 of the Nursing Act, 2005 (South Africa, 2005). It includes nurses with a single registration in general nursing, or registered as a general nurse and midwife or registered as professional nurse (general, psychiatric, community health) and midwife. This includes registered professional nurses with one or more specialist registration.

*Patient* – person(s) who are in the hospital because they require medical or surgical treatment and nursing care.

*Personality* – the combination of characteristics or qualities that form an individual's distinctive character (Oxford Dictionaries 2014). In this study the personality characteristics that will be studied include core self-evaluations which is an integrative personality characteristic consisting of self-esteem, generalised self-efficiency, neuroticism and locus of control.

*Professional values* – the core values that give meaning and direction to nursing (Shih et al., 2009).

*Work performance* – work or job performance refers to the behaviour and actions of individual nurses in the clinical setting that is directed to meeting the health needs of patients and achievement of the goals of the organisation in which they work, all of which contribute to the outcomes of patient care.

### 1.9.3 Methodological assumptions

The philosophical underpinning of this study is post-positivism or the scientific method. Post-positivism is a philosophy that originated in the 19th century through critiquing and modifying the views of positivists about the absolute truth of knowledge (Phillips & Burbules, 2000). In contrast to positivists who believe that the researcher and respondents in research are independent of each other, post-positivists recognise that the researcher has her/his own background, knowledge and values that could influence observations. Research undertaken by post-positivists is in a learning role rather than a testing role in order to obtain knowledge to create an image and explanations of the objective reality of the research participants (Cresswell, 2003; Ryan, 2006).

To understand the world within which we work and live, the scientific approach requires the researcher to have a theory, to collect data scientifically that would either confirm or reject the theory. The key assumptions of this position include, according to Phillips and Burbules (2000):

1.9.3.1 Knowledge is hypothetical – absolute truth can never be found, therefore researchers sometimes indicate that they failed to reject a hypothesis.

1.9.3.2 Research is the process of making claims and then refining or abandoning some of them for other claims with more merit.

1.9.3.3 Data, evidence, and rational considerations which shape knowledge are obtained through observation or respondents completing instruments.

1.9.3.4 Research seeks to develop true statements that can explain the situation being assessed or that describe the causal relationships of interest to the researcher.

1.9.3.5 Being objective is an essential aspect of competent inquiry. Examining methods and conclusions for bias such as the standard of validity and reliability remains essential.

In this study the researcher sought to understand the influence of intrapersonal characteristics of nurses on their work performance and caring behaviours. While it can be argued that 'understanding' nurses' world better, is qualitative rather than quantitative research, Ryan (2006:20) expresses the view that it depends on the question that needs to be answered. If the purpose was to determine how many nurses reported doing a diploma rather than a degree in nursing, a quantitative approach would provide relevant numbers. This information would, however, not provide information on *why* nurses chose to do a degree or a diploma in nursing. This is a more subjective issue and would require a qualitative approach to answer. Quantification therefore provides a comprehensive understanding of many cases or a group such as the professional nurses in this study; it can examine patterns across many cases such as the influence of intrapersonal factors on work performance and caring behaviours and it can indicate whether a phenomenon is numerically significant or not. It can open up the nature of the problem or question being investigated.

Cresswell (Cresswell, 2003) asserts that post-positivists hold a deterministic philosophy reflecting the need to identify and evaluate the causes that influence outcomes, such as the need to determine whether nurses' intrapersonal characteristics influence their work performance and caring behaviour. Smaller groups of ideas are pooled to evaluate, such as the variables that comprise hypotheses and research questions. The hypothesis for this study was that professional nurses' intrapersonal characteristics do influence their work performance and caring behaviours. The variables identified include work performance and caring behaviours of

nurses, professional values, personality (self-esteem, generalized self-efficacy, neuroticism, and locus of control), emotional intelligence, empathy and job involvement.

## 1.10 RESEARCH DESIGN

A quantitative, cross-sectional survey, predictive correlation model-testing design was used for this study to determine the work performance and caring behaviours of nurses through self-assessment and patient assessment of caring behaviours, selected intrapersonal characteristics of nurses and the relationship between intrapersonal characteristics and work performance and caring behaviours of nurses (Blunch 2013; Babbie & Mouton, 2001; Burns & Grove, 2011; Pallant 2013; Polit & Hungler, 2012; Terre Blanche, Durrheim & Painter 2006). A model of these relationships was drawn and tested with the aim to make predictions about the influence of intrapersonal characteristics of nurses on their work performance and caring behaviours to improve the understanding of nurses' own influence on the way they deliver care and to contribute to the theoretical debate on the safety, quality and standard of nursing and midwifery care.

### 1.10.1 Method

The method includes population, sampling, data collection, data analysis and rigour of the research undertaken (Babbie & Mouton, 2001; Burns & Grove, 2011; Pallant, 2013; Terre Blanche, Durrham & Painter, 2006). A brief overview of the method is presented in Table 1.2. The table includes the data analysis tools used, namely SPSS 21 (SPSS Inc., 2013), AMOS (Amos Development Company, 2011) and SAS (SAS Institute Inc. 2011).

Table 1.2 Summary of the research method for the study

| Research objective/aim | Research approach | Population (N) and sample (n) | Data collection | Data analysis | Validity and Reliability |
|---|---|---|---|---|---|
| Objectives:<br>• Describe the distribution of selected intrapersonal characteristics among professional nurses working in clinical settings in hospitals.<br>• Describe and analyse the self-assessment of work performance and caring behaviours of professional nurses in clinical settings in hospitals.<br>• Describe and analyse the caring behaviours of professional nurses in clinical practice in hospitals as perceived by patients during the execution of their care by nurses.<br>• Determine the correlation between intrapersonal characteristics, professional nurses' self-assessment of work performance and caring behaviours of professional nurses as perceived by patients.<br>• Test the hypothetical model of the | • Quantitative<br>• Cross-sectional survey<br>• Predictive correlation<br>• Model-testing design | • Population (N): registered professional nurses<br>• Tshwane District in Gauteng Province (purposive sampling)<br>• Random selection of private hospital group<br>• Public and private hospitals (random stratified sampling for public and private to maintain ratio of two public to one private nurse respondent)<br>• Selection of all medical & surgical wards<br>• Professional nurses working in medical or surgical wards maintaining ratio of two public to one private sector nurse respondents (all nurses invited due to shortage of professional nurses)<br>• Aim to invite 600 (N) nurses (400 public sector and 200 private sector) | Nurses:<br>• Only professional nurses<br>• Self-administered questionnaire<br>• Demographics and six instruments in questionnaire (Blaauw et al. 2010):<br>○ Demographic information<br>○ 6-DSNP<br>○ Professional values<br>○ CSES<br>○ STEM<br>○ EQ-short<br>○ Kanungo Job Involvement<br>• Distributed and collected by researcher<br><br>Patients:<br>• Respondents identified in collaboration with unit | • Statistical analysis of demographic data with SPSS 21<br>• AMOS to conduct Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), regression analysis and Structural Equation Modelling (SEM) for model testing (path analysis and causal modelling)<br>• SAS to determine the influence of demographic profile and intrapersonal characteristics on work performance and factor scores | • Pilot study of the questionnaires<br>• Construct validity with EFA & CFA<br>• Reliability with Cronbach's Alpha |

| Research objective/aim | Research approach | Population (N) and sample (n) | Data collection | Data analysis | Validity and Reliability |
|---|---|---|---|---|---|
| influence of selected intrapersonal characteristics on professional nurses' self-assessment of work performance and caring behaviours of professional nurses as perceived by patients.<br>• Develop predictions about the relationship between intrapersonal characteristics on the work performance and caring behaviours of nurses. | | • Patients in wards where nurse respondents were working (randomly sampled) based on inclusion criteria and consultation with unit manager<br>• Aim to invite 150 patients (100 public sector, 50 private sector) | manager<br>• Inclusion criteria:<br>○ In hospital 24 hrs<br>○ 18y or older<br>○ Conscious with no pain/discomfort<br>○ Able to read and write<br>• Completed CBI made available in English, Afrikaans, Sesotho and isiZulu<br>• Data collection by field workers | | |

## 1.11 ETHICAL CONSIDERATIONS

In addition to the consent obtained to perform the research, the three fundamental ethical principles of respect for persons, beneficence and justice were adhered to in this study. The rights of respondents embraced in the Bill of Human Rights in the RSA Constitution were taken into consideration (South Africa 1996). Attention was paid to the respondent's right to privacy, anonymity and confidentiality, fair treatment and protection from discomfort and harm (Brink, Van der Walt & Van Rensburg 2012; Polit & Beck, 2012).

### 1.11.1 Consent to perform the research

Ethical approval for the study was obtained on 26 March 2013 from the University of KwaZulu-Natal Humanities and Social Sciences Research Ethics Committee (HSS/0129/013D) (see annexure 5). Informed consent was obtained from the management of all participating hospitals (see annexure 6, 7 & 8) as well as nurse (see annexure 3) and patient participants (see annexure 4). Hospitals in the Tshwane region were stratified and randomly selected for participation (see item 3.3.2.2).

Consent to perform the study was obtained from each hospital where data were collected as well as their management departments and head offices. Meetings were set up with the nursing service manager of each of the hospitals to give an overview of the research and the relevant forms submitted for written permission to perform the study in the hospital. Each of these letters of consent to perform the study in the selected hospitals was submitted to the respective hospital groups' research committee prior to permission being granted as indicated in Table 3.10 (see annexure 6, 7 & 8). The dates of approval from the various institutions and Ethics Committees are included in Table 1.3 and the permissions attached as annexure 6, 7 & 8.

Table 1.3 Ethics approval process

| Hospital group | Hospital permission | Submission to ethics Committee | Approval received |
|---|---|---|---|
| Private Hospital 1 | 2 July 2013 | Netcare Research Committee 31 July 2013 | 12 August 2013 |
| Private Hospital 2 | 4 July 2013 | | |
| Private Hospital 3 | 29 July 2013 | | |
| Private Hospital 4 | 12 July 2013 | Life Healthcare Research Committee 12 July 2013 | 12 August 2013 |
| Public Hospital 1 | 5 July 2013 | Tshwane Research Committee 30 July | 1 August 2013 |
| Public Hospital 2 | 1 July 2013 | | |
| Public Hospital 3 | 30 July 2013 | | |
| Public Hospital 4 | 18 January 2014 | University of Pretoria Research Ethics Committee | 24 October 2013 |
| Public Hospital 5 | No response to requests for meeting | | |

Following this approval, meetings were set up with each hospital to perform the study at a time that suits the hospital the best. The data collection was then performed as indicated in Table 3.8.

### 1.11.2 Respect for persons

All individuals participating in the research process are autonomous beings with the ability to make their own decisions, therefore they are able to choose whether they want to participate in this study or not. All respondents were invited to participate without coercion or penalty and were provided with information on the study and what their participation would entail (see annexure 4). Informed consent was obtained from each nurse and patient respondent before the questionnaire was completed and it was confirmed that the respondent fully understood what was required. Participation had to be voluntary. The inclusion and exclusion criteria for patients excluded patients with diminished autonomy to protect them from any harm or exploitation and for this reason unit managers were requested to assist with identifying patients that meet these criteria. While all nurses in medical and surgical wards received a questionnaire, they could complete it in their own time, leaving them the

option not to do so and not to submit the completed form (Brink, Van der Walt & Van Rensburg 2012; Gravetter & Forzano 2012; Polit & Beck 2012).

### 1.11.3 Principle of Beneficence

The principle of beneficence refers to the protection of respondents from harm. There was a risk that if the data on intrapersonal variables, work performance and caring behaviours could be linked to a named nurse or midwife, this could be used against her/him. The questionnaires for nurses were distributed and collected by the researcher and for the patients by a field worker. On receipt of the completed questionnaire the consent was separated from the questionnaire and sealed in envelopes.

While there was no risk of physical harm in this study, nurses were sharing personal information and patients were providing personal opinions that were confidential. The measures to protect the identity of the nurses were therefore a priority to the researcher. There also was a risk that the work performance in some of the hospitals may be significantly lower than that in others. Should these institutions be identifiable, this might have had negative consequences for them. In similar manner, hospital names would not be mentioned to maintain anonymity (Brink, Van der Walt & Van Rensburg 2012; Burns & Grove 2009; Polit & Beck 2012).

### 1.11.4 Principle of Justice

The patients' right to fair treatment and justice was ensured by allowing all practitioners to have a chance to participate in the study. Potential participants were informed of their right to withdraw or not to participate without any repercussions. The exclusion and inclusion criteria as discussed in items 3.3.2.5 and 3.3.2.6 were considered prior to inviting nurses and patients to participate in the study to protect them.

Privacy was protected throughout the study, which included data management. Completed questionnaires were separated from permissions signed to keep it unidentifiable with only

the anonymous questionnaire sent for data capturing. The questionnaires were sealed in envelopes and couriered to the statistician for data capturing and analysis. During the analysis the data were kept in a computer which is password protected. Completed questionnaires and signed consent forms will be kept in a locked cupboard for fifteen years after completion of the research and shredded thereafter.

## 1.12 FORMAT OF THIS THESIS

This thesis consists of six chapters:

1.13.1 CHAPTER 1 Introduction and overview of the study

1.13.2 CHAPTER 2 Literature review

1.13.3 CHAPTER 3 Research design and method

1.13.4 CHAPTER 4 Results of the study

1.13.5 CHAPTER 5 Discussion of results

1.13.6 CHAPTER 6 Evaluation of the study, significance, limitations and recommendations for practice, education, research and policy.

## 1.13 SUMMARY

This chapter provided an overview of the study, aiming to make predictions about the influence of intrapersonal characteristics of professional nurses on their work performance and caring behaviours in order to improve the understanding of practitioners' own influence on their delivery of care and to contribute to the theoretical debate on the safety, quality and standard of the delivery of nursing care. The source and background to the problem were considered and this provided the reasons for the problem researched, the aim, objectives, model and hypothesis of the research. The overview included a description of the research assumptions, and a brief overview of the design and research methodology. The format of the research dissertation was presented. The next chapter will provide a more detailed discussion of the theoretical support for the study.

# CHAPTER 2

# LITERATURE REVIEW

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 INTRODUCTION

The previous chapter provided an overview of the study. This chapter presents an overview of the current literature pertaining to the background to the problem, the relevant concepts of the study, namely work performance, healthy work environments, caring behaviours and the selected intrapersonal characteristics.

### 2.1.1 Purpose of the literature review

A literature review is an organised written overview of the information that has been published on the research topic to provide a scientific background for the study (Burns and Grove, 2009). The literature review further highlights what has been done and where the gaps are. For this study an overview is provided of the rich information available on the influence of workplaces on the work performance of nurses and the limited information available on the influence of practitioners' intrapersonal characteristics, which is the focus of this study.

### 2.1.2 Scope of literature review

Literature was accessed by means of EBSCOHost and ScienceDirect. Scientific open source journals such as *Curationis* and *HealthSAGesondheid*, were used to source more local information on the research topic as well as the Africa Journal of Nursing and Midwifery (AJNM) which is only available in hard copy. Furthermore, websites were used to source policy documents of organisations such as the national Department of Health (South Africa), WHO and IOM. The search terms used include nurses, work performance, intrapersonal characteristics, personality, personality variables, caring behaviours, workplace, professional values, emotional intelligence, empathy and job involvement.

## 2.2 BACKGROUND TO THE PROBLEM

The global shortage of human resources for health undermines the quality and safety of delivery of healthcare services all over the world. Therefore the World Health Organisation (WHO) highlights in its 2006 World Health report (WHO, 2006) that adequate and ***motivated*** staff with the appropriate educational preparation and tools are essential for the delivery of safe healthcare services of high quality. This in turn, is an essential component of healthcare systems to ensure the achievement of the health goals of nations. The 2006 report was dedicated to the analysis of and strategies to address health worker shortages of all categories acknowledging that nurses represent the largest number of health workers in health systems globally (WHO). This trend in the shortage of healthcare practitioners continues in varying degrees globally and is influenced by the funding of healthcare services and unemployment rates in the different countries (Breyer, Wildschut, & Mgqolozana, 2009; Buchan, O'May & Dussault, 2013).

### 2.2.1 Demand for skilled healthcare practitioners

Based on the 2012 statistics of the WHO, the global density of physicians per 10 000 of the population is 14.1 as opposed to 28.2 nurses and midwives (WHO, 2012). Reports indicate that the shortage of skilled personnel, lack of access to training opportunities, lack of written policies and staffing ratios, amongst others, influence patient outcomes and mortality rates (Cartmill, Comans, Clark, Ash & Sheppard, 2012; Gondwe, Bhengu & Bultemeier, 2011; Sepeku & Kohi, 2011). Blaauw et al. (Blaauw, Erasmus, Pagaiya, Tangcharoensathein, Mullei, Mudhune, Goodman, English & Lagarded, 2010) report on human resource strategies to attract and retain nurses in rural areas in three countries, indicating that educational opportunities and rural allowances would be the most successful in Kenya and South Africa, whereas nurses in Thailand would choose improved healthcare insurance coverage. Other examples include task shifting, revised skills mix ratios, remuneration and compensation benefit packages, cross-border agreements to manage migration of health

workers, documentation of best practices and development of best practice guidelines (Blaauw et al., 2010; Dieleman & Harnmeijer, 2006; IOM, 2001; RNAO, 2008). While all these strategies are important and warrant some attention, only best practices will be considered in the background discussion for this study as this represents the context of the study as discussed in item 2.3.1.1.1.

Best practice guidelines promote and support the development and use of best scientific evidence available through identifying meaningful, appropriate and effective healthcare practices to assist in the improvement of healthcare outcomes globally (RNAO 2008). A best practice is a technique or methodology that, through experience and research, has proven to reliably lead to a desired result (JBI, no date; RNAO 2008). A commitment to using the best practices in any field is a commitment to using all the knowledge and technology at one's disposal to ensure success. The term is used frequently in the fields of healthcare, government administration, human resource management practices, the education system, project management, hardware and software product development, and elsewhere. Centres such as the Joanna Briggs Institute in Adelaide, Australia (JBI, no date) and Nursing Best Practice Research Centre (NBPRC, no date) in Ontario have been established to promote the development and use of scientific evidence by identifying meaningful, appropriate and effective practices in healthcare in the quest to improve global healthcare outcomes. Best practice guidelines are increasingly used to improve the quality of healthcare and nursing practice (UNAIDS, 2003).

### 2.2.2 Shortage of staff and burden of disease in Sub-Saharan Africa

On the African continent, particularly in Sub-Saharan Africa, the impact of HIV and AIDS has been devastating on the populations of these countries, including the health workers themselves. The shortage of health workers is the worst in this part of the world with the density of physicians at 2.2 per 10 000 of the population as opposed to 9.0 nurses and midwives (WHO, 2012).This is supported by reports from other Sub-Saharan countries

(Costa Mendes, Marchi-Alves, Mazzo, A. Nogueira, Trevizan, De Godoy, Bistafa Pereira, Leonardo De Oliveira Gaioli, & Arena Ventura, 2012). An indication of the high burden of disease this region carries in relation to the population and health workers available is summarised in Table 2.1.

Table 2.1 The scope of the shortage of health workers (WHO, 2006)

| **The Americas** | **Sub Saharan Africa** |
|---|---|
| **14%** of the world's population | **11%** of the world's population |
| **10%** of the global burden of disease | **25%** of the global burden of disease |
| **42%** of the world's health workers | **3%** of the world's health workers |
| **>50%** of global health expenditure | **<1%** of global health expenditure |

In many countries salaries of health workers were not paid, no stock and equipment for service delivery were available in healthcare institutions. Where unions raised awareness or organised protest action, there were reports of leaders being threatened who then had to hide for their own safety (NUPGE, 2009). Migration of healthcare professionals to other better resourced countries such as South Africa and the UK has created severe bottlenecks in access to healthcare and treatment, particularly for persons living with HIV and AIDS in many of these countries. However, in 2013 Buchan, O'May & Dussault (2013) reported that there was a significant change in nurse migration patterns. Due to the economic downturn post 2008, nurses try to hold on to their jobs in a challenging labour market which significantly changes their job-seeking behaviour (Alameddine, Baumann, Laporte & Deber, 2012; Buchan, O'May & Dussault, 2013; Buchan & Seccombe, 2012).

Strategies to address staffing shortages and the high burden of disease include funding support (directly and through initiatives such as the Global Fund), revised migration and emigration policies and technical assistance (through the WHO and bodies such as Médecins Sans Frontières) to strengthen the health systems in many of these countries

(Buchan, O'May & Dussault, 2013; Swart, Chrisholm, Cohen, Workman, Cameron & Blockman, 2013). Physical support for nurses and other practitioners has been initiated to provide practical support to clinicians (Swart et al., 2013). A recently reported success story is the South African National HIV and TB Health Care Worker Hotline run by Médecins Sans Frontières. This Hotline has provided free information on patient treatment to all healthcare practitioners in Southern Africa since 2008. In South Africa, specifically, the need for access to information on HIV and TB treatment has increased, particularly after the introduction of nurse initiation and management of antiretroviral treatment (NIM-ART). During a three-month survey period in 2012 a total of 1479 queries were received from healthcare practitioners of whom 386 were from nurses. Only 254 (66%) of the nurses asking after information on initiation of treatment (20%) or drug reactions (80%) were NIM-ART trained (Swart et al., 2013). Importantly this survey highlights areas for further training of nurses.

Furthermore, due to the high burden of HIV and AIDS in this region, best practices that have been documented by the nursing associations in Southern Africa mainly focus on HIV and AIDS care (UNAIDS, 2003). Without sufficient well-trained and motivated nurses to implement the best practices, these are meaningless though. The practitioners are further compromised as they mostly work in isolation where communication systems or mobile information technologies often are not available to facilitate access to important information at times that vital clinical decisions have to be made. Such technologies enable the practitioner to have access to the most appropriate information at the point of care. It has been reported that the use of mobile information technologies addresses barriers to research utilisation (Doran, Haynes, Kushniruk, Straus, Grimshaw, McGillis, Hall, Dubrowski, Di Pietro, Newman, Almost, Nguyen, Carryer, & Jedras, 2010).

### 2.2.3 Burden of disease and the shortage of health human resources in South Africa

The 2012 WHO report (WHO, 2012) does not reflect any human resources statistics for South Africa, but the WHO does not regard South Africa as a country with a critical shortage

of healthcare providers. The WHO Human Resources for Health (HRH) Discussion Paper indicates that African regions that have more than 39 healthcare providers per 10 000 of the population (Dal Poz, Kinfu, Drager & Kunjumen, 2007). The SANC (SANC, 2013a) database of nurses in the country is inadequate to indicate how many nurses of all categories are actually working at the bedside of the patient at clinical facilities. Combining information from various sources, it appears that only 144,000 of the 213 000 nurses on the SANC register were active in patient care services in South Africa during 2008 (Econex, 2009b). Escalating nursing shortages are reported (George, Quinlan, Reardon & Aquilera, 2012) in spite of a seemingly good growth on the SANC register and rolls (41%) of all categories of newly qualified nurses over the last 10 years as opposed to a 14% population growth over the same period. According to the SANC statistics published in 2013 there has been a 31% growth of newly qualified professional nurses alone over the last ten years as indicated in Figure 2.1.

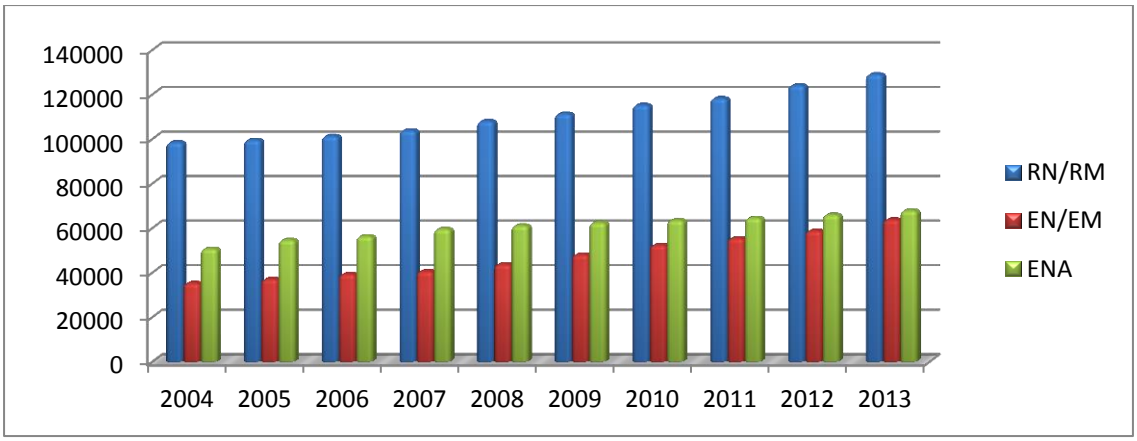


Figure 2.1 Growth of newly qualified professional nurses in the SANC registers 2004 – 2013 (SANC, 2013a)

The decline in some of the specialist qualifications as indicated in Figure 2.2 over the last fifteen years is noticeable and of great concern for specifically two reasons. Firstly, at a time where health policy initiatives require more specialist nurses, this trend does not bode well for a nurse-driven health service, and secondly with the poor performance of South Africa in mother and child health there should not be a decrease in advanced midwifery and

paediatric specialist nurses. However, focusing on an inadequate number of nurses as the human resources challenge in the country may be focusing on the symptom of the problem – there is an urgent need to increase the production of nurses with the right skills and in the right proportions to manage the changing burden of disease and even more importantly, to retain these skills (George et al., 2012; Lubbe & Roets, 2014).

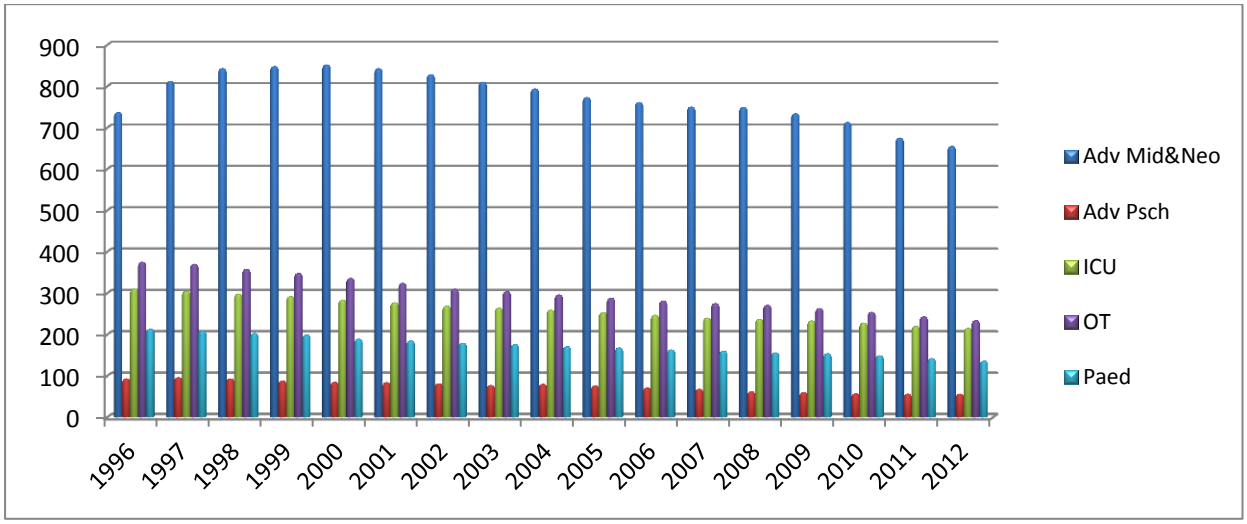


Figure 2.2 Growth of specialist nurses in the SANC Registers 1996 – 2012 (SANC, 2013c)

When speaking to the healthcare practitioners in clinical practice and reading media reports on healthcare services, there is a general view that there is a severe shortage of both physicians and nurses in the country which impacts negatively on health service delivery. This view is supported by the Human Resources for Health Policy drafted by the Department of Health which also projects the need for health professionals into the future (Department of Health, 2011a). In South Africa this challenge is exacerbated by an extensive and changing quadruple burden of disease; poor health outcomes, particularly mother and child care, serious shortages of all types of health professionals and a variety of other factors. South Africa's one of a kind quadruple burden of disease includes HIV/Aids (25%), injuries (12%), communicable/maternal/perinatal/nutritional diseases (22%) and non-communicable diseases (41%) demanding that healthcare practitioners have a broad skills base in order to manage healthcare delivery in the country (Econex, 2009a). The South African health

system is a nurse-based health system making nurses and midwives essential human resources in the delivery of healthcare, further highlighting the urgent need to train more nurses and retain those skills in clinical practice (George et al., 2012; Department of Health, 2011a; Mokoka, Oosthuizen & Ehlers, 2010; UNDP 2010).

There are various other factors that exacerbate the situation in South Africa. General factors such as working conditions, relationships in the work environment and the image of nursing influence nurse recruitment and retention in healthcare settings in the country which have been reported as reasons for emigration (Mokoka, Oosthuizen & Ehlers, 2011; Breyer, Wildschut & Mgqolozana, 2009; Xaba & Phillips, 2001). Organisational factors also contributing to retention or turnover of staff include a lack of safety and resources, policies and the culture within an organisation (Coetzee et al., 2013; Mokoka, Oosthuizen & Ehlers, 2010), lack of managerial skills (Mokoka, Oosthuizen & Ehlers, 2010) and workplace bullying (Cunniff & Mostert, 2012; Landman, Mouton & Nevhutalu, 2001; Steinman, 2003) which will be discussed in more detail later on in this chapter.

In this challenging work environment it has become common practice to read about poor patient care (Oosthuizen, 2013), large claims for negligence by medical practitioners (Nel, 2013) and cases of malpractice or negligence by all categories of healthcare practitioners, but mostly by nurses and midwives (De Bruin, 2011). Media reports on poor nursing and midwifery care include stories about slapping (Comins, 2010; Kruger, 2011) yelling and swearing at patients (Kruger, 2011); patient neglect (Makhabu, 2013; Pienaar, 2013, Venter, 2013a); sexual abuse (SANC, 2008; SANC, 2013b; Van Rooyen, 2013) nonchalant, 'don't care' attitudes (Levine, 2011; Pienaar, 2013) court cases on poor care provision (De Bruin, 2011; Venter, 2013) including objections from healthcare professionals (Miller, 2012). This is not a new phenomenon as SANC statistics on the cases heard by the Professional Conduct Committee of the Council during July 2003 to May 2013 (see Table 1.1) indicated that the

majority (47%, n=394) of cases were related to poor basic nursing care (SANC, 2008; SANC, 2013b).

Going even further back in considering the challenges experienced in healthcare service delivery in the country, a research report by the Ethics Institute of South Africa (EISA) reported in 2001 on the serious misconduct, staff and patient abuse, bribery and other ethics violations in a large tertiary public hospital in South Africa. The report pointed out that this was not conducive to professional and responsible patient care (Landman, Mouton & Nevhutalu, 2001).

### 2.2.4 Nursing Summit 2011

The shortage of nurses and the reports in the public media of poor nursing care supported by the high number of cases heard by the South African Nursing Council were some of the issues highlighted at the National Nursing Summit called by the Minister of Health in April 2011. In their addresses to the nurses present at the Summit, the President of the country and the Minister of Health acknowledged the shortage of nurses and the unacceptable working environments where some nurses, midwives and nurse educators were working. While they both recognised that nurses are the backbone of the health services, they were critical about the attitude and behaviour of nurses. The President, Mr Jacob Zuma, highlighted this in his address to delegates by emphasising that nurses and other healthcare workers have a constitutional responsibility to ensure that our citizens obtain good quality healthcare as it is their constitutional right. He stated that 'I am emphasizing this point because at times, public servants may think that they are doing members of the public a favour, when in fact they are providing services that citizens are entitled to' (Zuma, 2011). It was alleged that nurses behave better and more respectfully towards patients in the private sector institutions than in public sector institutions. This even though it is the same nurses who are employed full-time in the public sector and who work additional shifts in the private sector through nursing agencies.

Nursing agencies were highlighted by the delegates at the Summit as essential to keep continued healthcare service delivery possible in this country due to the shortage of nurses experienced, especially specialist nurses. These agencies supply sessional staff to mainly hospitals where there is insufficient staff to cover all the shifts. Most of the nurses placed by the agencies are already in full-time employment elsewhere and work additional shifts to earn an additional income. The sessional nursing staff therefore comes from the same pool of nurse resources – which may lead to tiredness and burnout that may contribute to the poor attitude and lack of caring reported on by the media. The concern remains that ad hoc placement of staff who may not know the institution may negatively influence the quality, safety, stability and continuity of care (Chu & Hsu, 2011). Both politicians committed their support and stated that no effort would be spared to ensure that the outcomes of the Summit would be implemented to restore the pride and dignity of the nursing profession in our country (Motsoaledi, 2011). The Strategic Plan for Nursing Education, Training & Practice (Nursing Strategy) 2013/14 – 2016/17 (Department of Health, 2013) aimed at addressing the challenges highlighted at the Summit, was launched in March 2013, but months down the line there had been no progress with implementing any of these promises undertaken. By December 2013 notice was given to the profession that the Chief Nursing Officer tasked with the implementation of the Nursing Strategy was appointed and she took office in January 2014.

### 2.2.5 Conflicting reports

Nevertheless, there are conflicting reports on the nursing care provided in South African healthcare institutions. There is information, mostly anecdotal, on good nursing and midwifery care received by members of the public in the same hospitals reportedly providing poor nursing care (FPNL, 2011; Lumadi & Buch, 2011). This is, however, almost never published in the public media. In addition a study by Meiring and Van Wyk (Meiring & Van Wyk 2013) indicated that, contrary to the negative portrayal of the profession by the public media in South Africa, the general public presented a positive response to nursing and

nurses, although nursing was not seen as a career of choice for their children. Another South African study indicated that oncology nurses experienced high levels of job satisfaction, personal growth and inner peace in spite of the absence of certain Herzberg's motivators. This was ascribed to their personal view on life and death, as well as what they gained from their patients (Van Rooyen, le Roux & Kotze, 2008) suggesting that intrapersonal characteristics do influence the work performance and response of nurses to their work environments.

This raised the question whether there was a relationship between nurses' intrapersonal characteristics and their work performance and caring behaviours in the clinical work environment.

## 2.3 LITERATURE OVERVIEW OF RELEVANT CONCEPTS OF THE STUDY

It has to be acknowledged right at the beginning of this discussion that the workforce of today consists of very different generational cohorts (LeDuc & Kotzer, 2009; Shragay & Tziner, 2010). As a result, different mind sets and skills impact on views, values and way of doing things in the workplace. This can create conflict amongst team members if generational diversity is not embraced to complement each other's' skills and expertise and translated into workplace initiatives to achieve this cohesion. In some instances there may be more similarities than differences as highlighted by a study comparing the professional nursing values of students, new graduates and seasoned professionals. This study revealed greater similarities than differences in professional values across the groups. What did significantly differ between the groups was their knowledge of the code of ethics and its relevance to practice (LeDuc and Kotzer, 2009).

Even though the target of the study was nurses and not the systems in which they work, for a more comprehensive picture on the information available on work performance of nurses and their context of work, the relevant national and international literature reviewed is highlighted. Work performance is discussed first.

### 2.3.1 Work performance of nurses

The increasing attention that work performance of nurses was receiving and the focus of the study required a better understanding of the work performance of nurses. Work performance relates to how well the activities undertaken by nurses were performed in their place of employment. Such performance is expected to be in accordance with the work description for the specific position that they were appointed in (Business Dictionary Inc, 2014). Understanding the work performance of nurses is important as it contributes to the success of the organisation, outcomes of care provision and patient satisfaction (Aiken et al., 2002; Palese et al., 2011). Work performance in this study is divided into the dimensions of leadership, critical care (technical nursing skills), teaching/collaboration, planning/evaluation, interpersonal relations/communications and professional development as defined by Schwirian (Schwirian 1978) when she developed a comprehensive instrument to measure work performance (Schwirian, 1978). To achieve good patient outcomes and organisational success, nursing care should ideally take place in a working environment that is conducive to providing safe, quality care, thus a healthy work environment. This research was conducted in the context of work environment as reflected in Figures 1.2 and 2.3. Taking into account that work environment impacts on nurses' work performance, some of the research done locally and internationally on system factors and work environments impacting on nurse work performance is highlighted in this section.

#### 2.3.1.1 Healthy work environments

Healthy work environments are dependent on a variety of elements. In the current economic climate there is increasing pressure to decrease healthcare cost while public expectation is still that safe, high quality care will be delivered. This phenomenon was already highlighted more than ten years ago in two significant reports, namely the World Health Report, 2000 (WHO, 2000) and the Institute of Medicine's report 'Crossing the quality chasm' (IOM, 2001). Both these reports highlighted the need to re-align incentives to balance the often competing

goals of cost containment and quality improvement. Even with the spread of good or best practices in clinical care, the biggest barrier remains the fear factor regarding how much it will cost (Buchan, O'May & Dussault, 2013; Carlisle, 2010; Jooste & Prinsloo, 2013).

Creating a healthy, safe workplace is an essential component of safe, quality healthcare services and was recommended to be a relatively low cost strategy to improve nurse staffing and patient outcomes in healthcare (Aiken et al., 2012; Coetzee et al., 2013). Even so, research in the USA indicated that better nurse staffing improved patient outcomes only if hospitals also had a good working environment (Aiken et al., 2011). The bottom line is that a shortage of nurses challenges the goal of safe, healthy work places, creating a working environment that leads to de-motivation of nurses and other workers, staff turnover and declining quality and safety of care (Aiken et al., 2003; Kamanzi & Nkosi, 2011).

Healthy work environments [or Positive Practice Environments (PPE)] are defined by various stakeholders. Fundamentally it is more than only the absence of negative, abusive or disrespectful behaviours and attitudes of role players in healthcare, and various instruments are available to assess the relationship between nursing work environment and quality outcomes (Siedlecki & Hixson, 2011; Simpson, 2010; Van Laar, Edwards & Easton 2007). The definitions of healthy work environments range from those that focus on anticipating, recognising, evaluating and controlling conditions arising in or from the workplace (Alli, 2008; CDC, n.d.; South Africa, 1993); to those that recognise that lifestyle changes of workers and even their families are also important (Leeds, Grenville & Lanark District Health Unit, 2009); to those that focus on specific working environments such as the health sector (Burton, 2010). Healthy work environments are cost-effective healthcare settings that support excellence and decent work, have the power to attract and retain staff and to improve patient satisfaction, safety and outcomes (Global Health Workforce Alliance, no date). A healthy, positive work environment is characterised by innovative policy frameworks focused on recruitment and retention of staff; strategies for continuing education and upgrading of skills

and competencies; adequate employee compensation; innovative recognition programmes; sufficient equipment and supplies; safe and clean working environments; developing and sustaining compassionate, visionary and inspirational leadership in nursing; total organisational participation and collaborative practice with true collaboration (Baumann, 2007). The WHO defines a healthy workplace as a place where 'everyone works together to achieve an agreed vision for the health and well-being of workers and the surrounding community. It provides all members of the workforce with physical, psychological, social and organizational conditions that protect and promote health and safety. It enables managers and workers to increase control over their own health and to improve it, and to become more energetic, positive and contented' (Burton, 2010).

Healthy work environments for nurses are defined more specifically by other organisations that tend to focus on their specific fields such as practice (AACN, no date); or more specifically on a specialist field in nursing such as critical care (ANCC, no date; Robinson, 2001); or more broadly on a healthy workplace (RNAO, 2008). The RNAO defines a healthy workplace as '...a practice setting that maximises the health and well-being nurses, quality patient/client outcomes, organisational performance and societal outcomes' (RNAO, 2008). This definition was selected as the starting point for this study as the comprehensive conceptual model for healthy work environments developed by the RNAO identifies and defines intrapersonal characteristics of nurses (or other healthcare practitioners) as one of the components influencing a healthy workplace. A description of this model is provided in the next section.

##### 2.3.1.1.1 Comprehensive Conceptual Model for Healthy Work Environments for Nurses

The RNAO has done extensive research on best practice to develop a comprehensive model for developing, implementing and evaluating a healthy work environment for nurses. This Model depicted in Figure 2.3, namely the *Comprehensive Conceptual Model for Healthy*

*Work Environments for Nurses*, when applied, serves to support the excellence in service that nurses are committed to delivering in their day-to-day practice (RNAO, 2008). The RNAO recognises that the nurses' work environment is complex and multidimensional consisting of several components with relationships between all these components (RNAO, 2008).

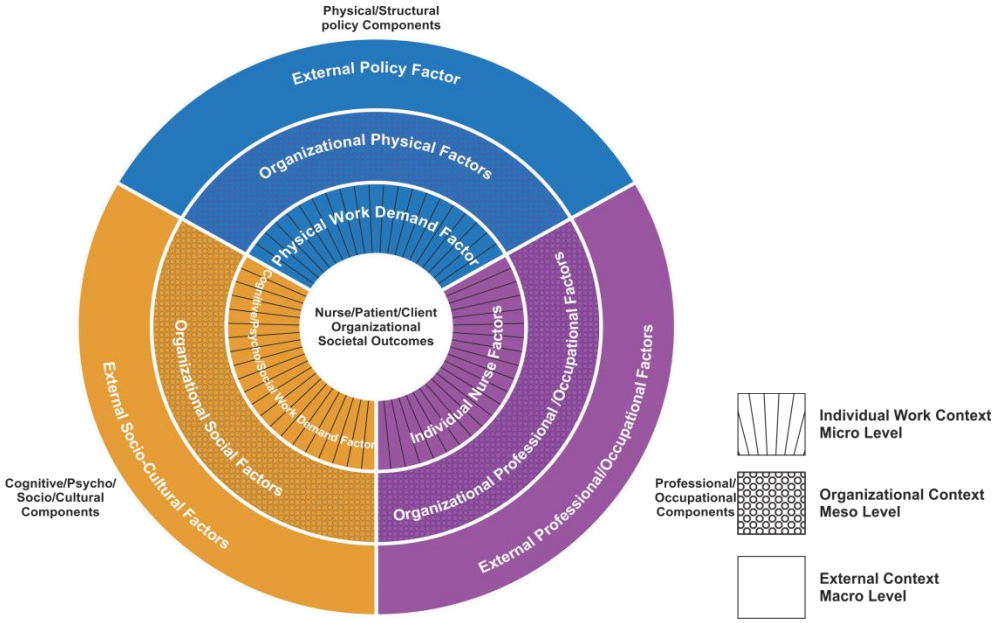


Figure 2.3 Comprehensive Conceptual Model for Healthy Work Environments for Nurses (RNAO, 2008)

A healthy workplace is shaped by the interdependence of components consisting of individual (micro level), organisational (meso level) and external (macro level) system determinants (see also discussion in item 1.9.2). These levels are presented as the three circles in Figure 2.3. The coloured sections crossing the three circles represent the physical, structural and policy component (blue); the cognitive, psychomotor, social and cultural components (yellow) and the professional components (pink). In the centre are the beneficiaries of healthy work environments, namely nurses, other health workers, patients, organisations and systems, and society as a whole. The synergistic interaction among all the levels and components of the model is illustrated by the dotted lines which indicates continuous interaction between the individual and her/his environment and the influence each has on the other. The individual's (in this study the nurse's), functioning is therefore

influenced by interactions between the nurse and her/his environment which includes all these levels. Interventions to promote healthy work environments should therefore be targeted at multiple components of the system, including the individual involved in healthcare delivery (RNAO, 2008). To influence these changes and plan interventions, each of the components have to be understood – hence the reason for this study to understand the influence of nurses' intrapersonal characteristics on their work performance and caring behaviours as reflected as the individual nurse factors in the Professional/Occupational Factors Component of the model in Figure 2.3.

To bring about change in nurses' work environment, the RNAO has developed six best practice guidelines to assist with the transformation of workplaces to create healthy and safer workplaces that will benefit not only nurses, but also other healthcare professionals, patients, organisations and the communities where they practice (RNAO, 2008).

The Comprehensive Conceptual Model for Healthy Work Environments for Nurses provides a framework for organising these best practices. Individually these comprehensive best practice guidelines address aspects of a healthy work environment and their implementation should therefore result in the development of healthy work environments – many of these aspects are highlighted in the literature overview in this chapter.

The underlying assumption of the Comprehensive Conceptual Model for Healthy Work Environments for Nurses is that healthy work environments are influenced by a multitude of factors are supported by an increasing amount of scientific literature particularly in respect of work environment and system factors impacting on healthy workplaces. System factors are briefly discussed next.

#### 2.3.1.2 System factors impacting on work performance

There is sufficient information indicating that challenging work environments have a negative impact on staff retention, the quality of nursing care, patient safety and patient outcomes (Aiken et al., 2012; Lang, Patrician & Steele 2012; Sepeku & Kohi, 2011; Zhu et al., 2012).

Nursing and healthcare delivery is a labour intensive component of service delivery. Adequate staffing and retention of staff in the healthcare sector remain one of the most important factors to maintain healthy work environments as staff highlights insufficient staffing as highly stressful (Jenkins & Elliot, 2004; Lang, Patrician & Steele 2012; Lim, Bogossian & Ahern, 2010; Modiba, 2008). Globally there are cycles of nursing shortages in most countries, except Africa where the shortage is continuously prevalent. This includes the shortage of nurse educators required to train more nurses, which is attributed to global migration of nurses, aging of nurse practitioners, a seeming devaluation of academic programmes, disincentives, reductions in full-time equivalent positions at nursing education institutions, and uncompetitive salaries (Nardi & Gyurko, 2013). This includes the decline of Master's- and doctorally prepared advanced specialist nurses choosing to teach (Van Dyk, Van Rensburg & Tjallinks, 2009). In South Africa, for example, the nature of this phenomenon is observed with salaries of nurse educators employed at universities which are lower than those at public nursing colleges, while colleges are losing staff back to clinical practice mainly due to the implementation of the Occupational Specific Dispensation (OSD) where practitioners with specialist qualifications and experience can earn higher income (Ditlopo, Blaauw, Rispel, Thomas & Bidwell, 2013). The OSD was implemented by Government as a retention strategy for relevant clinical expertise and experience. The shortage of nurse educators presents a challenge to the education and training of new entrants into nursing in the quest to strengthen the nursing profession in terms of skills and numbers (Nardi & Gyurko, 2013).

Global studies indicate that a qualified and committed nursing workforce can improve safety and quality of hospital care – staff retention therefore becomes essential (Aiken et al., 2012; Zhu et al., 2012). Hospitals with health working environments and sufficient nurse staff establishments have improved outcomes with regard to quality and safety of care and patient satisfaction. Hospitals with healthy working environments in this study were those with managerial support for nursing care, good nurse-doctor relationships, participation of nurses in decision-making and organisational priorities on care quality. Research on nurse staffing has shown that each additional patient above four per nurse brings about a 7% increase in the probability of patients dying within 30 days of admission to a hospital. Each additional patient also increased nurses' probability of experiencing job dissatisfaction by 15%, while adding a 23% higher probability of nurses experiencing stress-related burnout (Aiken et al., 2002). It has been reported that surgical patients in hospitals with higher proportions of nurses educated at the baccalaureate level or higher, experienced lower mortality and failure-to-rescue rates (Aiken et al., 2003) and influence willingness to report errors (Kagan & Barnoy, 2013). Investment in learning and development activities for nurses improves outcomes for nurses, the organisation and patients (Johnson, Hong, Groth & Parker, 2011).

A well-known but also critiqued system for excellence in care is the Magnet hospital system where the nurse's role in improving care is emphasised. The Magnet Recognition Program® is an international organisational credentialing programme recognising nursing excellence in healthcare institutions (AACN, no date). The programme is based on research which shows that creating a positive professional practice environment for nurses leads to improved outcomes for staff and for patients. Obtaining Magnet Recognition includes fourteen forces of magnetism organised into five model components, which include requirements for visionary and transformational leadership, empowered nursing structures, exemplary professional practice, new knowledge, innovation and improvements, nursing research and empirical quality outcomes. Quality and safety standards are included in these requirements.

Nurses employed at magnet hospitals have lower burnout rates, higher job satisfaction, and better patient outcomes (Aiken et al., 2002; Estabrooks, Midodzi, Cummings, Ricker & Giovannetti, 2005). The number of hospitals with Magnet accreditation for excellence in nurse work environments has increased (Kelly, McHugh & Aiken, 2011). Furthermore a Canadian study highlights that access to mobile information technologies improves job satisfaction and quality care over time, particularly in long-term settings (Doran et al., 2010). In South Africa there are two accreditation systems that strive to promote patient safety and excellence in care with similar standards to the Magnet accreditation, namely the Council for Health Service Accreditation of Southern Africa (COHSASA) which has existed for over eighteen years, and more recently the National Core Standards of the Department of Health that is being rolled out in government institutions (COHSASA, no date; Department of Health, 2011b).

#### 2.3.1.2 Healthy workplaces, work performance and caring behaviours

Healthy workplaces, work performance and caring behaviours are challenged by a variety of factors as highlighted in item 1.3.1. Nurses in South Africa find themselves in multi-skill settings which could challenge their skill set and threaten workplace health and safety (French, Du Plessis & Scrooby, 2011). However, staff in less complex jobs may experience less challenges, they perceived less autonomy, control and innovation in the workplace which had its own frustration for staff (De Frias & Schaie, 2001). Providing nursing and healthcare by its very nature takes place in stressful situations, particularly in places such as intensive care units or military hospitals. Therefore stressful situations cannot always be avoided, but such stressful situations can become the driving force that stimulates competence and greater perception of accomplishment associated with work (Cronqvist & Nystrőm, 2007; Lang, Patrician & Steele, 2012). This further highlights how nurses respond differently to their working environments supporting the focus of this study.

A large study in several countries indicated that organisational behaviour and the retention of a qualified and committed nurse workforce can improve the safety and quality of hospital care (Aiken et al., 2012). A survival analysis in Korea to estimate survival curve probability of nurses staying in their first job, reported that overall job dissatisfaction had significantly lower survival possibilities than those who reported themselves to be neutral or satisfied. Nurses were also more likely to leave if they were married, worked in small non-metropolitan and non-unionised hospitals with dissatisfaction with interpersonal relationships, work content and physical work environment increasing the potential of leaving their first job (Cho et al., 2012). Shift work is a known stressor for nurses with research indicating that shift nurses have greater difficulty falling asleep with the result that they have higher rates of retiring from clinical work. Endogenous rhythms were rarely considered and a study on this topic highlighted that 'morningness-eveningness' was the strongest predictor of sleep quality and not the shift schedule (Chung, Kuo & Hsu, 2007). Control of the age factor in shift nurses indicated that evening types working on changing shifts had higher risk of poor sleep quality compared to morning types. Greater age and longer years employed in nursing significantly decrease the risk of worse sleep quality. This is one of many aspects that highlight the inter-connectedness of system factors and personal characteristics.

Much has been reported on burnout amongst nurses indicating that work-related stressors lead to burnout (Jenkins & Elliot, 2004; Lang, Patrician & Steel, 2012) which negatively affects productivity (Nayeri, Negarandeh, Vaismoradi, Ahmadi & Faghihzadeh, 2009). A study concluded after a meta-analysis on the relationship between personality variables and burnout, that burnout is consistently related to employee personality (Alarcon, Eschleman & Bowling, 2009). Certain personality traits yielded stronger relationships with burnout than did others, for example, emotional stability, positive affectivity and negative affectivity each had a relatively stronger relationship with emotional exhaustion than did other personality traits. Thus, even when an organisation uses burnout interventions that focus on changing the

work environment such as reducing job stressors, some individuals may still experience high levels of burnout due to their personalities. The prevalence of burnout may increase when structural empowerment does not contribute to nurses' psychological empowerment which influences attitude and behaviour in the workplace (O'Brien, 2011; Peery, 2010) while increased connectedness of patients and nurses increases ability to care for patients, and decreases nurse burnout (Peery, 2010). Work performance is also influenced by nurses' self-image relating to leadership skills as well as the relationship between nurses' self-image and their perception of their public image as being caring (Takase, Maude & Manias, 2006).

While adequate staffing with the right categories of staff improve patient outcomes and nurse well-being, these are not the only factors influencing a healthy work environment and work performance. Nursing skills is a very important contributing factor, but is not addressed in this discussion other than highlighting the view of Zhang et al. (2001) that competence is not only about technical skills, but is inclusive of the underlying personal characteristics of nurses and other healthcare workers. Empowering work environments have empowering structures that provide nurses with access to information, resources, opportunities and support that allow them to provide safe and effective care (Stewart, McNulty, Quinn Griffin & Fitzpatrick, 2010; Lang, Patrician & Steele, 2012). Lack of structural empowerment is also a significant predictor of burnout (O'Brien, 2011). Other factors that allow nurses to use their skills optimally to promote safe working environments include sufficient stock and equipment, well-structured policies, procedures and systems which allow nurses to play a participatory role and value their contributions, effective managers with good leadership skills, good relationships between nurses and physicians, and the educational level of nurses, amongst others (Aiken et al., 2003; Coetzee et al., 2013; Klopper et al., 2012; O'Brien, 2011; Spence Laschinger & Leiter, 2006; Zegers, De Bruijne, Spreeuwenberg, Wagener, van der Wal & Groenewegen, 2011). A supportive practice environment was found to enhance nurses' error interception practice which plays a role in reducing medication errors (Flynn, Liang, Dickson, Xie & Suh, 2012; Kagan & Barnoy, 2013).

There is a wealth of information featuring the impact of working environments on the quality and safety of patient care and how personal characteristics influence nurses' response to their working environments when delivering this care. Ultimately, anything discussed above that impacts on work environments' safety and quality of care, also influences the views and experiences of patients who are the end users of health and nursing care in the systems that nurses are working in.

#### 2.3.1.3 Measuring work performance

Patients want to be treated well, to know that their nurse is competent and knowledgeable, to have high quality care every time and to have nurses who have a caring attitude and make them feel safe and comfortable (Henderson, Van Eps, Pearson, James, Henderson & Osborne, 2007; Peery, 2010). Within a healthy workplace, performance expectations therefore remain high as all stakeholders seek improved quality and affordability when accessing the healthcare system. In view of these expectations and the negative reporting, particularly in the media, this study focused on the individual nurse and her/his work performance – work performance is therefore one of the aspects that was evaluated in this study.

Three different instruments to measure work performance of nurses were identified in the literature. Two were instruments to measure work performance in nursing homes. Based on the public concern about poor nursing home care, a study was done in the USA to develop and validate an instrument for measuring the relationships between multiple dimensions of work environment at a nursing home and the perceived work performance (Temkin-Greener, Zheng, Katz, Zhao & Mukamel, 2009). The second study developed and tested an instrument named the EverCare Nurse Practitioner Role and Activity Scale (ENPRAS), to measure the frequency of the performance of role activities by nurse practitioners providing primary care to nursing home residents (Abdallah, Fawcett, Kane, Dick & Chen, 2005). Both

instruments were found valid and reliable, with the ENPRAS recommended for testing its generalisability for nurse practitioners working in other models of care provision. These instruments did not make sufficient provision for measuring work performance in a hospital's medical or surgical units targeted for this study.

The Schwirian's (Schwirian 1978) Six-Dimension Scale of Nursing Performance (6-DSNP) on the other hand provided a suitable instrument that was used in a variety of countries and studies. The 6-DSNP was used to assess work performance in New Zealand, Uganda and the USA, confirming its usefulness to measure nurses' self-reporting of work performance. Schwirian's 6-DSNP was developed as a 52-item inventory rated on a four-point Likert-type scale (not very well – very well) to fulfil the need for an instrument to accurately and practically assess performance of nursing staff in an easy and fairly quick way. The instrument, which can be used for performance measurement by nurses themselves or others, measures behaviours for frequency and quality of specific nursing actions and includes the following sub-scales: leadership, critical care (technical nursing skills), teaching/collaboration, planning/evaluation, interpersonal relations/communications and professional development (Schwirian, 1978). In Aotearoa, New Zealand, a study was undertaken with a group of recently graduated nurses who completed a one-year entry to practice programme. The study compared self-reported changes in both frequency and quality of performance of nursing behaviours seven weeks after beginning the programme and again seven months later by using a modified version of Schwirian's 6-DSNP. The study reported increases in the quality of nurse behaviours in the domains of critical care, planning/evaluation and interpersonal relations/communication (Roud, Giddings & Koziol-McLain, 2005). A Ugandan study (Nabirye et al., 2011) using the 6-DSNP as one of their instruments determined significant negative relationships between occupational stress and job performance and between occupational stress and job satisfaction. The experience of the nurse, type of hospital and number of children of the nurse, had a statistically significant relationship with occupational stress, job performance and job satisfaction. The type of

hospital (public versus private), the clinical units (obstetrics versus other units) and job satisfaction were significant predictors of self-rated quality of job performance. Job satisfaction was shown to mediate the relationship between occupational stress and job performance. In addition to the instrument being developed in the USA, other studies in the USA also compared new graduate self-appraisals with those of their evaluators six months and one year after graduation indicating that the ratings were significantly higher at one year on the planning/evaluation subscale (Vanetzian & Higgins, 1990). The 6-DSNP instrument was selected for use in this study as a self-report measure to measure nurse work performance.

Interestingly no significant difference between contracted and full-time nurses was found in terms of self-rated work performance by nurses. In contrast, when rated by their supervisors, work performance levels for full-time staff was significantly higher than those of contracted nurses (Chu & Hsu, 2011) which is the view of agency nurses' work performance in South Africa as well. In addition in Australia it was found that self-image had a positive impact on job performance while public image of nurses being caring did not have an effect. This was ascribed to nurses' performance being guided by their motivation to maintain high standards of practice (Takase, Maude & Manias, 2006). This does leave the impression that intrapersonal characteristics have an influence on work performance.

However, in the Netherlands it was found that nurses' and physicians' self-assessment of care for deteriorating patients on medical wards was sub-optimal (Ludikhuize et al., 2012). Care providers mostly rate the care they provided to patients in the hours preceding a life-threatening adverse event as good. Independent experts had a more critical appraisal of the care provided in terms of timely recognition. In addition to this, new graduate registered nurses tend to rate self-competence higher than experienced registered nurses rate the new graduates' competence when graduating from nursing education institutions (Reid, 2010). These findings seem to suggest that another view, such as from patients as recipients of

care, should be obtained on the care provided. This view is supported by the Consumer-Purchaser Disclosure Project in the USA that has developed criteria for meaningful and usable measures of performance (Global Health Workforce Alliance, 2011). The criteria are representative of the perspectives of those who receive the care, further suggesting that patient consultation should be done when measuring healthcare worker performance. The criteria are (Global Health Workforce Alliance, 2011):

(i) Make consumer and purchaser needs a priority in performance measurement.

(ii) Use direct feedback from patients and their families to measure performance.

(iii) Build a comprehensive 'dashboard' of measures that provides a complete picture of the care patients receive.

(iv) Focus measurement on areas of care where the potential to improve health outcomes and increase the effectiveness and efficiency of care is greatest.

(v) Ensure that measures generate the most valuable information possible.

(vi) Require that all patients fitting appropriate clinical criteria be included in the measure population.

(vii) Assess whether treatment recommendations are followed.

(viii) De-emphasise documentation (check-the-box) measures.

(ix) Measure the performance of providers at all levels (e.g., individual physicians, medical groups, ACOs).

(x) Collect performance measurement data efficiently.

Measurement of work performance seemingly could be more balanced if the consumers of the service, namely patients in this case, are involved in work performance measurement. This study therefore involved the view of patients through completion of an instrument on caring behaviours of nurses during their work performance. Patients' view of the care they received through their perception of the caring behaviours of nurses was therefore together

with the nurses' self-report on the quality of their work performance, used as the dependent variable for the study.

### 2.3.2 Measuring caring behaviours

The caring role and caring behaviours of nurses are instrumental in achieving patient satisfaction in institutions (Palese et al., 2011) and were identified as the main reasons for nurses to take up nursing as a profession (Newton et al., 2009). The philosophy of Roach (Roach 1987) features caring behaviour in nursing as the five 'C's which include compassion, competence, confidence, conscience and commitment. This philosophy makes it clear that you do not have to like the person receiving care, but that you have to respond to them in a caring and respectful manner, similar to what the Bill of Rights in the Constitution of the Republic of South Africa requires from its citizens and therefore also health workers. This philosophy highlights that care can never be only 'skill (competence) with a skin on' or without a human face (compassion) (Roach, 1987; South Africa, 1996; Tschudin, 2003). This is supported by the view that competence is not only about technical skill, but also about the underlying characteristics of practitioners which influence how they execute their competence (Idvall, Acaroglu, Antunes da Luz, Efstathiou, Kalafati, Kanan, Nleino-Kilpi, Lemonidou, Papastravrou, Sendir, & Suhonen, 2012; Zhang et al., 2001).

Sadly, it has been found that the caring behaviour of nurses is affected by emotional distress after entry into the healthcare environment (Jones, 2005), especially by nursing students (Van der Wal, 2006) and newly qualified nurses as they establish their professional identities (Deppoliti, 2008). Emotional distress after entry into the healthcare environment, was associated with both the dispositional characteristics of the individual and, indirectly, with the managerial support from both academic and clinical sources (Jones, Smith & Johnston, 2005). Other factors from the formal education environment as well as the clinical environment were found to erode the caring concern of student nurses (Van der Wal, 2006).

In addition to the special problems experienced by students, aspects relating to self (personal boundaries, bias, lack of self-knowledge; becoming too involved); emotional involvement; physical exhaustion; theory, practice and teaching; administrative issues; working conditions (work load, lack of collegial cooperation & communication, having to compromise, language) and patient characteristics (attitudes, aggression, lack of appreciation nagging/moaning patients) also contribute to erosion of the ability to care (Van der Wal, 2006).

An exploration was done of how nurses view caring in their nursing practice and its role in the construction of their professional identity through various passage points (Deppoliti, 2008). Newly qualified nurses have to negotiate a variety of factors when they enter into practice which includes finding a niche, navigating conflicts of caring, relationships with medical practitioners and other multi-professional team members, development of new skills, and eventually becoming a charge nurse. Throughout this process they are challenged by an overwhelming sense of responsibility to patients, the need to be perfect, authority issues in a hierarchical system, relationships with other staff members, and continual learning. The balance of these challenges and the support nurses received in the end influenced the successful negotiation of these developmental stages and the construction of their professional identity (Deppoliti, 2008). These findings further support the link between personal characteristics, working environment and work performance seen throughout the theoretical perspective of the study topic.

An instrument that has been used with great success amongst nurses and patients to assess caring behaviours is the Caring Behaviours Inventory (CBI). The CBI is an empirical tool originally developed by Zane Wolf in 1981 (Wu, Larrabee & Putman, 2006) based on the theory of Jean Watson (Watson, 2009), subsequently shortened (Wu, Larrabee & Putman, 2006) and used in several research studies to measure nurse caring behaviours (Burtson & Stichler, 2010; Mlinar, 2010; Palese et al., 2011; Peery, 2010). The Inventory was

developed from caring literature in general and Watson's Transpersonal Caring Theory specifically. The CBI is currently a 24-item instrument that addresses assurance of human presence, respectful deference to the other, professional knowledge and skill, positive connectedness and attentiveness to the other's experience (Wolf, Giardino, Osborne & Ambrose, 1994; Wu, Larrabee & Putman, 2006). The CBI was used in different groups in the studies highlighted in this section. It is worth noting that a systematic review of comparative studies highlighted that there is considerable evidence of the assertion that there is no congruence of perception between patients and nurses with regard to which behaviours are considered caring; therefore intended care is not always perceived as such by the patient (Palese et al, 2011).

According to Burtson and Stichler (Burtson & Stichler 2010) promoting nurses' internal motivation to care may increase the frequency of caring behaviours and therefore also patient satisfaction. A correlational study of nurses in a medical centre in the USA investigated the relationships between compassion satisfaction, nurse job satisfaction, stress, burnout and compassion fatigue to nurse caring using four valid and reliable research instruments, namely CBI, Mueller McCloskey Satisfaction Scale, Professional Quality of Life Scale and the Stress in General Scale (Burtson & Stichler 2010). A statistically significant relationship was shown between nurse caring and compassion satisfaction, nurse job satisfaction, stress and burnout as well as between the nurse caring subscale of knowledge and skill and compassion fatigue. Compassion satisfaction and nurse satisfaction with social interaction opportunities related to work, explained the variability in nurse caring. Application of the CBI amongst first and third year students in Slovenia, indicated that many of the nursing students strongly agreed with CBI items describing nursing but that caring behaviours were more important for the third-year group who were also older than the first-year group (Mlinar, 2010). In a descriptive and correlational study in six European Countries (Czech Republic, Cyprus, Finland, Greece, Hungary, and Italy) using CBI-24 and the Patient Satisfaction Scale patient satisfaction with nursing care was high. Patients indicated that

nurses performed caring behaviours between very frequently and always. A positive correlation emerged between CBI-24 and PSS highlighting that caring behaviours performed by nurses determine a consistent degree of patient satisfaction (Palese et al., 2011). The CBI is therefore suitable for use in both nurse and patient populations in research.

While these studies were performed in other countries very different from South Africa, the use of the CBI for patients to assess how nurses performed patient care in clinical practice, provides a useful instrument for this study to obtain patients' views of the nursing care they have received.

## 2.4 INTRAPERSONAL CHARACTERISTICS INFLUENCING WORK PERFORMANCE

While we have seen that the workplace has an influence on the work performance of nurses, the literature has also revealed that less has been documented on the way that intrapersonal characteristics may influence how nurses perform their work, particularly in South Africa. Although all nurses know that they have to understand the patients' bio-psycho-social needs to deliver patient-centred care, some nurses do this more effectively than others. Zhang et al. (2001) have pointed out that competence includes the underlying personal characteristics of people which influence the way that they implement their theoretical and clinical skills in the practice situation. Furthermore, personal attributes are reported to have an effect on nurses' assessment of individualised patient care, which can become beneficial when context-dependent recruitment decisions are required (Idvall et al., 2012). The available literature highlights several instruments measuring the influence of specific intrapersonal characteristics on nurses' work performance that could be used for a study in South Africa. The next section focuses on the influence of intrapersonal characteristics on nurses' work performance.

### 2.4.1 Professional values

Reading the media reports and listening to the debates taking place at nursing conferences as well as the 2011 South African Nursing Summit, all emphasise the importance afforded to the professional values of nurses and the perceived gap between the ideal of professional values and what is happening in practice. More than 15 years ago Taylor pointed out that nurses need moral competency which refers to their ability to live up to a personal moral code and role responsibilities (Taylor, 1995). As individuals, our behaviour is guided by personal beliefs, principles and values generally obtained from our environments where we were raised as children. We bring these to our careers as we enter nursing education programmes. The transfer and internalisation of the professional values of the nursing profession, particularly during basic education programmes, constitute the foundation of professional development. This socialisation process applied during nursing education involves the modification of personal values as well as the internalisation of the professional values of the profession and is a process which takes time (Shih et al., 2009). This view is supported by a Turkish study using a different scale amongst midwives indicating that the ranking of professional and personal values was changed by the process of education (Özcan, Akpinar & Ergin, 2012). However, a study by LeDuc and Kotzer (2009) did not support the notion that experience is necessary to develop professional values. Both the studies by Shih et al. (2009) and Özcan et al. (2012) highlighted the importance of ethical teaching and, in particular, the need to prepare nurses for their ideals and beliefs to be challenged in clinical practice. Another Turkish study examined the relationship between nurses' ethical decision-making levels and their professional behaviours. It was found that nurses in clinical practice facing ethical problems, did consider principled thinking while making ethical decisions but not at the expected level. Results indicated that nurses' ethical decision-making levels are related to their professional behaviour level and that decision-making skills can be strengthened if professionalism is strengthened (Cerit and Dinç, 2012).

While professional values are learned during nursing education, they are developed in clinical settings through personal experiences of practitioners involved in the clinical setting (Weis & Schank, 2000). In clinical practice, nurses fulfil a variety of roles and responsibilities and the extent to which these roles are fulfilled is influenced by the nurse's professional values. Professional values serve to guide delivery of nursing care and decision-making in the workplace. The professional values newly learned during education are particularly vulnerable because they often are not clarified yet, or may change or be discarded once employed on completion of the educational programme (Cerit & Dinç, 2012; Kubsch, Hansen & Huyser-Eatwell 2008). But it is also a well-known fact that in South Africa work environments are not ideal (Coetzee et al., 2013) and can be quite chaotic at times when our professional and personal values are challenged daily. It becomes important to understand nurses' level of awareness of the role of their professional values in their day-to-day provision of patient care.

An American programme evaluation study (Leners, Roehrs & Piccone, 2006) used the Nurses Professional Values Scale (NPVS) by Weiss and Schank (2000) to measure professional values amongst undergraduate nursing students on entering and exiting their education programme. This scale is derived from the American Nurses' Association (ANA) Code of Practice to measure nurses' professional values with a five-point Likert scale. The study indicated that values with the highest or lowest values on entry, remained those rated highest or lowest on exit from the programme with the addition of patient advocacy amongst the higher rated values on exit. Items highly ranked were those aspects of practice under nurses' control or the characteristics of the nurse-patient relationship. All ratings on exit increased significantly except for the items participating in nursing research and providing consumer education. Furthermore, there was a significant difference in perceived professional values according to level of nursing education, position or title, and professional organisation members. The highest level of perceived professional values was found among RN-BSN students (Kubsch, Hansen & Huyser-Eatwell, 2008). The NPVS was revised

(NPVS-R) in 2009 to a 26-item instrument with a five-point Likert scale with all items phrased in a positive direction (Weiss and Schank, 2000).

Both the studies in Turkey and America were based on the nurses' code of practice (Leners, Roehrs & Piccone, 2006; Özcan, Akpinar & Ergin, 2012). Because nurses' personal value systems shape the development of their professional values, a study was undertaken in Taiwan to identify culturally congruent values for their nurses. This study identified six prominent values, namely caring with a humanistic spirit, professionally competent and holistic care, personal and professional growth, experiencing the give-and-take through caring for others, financial advancement to achieve socio-economic recognition, and raising public awareness of health promotion. Secondary findings of the study related to the uptake of these professional values which were influenced by multiple perspectives, acquiring nursing values through self-realisation, recognising professional values through professional competency and humanistic concerns, and fulfilling these values through self-actualisation (Shih et al., 2009).

The ongoing provision of safe, quality patient care requires strong professional values. The NPVS-R was selected for use in this study to measure the professional values of nurses in clinical practice. The revised instrument presents a five-factor structure including caring, activism, trust, professionalism and justice and showed high validity and reliability (Weiss & Schank 2009). Furthermore, the five factors of the instrument and the questions in the questionnaire relate well to the draft SANC Charter of Nursing Practice consulted with the profession during 2004 (SANC, 2004), elements of the SANC Code of Ethics for Nursing Practitioners in South Africa (SANC, 2013d) as well as the philosophy of the Bill of Rights of the South African Constitution (South Africa, 1996).

### 2.4.2 Personality

As highlighted in the previous section professional values can be learned during educational programmes and are developed through personal experiences over time in clinical practice.

An important element in this development is how we as individuals engage with the theoretical content and the clinical practice situation where we are placed and ultimately internalise these values. This is dependent on our personality and intrapersonal characteristics which influence how we engage and respond in the profession and clinical practice. Dunn, Elsom & Cross (2007) argued, for example, that there may be direct relationships among mental health nurses' self-efficacy and their degree of internality or externality (locus of control) and their ability to safely and effectively manage aggressive incidents. It is often assumed that smarter people will be more likely to be successful in their jobs, but that is only partly what is required to be a 'good' nurse. Cognitive ability is part of selection criteria to enter into nursing programmes and at many nursing education institutions, psychometric testing is done to select the 'most suitable' candidates into the nursing education programme. Interestingly, while personality assessment may have a role in the process of recruitment of anaesthetists or those interested in rural medicine, earlier studies stated that it remains uncertain whether it is efficient to include personality testing for medical students entering medical school programmes (Eley, Young & Przybeck, 2009; Kluger, Watson, Laidlaw & Fletcher 2002).

Personality and intrapersonal characteristics provide a wide range of other characteristics that could make one applicant more suitable for selection into nursing than another. Work performance in nursing is therefore said to be composed of the knowledge, skills and attitudes to perform and fulfil the responsibilities of being a nurse (Muller, 1998). Throughout the literature review presented in this chapter links to personality and certain intrapersonal characteristics are seen, for example that employee personality is consistently related to burnout (Alarcon et al., 2009); self-mage (Takase, Maude & Manias, 2006); job performance (Judge & Hurst, 2007a; Judge, 2009); job stress (Brunborg, 2008); job satisfaction (Chang, Lin & Change, 2010; Gurková, Soósová, Harkov, Žiaková, Šerfellová. & Zamboriová, 2012; Li, Lin & Chen, 2007; Van Wyk, Boshoff & Celliers, 2003); empathetic tendency (Ozcan, Oflaz & Sutcu Cicek, 2010); perceptions of job demands (Jones, SMith & Johnston, 2005);

typologies of professional identity (Hensel, 2014). and non-verbal sensitivity of medical students (Hall, Roter, Blanch & Frankel, 2009). Furthermore, it has been found that work personality appears to be an important construct related to an individual's confidence to meet the contextual demand of the work environment and length of employment tenure (Strauser, O'Sullivan & Wong 2010). This is supported by the belief that the narrow skills-based definitions of competence are no longer acceptable in modern times with the rapidly changing healthcare landscape as it does not take into account the underlying intrapersonal characteristics of practitioners. Zhang et al. (2001) argue that competency and competencies are person-related, meaning that it is the underlying characteristics of individuals that lead to effective and/or superior performance in a job. In this sense competence refers to aspects of the job that a person can perform and competency as an individual's behaviour underpinning competent performance (Woodruffe, 1993). In reviewing critical incidents in clinical practice as reported by experienced nurses in China, Zhang et al. (2001) identified the top ten competencies of nurses as interpersonal understanding, commitment, information gathering, thoroughness, persuasiveness, compassion, comforting, critical thinking, self-control and responsiveness. These compare well with the Roach 5Cs of caring referred to earlier. Two characteristics highlighted that led to incompetent performance were nurses reporting that they did not have self-control and were not thorough enough (Zhang et al., 2001).

Specific tests for personality traits are available. An example is the Structured Interview of Personality Organization (STIPO) (Stern, Caligor, Clarkin, Critchfield. Horz, Maccornack, Lenzenweger & Kenrberg, 2010); or the 16PF Personal Career Development Profile (PCDP) which is a computer-generated interpretive report based on a sixteen item Personality Factor Questionnaire – fifth edition (16PF5) (Walter, 2007). This report summarises the career strengths of a person based on aspects of his/her personality. It also matches the respondent to careers in which people with similar personality traits are successfully employed. The instrument can be used for a variety of applications including career and

personal counselling, employee and manager training and development, personnel selection, and career transition coaching. Such instruments were not used in this study due to cost, the requirement to have certified persons to conduct and analyse the tests and limited access by educational and other institutions in future.

The Core Self-evaluations Scale (CSES) on the other hand, is a direct and relatively brief measure of a broad, integrative personality characteristic consisting of self-esteem, generalised self-efficacy, neuroticism and locus of control which is called core self-evaluations. Research suggests that core self-evaluations (CSE) explains much of the overlap among these characteristic measures while predicting many applied outcomes better than the individual characteristics (Judge & Bono, 2001; Judge, Erez, Bono & Thoresen 2002; Judge, 2009). CSE is a fundamental evaluation that people make of themselves and their functioning which is broader than an appraisal of only one's self worth. CSE encompass four traits:

(i) Self-esteem reflects a person's overall appraisal of his or her own worth.

(ii) Generalized self-efficacy is defined as an individual's estimate of his or her own ability to perform well and handle a variety of situations. Individuals high in generalised self-efficacy are more likely to take on new tasks that allow for growth in their ability and are more persistent than those low in generalised self-efficacy.

(iii) Neuroticism, one of the 'Big Five' personality characteristics, is defined as an enduring tendency to experience unpleasant emotions such as anger, anxiety or depression easily. Persons high in neuroticism react more negatively to stress, are prone to anxiety and susceptible to feelings of helplessness. Neuroticism as part of core self-evaluations is conceptualised as emotional stability.

(iv) Locus of control indicates a tendency for individuals to attribute life's events to their own doing or to outside forces beyond their control.

Persons with positive CSE appraise themselves and their functioning in a consistently positive manner across situations – those with high CSE tend to perform better in their jobs, are more satisfied with their jobs and lives, successful in their careers, report lower levels of stress and conflict, cope better with setbacks and can better capitalise on opportunities, thus making CSE a very good basis for predicting typical levels of work performance (Judge, Lock & Durham, 1997; Judge, 2009). In contrast those with negative CSE tend to view themselves as less worthy than others, dwell on their failures and see themselves as victims of their environment (Judge, Lock & Durham, 1997; Judge, 2009). In addition it was found that parents with occupational prestige (both parents work, have higher education levels and income) and higher secondary school grade point average also contributed to higher levels of success as working adults (Judge & Hurst, 2007b). Considering all this information suggests that highest levels of success are produced by both favourable circumstances as well as the right temperament as could be measured by CSE for the work at hand. Reflecting on some of the work environments that nurses find themselves in, this description provides a clear indication of the value that this instrument would bring to this study.

The CSES has been used extensively in research amongst nurses, for example related to burnout (Spence Laschinger & Finegan, 2008) and conflict management (Almost et al., 2010). The instrument has been used in a wide variety of other environments such as burnout amongst academia (Alarcon et al., 2009; Lian, Sun, Li & Peng, 2014) and in a study in South Africa to explore the relationship between CSES and Black Consciousness amongst adult Zulus in Zululand (Dodd & Snelgar, 2011). This instrument does not require certified persons to do the test and is freely available in the public domain which makes it accessible to be used for this study.

### 2.4.3 Emotional intelligence (EI)

Emotional intelligence (EI) is becoming an increasingly popular concept in professional settings, especially for the service professions as it plays an important role in relationships.

The concept originated in 1920 promoted by Thorndike as social intelligence which was extended by Gardner in 1993 to include intrapersonal and interpersonal components which all refer to the capacity of people to control their feelings and to interact with others. In 1990 Salovey and Mayer devised the phrase emotional intelligence as a subset of social intelligence which refers to the ability of persons to regulate their emotions (Killian, 2012). A variety of tests were developed to test these phenomena (Austin, 2010, MacCann & Roberts, 2008; Morrison, 2008; Whitworth, 2008). EI is a mixture of emotional and interpersonal competencies which affects one's behaviour, thinking and interaction with other people. It is the ability to effectively process, use, understand and manage emotion information and may contribute to well-being (Burrus et al., 2012). It is emphasized as an important capacity which represents a level in the evolution of one's thinking about the link between emotion and reason, which is considered to be a form of intelligence (Burrus et al., 2012; Salovey & Grewal, 2005).

EI consists of ability and trait dimensions which have different measurement methods (Austin, 2010). Four related sets of abilities are distinguished in EI ranging in complexity from relatively simple emotion processing skills (emotion perception) through to more complex and socially contextualised abilities such as understanding the relationship between different emotions, time courses and situations (emotional understanding and the ability to manage or regulate the experience) or generation of emotions (emotion management). These have a rough hierarchical order where abilities in the higher dimensions (understanding and managing emotions) are dependent on the abilities in the lower dimensions (e.g. recognising emotions) (MacCann, Pearce & Roberts, 2011). To date the four dimensions of the hierarchical model (See Figure 2.4) of EI have been operationalised mainly in the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) battery which identified the two highest branches of EI as Strategic EI and the two lower dimensions (emotion perception and emotion facilitation of thought) as Experiential EI (Mayer, Salovey, Caruso & Sitarenios, 2001; MacCann, Pearce & Roberts, 2011).

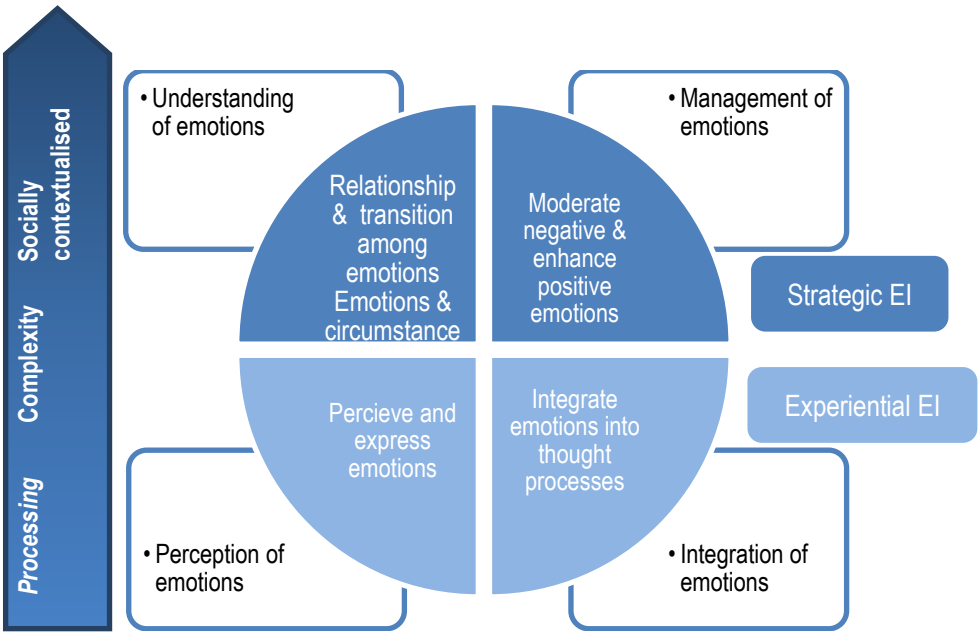


Figure 2.4 EI traits (model developed based on information from MacCann, Pearce & Roberts 2011)

An analysis of the literature suggests that the modern demands of nursing draw on the skills of emotional intelligence to meet the needs of direct patient care and cooperative negotiations within the multidisciplinary team (McQueen, 2003). A positive relationship between high levels of EI and the collaborative conflict handling style, and negative with the accommodating conflict-handling style, highlights the necessity for nurses working in a highly stressful occupation to develop competencies of EI to understand how to effectively handle conflict amongst other emotions. This will play a significant role in relationship management, appropriate conflict management and the ability to alleviate conflict and stress in the workplace (Morrison, 2008). A South African study found that older registered nurses with more experience in critical care appear to have a higher range of emotional intelligence (Towell, Nel & Müller, 2013). EI is particularly important for nursing leadership because leaders who possess EI appear to be fully aware of how important other people are for their personal and professional well-being, show appreciation for contributions by others encouraging a healthy climate for information sharing, decision-making and expression of opinions and views. EI should be considered for integration into nursing research, education

and practical settings provided that there is a good understanding of the concept (Akerjordet & Severinsson, 2010).

A range of studies have been published related to the EI in medical students highlighting that EI measurement appears to be a risky tool for the selection of medical students (Brannick et al., 2009); males had higher EI scores than females and Asian students had higher EI total scores than White students (Carr, 2009). No significant differences in EI were found between students entering primary care and non-primary care specialties and average MSCEIT scores. Researchers expressed concern about this as they believed that the medical profession requires practitioners with well-developed EI (Borges et al., 2009).

Similar studies have also been conducted amongst other groups, including Italian high school teachers. Significant differences in EI emerged with differences in age and gender with younger teachers having higher levels of EI and women scoring higher on the interpersonal dimension. Teacher self-efficacy was best explained by the intrapersonal dimension. The results of the study suggest a link between EI and self-efficacy beliefs in teachers (Di Fabio & Palazzeschi, 2008). Evaluation of demographic characteristics amongst Chinese business students indicated that EI scores did differ when factors such as age, class, foreign language course work, resident city size and family income were considered (Margavio et al., no date).

Current research focuses mostly on ability EI which is dominated by the Mayer-Salovey-Caruso EI Test (MSCEIT) with results also available for its predecessor the Multi-factor Emotional Intelligence Scale (Apker, Propp, Zabava, Ford, Hofmeister, Scudder & Edmunds, 2006). Both tests are based on a theoretical model which divides EI into perceiving, using, understanding and managing emotions. Various issues have been raised by critics of MSCEIT and there was a lack of alternatives for this test as within the fields of intelligence and personality, researchers can select from a wide range of tests as is possible for trait EI as well. The development of the Situational Test of Emotion Management (STEM) and

Situation Test of Emotional Understanding (STEU) started to address this situation by developing targeted instruments to evaluate specific traits of EI (Austin, 2010; MacCann, Pearce & Roberts 2011). These instruments and their assessment are freely available in the public domain. Short forms of both instruments have been developed for researchers to use in studies of emotional intelligence (MacCann & Roberts, 2008; MacCann & Roberts, 2010).

These studies seem to suggest that EI is an important element for successful performance in healthcare, and specifically patient care, where work performance depends on nurturing, human relationships and interaction. This not only applies to patient care, but also to relationships with colleagues, supervisors and subordinates. As nurses are expected to manage a variety of their own emotions in the clinical situation in their interaction with patients and other role players, STEM as one of the Strategic EI abilities, was selected for use in this study as it is freely available in the public domain and does not require experts to interpret the results of the instrument.

### 2.4.4 Empathy

Baron-Cohen (2003) suggests that the mind has two major dimensions of which one is empathising and the other systemising. Empathising is described as more characteristic of female brains which relates to an understanding of the social world. Systemising on the other hand is more characteristic of the male brain and is related to understanding how things work and the rules to explain the way things work. Nursing has since time immemorial been described as a caring profession and therefore the concern about the media reports on nursing that negatively impacts on the image of the profession.

Empathy is seen as an essential professional ability and is described as a multidimensional concept consisting of emotional, cognitive, moral, behavioural and relational dimensions. In a nutshell, it refers to dispositional empathy which involves the ability to understand and share in the feelings of others. Two levels of empathetic attitude and communicative ability can be distinguished, namely empathetic communication and empathetic tendency.

Empathetic communication requires both emotional and cognitive components and is reflected as an observable and teachable skill that can be learned by students in nursing. Empathetic tendency on the other hand is described as the person's potential to understand the feelings of the person who has problems and the wish to help him or her. It is based on personality characteristics and is related to helping behaviour, and higher empathetic tendency increases the capacity for an empathetic approach (Guan, Jin & Qian, 2012; Öz, 2001; Özcan, Oflaz & Sutcu Cicek 2010). Research has shown that education and personal characteristics affect both empathetic communication skills and empathetic tendency (Norfolk, Birdi & Walsh 2007; Öz, 2001; Reynolds & Scott, 1999; Stepien & Baernstein, 2006).

Practitioners in clinical practice who exhibit an empathetic attitude are said to increase the quality of care and have a positive impact on the healing process (Ozcan, Oflaz & Sutcu Cicek 2010). Empathy was also found to be associated with improved patient outcomes and greater satisfaction with care (Ward et al., 2012). A longitudinal study conducted in the USA amongst undergraduate nurses included the completion of the Jefferson Scale of Physician Empathy at the beginning and end of the academic year. A statistically significant decline in empathy occurred in the total sample with a greater decline in scores amongst Asian students as well as those with previous degrees in business and the sciences. More importantly, as students had more clinical exposure, they demonstrated a much greater decline in empathy scores over the year than those who had limited clinical experience during the year (Ward et al., 2012). This finding is supported by a Chinese study which found that registered nurses scored significantly lower on the Empathy Quotient (EQ) than students did when the effects of age were controlled (Guan, Jin & Qian, 2012). This trend is further supported by a cross-sectional and a longitudinal study in Turkey performed to determine the difference in the empathetic skills and empathetic tendency of nursing students in the successive years of undergraduate nursing education. The Empathetic Communication Skills Scale (ECSS) and the Empathetic Tendency Scale was used for this

study. In both studies an increase in the ECSS and the ETS was observed. Fourth-year students had higher empathetic skills levels while newly registered students had a higher empathetic tendency score. While findings show that empathetic skills were developed during undergraduate nursing education programmes, empathetic tendency showed a decline during their period of education (Ozcan, Oflaz & Sutcu Cicek 2010). Midwifery students had higher empathy levels than students nurses and students in emergency health process and older students between 26 and 35 years of age being more empathetic (Williams, Brown, Boyle, McKenna, Palermo & Etherington, 2014)

The incorporation of an assessment tool such as the Personal Qualities Assessment (PQA) may have positive implications for widening access and the objective selection of suitable medical students resulting in the training of doctors who are more representative of the community at large (Lumsden, Bore, Millar, Jack & Powis, 2005). This tool consists of a battery of psychometric tests to measure cognitive ability, personality traits and moral/ethical reasoning and could be considered for nursing recruits. The case is made that selecting the 'right' students may lead to more caring professionals.

The Empathy Quotient (EQ) is a relatively new but comprehensive instrument widely used to measure empathy. The initial 40-item EQ and its shorter 22-item version have been validated in studies with a wide variety of respondents (Baron-Cohen & Wheelwright, 2004; Wakabayashi et al., 2006). Interestingly no sex differences were reported in social skills even though it was expected that the higher female EQ would show greater sensitivity to social situations and better social skills (Muncer & Ling, 2006). The EQ-Short Form validated by Guan, Jin & Qian (2012) among Chinese nurses and nursing students, found that qualified nurses reported significantly lower levels of empathy than students, no significant gender differences and that EQ was related to several personality types – those with a high EQ may be assertive, happy-go-lucky and self-controlled. These results are consistent with findings of previous studies which showed that the most empathic students are inclined to be more assertive, less narcissistic, less self-focused and more sensitive (Kalliopuska 1992;

Watson et al., 1984). This discussion recognises the importance of empathy in the provision of nursing care and the EQ-Short Form was therefore selected for use in this study.

Gerdes, Lietz and Segal (2011) argue that instruments currently being used to measure empathy do not reflect the recent breakthroughs in neuroscientific scholarship on mirror neurons and the importance of self-awareness and emotion regulation in experiencing empathy. Using fMRI equipment neuroscientists say that when a person sees another person's actions, his or her body unconsciously and automatically respond as if the actor is not just an observer – a phenomenon called mirroring. As one observes or listens to another, the neural networks in the brain are stimulated by a 'shared representation' resulting in inner reflection or simulation of the experiences of the person being observed. They argue that the full extent of empathy is not only a feeling, but an experience that culminates in a decision on what to do with the empathetic feelings and thoughts that were aroused. Based on this the authors developed a comprehensive framework of empathy consisting of three components, namely affective response to another's emotions and actions; the cognitive processing of one's response and the other's perspective; and the conscious decision to take empathetic action. This led to the development of a self-report questionnaire, the Empathetic Assessment Index (EAI) with five constructs consisting of affective response, perspective taking, self-awareness, emotion regulation and empathic attitudes. This instrument was still in development and not considered for use in this study (Gerdes, Lietz & Segal, 2011).

### 2.4.5 Job involvement

With the shortage of nurses, employers implement strategies to keep turnover to a minimum. Retention of staff is improved by organisational identity of employees which, amongst others, improves work performance. Organisational identification is an important employee attitude influenced by job involvement of employees (Katrinli et al., 2008). Job involvement reflects a person's psychological identification and self-esteem, participation and performance in their

work which contributes to organisational identity (Katrinli et al., 2008; Permarupan, Mamun & Saufi, 2013; Takase, Maude & Manias 2006). Job involvement and organisational commitment are two separate constructs showing different aspects of a person's attachment to work (Hallberg & Schaufeli, 2006). Job involvement is the degree to which the job situation is central to the person and her/his identity. An instrument developed to measure job involvement and used extensively in research all over the world, Kanungo's Job Involvement Scale identifies these two concepts by items such as (Kanungo, 1982):

(i) centrality of work in daily life with statements like 'The most important things that happen to me relate to my job' and

(ii) affective identification with statements like 'For me, work is only a small part of what I am.'

A Turkish study exploring the antecedents of organisational identification supported the notion that organisational identification is related to job involvement (Katrinli, Atabay, Ganay & Gyneri, 2009). While job dimensions are not directly related to organisational identification, two of the job dimensions, namely task identity and task autonomy, significantly predict the variance in job involvement, have a direct effect on job involvement and therefore affect organisational identification. It was therefore recommended that nurses' jobs should be designed with greater levels of task autonomy and task identity to increase their job involvement and resultant organisational identification. In a Nigerian study with randomly selected participants, Akinbobola (2011) found that age, sex, staff status and job satisfaction significantly influenced job involvement. In addition self-efficacy and job involvement are significantly positively related. Both self-efficacy and job involvement of clinical nurse educators in Taiwan were at a medium to high level with significant differences existing in job self-efficacy and job involvement based on differences in age, marital status, teaching seniority, level of educator qualifications attained, job satisfaction and the healthcare institution to which educators were allocated (Yang, Kao & Huang 2006; Nyambegera,

Daniels & Sparrow, 2001). A Kenyan study (Nyambegera, Daniels & Sparrow, 2001) indicated that a person-environment fit model can partially predict job involvement in a developing country, but that it rather is the values themselves, and not their fit, that are most predictive of job involvement.

Freund and Drach-Zahavy (2007) in their investigation of multi-professional teamwork in community clinics, found that commitment to the job was significantly greater in all the professional groups, therefore implying that tasks are fulfilled according to professional standards rather than the organisational standards. Job involvement is strengthened by different means including lengthy professional training and developing the ethics and professional identity of the practitioners. Amongst doctors the link between commitment and effectiveness was job involvement, for paraprofessionals it was affective organisational commitment and for nurses both those commitments motivated effectiveness. While this poses a challenge to managers and policy makers to unify these groups into a team for service delivery, the combination of mechanistic and organic job structuring led to teamwork effectiveness.

A positive relationship exists between leader-member exchange quality and organisational identification (Katrinli et al., 2008). In this Turkish study, it was found that job involvement mediates the positive effects of leader-member exchange quality on organisational identification. The researchers concluded that increased awareness of nurse supervisors of the effect of their behaviours towards nurses can increase nurses' performance through increased job involvement and organisational identification. Furthermore, job involvement is strongly associated with organisational commitment (Esfahania, Emami & Tajnesaei 2013).

A cross-sectional study done amongst community health volunteers in northern Taiwan to determine the relationship between personality traits, job satisfaction and job involvement indicated that those inclined to internal control, showed higher job involvement. In this study both achievement orientation and job satisfaction were positively correlated with job

involvement. Of all the predictors of job involvement, the frequency of participating in on-the-job training courses accounted for the most variance in job involvement and there seemed to be a demand for more involvement as the rewards of pay, promotion and security are not available to volunteers (Li, Lin & Chen 2007). Similarly a study amongst pharmacists and accountants in South Africa showed a significant positive relationship between job involvement and internal locus of control (Van Wyk, Boshoff & Celliers 2003). To contribute to higher levels of job satisfaction, job involvement and productivity, Bester and Mouton (2001) believe that a good fit should be found between the dominant career anchor associated with a specific occupation and that of the employee. A career anchor is a set of self-perceived talents, abilities, motives, needs and values that form the nucleus of one's occupational self-concept. This develops over time after a few years of exposure to the real-life work situation and provides the reason for some of the choices we make. This study found that psychologists with service as main career anchor had a higher job involvement, but overall this group of practitioners had low job involvement scores.

These studies not only highlight the link between job involvement, organisational commitment and work performance, but also the influence of individual differences of people employed in the same organisation. Once again one is struck by the apparent interrelatedness of the characteristics identified for this study. As job involvement is highly correlated with self-esteem and locus of control and with level of participation in work (Katrinli et al., 2008) it could be expected that the greater the job involvement of nurses, the more likely it is that the organisation would become part of their identity, which would contribute to better patient outcomes and safe, healthy workplaces.

### 2.4.6 Demographic variables

Various studies have referred to the relationship of the intrapersonal characteristics identified for this study as well as demographic data of participants, such as age, sex, status, marital

status and dependent children, work-family conflict and social support, workplace, qualifications and status as a single parent or sole bread winner for the family (Aiken et al. 2003; Akinbobola, 2011; Cortese, Colomo & Ghislieri 2010; Gurková et al., 2012; Li, Lin & Chen 2007; Nabirye et al., 2011). The importance of non-work dimensions, such as work-life conflict, has been identified as important factors influencing employee turnover and has therefore been included in nurse turnover models (Battistelli, Portoghese, Galletta & Pohl, 2012) further supporting the need to include nurse demographics in the questionnaire for the study. Work performance is central to healthcare institutions' ability to obtain a competitive advantage as it increases service delivery and patient satisfaction (Mohammed Shaffril & Uli, 2010; Vermeeren, Kuipers, & Steijn, 2009). A section for demographic variables of participants which include the items listed has therefore been included in the nurse and patient questionnaire.

## 2.5 SYNOPSIS OF LITERATURE REVIEW

The literature describes workplace factors and intrapersonal characteristics influencing the work performance and caring behaviours of nurses. All these characteristics are interlinked as seen in the various cross references in the discussion. Establishing a healthy work environment for nurses, which also creates a safe and healthy environment for patients, is complex and multidimensional. While various studies have been done to identify system factors that influence nurse performance, less is known about intrapersonal characteristics and how these affect the professional practice of nurses, especially in South Africa. based on the finding that health professionals may overrate their work performance and skills, it was decided to obtain the views of patients as well during this study. The literature study identified a conceptual model, the RNAO Comprehensive Conceptual Model for Healthy Work Environments for Nurses (see Figure 2.3) which provides a conceptual model to guide the theoretical framework (see Figure 1.2) for this study.

The studies highlighted in this literature overview identified demographic variables as well as valid and reliable instruments that have been used with success in other nursing populations which could be used in a South African study. Taking into consideration the focus of this research, which was the work performance, personal demographics and intrapersonal characteristics of professional nurses, the instruments identified in the literature review for use in this study as the dependent variable consisted of the Six-Dimension Scale of Nursing Performance (6-DSNP) for self-evaluation by nurses of their work performance and the Caring Behaviours Inventory (CBI) for completion by patients to obtain their perceptions of nurses' caring behaviours. As independent variables the instruments identified for completion by nurses include:

(i) Nurses Professional Values Scale – Revised (NPVS-R) to measure professional values;
(ii) Core Self-evaluations Scale (CSES) measuring a broad, integrative personality characteristic consisting of self-esteem, generalised self-efficacy, neuroticism and locus of control;
(iii) Situational Test of Emotion Management (STEM) to measure emotional intelligence;
(iv) Empathy Quotient (EQ)-Short Form to measure empathy; and
(v) Kanungo's Job Involvement Scale to measure job involvement.

All the selected instruments were validated instruments and were used as self-report measures by nurses and patients.

## 2.6 SUMMARY

This chapter provided an overview of the literature related to the study focus. Background information for selecting this study topic based on the challenging healthcare environment on the continent and in South Africa as well as the mainly negative public media reporting was addressed. This was followed by an overview of literature on the impact of systems and workplace issues on the ability of nurses to provide safe, quality care and to maintain their caring behaviours. Finally the scientific background on the selected demographic variables,

selected intrapersonal characteristics and the instruments selected for this study was presented. Chapter 3 addresses the research methodology used for the study with theoretical justification for using these methods.

# CHAPTER 3

# RESEARCH DESIGN AND METHOD

# CHAPTER 3

# RESEARCH DESIGN AND METHOD

## 3.1 INTRODUCTION

The discussion in Chapter 2 reflected on the background of the study and a literature review of the focus of the research. In this chapter the research design and method used to collect and analyse the data is discussed.

## 3.2 RESEARCH DESIGN

The research design refers to the plan, blueprint or structured framework for conducting the research process to address the research question of the study (Babbie & Mouton, 2001). A quantitative (Burns & Grove, 2009), cross-sectional survey (Babbie & Mouton, 2001; Brink, Van der Walt & Van Rensburg, 2012; Gravetter & Forzano, 2012) and predictive correlation model-testing design (Blunch 2013; Hoyle 1995; Polit & Hungler 2012) were used for this study to make predictions about the influence of intrapersonal characteristics of professional nurses' on their work performance and caring behaviours.

### 3.2.1 Quantitative design

Quantitative research designs aim to develop the body of knowledge of the discipline under investigation by collecting numerical data that is analysed with statistical tools. The question that the researcher wants to answer determines the research strategy undertaken, for example to examine a relationship between variables would require a correlational research strategy. Data collection consists of information collected from individual sources which is then statistically summarised and analysed. The researcher starts with predetermined ideas of how the concepts of the study are related, followed by collection of information with structured instruments and/or processes which is then subjected to statistical analysis and

finalised with interpretation of the statistics and formulating conclusions (Babbie & Mouton, 2001; Gravetter & Forzano, 2012; Terre Blanche, Durrheim & Painter 2006).

### 3.2.2 Cross sectional survey design

Cross-sectional designs are used to examine cross sections of a group or phenomenon simultaneously and analysing the cross section carefully with the intention to identify trends. All the information on the topic is collected at one point in time from different participants with the aim to do a comprehensive in-depth study of the study focus. No identical study needs to be done at a later stage. The benefits of a cross-sectional design include the capacity to collect large amounts of data at one point, making results more readily available. Also, it is more manageable, less time consuming and more cost-effective and the confounding variable of maturation due to elapsed time is not present. Explorative and descriptive studies are often cross sectional. The disadvantage is that it is difficult to draw conclusions from the data as it is collected at one time (Babbie & Mouton, 2001; Burns & Grove, 2009; Gravetter & Forzano, 2012). The information obtained was very personal in nature and respondents participated anonymously which makes it impossible to follow up the same individuals over time (Macnee and McCabe, 2008).

### 3.2.3 Predictive correlation design

Correlational studies focus on the relationships between naturally occurring variables that exist in a situation, describes the nature of the relationship and allows analysis of the relationship between large numbers of variables. It allows researchers to study aspects that cannot be controlled or which ethically cannot be manipulated for study purposes (Goodwin, 2010; Gravetter & Forzano, 2012). No attempt is therefore made to control or manipulate the situation studied, which could be a situation that already occurred, or is currently taking place. In contrast to experimental studies, correlational studies simply measure the variables being studied and measurements are then analysed to determine whether they show any consistent pattern of relationship.

Correlational studies cannot arrive at any conclusions about cause and effect (Goodwin, 2010; Plichta & Kelvin, 2013). Although a correlation study cannot definitely prove a causal hypothesis, it may rule one out. Once correlation is known it can be used to make predictions. Making predictions on the basis of correlational research is referred to as doing a regression analysis (Goodwin, 2010). Correlational studies can be improved through cross-lagged-panel correlation using information over a time span, partial correlation and multiple correlation.

Limitations of correlation studies include (Gravetter & Forzano, 2012):

(i) Third variable – the study may establish that variables are related, but it does not mean that there must be a direct relationship between the two variables. It is always possible that a third (unidentified) variable is controlling both the two variables and is responsible for producing the observed relation.

    Partial correlation attempts to control for a third variable statistically. It is a post facto attempt to create semi-equivalent groups in the study. Calculating partial correlation involves inclusion of all the correlations in the study. A partial correlation measuring the remaining relationship between remaining variables is produced. Several correlations can be calculated to determine if any important third variable might be responsible for a relatively high correlation (Goodwin, 2010). Multiple correlation estimates the correlation between variables taking into consideration additional third variables.

(ii) Directionality – the study indicates that variables are related, i.e. changes in one variable tend to be accompanied by changes in the other variable. The correlational study does not determine which variable is the cause and which the effect.

These studies can be done over time (longitudinal) or prospectively (with all data collected at the same time) (Babbie & Mouton, 2001; Brink, Van der Walt & Van Rensburg, 2012; Burns & Grove, 2009; Gravetter & Forzano, 2012).

Predictive studies are designed to predict the value of one variable on the basis of values obtained from another variable(s). It studies the causal relationship between variables. A distinction is made between the dependent variable (the one to be predicted) of which there is only one, and independent variables (all the other variables that are predictors). When a study demonstrates a relationship between two variables, it allows researchers to use knowledge about the one variable to help predict or explain the second variable. The most effective variables in prediction are highly correlated with the dependent variable but not highly correlated with the other independent variables used in the study (Babbie & Mouton, 2001; Burns & Grove, 2009; Gravetter & Forzano, 2012).

### 3.2.4 Model-testing design

A model is described as a visual, figurative illustration of reality indicating the variables and the relationships between or among the different observed and latent variables (Blunch 2013; Du Plooy-Celliers, Davis & Bezuidenhout 2014; Hoyle, 1995; Macnee & McCabe, 2008). It allows the researcher to link the evidence and prior knowledge on the topic in a logical format which makes the information more accessible and understandable (Polit and Beck, 2012) and initiate the process by specification of a measurement model for the study (Hoyle 1995). The model developed for this study was based on the information available in the literature and used as an organised framework to guide the research task (Griffiths, 2009).The main variables identified for this study were selected intrapersonal characteristics, work performance and caring behaviours. Valid and reliable measurement instruments were available and selected from the literature for the study. The literature review informed the development of the conceptual framework with its hypothesized relationships between the different variables identified for the study.

Direct relationships were indicated with arrows conveying how these concepts were hypothesized to be related to each other and drawn from proposed cause to proposed effect. No indirect relationships were identified (Blunch 2013; Burns & Grove, 2009; Du Plooy-

Celliers, Davis & Bezuidenhout, 2014; Hoyle, 1995; Macnee & McCabe, 2008; Polit & Beck, 2012). This conceptual map with a hypothesized model of relationships was presented in Chapter 1 and is included here for ease of reference as Figure 3.1.

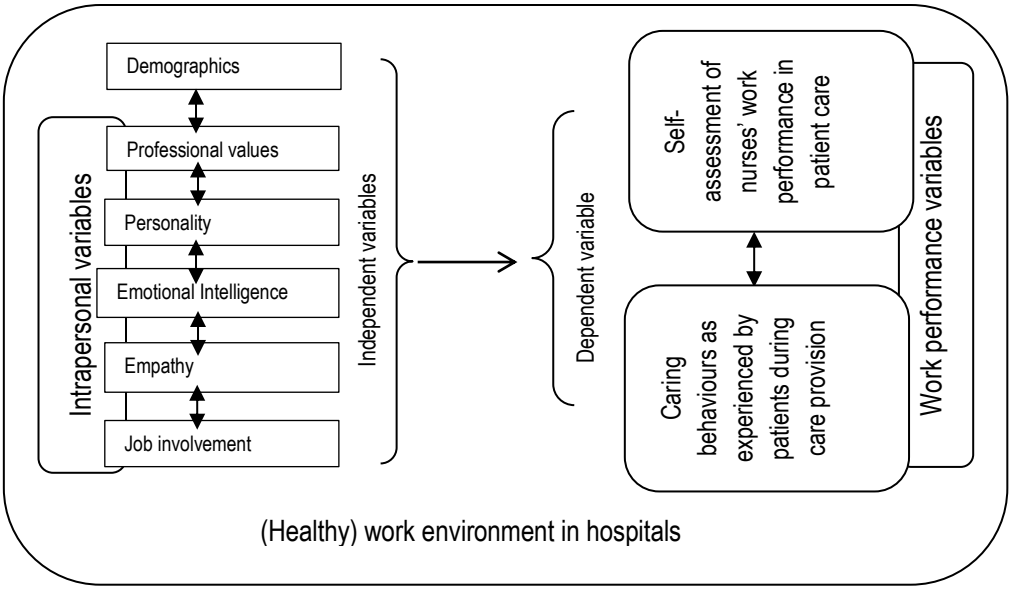


Figure 3.1 Conceptual map with hypothesized relationship model

The aim of this study was to understand the influence of nurses' intrapersonal characteristics on their work performance and caring behaviours and the conceptual map with its hypothesized relationships therefore was a causal model suggesting causal links or pathways between the study variables. Causal modelling entails testing of these hypothesized relationships in the model to determine if the proposed pathways from cause to effect agree with the data available. Path analysis allows the researcher to test whether non-experimental data sufficiently fit the underlying model (Burns & Grove, 2009; Hoyle 1995; Polit and Beck, 2012).

All variables included in the hypothesized causal model must be linked and measured to test the accuracy of the model. It requires a big heterogeneous sample, in this case it was registered professional nurses working in medical and surgical wards in public and private hospitals in the Tshwane district of the Gauteng province. The relationships in causal models

are tested using path analysis with regression using least-squares estimation and the result is presented in a path diagram. Path analysis identifies endogenous (variation explained as caused by other variables within the theoretical model), exogenous (variable within the theoretical model but determinants are outside the model) and residual variables (effect of unmeasured variables not included in model). Path coefficients or standardised partial regression slopes determined through regression indicate the weight of the effect of variables on each other (Blunch, 2013; Hoyle 1995; Polit & Beck, 2012).

### 3.2.5 Variables of the study

As the design of this study considered prediction, a distinction was made between independent variables which included the selected intrapersonal characteristics (professional values, personality, emotional intelligence, empathy and job involvement) for the study and dependent variables which were the work performance variables (nurses' self-assessment of work performance and patients' perception of caring behaviours). Independent variables are the stimulus influencing the dependent variable while the dependent variable is the behaviour which is influenced by the independent variables that the researcher wants to predict. The relationship between dependent and independent variables provides the source for formulation of hypotheses for the study. Determining the correlation or relationships between the variables therefore becomes an important step in a model-testing design (Blunch 2013; Burns & Grove, 2009; Hoyle, 1995; Polit & Beck, 2012).

## 3.3 RESEARCH METHOD

The research method consists of the population, sampling, data collection, data analysis and rigour of the research.

### 3.3.1 Population of the study

The population refers to all possible cases or individuals of interest to the researcher for the study. The population description includes characteristics of the members of the population

(content), the unit of analysis, geographic coverage of the population (extent), and the period during which the unit must possess the required characteristics (Gravetter & Forzano, 2012; Monette, Sullivan & De Jong, 2011). Due to the majority of reports coming from hospitals, the target population for the study was registered professional nurses working in clinical practice at the patient's bedside in private and public hospitals in the Tshwane District in the Gauteng Province. Professional registered nurses were selected as the population as they are the team leaders in the clinical situation. The data were collected between 12 September 2013 and 20 March 2014 at the hospitals sampled for the study.

### 3.3.2 Sampling for the study

Often the population is too large to include all persons in the study and a suitable sample is therefore drawn for the study. A sample is a set of individuals selected from the population identified for the research study to represent the population in the study (Burns & Grove, 2009; Gravetter & Forzano, 2012). Sampling decisions have a huge effect on the meaning and generalisability of the findings of the study and must therefore be carefully thought through when planning the study. A sampling plan is devised to determine the process of making the selections for the sample (Brink, Van der Walt & Van Rensburg, 2012; Burns & Grove, 2009). Multi-level sampling was done in this study with the aim of obtaining a truly representative sample of participants. Representative samples accurately reflect the characteristics of the population identified for the study (Gravetter & Forzano, 2012). The representative nature of the sample also improves accuracy of conclusions and allows the findings of the study to be legitimately generalised to the population from which it was drawn (Monette, Sullivan & De Jong, 2011).

#### 3.3.2.1 Sampling of the Province

The nursing profession in South Africa is a large population as the summarised provincial distribution of registered professional nurses on the SANC registers at the end of 2012 in Table 3.1 indicates. Nationally there were 124 045 registered professional nurses on the

registers of SANC at the end of 2012 (SANC, 2012) when the sampling strategy was planned. Therefore a workable number of participants had to be selected from the larger group to allow the researcher to derive findings that are relevant to the group. Furthermore, better information can be obtained from carefully drawn and representative samples than from the whole group, especially when the group is very big (Monette, Sullivan & De Jong, 2011).

Table 3.1 Registered nurses on the SANC registers, December 2012 (SANC, 2012)

| **Province** | **Female** | **Male** | **Total** |
|---|---|---|---|
| Limpopo | 8,921 | 1,159 | 10,080 |
| North West | 7,425 | 969 | 8,394 |
| Mpumalanga | 5,708 | 623 | 6,331 |
| **Gauteng** | **30,232** | **1,874** | **32,106** |
| Free State | 6,865 | 923 | 7,788 |
| KwaZulu-Natal | 24,968 | 2,073 | 27,041 |
| Northern Cape | 2,062 | 180 | 2,242 |
| Western Cape | 14,560 | 895 | 15,455 |
| Eastern Cape | 13,414 | 1,194 | 14,608 |
| **Country total** | **114,155** | **9,890** | **124,045** |

However, the SANC database does not provide clarity on the number of registered nurses working at the patient's bedside, making it difficult to calculate the exact size of the nurse population working in hospitals at the patients' bedside. The 32 106 registered professional nurses for the Gauteng province at the end of 2012 makes it the most densely populated province in the country. A purposive sample of the most densely populated province in the country was therefore the first step in the sampling process to ensure a larger population to draw the sample from.

#### 3.3.2.2 Sampling of the district

The population for the study being professional registered nurses, requires them to be sampled from public and private hospitals. Selecting the district in Gauteng province with the highest concentration of hospitals purposively would ensure a large group of hospitals to

select the sample of nurses from to participate in the study. Based on the information in Table 3.2, the district with the highest concentration of hospitals in the public sector where the majority of nurse participants could come from was the Tshwane District (see Figure 3.2). The specialist hospitals in the public and private sector were not included in the list in Table 3.2. The Tshwane District in the Gauteng Province was therefore purposively selected for this study.

Table 3.2 Distribution of hospitals in Gauteng province (Joynt, 2011/2012)

| Districts | Public hospitals | Public beds | Private hospitals | Private beds |
|---|---|---|---|---|
| City of Johannesburg | 7 | 5088 | 26 | 5540 |
| **City of Tshwane** | **9** | **5140** | **25** | **4109** |
| Ekurhuleni | 7 | 2902 | 16 | 2410 |
| Metsweding | 1 | 298 | 1 | 43 |
| Sedibeng | 3 | 1083 | 7 | 709 |
| West Rand | 3 | 709 | 3 | 197 |

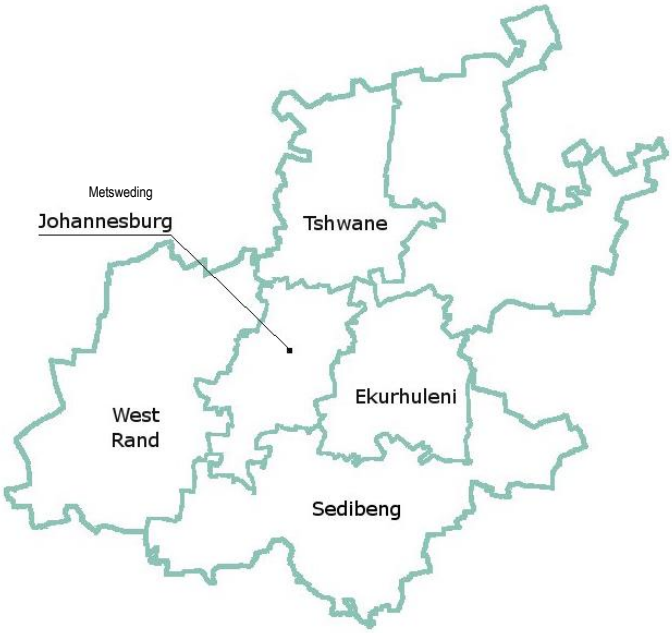


Figure 3.2 Map of Gauteng Province (Source: MinuteMan Press, 2014)

### 3.3.2.3 Sampling of the hospitals

Populations generally consist of a variety of identifiable subgroups. To avoid distortion related to over- or under-representation of subgroups within the population, the sample was

stratified to ensure that subgroups were represented in the sample for the study. Stratified samples improve the potential to match the sample more closely to the population because portions of the total sample were taken from different population sub-groups (Gravetter & Forzano, 2012). Sampling strata should be related to the elements in the study population and the adequacy of the sampling frame determines the quality of the sample (Monette, Sullivan & De Jong, 2011). To obtain a stratified sample for this study, the researcher (Gravetter & Forzano, 2012):

(i) Selected the stratifying variables, which in this study were public and private hospitals,

(ii) Divided the sampling frame into separate lists – one for each category of the stratifying variables which in this study included a list of private hospitals and public hospitals.

(iii) Drew a random sample from each group. For this study random sampling was done for the hospitals.

The health system in South Africa where nurses are employed is a dual-sector system consisting of a private health sector and a public health sector. Hospitals were selected from both sectors for participation in the study.

3.3.2.3.1 Public health sector

The public sector hospitals throughout South Africa are divided into different tiers, namely national, provincial and district health services. Each of the tiers are further divided into different levels of service delivery, namely central/tertiary, regional and district hospital services, each with their own set of service delivery responsibilities and referral pathways. The public health system in South Africa is a decentralised, primary healthcare and nurse-driven system with three (national, provincial, district/local) spheres of government that are involved in health service delivery. According to the Constitution of the Republic of South Africa (South Africa 1996) both national and provincial spheres of government have a responsibility for delivery of health services with national mainly responsible for policy development and provinces executing the policies through its regional structures. National

health is also responsible for the central or tertiary hospitals where specialist and super-specialist services are provided. The direction of referral pathways in this system is from primary healthcare upward for each district, local authority and province. The first point of entry in the South African health services is at primary healthcare level at clinics or community health centres (CHC) where services are free for ambulatory patients. A comprehensive range of services are provided in these facilities by nurses. Where required patients are referred to hospitals in districts (level 1 hospitals), from there to level 2 hospitals at regional level and from there to level 3 hospitals which are the specialist central or tertiary hospitals (South Africa, 1996; Cullinan, 2006).

There were two (2) central/tertiary hospitals, one (1) regional hospital and six (6) district hospitals in the Tshwane District of the Gauteng province. To ensure a representative sample of nurses from the range of hospital services available in the public sector, the sample of the public sector hospitals was representative of each hospital level. The selection included a random selection of one (1) central/tertiary hospital; one (1) regional hospital and three (3) district hospitals in consultation with the statistical consultation services. Except for the regional hospital of which there was only one, random selection of hospitals was done by drawing the names of the different categories of hospitals that was put in a bowl.

The inclusion criteria for hospitals were:

(i) Hospitals in the public or private sector in the Tshwane district and selected private sector group in the Gauteng province.

(ii) Hospitals and units providing medical and surgical care for adults.

(iii) Provide 24-hour care.

Exclusion criteria for hospitals:

(i) Specialist hospitals.

(ii) Day clinics.

(iii) Psychiatric hospitals.

(iv) Paediatric or neonatal care

3.3.2.3.2 Private sector hospitals

Private hospitals provide general health services as well as maternity, mental health and other specialist and super-specialist services. The private sector has hospitals delivering service as single institutions, small groups or grouped in large corporates. Private hospitals not belonging to a corporate group and specialist hospitals were not included in the study population, since they form a very small part of the nurse employers in the private sector. There are three large private hospital groups providing hospital services in South Africa, namely Life Healthcare, Mediclinic and Netcare. The names of the three hospital groups were put into a bowl from which the Netcare Group was drawn. They had ten hospitals in the Tshwane District of the Gauteng Province meeting the inclusion criteria (Joynt, 2011/2012) from which three hospitals were randomly selected for this study in consultation with the statistical consultation services (Table 3.3). Random selection was done by putting the names of all the hospitals in a bowl and drawing the names from the hospitals. One additional hospital was conveniently sampled for the pilot study, from the Life Healthcare group.

Public and private hospitals were randomly selected to the proportion of 2:1 keeping in mind that the ratio of nurses working in public and private sector had to be 2:1 for this study. The ratio of two nurses from public sector to one nurse from private sector is based on the volume of service delivery and human resources of the two sectors. The private sector delivers healthcare services to approximately 24,3% of households in South Africa with 70,7% (61,2% public clinics and 9.5% public hospitals) households seeking public sector services and 5% other service providers such as pharmacists, traditional practitioners, homeopaths and others according to the 2011 household survey (Lehohla, 2011a). Therefore the sample from the private sector was smaller.

Table 3.3 Sampling of hospitals

| Hospitals Tshwane District | Population N | No of hospitals | Sampling method | Sampling frame | Projected Sample n |
|---|---|---|---|---|---|
| Public hospitals **(total=9)** | **Central & Tertiary** | | Stratified random sampling | Gauteng Department of Health Hospital list | **Tertiary** |
| | | **2** | | | 1 |
| | **Regional** | | | | **Regional** |
| | | **1** | | | 1 |
| | **District** | | | | **District** |
| | | **6** | | | 3 |
| Private hospitals **(Total=24)** | Netcare hospitals | **10** | Random selection of: one private group, then hospitals in district selected | Private hospital group list of hospitals | 3 |

### 3.3.2.4 Sampling of wards in the hospital

Hospitals wards that provided adult medical and surgical care were elected as the setting where professional nurses were invited to participate in the study. This choice of the research setting for the study was based on the fact that large studies on the practice environment referred to in the literature overview were performed in similar areas (Aiken et al., 2012; Coetzee et al., 2013). Medical and surgical wards are described as complex work areas where nurses are expected to master a wide range of topics which provide a broad range of general nursing competence in a similar context in different hospitals (Taylor, 2006).

### 3.3.2.5 Sampling nurses

The variables used for stratification of the sample must correlate with the dependent variables being examined in the study (Burns & Grove, 2009), which in this study were the professional nurses working in medical and surgical units of the private and public hospitals in the selected district of the Gauteng province. The sampling of professional nurses for this

study was done at a ratio of 1:2, consisting of 1 private sector nurse to 2 public sector nurses. To ensure that this ratio was maintained, the number of nurses participating informed the number of hospitals approached for participation. To ensure that nurses from both the private and the public sector are sampled at a proportion of 1 nurse in private sector to 2 nurses in public sector, the sample was stratified for the sampling of public hospitals, private hospitals and medical or surgical wards in those hospitals. All nurses from all these units were invited to participate in the study. This decision was influenced by the shortage of professional registered nurses in all hospitals and the size of the sample required for statistical analysis.

To arrive at the optimal sample size, the researcher had to rely on the commonly recommended sample requirements for structural equation modelling (SEM) found in the literature (Hoyle, 1995; Ullman, 1996). In general, the literature suggests that a sample of about 100-200 subjects provides sufficient statistical power needed to conduct the confirmatory factor analysis (CFA) and SEM (Hoyle, 1995; Ullman, 1996) although smaller samples are sufficient at higher effect sizes. Based on the review of Monte Carlo simulation studies, Loehlin (1992) concluded that for the class of models similar to the one proposed in this study a sample size of 200 should suffice. Statistical estimation involving a sample of 200 typically results in stable estimates of selected fit indices used to determine the degree of fit between the pattern of relationships in the data and those proposed in a model (Hoyle, 1995). Based on studies recently performed in South Africa, in which the response rate was 45% (Coetzee et al., 2013) the aim was to include approximately 600 nurses in the sample, therefore 400 nurses from the public sector and 200 nurses from the private sector.

Inclusion criteria for the sample of nurses were that they had to be:

(i) Working in public and private sector hospitals providing general medical or surgical care.

(ii) Working in clinical practice.

Exclusion criteria for nurses were if they were:

(i) Professional nurses working in specialist units other than medical and surgical units.

Since the questionnaire took 35 minutes to complete, it required a significant commitment from the nurses who participated. Due to the large sample involved, it was impossible to compensate the nurses for their time. The following rewards were therefore built in to encourage participation:

(a) A ruler and pen as a small token of appreciation was given to respondents who submitted a completed questionnaire.

(b) The names of all participating nurses were entered into a draw for a small cell phone at each hospital;

(c) A one-day continuing education programme of their choice was offered free of charge to the participating nurses at each hospital.

Table 3.4 Sampling of nurses for the study

| Strata | Hospitals (sample n=5) | | | | Nurses (sample n=4) | | | |
|---|---|---|---|---|---|---|---|---|
| | Inclusion criteria | Exclusion criteria | Number of hospitals (wards) | | Inclusion criteria | Exclusion criteria | No | Ratio |
| Public | • Provides general medical and surgical care<br>• Provides 24-hour care | • Specialist hospitals<br>• Psychiatric hospitals.<br>• Day clinics<br>• Peadiatric & neonatal care. | n=5<br>(N=25) | All nurses from each medical & surgical wards in each hospital | • Registered professional nurses (RN)<br>• Working in clinical practice | • Nurses working in specialist wards | 400 | 2 nurses in public sector to 1 nurse in private sector |
| Private | | | N=4<br>(N=20) | | | | 200 | |

### 3.3.2.6 Sampling of patients

Patients were selected from the wards in which the nurses participating in the study worked. A random sample was drawn of the patients in the wards at the time of the data collection

and the sampling frame was the list of patients in the ward at the time of data collection. The sampling frame of patients available for participation was identified in conjunction with the unit manager to ensure that patients comply with the inclusion criteria. From the patients available for invitation, every second patient was selected and invited to participate. Where patients declined participation, a next round of selection was done. In two of the hospitals it was not possible to randomly select patients due to patients being too ill to participate. All patients available for participation were therefore invited to participate.

The inclusion criteria for the sample were:

(i) Persons who were in the hospital for at least 24 hours.

(ii) Persons who were conscious, without discomfort and able to read and write.

(iii) Patients 18 years or older.

(iv) Home language either English, isiZulu, Afrikaans, or Sesotho.

The exclusion criteria were:

(i) Patients who were unconscious, in pain or had surgery during the last 24 hours.

(ii) Patients younger than 18 years.

(iii) Patients intellectually or mentally impaired.

No incentives for participation were offered to patients.

Fieldworkers who were non-nurses were used to distribute and collect the instrument to create distance between the researcher who is also a nurse and the participants (Mouton, 1996). Three different fieldworkers assisted with the study: one speaking Afrikaans and English, one speaking English and Sesotho and a third speaking English, Sesotho and Zulu. Fieldworkers were trained to obtain voluntary and informed consent, to ensure understanding and to respect the dignity, individuality, autonomy and values of the participants (Brink, Van der Walt & Van Rensburg, 2012). The researcher accompanied each of them to the first two patients approached. While the aim was to sample 100 patients

in public sector and 50 patients in private sector, this was not possible due to acuity and short period of hospitalisation of patients.

### *3.3.3 Data collection instruments*

The data collection instruments summarised in Table 3.11 were completed by nurses and patients. Seven instruments were used in the study of which six were completed by nurses and one by patients.

#### 3.3.3.1 Data collection instruments completed by nurses

One data collection package was used for nurses consisting of a section on demographic details, the work performance assessment and other self-report instruments on intrapersonal characteristics listed in Table 3.8 (see annexure 1). The questionnaire was self-administered. These instruments were made available only in English as all nursing education institutions used English textbooks and the general language in the workplace was English. A summary of the data collection instruments completed by nurses follows in the next section.

##### *(i) Schwirian's Six Dimension Scale of Nursing Performance (6-DSNP)*

Schwirian's Six Dimension Scale of Nursing Performance (6-DSNP), developed and tested by Patricia Schwirian (Schwirian, 1978), was used by nurses to measure their work performance in this study. The instrument consists of a list of 52 nursing behaviours that nurses engage in at different degrees of frequency and quality. These behaviours can be grouped into six subscales of nursing performance, namely leadership (5 items), critical care (7 items), teaching/collaboration (11 items), planning/evaluation (7 items), interpersonal relations/communication (12 items) and professional development (10 items) (see Table 3.5). There are 52 items in the instrument, which has two columns to be completed, namely one about quantity (A) and one about quality (B). For each behaviour, nurses are asked in column A (quantity), excluding the professional development section 'How often you perform

the activity?' with a scale ranging from 1 (not expected in this job) to 4 (frequently). In column B (quality) for each behaviour, nurses are asked 'How well do you perform them?' with a scale 1 (not very well) to 4 (very well). Items 1 – 42 are therefore scored twice – the first score represents the frequency of a given behaviour by a nurse and the second score represents the quality of that particular behaviour. Items 43 – 53 are evaluated solely in terms of the quality of the behaviour. Scoring for column B is performed on a 4-point Likert-type scale ranging from 'not expected in this job' to 'frequently' for the frequency of activity and 'not very well' to 'very well' in terms of the quality of performance (Schwirian, 1978). Construct validity was established through a collaboration of developers, consultants and pilot respondents. Reliability was established using Cronbach's Alpha with coefficients ranging from 0.844 to 0.978 (Roud, Giddings & Koziol-McLain, 2005; Schwirian, 1978). The 6-DSNP may be used to obtain self-appraisal of perceived adequacy of practicing nurses, nursing school preparation for performance and for peer evaluation or supervisor evaluation of nurses' work performance. Six factors or subscales were identified for the 6-DSNP (Schwirian 1978) as indicated in Table 3.5).

Table 3.5 Schwirian's Six-Dimension Scale of Nursing Performance (Schwirian, 1978)

| Scale Item | No | Item Content |
|---|---|---|
| Leadership | 3 | Give praise and recognition for achievement to hose under his/her direction. |
| | 23 | Delegate responsibility for care based on assessment of priorities of nursing care needs and personnel. |
| | 25 | Guide other health team members in planning for nursing care. |
| | 26 | Accept responsibility for the level of care under his/her direction. |
| | 41 | Remain open to the suggestions of those under his/her direction and use them when appropriate. |
| Critical care | 11 | Perform technical procedures: e.g. oral suctioning, tracheostomy care, IV therapy, catheter care, dressing changes. |
| | 18 | Use mechanical devices: e.g. suction machine, Gomco, cardiac monitor, respirator. |
| | 19 | Give emotional support to family of dying patient. |
| | 27 | Perform appropriate measures in emergency situations. |
| | 30 | Perform nursing care required by critically ill patients. |
| | 37 | Recognize and meet the emotional needs of a dying patient. |
| | 40 | Function calmly and competently in emergency situations. |
| Teaching/ collaboration | 1 | Teach a patient's family members about the patient's needs. |
| | 4 | Teach preventive health measure to patients and their families. |
| | 5 | Identify and use community resources in developing a plan of care for a patient and his/her family. |
| | 12 | Adapt teaching methods and materials to the understanding of the particular audience: e.g., age of patient, educational background and sensory deprivation |
| | 14 | Develop innovative methods and materials for teaching patients. |
| | 28 | Promote the use of interdisciplinary resource persons. |
| | 29 | Use teaching aids and resource materials in teaching patients and their families. |
| | 31 | Encourage the family to participate in the care of the patient. |
| | 32 | Identify and use resources within the health care agency in developing a plan of care for a patient and his/her family. |
| Planning/evaluation | 2 | Coordinate the plan of nursing care with the medical plan of care. |
| | 6 | Identify and include in nursing care plans anticipated changes in patient's conditions. |
| | 7 | Evaluate results of nursing care. |
| | 9 | Develop a plan of nursing care for a patient. |
| | 10 | Initiate planning and evaluation of nursing care with others. |
| | 13 | Identify and include immediate patient needs in the plan of nursing care. |
| | 36 | Contribute to the plan of nursing care for a patient. |
| Interpersonal relations/ communications | 2 | Coordinate the plan of nursing care with the medical plan of care. |
| | 6 | Identify and include in nursing care plans anticipated changes in patient's conditions. |
| | 7 | Evaluate results of nursing care. |
| | 9 | Develop a plan of nursing care for a patient. |
| | 10 | Initiate planning and evaluation of nursing care with others. |
| | 13 | Identify and include immediate patient needs in the plan of nursing care. |
| | 36 | Contribute to the plan of nursing care for a patient. |
| Professional Development | 43 | Use learning opportunities for ongoing personal and professional growth. |
| | 44 | Display self-direction. |
| | 45 | Accept responsibility for own actions. |
| | 46 | Assume new responsibilities within the limits of capabilities. |
| | 47 | Maintain high standards of performance. |
| | 48 | Demonstrate self-confidence. |
| | 49 | Display a generally positive attitude. |
| | 50 | Demonstrate a knowledge of the legal boundaries of nursing. |
| | 51 | Demonstrate knowledge in the ethics of nursing. |
| | 52 | Accept and use constructive criticism. |

For this study the 6-DSNP was used as a self-report instrument completed by nurses. As only the response to the work performance component was required, only information collected in the quality component asking the question 'How well do you perform them?' for items 1 – 52 were used for this study. The score is determined by the sum total of scores (1 – 4) that respondents allocate to each of the statements. The higher the score, the better nurses rated their work performance.

***(ii) Nurses' Professional Values Scale (NPVS-R)***

The Nurses' Professional Values Scale-Revised (NPVS-R) is a psychometrically sound instrument that was derived from the American Nurses' Association (ANA) Code of Ethics for Nurses with the specific purpose to measure the professional values of nurses and to enhance professional socialisation (LeDuc & Kotzer, 2009; Leners, Roehrs & Piccone 2006; Weis & Schank, 2000). The NPVS-R consists of 26 items with a short descriptive phrase in a positive direction that have to be rated in a Likert-type scale ranging from 1 (not important) to 5 (most important). The possible range of scores is 26 to 130. The higher the score obtained by summing the numeric responses to each item, the stronger the nurse's professional value orientation. The NPVS-R is copyrighted and permission has been obtained from the developers (see annexure 9).

Initial testing of the NPVS-R showed high levels of reliability and validity, but it requires further testing with culturally diverse students and practising nurses. Validity assessment of the NPVS-R was examined by using factor analysis and five factors were identified, namely (Weis & Schank, 2000):

- Caring which focuses on concern for the patient,
- Activism which focuses on the professional components through which the nurse can impact professional change and in turn patient care,
- Trust which focuses on the nurses' duty to patients and reflects the value of veracity,
- Professionalism which reflects the conduct/qualities characteristics of a professional, and

- Justice which focuses on regard for patients with statements reflecting equality and diversity issues.

The factors of the NPVS-R are reflected in the instrument through the statements as listed in Table 3.6.

Table 3.6 Nurses' Professional Values Scale-Revised (NPVS-R)

| | |
|---|---|
| Factor 1: Caring | 21 Safeguard patient's right to privacy.<br>25 Maintain confidentiality of patient.<br>20 Provide care without prejudice to patients of varying lifestyle.<br>24 Practice guided by principles of fidelity and respect for person.<br>23 Protect rights of participants in research.<br>16 Protect moral and legal rights of patients.<br>18 Act as a patient advocate.<br>22 Confront practitioners with questionable or inappropriate practice.<br>17 Refuse to participate in care if in ethical opposition to own professional values. |
| Factor 2: Activism | 26 Participate in activities of professional nursing associations.<br>19 Participate in nursing research and/or implement research findings appropriate to practice.<br>10 Advance the profession through active involvement in health-related activities.<br>11 Recognize role of professional nursing associations in shaping health care policy.<br>4 Participate in public policy decisions affecting distribution of resources. |
| Factor 3: Trust | 15 Maintain competency in area of practice.<br>14 Accept responsibility and accountability for own practice.<br>1 Engage in ongoing self-evaluation.<br>2 Request consultation/collaboration when unable to meet patient needs.<br>9 Seek additional education to update knowledge and skills. |
| Factor 4: Professionalism | 6 Establish standards as a guide for practice.<br>7 Promote and maintain standards where planned learning activities for students take place.<br>5 Participate in peer review.<br>8 Initiate actions to improve environments of practice. |
| Factor 5: Justice | 13 Assume responsibility for meeting health needs of the culturally diverse population.<br>12 Promote equitable access to nursing and health care.<br>3 Protect health and safety of the public. |

Construct validity was supported with an overall factor loading range of 0.46 to 0.79. The goodness-of-fit indices were at an acceptable value level (0.063). The internal consistency reliability of five factors with alpha coefficients ranged from 0.70 to 0.85 and a total scale

alpha coefficient of 0.92 (Weis & Schank, 2000). All items are phrased in the positive direction; none are reversed scored.

***(iii) Core Self-evaluations Scale (CSES)***

Core self-evaluations (CSE) is a broad personality trait which is regarded as a significant predictor of job performance and job satisfaction (Judge & Bono, 2001; Judge, Locke & Durham, 1997). CSE is a stable personality trait reflecting a subconscious judgement of one's own worthiness, effectiveness and capability as a person. Persons with high core self-evaluations as indicated by the mean score think positively of themselves and are confident in their own abilities. On the other hand, those with low core self-evaluations have a negative judgement of themselves and lack confidence. While the CSES was originally developed as a predictor of job satisfaction, it has been extended to predict a variety of other outcomes in industry-organisational psychology (Judge et al., 2003).

The Core self-evaluations Scale (CSES) includes four personality dimensions, namely locus of control, neuroticism, generalised self-efficacy and self-esteem, which were first investigated by Judge, Locke, and Durham in 1997. Locus of control reflects beliefs about the causes of events in our own lives – if a person sees events as being dependent on their own behaviour, locus of control is internal while it is external where a person sees events as caused by uncontrollable factors or other people. Neuroticism refers to the tendency to focus on negative aspects of the self. Generalised self-efficacy reflects an assessment of how well one can perform across a variety of situations. Self-esteem reflects the overall value that one places on oneself as a person (Judge, Erez & Bono, 1998; Judge, Locke & Durham, 1997).

The instrument consists of 12 items with statements to which the participant must indicate to what extent they agree with the statement using a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Judge et al., 2003). Construct validity of the CSES has been confirmed. The four core traits are substantially interrelated with the average correlation among traits at 0.64 which is as high as the correlation among alternative

measures of the traits of the Big Five model in personality (extraversion, agreeableness, conscientiousness, neuroticism and openness) (Judge et al., 2002). Furthermore, the overall concept of CSE is a more consistent predictor of outcomes than are the individual traits and provides incremental validity over the five-factor model (Judge et al., 2002). Exploratory and confirmatory factor analysis has consistently shown that the four core traits load on a common factor (Judge, Van Vianen & De Pater 2004). Reliability of the CSES was $\geq$ .80 over four samples (Judge et al., 2003). The instrument was also translated into German (Heilmann & Klaus, 2010) and Korean (Holt & Jung, 2008) and it was found valid and reliable for use amongst other cultures/populations as well. This instrument was used in South Africa in a study on black consciousness in Kwazulu-Natal, where it was combined with another instrument to create a composite measure (Dodd & Snelgar, 2011). The respondents had to indicate to what extent they agree or disagree with the statements provided using a scale from 1 (strongly disagree) to 7 (strongly agree). This instrument is a one-dimensional instrument with the scale scores determined by the sum of the ratings of the items of the instrument. Selected items reverse scored in the calculation as indicated in Table 3.7 (Judge et al., 2003).

Table 3.7 Core self-evaluations (CSES)

| | | |
|---|---|---|
| 1. | I am confident I get the success I deserve in life. | |
| 2. | Sometimes I feel depressed. | (*r*) |
| 3. | When I try, I generally succeed. | |
| 4. | Sometimes when I fail I feel worthless. | (*r*) |
| 5. | I complete tasks successfully. | |
| 6. | Sometimes, I do not feel in control of work. | (*r*) |
| 7. | Overall, I am satisfied with myself. | |
| 8. | I am filled with doubts about my competence. | (*r*) |
| 9. | I determine what will happen in my life. | |
| 10. | I do not feel in control of my success in my career. | (*r*) |
| 11. | I am capable of coping with most of my problems. | |
| 12. | There are times when things look pretty bleak and hopeless to me. | (*r*) |

### *(iv) Emotional Intelligence: Situational Test of Emotion Management (STEM)*

The Situational Test of Emotion Management (STEM) is intended to assess emotion management – the capacity of individuals to regulate their emotions optimally, curbing negative feelings and fostering positive feelings (MacCann and Roberts, 2008). Permission was given by the developers to use the instrument for this study (see annexure 9). The STEM was developed using the situation judgement test method. Test items covering emotions of sadness, anger and fear across a range of situation types were created by extracting scenarios in which emotion management would be required from semi-structured interviews with 50 individuals. MacCann and Roberts (2008) showed the situational test of emotion management is also a valid test of emotional intelligence. That is, this test was correlated with vocabulary, university grades, and age, but was relatively independent of personality and thus assessed a form of intelligence. The original 44-item instrument was revised to create a shorter 20-item instrument ($\alpha$ =.83). This was done by selecting the best 20 items which were those with the higher factor loadings (0.5 or higher) after running an analysis with SPSS. The mean for the 20-item STEM was 0.62 (SD=0.12) compared to 0.52 (SD=0.07) for the 44-item STEM. The instrument has been used on undergraduate students at a UK university and first-year psychology students. The STEM is positively correlated with emotion perception tests, and is positively correlated with MSCEIT total score and most branch scores. The STEM is not significantly correlated with trait EI tests, confirming the distinctness of trait and ability EI. Test items and scoring protocol were re-produced to allow researchers to administer these short forms. These short forms and their scoring keys are freely available for researchers to use (Austin, 2010; MacCann & Roberts, 2008).

For each item, a scenario is presented. Participants then have to select which of four proposed options they feel the person should apply as the most effective action in this instance to improve emotions and manage the problem. The items relate to both work and personal life situations and depict sadness, anger, fear, or disgust. For each item,

participants receive a score that reflected the percentage of experts who choose each alternative as follows:

Table 3.8 Situational Test of Emotion Management (STEM) scoring

| | |
|---|---|
| IF STEM01 = 1 STEM_R01 = 0 . | IF STEM10 = 1 STEM_R10 = 0.75 . |
| IF STEM01 = 2 STEM_R01 = 0 . | IF STEM10 = 2 STEM_R10 = 0 . |
| IF STEM01 = 3 STEM_R01 = 0.916666667 . | IF STEM10 = 3 STEM_R10 = 0.25 . |
| IF STEM01 = 4 STEM_R01 = 0.083333333 . | IF STEM10 = 4 STEM_R10 = 0 . |
| IF STEM02 = 1 STEM_R02 = 0.75 . | IF STEM11 = 1 STEM_R11 = 0.916666667 . |
| IF STEM02 = 2 STEM_R02 = 0.25 . | IF STEM11 = 2 STEM_R11 = 0 . |
| IF STEM02 = 3 STEM_R02 = 0 . | IF STEM11 = 3 STEM_R11 = 0 . |
| IF STEM02 = 4 STEM_R02 = 0 . | IF STEM11 = 4 STEM_R11 = 0.083333333 . |
| IF STEM03 = 1 STEM_R03 = 0 . | IF STEM12 = 1 STEM_R12 = 0 . |
| IF STEM03 = 2 STEM_R03 = 0.166666667 . | IF STEM12 = 2 STEM_R12 = 0 . |
| IF STEM03 = 3 STEM_R03 = 0.833333333 . | IF STEM12 = 3 STEM_R12 = 0.083333333 . |
| IF STEM03 = 4 STEM_R03 = 0 . | IF STEM12 = 4 STEM_R12 = 0.916666667 . |
| IF STEM04 = 1 STEM_R04 = 0 . | IF STEM13 = 1 STEM_R13 = 0.166666667 . |
| IF STEM04 = 2 STEM_R04 = 1 . | IF STEM13 = 2 STEM_R13 = 0 . |
| IF STEM04 = 3 STEM_R04 = 0 . | IF STEM13 = 3 STEM_R13 = 0 . |
| IF STEM04 = 4 STEM_R04 = 0 . | IF STEM13 = 4 STEM_R13 = 0.833333333 . |
| IF STEM05 = 1 STEM_R05 = 0 . | IF STEM14 = 1 STEM_R14 = 0 . |
| IF STEM05 = 2 STEM_R05 = 0.166666667 . | IF STEM14 = 2 STEM_R14 = 0.083333333 . |
| IF STEM05 = 3 STEM_R05 = 0.75 . | IF STEM14 = 3 STEM_R14 = 0 . |
| IF STEM05 = 4 STEM_R05 = 0.083333333 . | IF STEM14 = 4 STEM_R14 = 0.916666667 . |
| IF STEM06 = 1 STEM_R06 = 0 . | IF STEM15 = 1 STEM_R15 = 0.166666667 . |
| IF STEM06 = 2 STEM_R06 = 0.833333333 . | IF STEM15 = 2 STEM_R15 = 0 . |
| IF STEM06 = 3 STEM_R06 = 0.166666667 . | IF STEM15 = 3 STEM_R15 = 0.833333333 . |
| IF STEM06 = 4 STEM_R06 = 0 . | IF STEM15 = 4 STEM_R15 = 0 . |
| IF STEM07 = 1 STEM_R07 = 0.083333333 . | IF STEM16 = 1 STEM_R16 = 0 . |
| IF STEM07 = 2 STEM_R07 = 0.916666667 . | IF STEM16 = 2 STEM_R16 = 0 . |
| IF STEM07 = 3 STEM_R07 = 0 . | IF STEM16 = 3 STEM_R16 = 0.25 . |
| IF STEM07 = 4 STEM_R07 = 0 . | IF STEM16 = 4 STEM_R16 = 0.75 . |
| IF STEM08 = 1 STEM_R08 = 0 . | IF STEM17 = 1 STEM_R17 = 0 . |
| IF STEM08 = 2 STEM_R08 = 0.25 . | IF STEM17 = 2 STEM_R17 = 0.75 . |
| IF STEM08 = 3 STEM_R08 = 0.75 . | IF STEM17 = 3 STEM_R17 = 0.25 . |
| IF STEM08 = 4 STEM_R08 = 0 . | IF STEM17 = 4 STEM_R17 = 0 . |
| IF STEM09 = 1 STEM_R09 = 0.75 . | IF STEM18 = 1 STEM_R18 = 0 . |
| IF STEM09 = 2 STEM_R09 = 0 . | IF STEM18 = 2 STEM_R18 = 0 . |
| IF STEM09 = 3 STEM_R09 = 0.166666667 . | IF STEM18 = 3 STEM_R18 = 0.916666667 . |
| IF STEM09 = 4 STEM_R09 = 0.083333333 . | IF STEM18 = 4 STEM_R18 = 0.083333333 . |

### *(v) Short Form of Empathy Quotient (EQ-Short)*

The 22-item EQ-Short, developed as a measure for empathy with a sample of healthy British undergraduates, is a self-administered instrument with forced choices (Baron-Cohen &

Wheelwright, 2004). The respondent is presented with statements that they have to rate. Responses are made on a 4-point scale ranging from *strongly agree (4)* to *strongly disagree (1), the scores awarded by respondents are totalled* with higher scores indicating a higher level of empathic ability. The initial 40-item EQ and its shorter 22-item version have been validated in studies with a wide variety of respondents (Baron-Cohen & Wheelwright, 2004; Wakabayashi et al., 2006).The internal consistency reliability of the EQ-short among British college students was satisfactory, with a Cronbach's Alpha coefficient of 0.90 (Wakabayashi et al., 2006). The scale scores are the sum of the ratings of the items. Relevant items reverse coded as indicated in Table 3.9.

Table 3.9 Short Form of Empathy Quotient

| | |
|---|---|
| 1. I am confident I get the success I deserve in life. | |
| 2. Sometimes I feel depressed. | (*r*) |
| 3. When I try, I generally succeed. | |
| 4. Sometimes when I fail I feel worthless. | (*r*) |
| 5. I complete tasks successfully. | |
| 6. Sometimes, I do <u>not</u> feel in control of work. | (*r*) |
| 7. Overall, I am satisfied with myself. | |
| 8. I am filled with doubts about my competence. | (*r*) |
| 9. I determine what will happen in my life. | |
| 10. I do <u>not</u> feel in control of my success in my career. | (*r*) |
| 11. I am capable of coping with most of my problems. | |
| 12. There are times when things look pretty bleak and hopeless to me. | (*r*) |

***(vi) Kanungo Job Involvement scale***

The Kanungo Job Involvement Scale (Kanungo, 1982) was developed as an improvement on the Lodahl and Kejner's (1965) job involvement measure. It is a uni-dimensional 10-item scale with Cronbach's Alpha reliabilities in different studies being 0.83 – 0.87 (Kanungo, 1982; Blau & Boal, 1987) and is reported to be valid (Blau and Boal, 1987). The 10 items are

rated using a scale ranging from *1=strongly disagree* to *5=strongly agree*. The studies done by Boshoff and Hoole (1998) found that the Kanungo's Job Involvement Inventory was portable to the South African situation with high construct validity and high internal reliability (Bester & Mouton 2006). The respondents had to rate the statements to indicate to what extent they agree or disagree with the statements. The scale is a one-dimensional and does not have subscales as summarised in Table 3.10. Scores of the questionnaire are linearly summed to produce a total score. The higher the scores respondents obtain, the higher their job involvement is.

Table 3.10 Kanungo Job Involvement

| |
|---|
| 1. The most important things that happen to me involve my present job. |
| 2. To me, my job is only a small part of who I am. |
| 3. I am very much involved personally in my job. |
| 4. 1 live, eat, and breathe my job. |
| 5. Most of my interests are centred around my job. |
| 6. I have very strong ties with my present job which would be very difficult to break. |
| 7. Usually I feel detached from my job. |
| 8. Most of my personal life goals are job-oriented. |
| 9. **I** consider my job to be **very** central to **my** existence. |
| 10. I like to be absorbed in my job most of the time. |

#### 3.3.3.2 Data collection instrument completed by patients

The CBI is an empirical tool developed by Wolf et al. in 1994 and has been used in several research studies to measure nurse caring (Burtson & Stichler, 2010; Mlinar, 2010; Palese et al., 2011; Peery, 2010) (see annexure 2). The CBI addresses assurance of human presence, respectful deference to the other, professional knowledge and skill, positive connectedness and attentiveness to the other's experience. It has been used for both nurses and patients to assess caring behaviours. The knowledge and skills factor of this instrument is perceived by patients as the most frequently met caring behaviour which highlights the high importance patients bestow on instrumental caring behaviours – something which takes up most of the nurses' time at the bedside (Larrabee, Ostrow, Withrow, Janney, Hobbs &

Burant, 2004; Palese et al., 2011). A positive correlation has also been found between CBI and patient satisfaction, with patients' satisfaction mainly determined by 'positive connectedness'. This factor comprises elements such as teaching patients and spending time with the patient (Palese et al., 2011). Based on an instrument originally designed with 75 items and revised through psychometric process to 43 and finally to 24 items. The instrument's 24 items include four subscales, namely assurance, knowledge and skill, respectfulness and connectedness with a Cronbach's Alpha .98 for nurses; test-retest reliability r = 0.85 for patients and 0.82 for nurses and 4-factor convergent validity (Watson, 2008). After 1994 the Likert Scale of the CBI was revised to a six-point scale (1=never, 2=almost never, 3=occasionally, 4=usually, 5=almost always, 6=always). Reliability coefficient for the CBI for patient perceived nurse caring is ά=0.98 (Watson, 2008). For this instrument six factors or subscales were identified as summarised in Table 3.11. The total score given by patients to each statement is calculated and the higher the score obtained, the better patients perceive the caring behaviours of nurses to be.

Table 3.11 Caring Behaviours Inventory (CBI)

| Factor | Items |
|---|---|
| ***Assurance*** | 16. Returning to the patient voluntarily<br>17. Talking with the patient<br>18. Encouraging the patient to call if there are problems<br>20. Responding quickly to the patient's call<br>21. Helping to decrease patient's pain<br>22. Showing concern for the patient<br>23. Giving the patient's treatments and meds on time<br>24. Relieving the patient's symptoms |
| ***Knowledge and Skills*** | 9. Knowing how to give shots, IV's, etc.<br>10. Being confident with the patient<br>11. Demonstrating professional knowledge and skill<br>12. Managing equipment skilfully<br>15. Treating patient information confidentially |
| ***Respectful*** | 1. Attentively listening to the patient<br>3. Treating patient as an individual<br>5. Supporting the patient<br>6. Being empathetic or identifying with the patient<br>13. Allowing the patient to express feelings about his or her disease and treatment<br>19. Meeting the patient's stated and unstated needs |
| ***Connectedness*** | 2. Giving instructions to teaching the patient<br>4. Spending time with the patient<br>7. Helping the patient grow<br>8. Being patient or tireless with the patient<br>14. Including the patient in planning his or her care |

The CBI was translated into isiZulu, Afrikaans, and Sesotho for the benefit of the patients in the sampled institutions as these were the languages used most often in the selected province. The Statistics SA figures for 2011 indicated that the languages mostly used in Gauteng province are isiZulu (19.8%), English (13.3%), Afrikaans (12.4%) and Sesotho (11.6%) (Lehohla, 2011b), representing 57% of the total population. The forward and backward translation process was used to translate the questionnaires (Burns & Grove, 2009) and experts were consulted to ensure that the translation correctly reflects the content of the questionnaires. None of the patient respondents used the isiZulu questionnaire.

#### 3.3.3.3 Data collection instruments for this study

The data collection instruments selected for this study are summarised in Table 3.12.

Table 3.12 Instruments selected for the study

| Concept | Instrument | Focus | Validity | Reliability | Previously used by | Time (min) to do | Completed by |
|---|---|---|---|---|---|---|---|
| **Dependent variable** | | | | | | | |
| Work performance (Schwirian, 1978) | Schwirian's 6-DSNP | Nurse work performance self-report | Construct validity through collaboration of developers, consultants & pilot respondents. 4-step content validation | High α =.84 - .98 | Nurses in USA, Australia, New Zealand & Uganda | ± 10 | Nurses |
| Caring behaviours (Wolf et al., 1994) | Caring Behaviours Inventory (CBI) 24 – item | Caring behaviours in nursing patient report | Convergent validity *r*=0.62 | Test-retest reliability *r*= 0.88 for patients Internal consistency ά=0.96 | Patients and nurses | ± 10 | Patients |
| **Independent variables** | | | | | | | |
| Professional values (Weiss & Schank, 2000) | Nurses Professional Values Scale | Professional values in nursing | Construct validity overall factor loading range of .46 - .79 Exploratory analysis | Internal consistency reliability (total scale) α = .92. | Nurses in USA | ± 5 | Nurses |

| Concept | Instrument | Focus | Validity | Reliability | Previously used by | Time (min) to do | Completed by |
|---|---|---|---|---|---|---|---|
| Personality Judge, Locke & Durham, 1997; Judge et al., 2003) | Core Self-evaluation Scale | Self-esteem, generalized self-efficacy, neuroticism, and locus of control | Correlation amongst traits = average .64 Factor loadings core traits – .80 Equal to optimal weighting of 4 traits Incremental validity over five-factor model | Reliability α ≥ .80 | Various countries and workplaces and once in Zululand, South Africa in composite instrument | ± 5 | Nurses |
| Emotional intelligence (MacCann & Roberts, 2008) | STEM | Ability EI | Positive correlation with an intelligence test, university grades and age divergent validity test with respect to personality | α = 0.68 *r* = 0.73 | Undergrad students in UK | ± 15 | Nurses |
| Job involvement (Wolf et al., 1994) | Kanungo Job Involvement Scale | Psychological identification with and level or participation in work | Convergent and discriminate validity | Test-retest coefficients of 0.74, 0.85 and 0.82 α = 0.83 – 0.87 | Psychologists in RSA | ≤ 5 | Nurses |
| Empathy (Wakabayashi et al., 2006) | Short Form of Empathy Quotient (EQ-Short) | Empathetic ability | Concurrent validity: zero-order correlations with 16PF | α = 0.90 *r*=0.93 | British students in UK | ≤ 5 | Nurses |

### 3.3.4 Pilot test

While all the selected instruments used in the study were found to be valid and reliable and have been used in other nursing populations, only two of the selected instruments had previously been used in the South African context. The pilot study was conducted between 7 and 20 September 2013 at hospital 1 with a sample of 19 nurses and 17 patients according to the stipulated inclusion criteria. The pilot study was used to test the face validity and time taken to complete as well as the data collection process. The pilot group completed all the instruments.

#### 3.3.4.1 Nurse respondents

Due to the shortage of staff and acuity of patients it was not possible to withdraw the professional nurses from the clinical units for about 35 minutes to complete the questionnaire which included the six instruments targeting nurses. It was agreed with the hospital management that professional nurses would keep the questionnaires with them to complete. The questionnaires were distributed to all professional nurses working in medical and surgical wards by a person delegated by the nursing service manager, namely the training department manager. A meeting was arranged with this manager to explain the requirements for the completion of the questionnaires, such as the inclusion and exclusion criteria, the request that respondents would indicate in writing on the questionnaires if any problems were experienced, as well as the necessity that all the instruments must be completed and the signed consent forms separated from the questionnaire. The consent form was included at the bottom of the information sheet for participants and two copies of this page was attached to the questionnaire – one to sign and submit separately to the researcher and one for the nurse to retain. A total of 55 questionnaires were distributed and 30 nurses completed the questionnaire (54.5% response rate).

Completed questionnaires were submitted to the training department's administrative assistant where they were picked up by the researcher on the 26th September 2013. Due to the nursing shortage and patient acuity it was not possible to do a focus group with respondents. It was possible to speak to some of the respondents in addition to the notes made on the questionnaires to identify any challenges with the questionnaire.

Because it was not possible to discuss the instruments with the above participants, the researcher decided to pilot the instrument with a group of nurses that would be able to provide detailed feedback. Eight (8) professional nurses not working in the medical and surgical units were requested to complete the questionnaire with the specific purpose to identify any challenges with the questionnaire. When the questionnaire was collected from each of them, their contribution was discussed with them after completion of the

questionnaire, emphasising any challenges they may have experienced with the questionnaire.

The following was reported and attended to:

(i) Many indicated that it was a long questionnaire to complete. No changes were made, as all the instruments included in the questionnaire were required for this study.
(ii) Two typographical errors were identified and corrected.
(iii) No challenges were experienced with the completion of the form – there was one place where two questions were experienced as more or less similar by one person, but not by all respondents. Therefore no changes were made.

On scrutinising the completed questionnaires, one challenge that was identified was that two nurse respondents only marked ‘surgical or medical ward’ and did not provide the number of the ward. This created confusion as there was more than one surgical/medical ward in the hospital. The statement following the type of ward in which respondents work was amended to be more specific by adding ‘(Ward/unit number)’ after the statement ‘Specific unit where you currently work’. This information was required for statistical analysis where it was required to link wards with each other and the wards with patients. The administrative staff receiving the completed questionnaires separated the consent forms from the questionnaires but had clipped the consent forms to the questionnaire. This made it possible to add the unit numbers where nurses work before the consent forms were removed and the questionnaires collected by the researcher. Completed forms were stored in an envelope for the researcher to collect. The instruction sheet to field workers was subsequently amended to state that the ward number must be included on the form before the consent form is separated from the questionnaire.

While it was planned that data collection would take one week per hospital, handing out and collecting the completed questionnaire took just under three weeks at hospital 1. The

schedule for the data collection of the remainder of the hospitals was revised to accommodate a longer timeline for data collection at each hospital.

#### 3.3.4.2 Patient respondents

With regard to the patient questionnaire, the pilot hospital provided a person to distribute and collect the questionnaire but this did not turn out too well as there were patients not in the targeted wards who completed the questionnaire. Fieldworkers that were subsequently selected, trained and accompanied by the researcher to the first interviews, provided responses that were better coordinated and linked to each of the clinical wards where nurses completed the questionnaires. Seventeen (17) patients completed questionnaires. One question raised by patients, was how they should rate the question when some nurses provide good care and others not such good care. Patients were advised, as indicated in the statement at the top of the questionnaire, that an overall or general view of the care received in the hospital should be provided. A few patients added a comment to express more clearly their feelings related to the question. No changes were made to the patient questionnaire.

No content amendments were made to the instruments for the study. The responses obtained at hospital 1 were therefore included in the study.

### 3.3.5 Data collection process and management

Hospital 9 never declined to participate in the study, but always had a reason why the researcher could not come to discuss the research project and to invite participation. Finally they were excluded from the study, but it did make the target population smaller than originally planned. All other hospitals participated in the study.

A sample of 524 professional nurses was invited to participate with 357 nurses from the public sector and 167 nurses from private sector. Of the total group invited to participate, 249 (48%) nurses returned the questionnaire with 146 (58.63%) from the public sector and 103 (41.37%) from the private sector. This provided a ratio of 1.5:1 public to private nurse

respondents, but with the discarded questionnaires that were not used for analysis, the two public to one private sector nurse ratio could be maintained. Of the returned questionnaires 217 (93.89%) were fully completed and used. The remaining 32 (6.11%) questionnaires could not be used due to wrong categories completing the questionnaire (12), nurses from specialist units (13) and incomplete submissions (2). These responses were not included in the results of the study. A summary of the samples and data collection process is contained in Table 3.13.

A sample of 124 patients was recruited for the study including 59 (47.58%) from the private sector and 65 (52.42%) from public sector. Of this group of patients, 54 patients from each sector (87.1%) agreed to participate while 16 (12.9%) did not want to participate. Hospital units were visited, and patients who adhered to the inclusion criteria were identified in consultation with the nurse in charge of the unit. This nurse identified patients who complied with the inclusion criteria and then the field worker approached and invited the patients to participate. While the intention was that the unit managers approach the patients with the information and consent forms to obtain consent, many unit managers indicated that they did not have time to do this and the researcher and field worker had to approach the patient.

Data collection took about three weeks at each hospital. The researcher met with the nursing management team at all the selected hospitals to discuss the process of implementation of the research. The data collection commenced on 12 September 2013 and was concluded on 20 March 2014 as indicated in Table 3.13. It was not possible to withdraw the professional nurses from the clinical units to complete the questionnaire which took about 35 minutes to complete in all the hospitals selected for the study. Thus, forms were distributed to the nurses in their units where they could complete the forms in their own time. The questionnaires were distributed in unsealed envelopes which could be sealed after completion to ensure anonymity to all professional nurses working in medical and surgical units.

Table 3.13 Samples and data collection process

| Hospital | Dates for data collection | Nurse questionnaires issued | Nurse questionnaires return | % return | Number used | Reasons for non-use | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Wrong category nurse | Specialist unit not included | No personal details | Not complete |
| Hospital 1 Private | 12 –26/ 9/13 | 55 | 30 | 55 | 20 | 4 | 5 | 1 | |
| Hospital 2 Private | 26/11-17/12/2013 | 45 | 31 | 69 | 23 | 4 | 8 | | |
| Hospital 3 Private | 5/11 - 20/12/2013 | 44 | 24 | 55 | 15 | | | | 1 |
| Hospital 4 Private | 11/11 -10/12/2013 | 23 | 18 | 78 | 14 | 4 | | | |
| **TOTAL PRIVATE SECTOR** | | **167** | **103** | **61.68%** | **73** | **12** | **13** | **1** | **1** |
| Hospital 5 Public | 4 - 13/11/2013 | 14 | 13 | 93 | 13 | | | | |
| Hospital 6 Public | 25/10 - 18/12/2013 | 14 | 5 | 36 | 5 | | | | |
| Hospital 7 Public | 24/2 - 14/3/2014 | 34 | 10 | 29 | 10 | | | | |
| Hospital 8 Public | 10/1 - 20/3/2014 | 295 | 118 | 40 | 117 | | | | 1 |
| Hospital 9 Public | No response | 0 | 0 | 0 | 0 | | | | |
| **TOTAL PUBLIC SECTOR** | | **357** | **146** | **40.9%** | **145** | **0** | **0** | **0** | **1** |
| **PROJECT TOTAL** | | **524** | **249** | **48%** | **217** | | | | |

The researcher approached the unit managers of participating medical and surgical wards in the selected hospitals about the selection of patients for the study and to introduce the field-worker. This was done during the same period that nurses had received the questionnaires to complete. As indicated all patients complying with the inclusion criteria that were willing and able were invited to participate. Due to high acuity and short stay in private sector hospitals and the high prevalence of very ill and patients with mental health problems in public hospitals the number of patients that could be invited was limited. The patient data were collected by a field worker, the permission form separated from the questionnaire and sealed in separate envelopes.

All forms were collected from the nurses by the researcher at least weekly during the data collection period. All forms were checked for completeness and patients and nurses from the

same units collated in groups. During this process the completed instruments were kept under lock and key. On completion of the data collection at each hospital, the completed forms were grouped into the wards where the questionnaires were collected, sealed in an envelope and couriered to the statistician for data capturing and analysis.

## 3.4 DATA ANALYSIS

Data analysis entailed categorising, ordering, manipulation and summarising data obtained and describing it in meaningful terms (Brink, Van der Walt & Van Rensburg, 2012; Levine, Stephan, Krehbiel & Berenson, 2011). If more than 10% of the data on the questionnaire was missing, they were not used in the survey, and where answers were missing in questionnaires, it was left blank during data analysis.

### 3.4.1 Descriptive statistics

Descriptive statistics were calculated with SPSS 21 (SPSS Inc., 2013). Descriptive statistics utilising frequencies, means and standard deviations was used to report the demographic data, distribution of intrapersonal characteristics, work performance and caring behaviours. Descriptive statistics is the starting point of analysis in studies with numerical data (Burns & Grove, 2009) and it allowed the researcher to organise the data in ways that give meaning and insight into the data obtained and these allow the researcher to analyse the phenomenon from different angles (Burns & Grove, 2009).

### 3.4.2 Factor analysis

Factor analysis was conducted with SPSS 21 (SPSS Inc., 2013). As most of the questionnaires were used in South Africa for the first time, construct validity was determined with exploratory and confirmatory factor analysis which also provided the statistical significance of the relationships identified (Sireci, 2011).

Structural equation modelling (SEM) is a flexible tool that allows the combination of regression, correlation and factor analysis simultaneously when consideration issues related

to the humanities and other sciences. SEM was used in this study for its ability to thoroughly test a hypothesized model of relations amongst dependent and independent variables which is based on theory. SEM provides a set of indicators that indicate to what extent the hypothesized model fits the data (Hoyle, 1995).

#### 3.4.2.1 Exploratory Factor Analysis

Exploratory factor analysis entails the following steps to create smaller but more meaningful groups or factors (Blunch 2013; Pallant, 2013; Terre Blanche, Durrheim & Painter 2006):

(i) Determining the relationships among variables

Exploratory factor analysis produces a factor matrix with the relationships between the variables indicated by factor loadings (correlation coefficients). Generally variables with factor loadings lower than 0.3 are not used, but for this study all the factor loadings above 0.2 were used in the analysis process to determine how well the data from the study fit the model in the literature (Blunch 2013; Pallant, 2013; Hoyle 1995; Polit & Beck, 2012; Terre Blanche, Durrheim & Painter 2006).

(ii) Extracting initial factors

For this study factor extraction was done with SPSS 21 (SPSS Inc 2013) through principal component analysis as discussed in Chapter 4. This produces a set of factors which are then standardised and Eigen values determined. Eigen values determine the amount of variance explained by each factor. The general rule is then that only factors with Eigen values higher than 1 are considered as meaningful. A scree plot can also be used to plot the values on an X and Y axis and where there is a distinct break between the meaningful factors the remainder of the factors, which would not be used.

(iii) Rotating the factors

The analysis produces a matrix with factor loadings which is not always easy to interpret because variables correlate with more than one factor. The ideal is that every variable only correlates with one factor. The factors are rotated to provide a better picture of the variables which would be easier to interpret. In this study Oblimin rotation was used to produce a pattern matrix from which the factors were identified. Factor identification is based on the variable loadings onto the factor and, depending on the content of the variables, the factor is labelled (Blunch 2013; Pallant 2013; Hoyle 1995; Polit & Beck, 2012; Terre Blanche, Durrheim & Painter, 2006). For this study the labels of the models obtained in the literature was used for grouping the variables and to determine the fit.

#### 3.4.2.2 Confirmatory factor analysis

To test the theoretical measurement instrument with the hypothesized relationships model identified from the study data, confirmatory factor analysis is done, using maximum likelihood in AMOS (AMOS Development Company, 2011) Confirmatory factor analysis is a subset of structural equation modelling (Blunch, 2013; Hoyle, 1995). To determine whether the overall fit of the model is good, measures of good fit were identified for the study as discussed in Chapter 4 (Blunch, 2013; Hancock & Mueller 2010; Hoyle 1995; Polit & Beck, 2012). As it is regarded as good practice, multiple measures of good fit were applied to the study (Hancock & Mueller, 2010). The measures of good fit used for this study included Chi-square, CMIN/DF with ratios up 3, 4 or 5 (Mueller, 1996); Comparative Fit Index (CFI) with values above 0.9 (Muller 1996); Root Mean Square Error of Approximation (RMSEA) with values lower that 0.10 (Blunch 2013); Akaike Information Criterion (AIC) and the Browne-Cudeck Criterion (BCC) where the lowest values are the optimal models (Schumacker & Lomax, 2004). For identification in confirmatory factor models the following should apply (Blunch 2013):

- Every factor must have at least two to three indicators;

- Error terms are not correlated;
- Covariance matrix for latent variables does not contain zeros; and
- No manifest variable is indicated for more than one factor.

### 3.4.3 Correlations and multiple regression

Correlation analysis was performed to understand relationship between the dependent variables and the independent variables of the study. This was performed with SPSS 21 (SPSS Inc 2013) producing a Spearman Rank Order Correlation coefficient (Pallant 2013; Polit & Beck 2012; Steyn, 2009). In view of the fact that it was not possible to determine the relationship on the level of each specific nurse, the data on nurses and patients were grouped to ward level. Spearman's rho was then used to measure the relationship between nurses' work performance, their intrapersonal characteristics and patients' perceptions of the nurses' caring behaviours.

Multiple regression analysis was performed to predict the dependent variables from the independent variables of the study.

### 3.4.4 Effect size of relationships

The coefficient of multiple determination for multiple regression, referred to as R-squared ($R^2$), was used as a measure of the effect size of the correlation between ordered variables (such as age, experience, number of children) using PROC SURVEYREG in SAS (SAS Institute Inc 2011; Steyn, 2009).

The effect size for nominal demographical variables was determined as the standardised difference between means, called Cohen's d (Steyn, 2009).

### 3.4.5 Structural Equation Modelling (SEM)

SEM was used to test the hypothesized model as it examines the correlations among a number of variables in order to identify possible causal relationships (Blunch, 2013; Leedy &

Ormrod, 2012; Hoyle 1995; Polit & Beck, 2012). SEM encourages confirmatory rather than exploratory modelling thus making it suitable for model-testing rather than model or theory development. SEM is a comprehensive approach to modelling associations between variables. Such variables include endogenous variables which are those directly linked to one or more other variables in the model and are indicated with one straight arrow pointing directly at it. Endogenous variables also have other external errors or disturbances influencing it. Therefore some of the endogenous variables will be explained by external factors not included in the model which is referred to as errors or disturbances. Exogenous variables include those that are in the model, but only as a cause of other variables – they are therefore not directly influenced by other variables in the model even though they may co-vary with some of the variables in the model (Blunch, 2013; Hoyle 1995; Lee, 2013).

Measurements in SEM include linear associations labelled as correlations. Correlations reflect linear associations between variables indicating that when one variable is high, a second variable may be higher or lower. Again, it does not show causality. In SEM a correlation between two variables is connected with a double-headed elbow or a curved arrow. This distinguishes the relationship from assumed causality which is reflected by a straight arrow (Hoyle 1995; Lee, 2013).

SEM usually focuses on abstract psychological variables such as ‘personality’ rather than on the manifest variables used to measure these concepts. Measurement is recognized as difficult and error-prone. By explicitly modelling measurement error, SEM aims to derive unbiased estimates for the relations between latent concepts. To this end, SEM allows multiple measures to be associated with a single latent construct. SEM analysis assesses the fit between the hypothesized model and the observed relationships in the data (Spence, Laschinger & Finegan, 2008). SEM is an extension of the general linear model (GLM) that enables a researcher to test a set of regression equations simultaneously and also allows examination of more complex relationships and models, such as confirmatory factor analysis

(CFA) and time series analyses (Blunch, 2013). SEM analysis was applied with the AMOS programme (Amos Development Company, 2011) to analyse the results of the study.

### 3.4.6 Validity and reliability

The quality of measurement taking place during scientific enquiry is crucial to ensure quality outcomes of the process. This is done by establishing the validity and reliability of procedures and instruments used for the study. Validity refers to the degree which an instrument measures what it claims to measure (Babbie & Mouton, 2001; Brink, Van der Walt & Van Rensburg, 2012; Burns & Grove, 2009; Gravetter & Forzano, 2012). With instruments that have been found valid in other disciplines but have not been used for nursing studies, it is important that validity be assessed in terms of nursing knowledge Burns & Grove, 2009).

#### 3.4.6.1 Face validity

Face validity refers to the extent which an instrument seems to measure what it intends to measure (Burns & Grove, 2009; Gravetter & Forzano, 2012; Polit & Beck, 2012). Face validity of the instruments identified for the study was evaluated with a pilot study as discussed in item 3.3.4.

#### 3.4.6.2 Construct validity

Construct validity refers to what is being measured and evaluates the relationship between the instrument and the related theory. Construct validity reflects the degree to which items in an instrument relate to one another as expected within a system of theoretical relationships (Babbie & Mouton, 2001; Burns & Grove, 2009; Gravetter & Forzano, 2012; Polit & Beck, 2012). Exploratory and confirmatory factor analyses were used to confirm construct validity in this study and to determine how well the data from this study fits the theoretical models identified in the literature

.

#### 3.4.6.3 Reliability

Reliability refers to the likelihood that an instrument will consistently provide the same information when used repeatedly to measure the same individual under the same circumstances, by the same or other researchers. Reliability measures the amount of random error in measurement techniques and plays a particularly important role in the selection of rating scales used in instruments. Reliability of an instrument is provided as a correlation measure between 0 and 1 and the closer the measure is to 1, the higher the correlation (Burns & Grove, 2009; Gravetter & Forzano, 2012; Polit & Beck, 2012). The reliability of the instruments used in the study is included in Table 3.12. Cronbach's Alpha was used in this study to determine reliability.

## 3.5 SUMMARY

This chapter provided a detailed description of the research design and method used to complete this study. This included a description and justification of the research design, research methodology, sampling, data collection, data analysis, and reliability and validity of the study. Results were descriptively analysed with SPSS 21 (SPSS Inc., 2013); multiple regression with SPSS 21 (SPSS Inc., 2013); exploratory and confirmatory factor analysis as well as structural equation modelling in AMOS (Amos Development Company, 2011) and SAS (SAS Institute Inc., 2011) for the determination of effect sizes of relationships. The study employed structural equation modelling to investigate which factors predict or influence the work performance and caring behaviours of nurses. The results of the study are presented in Chapter 4.

# CHAPTER 4

# RESULTS OF THE STUDY

# CHAPTER 4

# RESULTS OF THE STUDY

## 4.1 INTRODUCTION

Chapter 3 provided an overview of the methodology for this study about the influence of intrapersonal characteristics of professional nurses on their work performance. Chapter 4 presents the results of the study which include the realisation of the study sample, demographic descriptives, construct validity, reliability, the relationship amongst variables and structural modelling.

## 4.2 REALISATION OF STUDY SAMPLE

The target group for the study was registered professional nurses. The research was performed in Gauteng as it is the province with the highest number of professional nurses on the SANC register. The aim was to approach 600 professional nurses to participate in the research. This number was based on a recent national survey done amongst registered nurses in South Africa which showed a response rate of 42.4% (Coetzee et al., 2013). Based on this and to ensure an adequate sample size for the study, the aim was to sample 600 nurses – almost three times what was actually required to account for the response rate of 200 respondents (Hoyle, 1995; Ullman, 1996). As indicated in Chapter 3, patients were also invited to complete a Caring Behaviours Inventory, that will be used in conjunction with the 6-DSNP, to assess the work performance of professional nurses. The aim was to select a total of 150 patients with 50 patients from the private sector and 100 patients from the public sector.

### 4.2.1 Hospitals participating in the study

Hospitals in the Tshwane District (district with the highest number of general hospitals in Gauteng) were randomly selected according to the inclusion and exclusion criteria outlined in item 3.3.2.3 and subsequently approached to participate in the study. The selection of

public sector hospitals was stratified into district (4), regional (1) and central/tertiary (2) hospitals and then the district and central/tertiary hospitals were randomly selected for participation in the study. There is only one regional hospital in the Tshwane district which was purposely selected to participate and three district hospitals and one central/tertiary hospital were randomly selected.

One private sector group was randomly selected by putting the names of the three private hospital groups into a glass bowl and drawing the name of one. Thereafter three individual hospitals were randomly selected with one additional hospital for piloting the data collection process and instruments used for the study. Following the pilot study, the instruments required some technical editing and together with the supervisor it was agreed that the questionnaires from the pilot study would be incorporated into the study, thus realising a sample of four private hospitals participating in the study.

The number of hospitals approached for participation was guided by the number of professional nurses working in medical and surgical wards at the selected institutions, keeping in mind that the relationship of public sector to private sector participants should be 2:1. The sample of hospitals realised consisted of four private hospitals and five public hospitals, which provided a potential number of 606 nurse participants as summarised in Table 4.1. One public hospital, hospital 9, never officially declined to participate, but never responded to the invitation to participate and an appointment to meet with the hospital management could not be obtained. This hospital was therefore excluded after ten months of attempting to secure an appointment. All the other sampled hospitals participated in the study.

Table 4.1 Potential participants in selected hospitals

| Sector | Hospital | Potential participants | Total |
|---|---|---|---|
| Private hospitals | 1 | 55 | 169 |
| | 2 | 45 | |
| | 3 | 44 | |
| | 4 | 25 | |
| Public hospitals | 5 | 14 | 437 |
| | 6 | 14 | |
| | 7 | 34 | |
| | 8 | 295 | |
| | 9 | 80 | |

### 4.2.2 **Wards participating in study**

The surgical and medical wards were used as primary units of measurement as it could be expected that a certain culture exists in each of the different wards with all nurses in the same ward performing in a specific manner. A total of 45 wards participated in the study as indicated in Table 4.2.

Table 4.2 Grouped/nested units of participants

| Hospital | | Grouped units |
|---|---|---|
| 1 | Private | 5 |
| 2 | Private | 4 |
| 3 | Private | 5 |
| 4 | Private | 6 |
| 5 | Public | 2 |
| 6 | Public | 2 |
| 7 | Public | 4 |
| 8 | Public | 17 |
| | **Total** | **45** |

### 4.2.3 **Nurses participating in the study**

The main target of the study was professional nurses. All the professional nurses in surgical and medical wards in the selected hospitals were invited to participate in the study, keeping in mind that a ratio of two nurses from the public sector to each nurse from the private sector had to be maintained. A total of 249 respondents of the 524 nurses invited to participate returned their questionnaires, reflecting an overall response rate of 48%. The response rate varied amongst individual hospitals as indicated in Table 4.3. This response was however, in

accordance with what was expected, to gain a sample of 200 nurses (Coetzee et al., 2013). Table 4.3 also highlights the 28 questionnaires that could not be included for the data analysis, as well as the reasons for not including those questionnaires.

Table 4.3 Response rate of nurses at selected hospitals

| Hospital | | Instruments issued | Instruments returned | Total returned per sector | % return | Number used | Reason not used | | | | Total used per sector |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Wrong category nurse | Specialist ward not included | No personal details | Not completed | |
| 1 | Private | 55 | 30 | | 55% | 20 | 4 | 5 | 1 | | |
| 2 | Private | 45 | 31 | | 69% | 23 | 4 | 8 | | | |
| 3 | Private | 44 | 24 | | 55% | 15 | | | | 1 | |
| 4 | Private | 23 | 18 | 103 | 78% | 14 | 4 | | | | 73 |
| 5 | Public | 14 | 13 | | 93% | 13 | | | | | |
| 6 | Public | 14 | 5 | | 36% | 5 | | | | | |
| 7 | Public | 34 | 10 | | 29% | 10 | | | | | |
| 8 | Public | 295 | 118 | 146 | 40% | 117 | | | | 1 | 145 |
| | **Total** | **524** | **249** | | **48%** | **218** | **12** | **13** | **1** | **2** | **218** |

A total of 61.68% (103) of the 167 questionnaires issued at private hospitals were returned and 40.90% (146) of the 357 questionnaires distributed at public hospitals were returned. The reason for the difference in response rate between the two sectors could be that the morale of staff in some of the public hospitals was lower than in the private sector. Staff in many of the public sector institutions worked under more stressful and less resourced practice environments which affects the morale of nurses and this seems to support findings by other researchers (Coetzee et al., 2013; French, du Plessis & Scrooby, 2011). Of the questionnaires returned, 73 from the private sector and 145 from the public sector could be used providing a distribution of two public sector nurses (66.5%) to one private sector nurse (33.5%) as reflected in Figure 4.1.

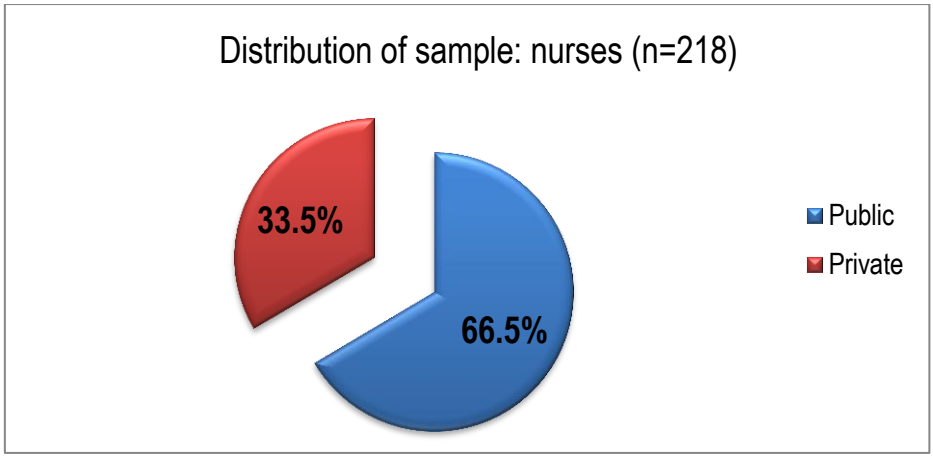


Figure 4.1 Private-public distribution of sample of professional nurses realised

### 4.2.4 Patients participating in the study

Patients in the surgical and medical wards participating in the study and who complied with the inclusion criteria for the study outlined in item 3.3.2.6 were invited to participate in the study. The selection of patient participants was done in cooperation with the unit manager who advised the researcher and fieldworkers which patients complied with the inclusion criteria. The unit manager informed the patients about the project and obtained their permission to be approached for participation. The fieldworker could then approach the patient to invite participation in the study and assist with the completion of the questionnaire if necessary. In two of the public hospitals the unit manager indicated which patients complied with the inclusion criteria, but did not inform them about the project for permission to participate as they indicated that they did not have time to do so. In this case the researcher undertook this task, so that the fieldworker could approach the patient for his or her participation.

A total of 58 patients participated in each of the sectors as indicated in Table 4.4. For the public sector this resulted in a 58% realisation of the planned sample while the private sector sample had eight (16%) more participants than planned. The number of patients who could be invited to participate in the study was limited, particularly in the public sector. In the public

sector the following situations resulted in few patients being available to participate as they did not comply with the inclusion criteria:

(i) Patient acuity resulting in patients being in pain, or too ill to participate.

(ii) The number of mental healthcare patients requiring acute care admitted to medical wards in public hospitals. These patients could not participate in the study.

In the private sector the patients available for random selection were limited due to the short stay of patients in private hospitals. This resulted in patients who then were in hospital at the time of the data collection, being in pain or too ill to participate.

In some wards patients were interviewed or invited to complete a questionnaire, but their responses could not be used as the nurses in the wards where they were admitted did not return any of their questionnaires.

Table 4.4 Response of patients participating in the study (n=116)

| Hospital | | Invited | Declined | Not used | % return | Number used | % of total sample | Total per sector |
|---|---|---|---|---|---|---|---|---|
| 1 | Private | 26 | | 5 | 100 | 21 | 18.1 | |
| 2 | Private | 10 | 2 | | 78 | 8 | 6.9 | |
| 3 | Private | 15 | 3 | | 80 | 12 | 10.3 | |
| 4 | Private | 19 | 2 | | 89.5 | 17 | 14.7 | 58 |
| 5 | Public | 6 | | | 100 | 6 | 5.2 | |
| 6 | Public | 11 | 5 | 4 | 55 | 2 | 1.7 | |
| 7 | Public | 8 | | | 100 | 8 | 6.9 | |
| 8 | Public | 48 | 6 | | 86.4 | 42 | 36.2 | 58 |
| | **Total** | **135** | **18** | **9** | **80%** | **108** | **100%** | **116** |

## 4.3 DEMOGRAPHIC PROFILE OF STUDY PARTICIPANTS

The demographic profile of the study participants including professional nurses and patients, is described next.

### 4.3.1 Demographic profile of nurse respondents

A total of 218 usable questionnaires were completed by nurse respondents. Questions not responded to in the instruments are indicated as missing.

#### 4.3.1.1 Gender distribution of nurse respondents

The sample of professional nurses consisted of 205 (94%) females and 10 (4.6%) males with three respondents (1.4%) not completing this question as indicated in Figure 4.2.

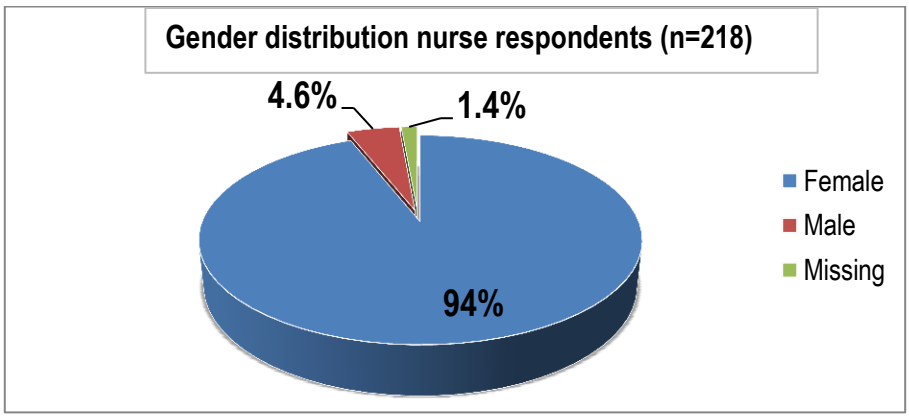


Figure 4.2 Gender distribution of nurse respondents (%)

#### 4.3.1.2 Age distribution of nurse respondents

The analysis of the age distribution of the nurse respondents indicates that the majority [66 (30.3%)] were in the age group 40 – 49 years, with 56 (25.7%) in the age group 30 – 39 years, 52 (23.9%) in the 50 – 59 year age group, and 22 (10.1%) in the 25 – 29 year age group with eight (3.7%) in the 60 – 69 year age group. None of the respondents was older than 70 years. One respondent (0.5%) did not answer this question. The age distribution of the nurse respondents is reflected in Figure 4.3.

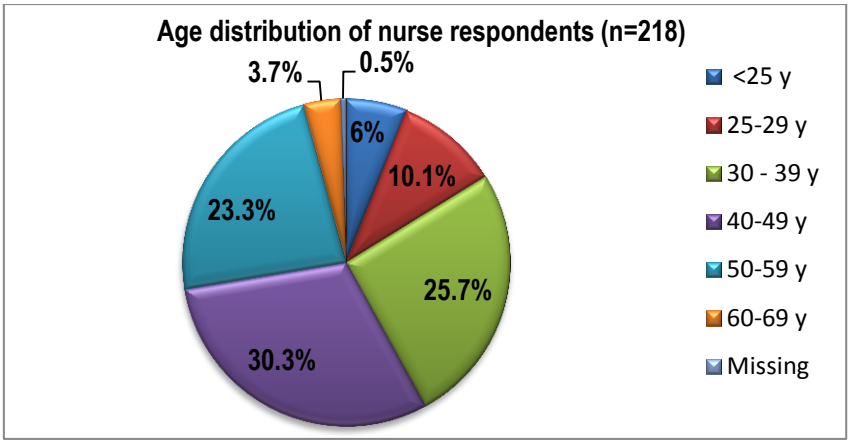


Figure 4.3 Age distribution of nurse respondents (%)

#### 4.3.1.3 Marital status of nurse respondents

The marital status of nurses participating in the study is illustrated in Figure 4.4, which reveals that the largest single proportion [102 (46.8%)] of the 218 respondents were married, followed by 77 (35.3%) single and never married, 17 (7.8%) divorced, 13 (6.0%) living with a partner and eight [8 (5.4%)] widowed. One person (0.5%) did not answer this question.

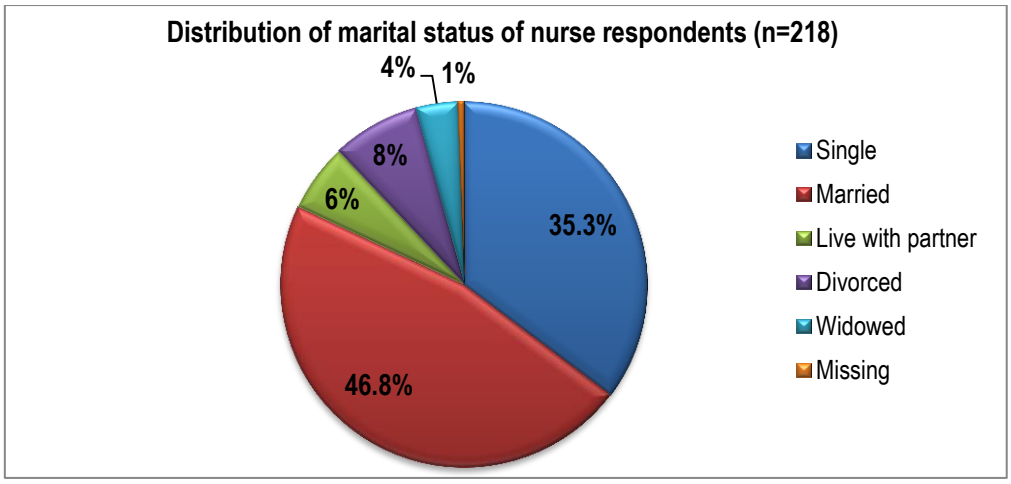


Figure 4.4 Distribution of marital status of nurse respondents (%)

#### 4.3.1.4 Family responsibilities of nurse respondents

The majority [113 (51.8%)] of nurse respondents had 1 – 2 children, 57 (26.1%) had no children; 38 (17.4%) had 3-5 children and 9 (4.1%) had more than 5 children. One person (0.5%) did not answer this question. This information is illustrated in Figure 4.5.

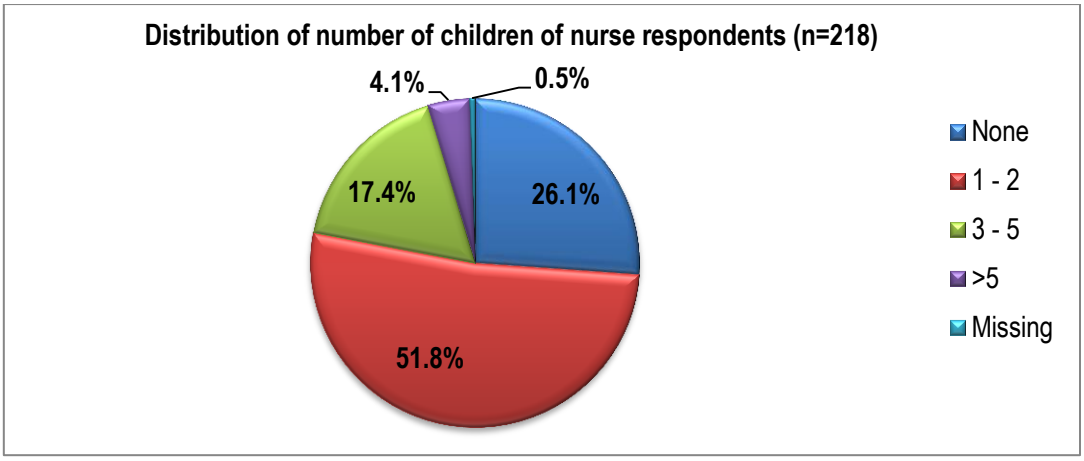


Figure 4.5 Distribution of number of children of nurse respondents (%)

A total of 113 (51.8%) of the respondents were the sole breadwinners in their families with 71 (32.6%) indicating that they were also single parents. One person (0.5%) did not answer the question on single parents. The information is summarised in Table 4.5.

Table 4.5 Income and child care responsibility of nurse respondents (n=218)

| | Sole bread winner | | Single parent | |
|---|---|---|---|---|
| | f | % | f | % |
| Yes | 113 | 51.8% | 71 | 32.6% |
| No | 105 | 48.2% | 146 | 67% |
| Missing | 0 | 0 | 1 | 0.5% |

#### 4.3.1.5 Clinical involvement of nurse respondents

A total of 113 (51.8%) and 98 (46.4%) of respondents were working in surgical and medical wards respectively at the time of data collection. The majority [158 (72.5%)] indicated that they work day duty and 43 (19.7%) on night duty with 17 (7.8%) not indicating which shift they work – this might be due to staff at some wards working both night and day duty during the same month. They are mainly full-time employed [210 (96.3%)] with five (2.3%) indicating part-time employment and two (0.5%) indicating employment through a nursing agency as indicated in Figure 4.6. One person (0.5%) did not respond to this question.

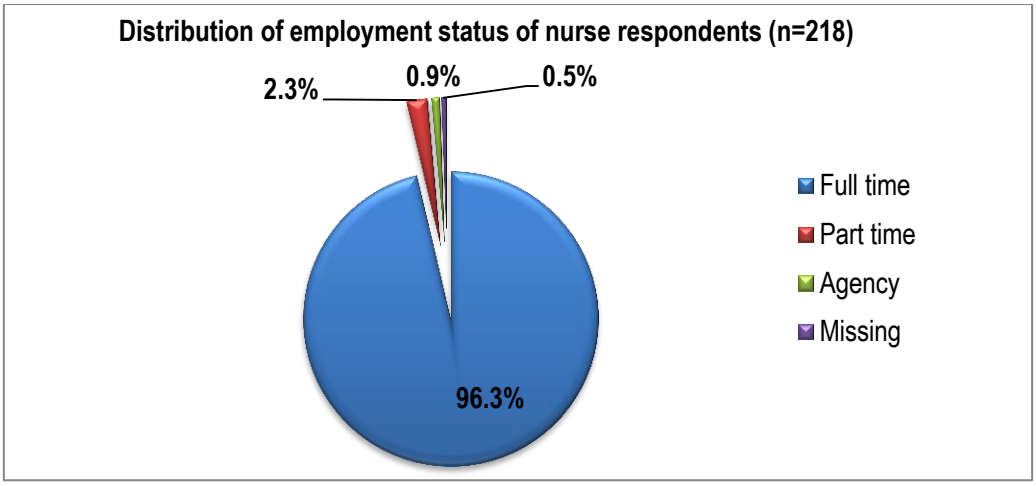


Figure 4.6 Employment status of nurse respondents (%)

The largest single [proportion of participants [62 (28.4%)] have more than 20 years' clinical experience, followed by 47 (21.6%) with 2 – 5 years' experience, 31(14.2%) with 6 – 10 years' experience, 29 (13.3%) with 11 – 15 years' experience, 25 (11.4%) with 16 – 20 years' experience and 20 (9.3%) with less than one year experience in the clinical field. Four respondents (1.8%) did not answer this question. The distribution of experience in the clinical field is depicted in Figure 4.7.

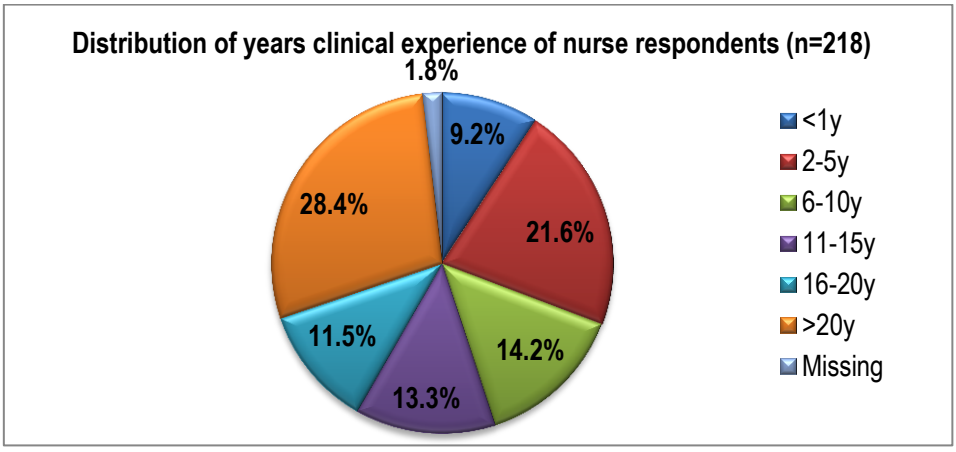


Figure 4.7 Distribution of nurse respondents' years of clinical experience (%)

#### 4.3.1.6 Qualifications of nurse respondents

The question about the highest academic qualifications achieved by the nurse respondents revealed that 139 (67.5%) had obtained a diploma and 27 (13.1%) a degree as basic

qualification in nursing. Additional qualifications following basic programmes, included 21 (10.2%) with specialisation, eight (3.9%) with a post basic B degree, one (0.5%) specialist short course, seven (3.4%) Masters' degrees and three (1.5%) PhDs. The distribution of the highest academic qualification of nurses is illustrated in Figure 4.8.

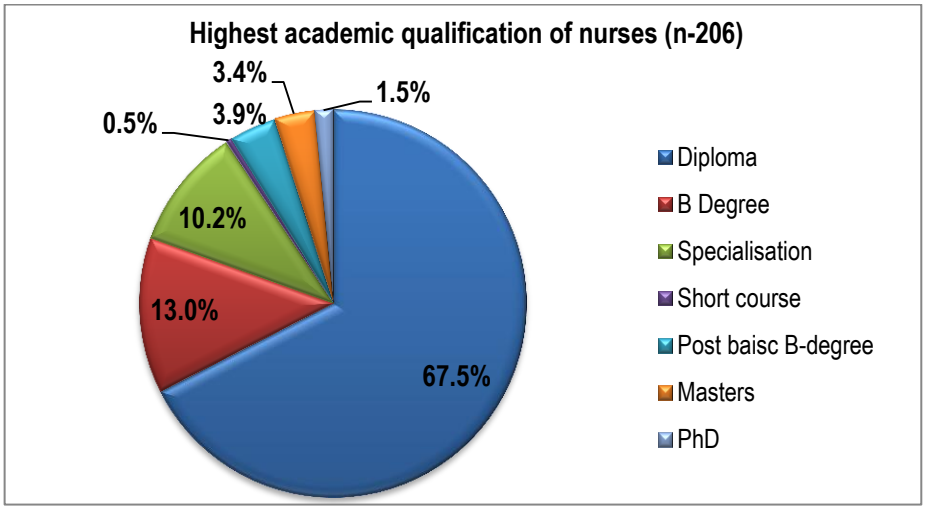


Figure 4.8 Distribution of highest academic qualification of nurses (%)

The results of the question on the professional qualifications of nurses indicated that 33% (72) had a general qualification, 0.5% (1) a midwifery qualification and 18.8% (41) a specialisation in nursing. A large group [47.7% (104)] did not answer this question and no further analysis was undertaken on this item.

### 4.3.2 Demographic profile of patient respondents

In total 116 questionnaires that were completed by patient respondents were used in the study. Questions not responded to in the instruments are indicated as missing.

#### 4.3.2.1 Gender distribution of patient respondents

Of the 116 respondents 67 (57.8%) was female, 45 (38.8%) male and 4 (3.4%) did not complete this question as indicated in Figure 4.9.

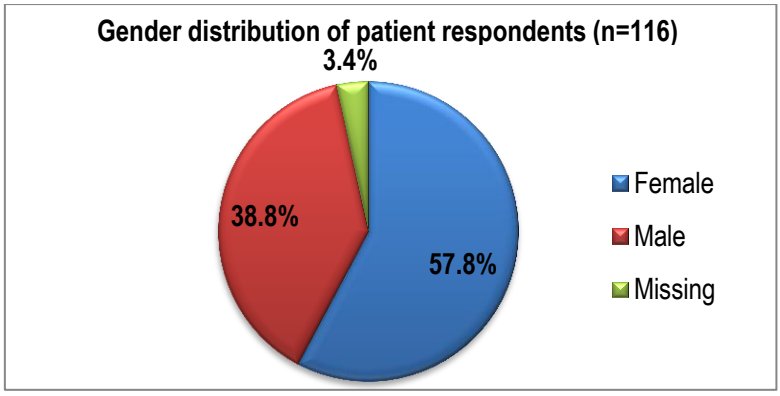


Figure 4.9 Gender distribution of patient respondents (%)

#### 4.3.2.2 Marital status of patient respondents

The majority [63 (56.25%)] of patient respondents were married, with 29 (25.89%) single, 11 (9.82%) divorced, six (5.36%) widowed and three (2.68%) living with a partner. Four persons (3.4%) did not respond to this question. This information is presented in Figure 4.10.

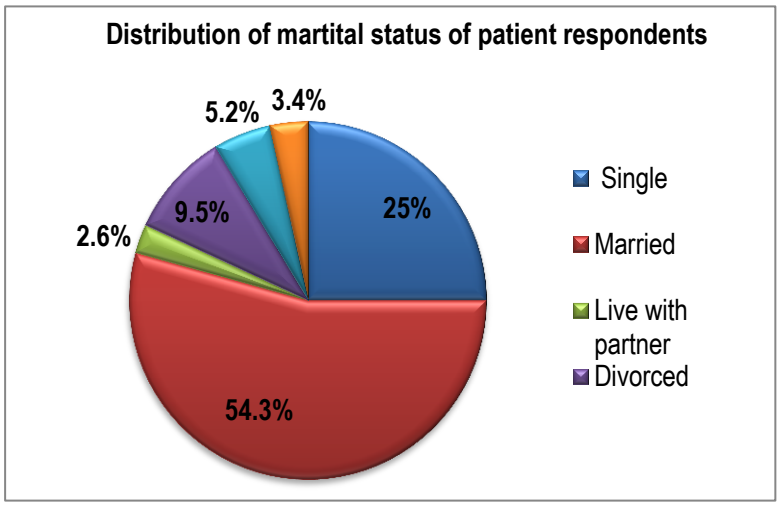


Figure 4.10 Distribution of marital status of patient respondents (%)

#### 4.3.2.3 Age distribution of patient respondents

The age distribution of patients is displayed in Figure 4.11, which shows the highest number of patients, namely 28 (24.1%) were in the 40 – 49 year age group followed by 26 (22.4%) in the 30 – 39 age group. The distribution of the remainder of the patients' ages were 19 (16.4%) for 50 - 59; 16 (13.8%) for the age group 60 - 69; 14 (12.1%) for the age group 26-

30 years; six (5.2%) for 20-25 years of age, four (3.6%) for the age group younger than 20 years group. Three (2.6%) patients were older than 70 years.

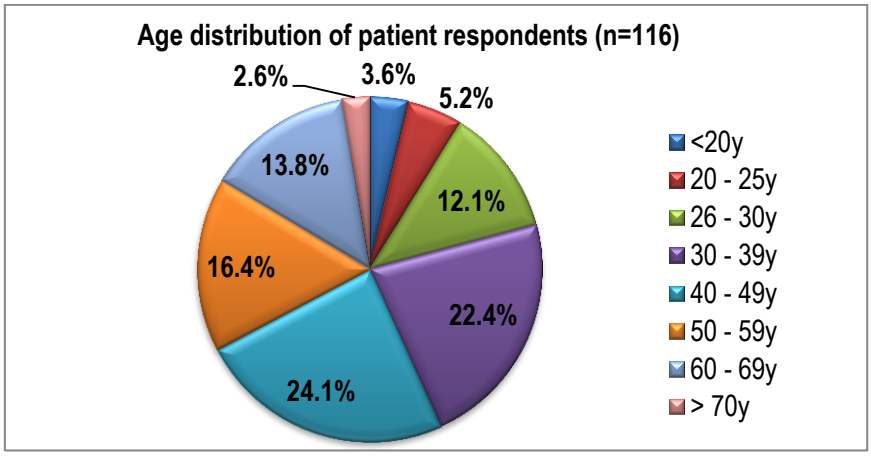


Figure 4.11 Age distribution of patient participants (%)

#### 4.3.2.4 Distribution of academic qualifications of patient respondents

The highest academic qualification obtained by patients participating in the study is shown in Figure 4.12. The greatest single proportion [44(37.9%)] of respondents had a Grade 12 or matric certificate; followed by 21 (18.1%) with a Grade 10 qualification; 16 (13.8%) a degree; 13 (11.2%) a diploma; three (2.6%) had up to a Grade 5 certificate; three (2.6%) a Grade 7 certificate; two (1.7%) a Master's degree and one (0.9%) a PhD degree. Four persons (3.4%) did not respond to this question. This data is presented in Figure 4.12.

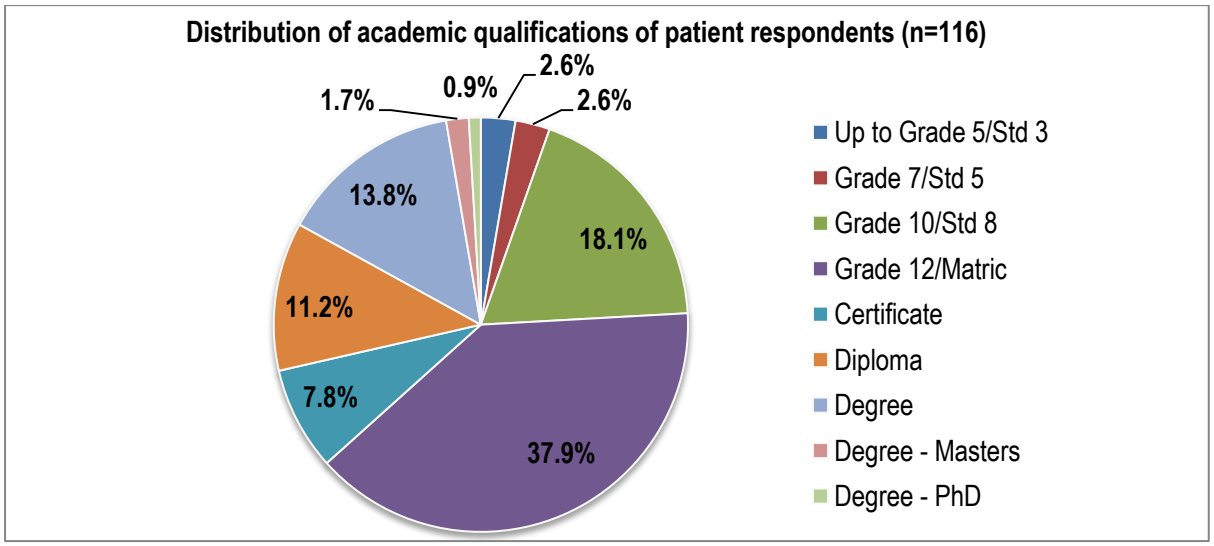


Figure 4.12 Highest academic qualification of patient respondents (%)

## 4.4 CONSTRUCT VALIDITY

Instruments or scales used to measure, evaluate or assess aspects during a study can only be useful if they are valid and reliable. In this study exploratory and confirmatory factor analyses were used to justify construct validity. Construct validity reflects the degree to which items in an instrument relate to each other as expected within a system of theoretical relationships (Babbie & Mouton, 2001). In this study six instruments were completed by nurse respondents and one by patient respondents. The exploratory factor analysis and confirmatory factor analysis for each of the instruments used in the study are presented next. In the analysis presented, correlation coefficients of <0.3 were considered to be a weak relationship, 0.3 – 0.5 a moderate relationship and >0. 5 a strong relationship (Burns & Grove, 2009).

As part of the confirmatory factor analysis, measures of goodness of fit were considered. As it is considered good practice to report multiple fit indices, typically from three broad classes, the following measures were used in this study (Hancock & Mueller, 2010):

(i) The Chi-squared test statistic with a p<0.000 is regarded as too strict as it detects small deviations from the proposed model. Mueller recommends that it should be divided by degrees of freedom (DF) (Mueller, 1996).

(ii) The Minimum Sample Discrepancy (Chi-squared test statistic) divided by Degrees of Freedom (CMIN/DF) value which indicates a good model fit at values close to 2 but ratios as high as 4 or 5 (Mueller, 1996).

(iii) The Comparative Fit Index (CFI) values of above 0.9 indicate an overall good fit (Mueller, 1996).

(iv) The Root Mean Square Error of Approximation (RMSEA) value with a 90 % confidence interval was determined. According to the Blunch models with RMSEA values of 0.10 and larger should not be accepted (Blunch, 2013).

(v) In the event that more than one model fit on the same data were required, the values in all the models were compared by using the Akaike information criterion (AIC) and the Browne-Cudeck criterion (BCC). Lowest value models are optimal (Schumacker and Lomax, 2004).

### 4.4.1 Six Dimension Scale of Nursing Performance (6-DSNP)

The 6-DSNP as described in item 3.3.2.1 (i) was used for nurses' self-evaluation of work performance. The literature review did not include professional development items in the factor analysis for the 6-DSNP as they were conceptually different from the other behaviours (Schwirian, 1978). However, for this study these items were included in the factor analysis.

#### 4.4.1.1 Exploratory factor analysis of the six-DSNP (13 factors)

A principal axis exploratory factor analysis with Oblimin rotation of the 6-DSNP data extracted thirteen factors which is more than double the number identified from the literature. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for the analysis was found to be 0.890 and a 66.82% of the total variance was explained, which is considered good. During the pattern matrix, Kaiser's criterion extracted subscales as presented in Table 4.6:

Table 4.6 Pattern matrix for the six-DSNP (thirteen factors)

| Item No | Item | Factor | Component | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| DSNP48 | Demonstrate self-confidence. | Prof Dev | .744 | | | | | | | | | | | | |
| DSNP49 | Display a generally positive attitude. | Prof Dev | .677 | | | | | | .234 | | | | -.201 | | |
| DSNP47 | Maintain high standards of performance. | Prof Dev | .646 | | | | | | | .250 | | | | | |
| DSNP44 | Display self-direction. | Prof Dev | .640 | | | | | | | | | | | | .242 |
| DSNP46 | Assume new responsibilities within the limits of capabilities. | Prof Dev | .582 | | | | | .356 | | | | | | | |
| DSNP45 | Accept responsibility for own actions. | Prof Dev | .477 | | | | | .331 | | | | | | | |
| DSNP51 | Demonstrate knowledge in the ethics of nursing. | Prof Dev | .382 | | | | | | | | | -.242 | | .312 | |
| DSNP14 | Develop innovative methods and materials for teaching patients. | Teach | | .716 | | | | | | | | | | | |
| DSNP12 | Adapt teaching methods and materials to the understanding of the particular audience: e.g., age of patient, educational background and sensory deprivation. | Teach | | .633 | | | | .233 | | | | | | | |
| DSNP29 | Use teaching aids and resource materials in teaching patients and their families. | Teach | | .598 | | | | | | .323 | -.206 | | | | |
| DSNP21 | Promote the patients' rights to privacy. | Communi | | | .692 | | | | | | | | | | |
| DSNP17 | Help a patient communicate with others. | Communi | | | .563 | | | | | | | | | | |
| DSNP5 | Identify and use community resources in developing a plan of care for a patient and his/her family. | Teach | | | .558 | | | | | | -.204 | | | .231 | |
| DSNP24 | Explain nursing procedures to a patient prior to performing them. | Communi | | .275 | .469 | | | | | .237 | | -.210 | | -.201 | |
| DSNP16 | Seek assistance when necessary. | Communi | | | .369 | | | .321 | .259 | | | | -.254 | -.219 | |
| DSNP19 | Give emotional support to family of dying patient. | CritCare | | | | -.822 | | | | | | | | | |
| DSNP37 | Recognize and meet the emotional needs of a dying patient. | CritCare | | | | -.718 | | | | | -.275 | -.219 | | | |
| DSNP35 | Help a patient meet his/her emotional needs. | Communi | | | .278 | -.408 | | | | -.277 | | -.272 | | .279 | |
| DSNP18 | Use mechanical devices: e.g., suction machine, cardiac monitor, respirator | CritCare | | | | | .840 | | | | | | .216 | | |
| DSNP11 | Perform technical procedures: e.g. oral suctioning, tracheostomy care, IV therapy, catheter care, dressing changes. | CritCare | | | | | .728 | | | | | | -.237 | | |
| DSNP13 | Identify and include immediate patient needs in the plan of nursing care. | Planning | | | | | .474 | | | | | | | .240 | .222 |
| DSNP27 | Perform appropriate measures in emergency situations. | CritCare | | .233 | | | .315 | .269 | .208 | | | | | | .293 |
| DSNP26 | Accept responsibility for the level of care under your direction. | Leadership | | | | | | .572 | | | | | | | |
| DSNP30 | Perform nursing care required by critically ill patients | CritCare | | | | | | .541 | | | | .293 | | | -.392 |
| DSNP2 | Coordinate the plan of nursing care with the medical plan of care. | Planning | -.262 | | | | | .511 | | | | | | .503 | |
| DSNP41 | Remain open to the suggestions of those under your direction and use them when appropriate. | Leadership | .258 | | | | | .478 | | | -.283 | | | | .207 |
| DSNP22 | Contribute to an atmosphere of mutual trust, acceptance, and respect among other health team members. | Communi | | | .306 | | | | .616 | | | | | | |
| DSNP23 | Delegate responsibility for care based on assessment of priorities of | Leadership | | | | | | | .608 | | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | nursing care needs and the abilities and limitations of available health care personnel. | | | | | | | | | | | | | | |
| DSNP20 | Verbally communicate facts, ideas, and feelings to other health care team members. | Communi | | .209 | | | | | .606 | | | | | | |
| DSNP10 | Initiate planning and evaluation of nursing care with others. | Planning | | | | | | | .447 | | | .404 | | .316 | |
| DSNP25 | Guide other health team members in planning for nursing care. | Leadership | | | | | | | .437 | .225 | | | | .226 | -.262 |
| DSNP3 | Give praise and recognition for achievement to those under his/her direction | Leadership | | | | | | | | .750 | | | | | |
| DSNP28 | Promote the use of interdisciplinary resource persons. | Teach | | | | | | | .281 | .397 | -.244 | | | | |
| DSNP38 | Communicate facts, ideas, and professional opinions in writing to patients and their families. | Teach | | .260 | | | | | | | -.657 | | | | |
| DSNP39 | Plan for the integration of patient needs with family needs. | Teach | | .206 | | | | | | | -.610 | | | | |
| DSNP32 | Identify and use resources within the health care agency in developing a plan of care for a patient and his/her family. | Teach | | | | | | | | | -.534 | | | | |
| DSNP31 | Encourage the family to participant in the care of the patient. | Teach | | | | -.356 | | | | | -.390 | .300 | -.204 | | |
| DSNP9 | Develop a plan of nursing care for a patient. | Planning | .321 | | | | | | | | | .482 | | .221 | |
| DSNP1 | Teach a patient's family members about the patient's needs. | Teach | | .311 | | | | | | .322 | | .447 | | | |
| DSNP52 | Accept and use constructive criticism. | Prof Dev | | | | | | | | | -.297 | -.354 | -.222 | | |
| DSNP33 | Use nursing procedures as opportunities for interaction with patients. | Communi | | | | | | | | | | | -.644 | | |
| DSNP36 | Contribute to the plan of nursing care for a patient. | Planning | | | | | | | | | -.293 | | -.550 | | |
| DSNP40 | Function calmly and competently in emergency situations. | CritCare | .424 | | | | | | | | | | .440 | | |
| DSNP34 | Contribute to productive working relationships with other health team members. | Communi | .302 | | | | | | .302 | | | | -.420 | | -.219 |
| DSNP4 | Teach preventive health measure to patients and their families. | Teach | | | .285 | | | | | .333 | | | -.355 | | |
| DSNP6 | Identify and include in nursing care plans anticipated changes in patient's conditions. | Planning | | | | | | | | | | | | .734 | |
| DSNP7 | Evaluate results of nursing care. | Planning | | | | | | | | | | | | .611 | |
| DSNP8 | Promote the inclusion of patient's decision and desires concerning his/her care. | Communi | | | .291 | | | | | | | | | .359 | .303 |
| DSNP50 | Demonstrate a knowledge of the legal boundaries of nursing. | Prof Dev | .322 | | | | | | | | | -.278 | | .329 | |
| DSNP43 | Use learning opportunities for ongoing personal and professional growth. | Prof Dev | .263 | | | | | | | | | | -.283 | | .572 |
| DSNP42 | Use opportunities for patient teaching when they arise. | Communi | | | .202 | | -.229 | | | | -.272 | | | | .405 |
| DSNP15 | Communicate a feeling of acceptance of each patient and a concern for the patient's welfare. | Communi | | .263 | | -.290 | | .206 | | | | .296 | | | .366 |

*Rotation converged in 75 iterations.*

The content of the factors identified were analysed to determine to what degree it resembles the six subscales identified in the literature (Schwirian, 1978). Items with double loadings also loading on the theoretically identified subscales were kept within the initial factor/subscale. The themes according to the theoretical subscales assigned to the identified factors in this pattern matrix repeated as follows:

- professional development (factor 1): 10 items: 15, 43, 44, 45, 46 47, 48, 49, 50, 51
- teaching/collaboration (factor 2): three items: 12, 14 and 29
- interpersonal relations/communication (factor 3): Seven items 7, 8, 16, 21, 22, 24 and 35
- critical care (factor 4): Two items: 19 and 37.
- critical care (factor 5): Three items: 11, 18 and 27.
- leadership (factor 6): Two items: 26 and 41.
- interpersonal relations/communication (factor 7): Three items: 1, 3 and 4.
- teaching/collaboration (factor 8): Two items: 1 and 4.
- teaching/collaboration (factor 9): Six items: 5, 28, 31, 32, 38 and 39.
- professional development (factor 10): Two items: 30 and 52.
- interpersonal relations/communication (factor 11): Two items: 33 and 36
- planning/evaluation (factor 12): Seven items: 2, 3, 6, 7, 10, 13 and 25
- interpersonal relations/communication (factor 13): Two items: 15 and 42.

Based on the results of this analysis, some items included in specific subscales or factors in the literature, loaded onto other factors. These items, discussed in the order as they appear in the table, loaded onto other factors as follows:

(i) Item 30: (*Perform nursing care required by critically ill patients*)

This item did not load on the critical care factor, but rather loaded in the professional development factor. This might be due to the fact that providing a high standard of patient care is closely related to professional development as nurses become more

experienced over time or are exposed to additional or specialist education and training programmes.

(ii) Item 23: (*Delegate responsibility for care based on assessment of priorities of nursing care needs and the abilities and limitations of available health care personnel*)

This item did not load on the leadership factor, but rather loaded in the professional development factor. This could be due to the development that nurses undergo as they become more experienced over time as well as being exposed to additional or specialist education and training programmes. All the participating hospitals also have students in training who are expected to become more competent. The responsibilities these practitioners are able to undertake therefore change, resulting in the ability to delegate responsibilities for care differently.

(iii) Item 20: (*Verbally communicate facts, ideas, and feelings to other health care team members*)

This item did not load on the interpersonal relations/communication factor, but rather loaded in the professional development factor. Professional nurses are the team leaders in the clinical situation responsible for the management of patient care. They communicate, amongst others, professionalism to other team members through the way that they execute this responsibility. To ensure good, safe patient care professional nurses must be able to communicate effectively with healthcare team members with varying educational and occupational preparation. These skills can be improved through professional development and experience (Apker et al., 2006).

(iv) Item 25: (*Guide other health team members in planning for nursing care*)

This item did not load on the leadership factor, but rather loaded in the planning factor. The fact that this statement refers to planning may be why it loaded on the planning factor instead.

(v) Item 3: (*Give praise and recognition for achievement to those under his/her direction*)

This item did not load on the leadership factor, but rather loaded in the planning factor. This could be due to a general culture in nursing not to acknowledge each other's

achievements – rather such action is purposefully planned for by method of performance appraisal or by professional organisations.

(vi) Item 36: (*Contribute to the plan of nursing care for a patient*)

This item did not load on the planning factor, but rather loaded in the interpersonal relations/communications factor. This might be because professional nurses view a patient nursing care plan to be a form of communication between different healthcare team members.

(vii) Item 40: (*Function calmly and competently in emergency situations*)

This item did not load on the critical care factor, but rather loaded in the professional development factor. This might be because competence and experience are developed over time through learning that takes place while performing one's duties, making it possible to function calmly in an emergency situation.

Although with more sub-factors, this represents the theoretical factors to a large degree.

#### 4.4.1.2 Exploratory factor analysis of the six-DSNP (six factors)

The literature identified six factors for the 6-DSNP (Schwirian, 1978). The researcher in consultation with the statistician and promoter decided to do a six factor analysis to see what emerged from this analysis. In Table 4.11 the six-factor analysis obtained through principal axis factoring with Oblimin rotation is presented. A KMO of 0.876 for the six-factor analyses and 50.57 % of the total variance was explained which is regarded as acceptable. The pattern matrix extracted is presented in Table 4.7.

Table 4.7 Pattern matrix six-DSNP (six factors)

| Item No | Item | Factor | Component | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 |
| DSNP49 | Display a generally positive attitude. | Prof Dev | .814 | | | | | |
| DSNP48 | Demonstrate self-confidence. | Prof Dev | .713 | | | | .203 | -.311 |
| DSNP46 | Assume new responsibilities within the limits of capabilities. | Prof Dev | .707 | | | | | .229 |
| DSNP44 | Display self-direction. | Prof Dev | .671 | | | | | |
| DSNP47 | Maintain high standards of performance. | Prof Dev | .652 | | | | | |
| DSNP45 | Accept responsibility for own actions. | Prof Dev | .634 | | .260 | .244 | | |
| DSNP23 | Delegate responsibility for care based on assessment of priorities of nursing care needs and the abilities and limitations of available health care personnel. | Leadership | .596 | | | | | |
| DSNP52 | Accept and use constructive criticism. | Prof Dev | .595 | | | | | |
| DSNP51 | Demonstrate knowledge in the ethics of nursing. | Prof Dev | .587 | | | | | |
| DSNP50 | Demonstrate a knowledge of the legal boundaries of nursing. | Prof Dev | .575 | | | | | |
| DSNP34 | Contribute to productive working relationships with other health team members. | Communi | .536 | .325 | | | | -.235 |
| DSNP40 | Function calmly and competently in emergency situations. | CritCare | .533 | | | | | |
| DSNP41 | Remain open to the suggestions of those under your direction and use them when appropriate. | Leadership | .532 | | .286 | | | .228 |
| DSNP43 | Use learning opportunities for ongoing personal and professional growth. | Prof Dev | .503 | | | | | |
| DSNP28 | Promote the use of interdisciplinary resource persons. | Teach | .447 | | | -.293 | | .360 |
| DSNP22 | Contribute to an atmosphere of mutual trust, acceptance, and respect among other health team members. | Communi | .402 | | .331 | | | |
| DSNP26 | Accept responsibility for the level of care under your direction. | Leadership | .374 | | .336 | | | .232 |
| DSNP20 | Verbally communicate facts, ideas, and feelings to other health care team members. | Communi | .365 | .225 | | -.287 | | |
| DSNP33 | Use nursing procedures as opportunities for interaction with patients. | Communi | .321 | .291 | | | | |
| DSNP6 | Identify and include in nursing care plans anticipated changes in patient's conditions. | Planning | | .608 | | -.211 | .246 | |
| DSNP10 | Initiate planning and evaluation of nursing care with others. | Planning | | .524 | | | | |
| DSNP4 | Teach preventive health measure to patients and their families. | Teach | | .510 | .250 | | | |
| DSNP36 | Contribute to the plan of nursing care for a patient. | Planning | .413 | .445 | | | | |
| DSNP25 | Guide other health team members in planning for nursing care. | Leadership | .291 | .430 | | -.308 | | |
| DSNP9 | Develop a plan of nursing care for a patient. | Planning | | .412 | | | .352 | |
| DSNP7 | Evaluate results of nursing care. | Planning | | .410 | | | .388 | .293 |
| DSNP5 | Identify and use community resources in developing a plan of care for a patient and his/her family. | Teach | | .393 | .300 | | | |
| DSNP1 | Teach a patient's family members about the patient's needs. | Teach | | .385 | .378 | | | .338 |
| DSNP8 | Promote the inclusion of patient's decision and desires concerning his/her care. | Communi | | .305 | .278 | | | |
| DSNP15 | Communicate a feeling of acceptance of each patient and a concern for the patient's welfare. | Communi | | | .650 | | | |
| DSNP16 | Seek assistance when necessary. | Communi | | | .566 | | | |
| DSNP17 | Help a patient communicate with others. | Communi | | | .565 | | | |
| DSNP19 | Give emotional support to family of dying patient. | CritCare | | | .505 | -.297 | | |
| DSNP42 | Use opportunities for patient teaching when they arise. | Communi | .322 | | .474 | | -.235 | |
| DSNP31 | Encourage the family to participant in the care of the patient. | Teach | | .228 | .472 | -.248 | | |
| DSNP24 | Explain nursing procedures to a patient prior to performing them. | Communi | | | .447 | | | |
| DSNP30 | Perform nursing care required by critically ill patients. | CritCare | | | .356 | | .228 | |
| DSNP37 | Recognize and meet the emotional needs of a dying patient. | CritCare | | -.350 | | -.656 | | |
| DSNP14 | Develop innovative methods and materials for teaching patients. | Teach | | | | -.655 | | |
| DSNP29 | Use teaching aids and resource materials in teaching patients and their families. | Teach | | | | -.628 | | |
| DSNP38 | Communicate facts, ideas, and professional opinions in writing to patients and their families. | Teach | | | | -.628 | | |
| DSNP39 | Plan for the integration of patient needs with family needs. | Teach | | | | -.572 | | |
| DSNP35 | Help a patient meet his/her emotional needs. | Communi | | | | -.568 | | -.411 |
| DSNP32 | Identify and use resources within the health care agency in developing | Teach | .245 | .290 | | -.457 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | a plan of care for a patient and his/her family. | | | | | | | |
| DSNP18 | Use mechanical devices: e.g., suction machine, cardiac monitor, respirator | CritCare | | | | | .737 | |
| DSNP11 | Perform technical procedures: e.g. oral suctioning, tracheostomy care, IV therapy, catheter care, dressing changes. | CritCare | | | | | .685 | |
| DSNP13 | Identify and include immediate patient needs in the plan of nursing care. | Planning | | | | | .531 | |
| DSNP27 | Perform appropriate measures in emergency situations. | CritCare | .347 | -.225 | .205 | | .384 | .217 |
| DSNP12 | Adapt teaching methods and materials to the understanding of the particular audience: e.g., age of patient, educational background and sensory deprivation. | Teach | | | .274 | -.301 | .380 | |
| DSNP21 | Promote the patients' rights to privacy. | Communi | | | .517 | | | -.530 |
| DSNP2 | Coordinate the plan of nursing care with the medical plan of care. | Planning | | .256 | | | .210 | .506 |
| DSNP3 | Give praise and recognition for achievement to those under his/her direction | Leadership | .254 | .203 | | | | .375 |

*Rotation converged in 28 iterations.*

The results of the six factor analysis indicated a satisfactory grouping for all the items as indicated in Table 4.7. Items that were similar to the initial subscales and corresponded during the six factor analysis were kept within the initial factor/subscale identified in the literature. With the six factor analysis the following were included in each factor:

- *Factor 1 (professional development)* – 13 items: 23, 34, 40, 43, 44, 45, 46, 47, 48, 49, 50, 51 and 52.
- *Factor 2 (planning)* – 11 items: 2, 4, 5, 6, 7, 9, 10, 25, 33, 36 and 37.
- *Factor 3 (interpersonal relations/communication)* – Nine items: 1, 8, 15, 16, 17, 19, 22, 24 and 42.
- *Factor 4 (teaching/collaboration)* – Nine items: 12, 14, 21, 28, 29, 31, 32, 38 and 39.
- *Factor 5 (critical care)* – Seven items: 11, 13, 18, 10, 27, 30 and 36.
- *Factor 6*: *(leadership)* – Four items: 3, 21, 35 and 41.

During the analysis, some items included in specific subscales or factors in the literature, could not load onto the same factors. These items loaded onto other factors as follows:

(i) Factor 23 (*Delegate responsibility for care based on assessment of priorities of nursing care needs and the abilities and limitations of available health care personnel*)

This item did not load on the leadership factor, but rather loaded in the professional development factor. This could be due to the development that nurses undergo as they become more experienced over time as well as being exposed to additional or specialist

education and training programmes, improving their competence, thus making it possible to delegate more responsibilities to them.

(ii) Factor 34 (*Contribute to productive working relationships with other health team members*)

This item did not load on the interpersonal relations/communication factor, but rather loaded in the professional development factor. The reason for this might be the poor communication amongst team members of different professional groups – good communication and teamwork are skills which can be improved through professional development and experience.

(iii) Item 40 (*Function calmly and competently in emergency situations)*

(iv) This item did not load on critical care factor, but rather loaded in the professional development factor. It is possible that the reason for this is that nurses develop their competence and experience over time while performing their duties which enable then to function calmly in an emergency situation.

(v) Item 33 (*Use nursing procedures as opportunities for interaction with patients*)

This item did not load on the interpersonal relations/communication, but rather loaded in the planning factor. The reason for this might be that professional nurses feel that nursing's goal directed interaction with patients takes planning.

(vi) Item 4 (*Teach preventive health measures to patients and their families*)

This item did not load on the teaching factor, but rather loaded in the planning factor. A reason for this might be that teaching of preventative or any other type of health measures must be specific which demand proper planning to execute rather making it a planning activity for this group of nurses.

(vii) Item 5 (*Identity and use community resources in developing a plan of care for a patient and his/her family*)

This item did not load on the teaching factor, but rather loaded in the planning factor. The reason for this could be that discharging a patient from hospital requires nurses to plan where to refer the patient to after discharge – this requires careful and informed

planning of discharge. Particularly in the public sector the social worker fulfil this task, and in the private sector patients have their own resources to go back to.

(viii) Item 1 (*Teach a patient's family members about the patient's needs*)

This item did not load on the teaching factor, but rather loaded in the interpersonal relations/communication factor. This could be as a result of the nurse being required to establish a good, trusting, relationship with patients and their family to understand exactly what their needs are so that they take to heart what is being conveyed.

(ix) Item 19 (*Give emotional support to family of dying patient*)

This item did not load on the critical care factor, but rather loaded in the interpersonal relations/communication factor. Similar to the previous situation, the nurse needs good communication and a trusting relationship with the patient and his/her family to provide appropriate emotional support.

(x) Item 37 (*Recognize and meet the emotional needs of a dying patient)*

This item did not load on the critical care factor, but rather loaded in the planning factor. This could be contributed to the fact that recognising and meeting the emotional needs of the dying patient requires good planning.

(xi) Item 35 (*Help a patient meet his/her emotional needs*)

This item did not load on the interpersonal relations/communication factor, but rather loaded in the leadership factor. The reason for this could be ascribed to the fact that all nurses in their one-on-one relationship with a patient, provide leadership in their guidance to patients to meet emotional and other needs.

(xii) Item 13 (*Identify and include immediate patient needs in the plan of nursing care*)

This item did not load on the planning factor, but rather loaded in the critical care factor. The reason for this might be that immediate needs of patients often are seen as an emergency situation requiring a quick response based on rapid decision-making and action, or honouring the wishes of very ill or dying patients.

Based on these results, it was decided that, to a large extent, the six factor analysis corresponds well with the subscales/factors that were initially anticipated.

#### 4.4.1.3 Confirmatory factor analysis of six-DSNP (six factors)

Confirmatory factor analysis was done to confirm the six factors/ subscales that were determined during in the literature. The confirmatory factor analysis that was performed is presented in Figure 4.13.

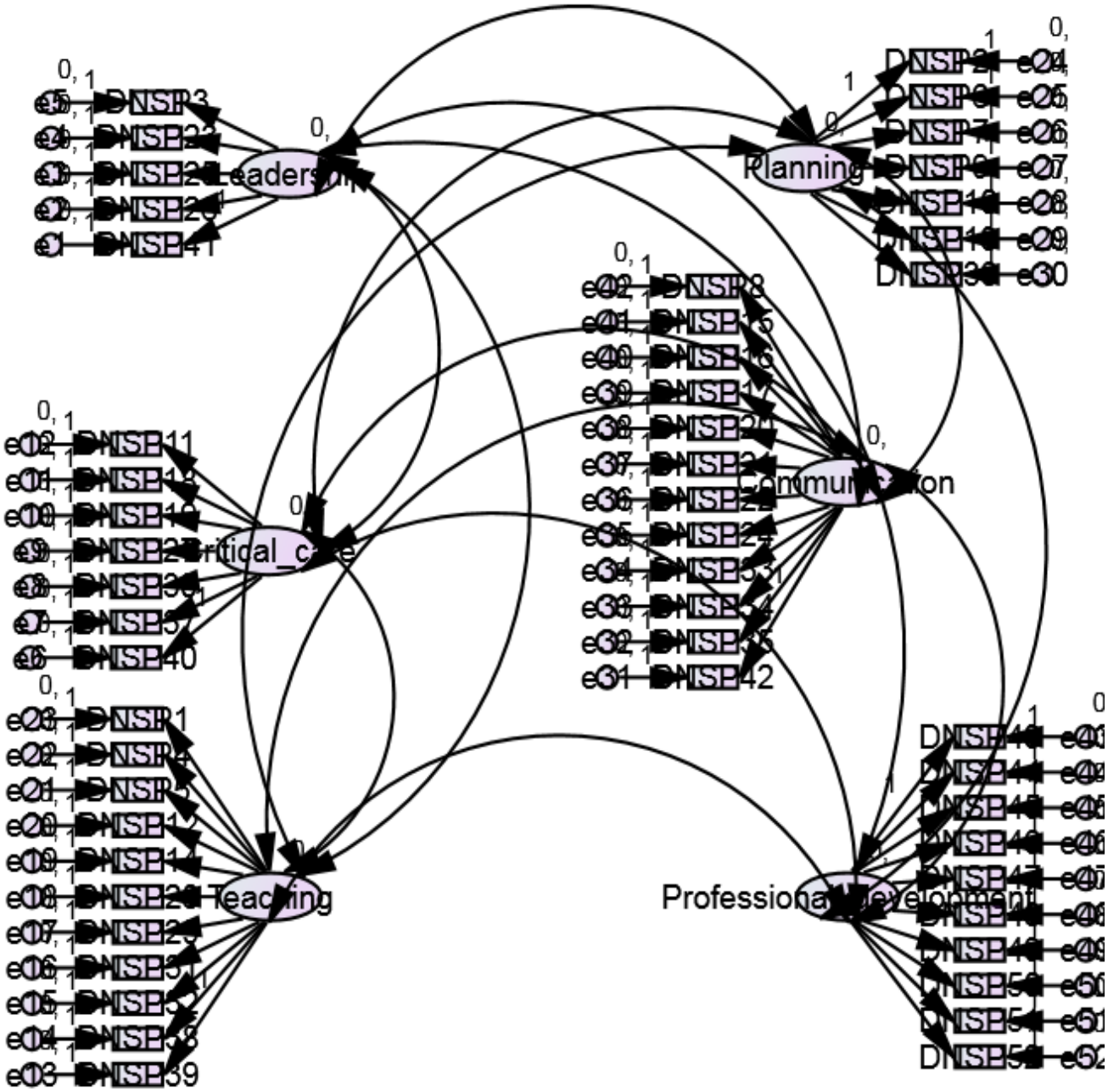


Figure 4.13 Confirmatory factor analysis of six-DSNP (six factors)

In Table 4.8 the standardised regression weights are presented for the six-DSNP (six factors).

Table 4.8 Standardised regression weights DSNP (six factors)

| Item No | Item | | Factor | Estimate | P value |
|---|---|---|---|---|---|
| DSNP41 | Remain open to the suggestions of those under your direction and use them when appropriate. | <-- | Leadership | .626 | <0.001 |
| DSNP26 | Accept responsibility for the level of care under your direction. | <--- | Leadership | .600 | <0.001 |
| DSNP25 | Guide other health team members in planning for nursing care. | <--- | Leadership | .593 | <0.001 |
| DSNP23 | Delegate responsibility for care based on assessment of priorities of nursing care needs and the abilities and limitations of available health care personnel. | <--- | Leadership | .556 | <0.001 |
| DSNP3 | Give praise and recognition for achievement to those under his/her direction | <--- | Leadership | .365 | <0.001 |
| DSNP40 | Function calmly and competently in emergency situations. | <--- | Critical care | .596 | <0.001 |
| DSNP37 | Recognize and meet the emotional needs of a dying patient. | <--- | Critical care | .430 | <0.001 |
| DSNP30 | Perform nursing care required by critically ill patients. | <--- | Critical care | .444 | <0.001 |
| DSNP27 | Perform appropriate measures in emergency situations. | <--- | Critical care | .690 | |
| DSNP19 | Give emotional support to family of dying patient. | <--- | Critical care | .458 | <0.001 |
| DSNP18 | Use mechanical devices: e.g., suction machine, cardiac monitor, respirator. | <--- | Critical care | .428 | <0.001 |
| DSNP11 | Perform technical procedures: e.g. oral suctioning, tracheostomy care, IV therapy, catheter care, dressing changes. | <--- | Critical care | .399 | <0.001 |
| DSNP39 | Plan for the integration of patient needs with family needs. | <--- | Teaching | .629 | <0.001 |
| DSNP38 | Communicate facts, ideas, and professional opinions in writing to patients and their families. | <--- | Teaching | .468 | <0.001 |
| DSNP32 | Identify and use resources within the health care agency in developing a plan of care for a patient and his/her family. | <--- | Teaching | .688 | <0.001 |
| DSNP31 | Encourage the family to participant in the care of the patient. | <--- | Teaching | .602 | |
| DSNP29 | Use teaching aids and resource materials in teaching patients and their families. | <--- | Teaching | .547 | <0.001 |
| DSNP28 | Promote the use of interdisciplinary resource persons. | <--- | Teaching | .464 | <0.001 |
| DSNP14 | Develop innovative methods and materials for teaching patients. | <--- | Teaching | .503 | <0.001 |
| DSNP12 | Adapt teaching methods and materials to the understanding of the particular audience: e.g., age of patient, educational background and sensory deprivation. | <--- | Teaching | .447 | <0.001 |
| DSNP5 | Identify and use community resources in developing a plan of care for a patient and his/her family. | <--- | Teaching | .418 | <0.001 |
| DSNP4 | Teach preventive health measure to patients and their families. | <--- | Teaching | .600 | <0.001 |
| DSNP1 | Teach a patient's family members about the patient's needs. | <--- | Teaching | .450 | <0.001 |
| DSNP2 | Coordinate the plan of nursing care with the medical plan of care. | <--- | Planning | .477 | <0.001 |
| DSNP6 | Identify and include in nursing care plans anticipated changes in patient's conditions. | <--- | Planning | .634 | <0.001 |
| DSNP7 | Evaluate results of nursing care. | <--- | Planning | .673 | <0.001 |
| DSNP9 | Develop a plan of nursing care for a patient. | <--- | Planning | .617 | <0.001 |
| DSNP10 | Initiate planning and evaluation of nursing care with others. | <--- | Planning | .614 | |
| DSNP13 | Identify and include immediate patient needs in the plan of nursing care. | <--- | Planning | .630 | <0.001 |

| Item No | Item | | Factor | Estimate | P value |
|---|---|---|---|---|---|
| DSNP36 | Contribute to the plan of nursing care for a patient. | <--- | Planning | .620 | <0.001 |
| DSNP42 | Use opportunities for patient teaching when they arise. | <--- | Communication | .587 | <0.001 |
| DSNP35 | Help a patient meet his/her emotional needs. | <--- | Communication | .575 | <0.001 |
| DSNP34 | Contribute to productive working relationships with other health team members. | <--- | Communication | .628 | <0.001 |
| DSNP33 | Use nursing procedures as opportunities for interaction with patients. | <--- | Communication | .581 | <0.001 |
| DSNP24 | Explain nursing procedures to a patient prior to performing them. | <--- | Communication | .450 | <0.001 |
| DSNP22 | Contribute to an atmosphere of mutual trust, acceptance, and respect among other health team members. | <--- | Communication | .624 | <0.001 |
| DSNP21 | Promote the patients' rights to privacy. | <--- | Communication | .463 | <0.001 |
| DSNP20 | Verbally communicate facts, ideas, and feelings to other healthcare team members. | <--- | Communication | .635 | <0.001 |
| DSNP17 | Help a patient communicate with others. | <--- | Communication | .515 | <0.001 |
| DSNP16 | Seek assistance when necessary. | <--- | Communication | .539 | <0.001 |
| DSNP15 | Communicate a feeling of acceptance of each patient and a concern for the patient's welfare. | <--- | Communication | .498 | <0.001 |
| DSNP8 | Promote the inclusion of patient's decision and desires concerning his/her care. | <--- | Communication | .454 | <0.001 |
| DSNP43 | Use learning opportunities for ongoing personal and professional growth. | <--- | Professional development | .645 | <0.001 |
| DSNP44 | Display self-direction. | <--- | Professional development | .721 | <0.001 |
| DSNP45 | Accept responsibility for own actions. | <--- | Professional development | .701 | <0.001 |
| DSNP46 | Assume new responsibilities within the limits of capabilities. | <--- | Professional development | .674 | |
| DSNP47 | Maintain high standards of performance. | <--- | Professional development | .718 | <0.001 |
| DSNP48 | Demonstrate self-confidence. | <--- | Professional development | .745 | <0.001 |
| DSNP49 | Display a generally positive attitude. | <--- | Professional development | .709 | <0.001 |
| DSNP50 | Demonstrate a knowledge of the legal boundaries of nursing. | <--- | Professional development | .750 | <0.001 |
| DSNP51 | Demonstrate knowledge in the ethics of nursing. | <--- | Professional development | .786 | <0.001 |
| DSNP52 | Accept and use constructive criticism. | <--- | Professional development | .551 | <0.001 |

All items had statistically significant standardised regression weights above 0.365, indicating that items loaded significantly on the theoretical factors. The correlation amongst the factors of the six-DSNP are summarised in Table 4.9.

Table 4.9 Correlations amongst factors of the six-DSNP

| Factor | | Factor | Estimate |
|---|---|---|---|
| Leadership | <--> | Planning | .811 |
| Leadership | <--> | Communication | .929 |
| Professional development | <--> | Leadership | .911 |
| Leadership | <--> | Critical care | .877 |
| Leadership | <--> | Teaching | .782 |
| Critical care | <--> | Teaching | .679 |
| Critical care | <--> | Planning | .741 |
| Critical care | <--> | Communication | .844 |
| Professional development | <--> | Teaching | .651 |
| Professional development | <--> | Critical care | .786 |
| Teaching | <--> | Planning | .821 |
| Teaching | <--> | Communication | .770 |
| Planning | <--> | Communication | .747 |
| Professional development | <--> | Planning | .675 |
| Professional development | <--> | Communication | .811 |

Considering the correlation coefficients in Table 4.9, all the factors of the 6-DSNP are positively and strongly correlated with each other with correlation coefficients of $r$ = 0.651 (professional development and teaching) and higher. The strongest relationship is between leadership and communication ($r$ = 0.929).

Measures of goodness of fit for the six-factor model yielded a CMIN/DF value of 2.044 which indicates a good model fit. A relatively unacceptable CFI of 0.717 was obtained while an acceptable RMSEA value of 0.069 with a 90 % confidence interval of [0.066; 0.073] was obtained. A summary of the measures of goodness of fit is provided in Table 4.10.

Table 4.10 Measures of goodness of fit for six-DSNP (six factors)

| Factors | Chi Square | CMIN/DF | CFI | RMSEA [90%] |
|---|---|---|---|---|
| 6 (52 items) | <.0001 | 2.044 | 0.717 | 0.069 [0.066; 0.073] |

### 4.4.2 Nurses Professional Values Scale-R©

The Nurses Professional Values Scale – Revised (NPVS-R) as described in item 3.3.2.1 (ii) was used to measure the professional values of nurses (Weis and Schank, 2009).

#### 4.4.2.1 Exploratory factor analysis of the NPVS-R (five factors)

Principal axis exploratory factor analysis with Oblimin rotation extracted five factors from the data obtained. The KMO measure of sampling adequacy for the five factor analyses was 0.769 and 60.23 % of the total variance was explained, which is regarded as good. The five subscales extracted from the data during the pattern matrix with Kaiser's criterion are presented in Table 4.11.

Table 4.11 Pattern matrix NPVS-R (five factors)

| Item No | Item | Sub scale | Factor | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| R21 | Safeguard patient's right privacy | Caring | .751 | | | | |
| R20 | Provide care without prejudice to patients of varying lifestyles | Caring | .748 | | | | |
| R18 | Act as a patient advocate | Caring | .731 | | | | |
| R25 | Maintain confidentiality of patient | Caring | .691 | | | | -.264 |
| R16 | Protect moral and legal rights of patients | Caring | .674 | | | | |
| R22 | Confront practitioners with questionable or inappropriate practice | Caring | .475 | .240 | | | |
| R24 | Practice guided by principle of fidelity and respect for person | Caring | .391 | | -.205 | -.315 | |
| R3 | Protect health and safety of the public | Justice | .369 | .266 | .201 | | |
| R19 | Participate in nursing research and/or implement research findings appropriate to practice | Activism | .337 | | -.218 | | |
| R23 | Protect rights of participants in research | Caring | .282 | | -.281 | -.224 | |
| R4 | Participate in public policy decision affecting distribution of resources | Activism | | .878 | | | |
| R5 | Participant in peer review | Profess | | .803 | | | |
| R6 | Establish standards as a guide for practice | Profess | | .577 | | | |
| R7 | Promote and maintain standards where planned learning activities for students take place | Profess | | .508 | | | -.271 |
| R1 | Engage in on-going self-evaluation | Trust | | .450 | .202 | | |
| R26 | Participate in activities of professional nursing associations | Activism | | .305 | -.262 | | -.230 |
| R17 | Refuse to participate in care of ethical opposition to own professional values | Caring | | .280 | | | .257 |
| R2 | Request consultation/collaboration when unable to meet patient needs | Trust | .328 | | .434 | | |
| R11 | Recognise role of professional nursing associations in shaping healthcare policy | Activism | .214 | | -.317 | -.300 | |
| R14 | Accept responsibility and accountability for own practice. | Trust | | | | -.971 | |
| R13 | Assume responsibility for meeting health needs of the culturally diverse population | Justice | | | | -.888 | |
| R10 | Advance the profession through active involvement in health related activities | Activism | | | -.205 | -.419 | -.279 |
| R12 | Promote equitable access to nursing and healthcare | Justice | .235 | .201 | | -.416 | |
| R8 | Initiate action to improve environments of practice | Profess | | .286 | | -.394 | -.269 |
| R15 | Maintain competency in area of practice | Trust | .351 | | | -.365 | |
| R9 | Seek additional education to update knowledge and skills | Trust | .247 | | | -.303 | -.394 |

*Rotation converged in 26 iterations.*

Items with loadings that corresponded during the factor analysis with the subscales described in the literature were kept within the initial subscale. With the five factor analyses the following were included in each factor:

- Factor 1 (caring) – 10 items: 3, 16, 18, 19, 20, 21, 22, 23, 24 and 25.
- Factor 2 (professionalism) – 8 items: 4, 5, 6, 7, 8, 17, 26 and 17.
- Factor 3 (nursing) – 2 items: 1 and 2.
- Factor 4 (activism) – 6 items: 10, 11, 12, 13, 14 and 15.
- Factor 5 (justice) – 1 item: 9.

Based on the results of the analysis, some items did not correspond with the theoretical subscales. These items are listed in the order in which they appear in Table 4.13:

(i) Item 3 (*Protect health and safety of the public*) did not load on the justice factor but instead loaded on the caring factor. While protecting the health and safety of the public as a comprehensive aspect of public health is more often a justice concern, protecting health and safety of patients, their loved ones and the staff in a hospital situation is seen as a component of providing quality health and nursing care.

(ii) Item 19 (*Participate in nursing research and/or implement research findings appropriate to practice*) did not load on the activism factor but instead loaded on the caring factor. This could be because evidence based practice is high on the agenda of health and nursing care in South Africa, making it not only a goal pursued through activism but also a goal to be achieved as a concern for the patient and quality care provision.

(iii) Item 4 (*Participate in public policy decision affecting distribution of resources*) did not load on the activism factor but instead loaded on the professionalism factor. Nurses working in a hospital environment are seldom involved in public policy decision-making processes. Those who do participate are generally in senior leadership positions at the

hospital or in professional associations where participation is seen as a professional rather than an activist activity.

(iv) Item 26 (*Participate in activities of professional nursing associations*) did not load on the activism factor but instead loaded on the professionalism factor. Professional associations in the nursing context consist of nurses, more often specialist nurses, getting together to promote and strengthen their particular area of nursing and to improve their own practice. This is different from larger organisations of nurses (and sometimes other workers) where more than nursing goals are pursued through activist activities. Participation of nurses in professional associations is more often regarded as a professionalism activity rather than an activist activity, therefore providing a reasonable fit for this item.

(v) Item 17 (*Refuse to participate in care of ethical opposition to own professional values*) did not load on the caring factor but instead loaded on the professionalism factor. The statement of refusing 'to participate in care' may not have been interpreted as caring by respondents, but rather as a right and therefore more likely interpreted as professionalism.

(vi) Item 14 (*Accept responsibility and accountability for own practice*) did not load on the trust factor but instead loaded on the activism factor. This could be due to the view that accepting responsibility and accountability for one's own actions as a professional nurse is deemed to be a given, therefore seen as a social action rather than a trust action.

(vii) Item 13 (*Assume responsibility for meeting health needs of the culturally diverse population*) did not load on the justice factor but instead loaded on the activism factor. This can be ascribed to the fact that meeting the diverse needs of the population of South Africa being a justice factor but also an issue taken up by many health and non-health professional activists as they pursue the rights of the diverse groups they represent.

(viii) Item 12 (*Promote equitable access to nursing and healthcare* did not load on the justice factor but instead loaded on the activism factor. Similar to the previous statement, equitable access is about justice for all and is currently strongly driven by activist organisations in South Africa.

(ix) Item 9 (*Seek additional education to update knowledge and skills*) did not load on the trust factor but instead loaded on the justice factor. This could be due to the fact that updated competence does show regard for patients' well-being and willingness of nurses to provide good quality care.

The results of the five-factor analysis indicated that, to a large extent, the five-factor analysis corresponds well with the subscales/factors that were initially anticipated, therefore a confirmatory factor analysis was performed.

#### 4.4.2.2 Confirmatory factor analysis of NPVS-R (five factors)

A confirmatory factor analysis was done to confirm the five factors that were determined in the literature. The confirmatory factor analysis that was performed is presented in Figure 4.14.

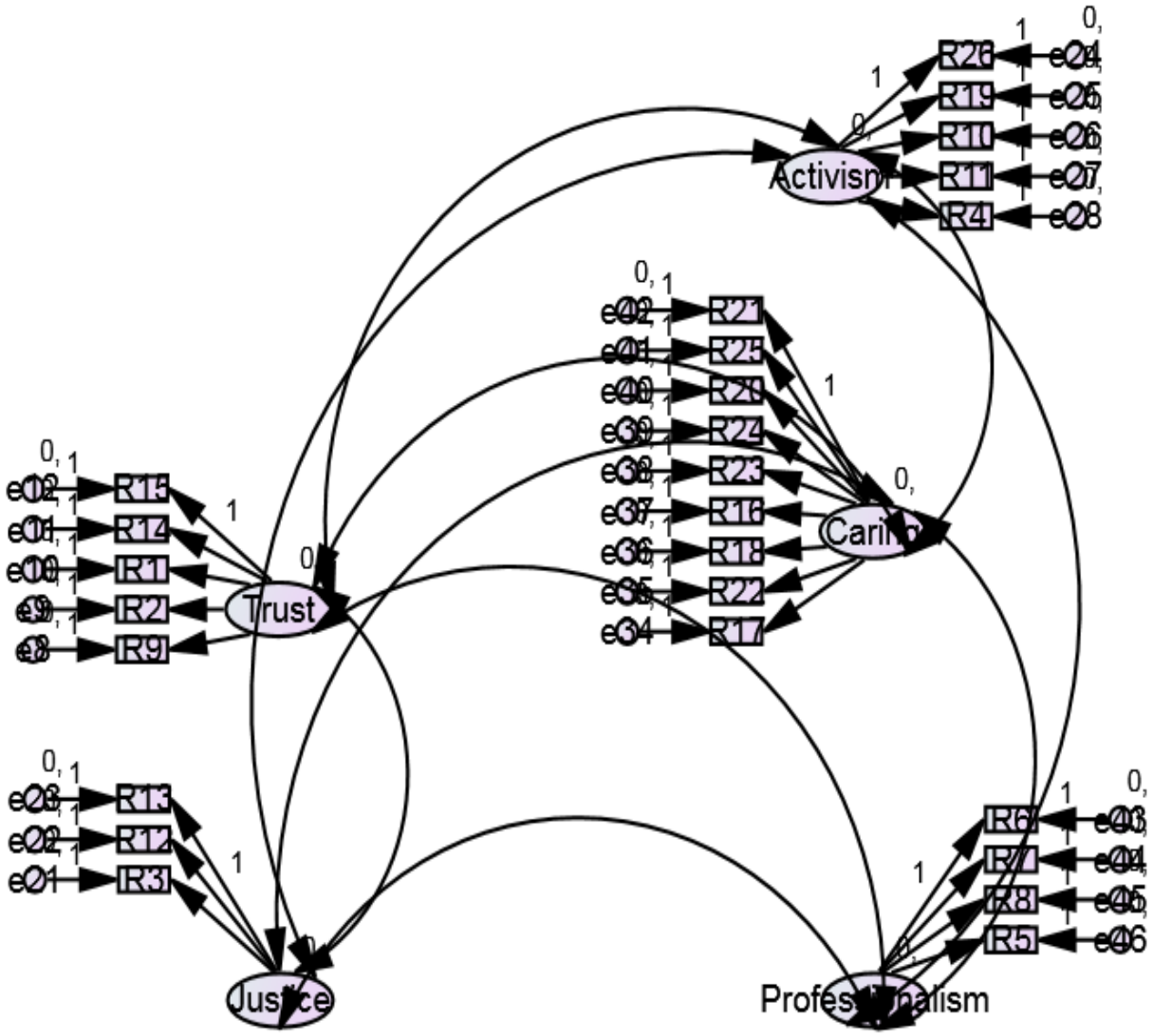


Figure 4.14 Confirmatory factor analysis NPVS-R (five factors)

In Table 4.12 the standardised regression weights for the NPVS-R with five factors are presented.

Table 4.12 Standardised regression weights of NPVS-R (five factors)

| Item nr. | Item | | Factor | Estimate | P-value |
|---|---|---|---|---|---|
| R9 | Seek additional education to update knowledge and skills | <--- | Trust | .702 | <.001 |
| R2 | Request consultation/collaboration when unable to meet patient needs | <--- | Trust | .594 | <.001 |
| R1 | Engage in on-going self-evaluation | <--- | Trust | .602 | <.001 |
| R14 | Accept responsibility for meeting health needs of the culturally diverse population | <--- | Trust | .772 | <.001 |
| R15 | Maintain competency in area of practice | <--- | Trust | .718 | <.001 |
| R3 | Protect health and safety of the public | <--- | Justice | .656 | <.001 |
| R12 | Promote equitable access to nursing and healthcare | <--- | Justice | .774 | <.001 |
| R13 | Assume responsibility for meeting health needs of the culturally diverse population | <--- | Justice | .761 | <.001 |
| R26 | Participate in activities of professional nursing associations | <--- | Activism | .577 | <.001 |
| R19 | Participate in nursing research and/or implement research findings appropriate to practice | <--- | Activism | .609 | <.001 |
| R10 | Advance the profession through active involvement in health related activities | <--- | Activism | .780 | <.001 |
| R11 | Recognise role of professional nursing associations in shaping healthcare policy | <--- | Activism | .707 | <.001 |
| R4 | Participate in public policy decision affecting distribution of resources | <--- | Activism | .475 | <.001 |
| R17 | Refuse to participate in care of ethical opposition to own professional values | <--- | Caring | .315 | <.001 |
| R22 | Confront practitioners with questionable or inappropriate practice | <--- | Caring | .674 | <.001 |
| R18 | Act as a patient advocate | <--- | Caring | .605 | <.001 |
| R16 | Protect moral and legal rights of patients | <--- | Caring | .721 | <.001 |
| R23 | Protect rights of participants in research | <--- | Caring | .574 | <.001 |
| R24 | Practice guided by principle of fidelity and respect for person | <--- | Caring | .720 | <.001 |
| R20 | Provide care without prejudice to patients of varying lifestyles | <--- | Caring | .741 | <.001 |
| R25 | Maintain confidentiality of patient | <--- | Caring | .700 | <.001 |
| R21 | Safeguard patient's right privacy | <--- | Caring | .801 | <.001 |
| R6 | Establish standards as a guide for practice | <--- | Professionalism | .739 | <.001 |
| R7 | Promote and maintain standards where planned learning activities for students take place | <--- | Professionalism | .769 | <.001 |
| R8 | Initiate action to improve environments of practice | <--- | Professionalism | .790 | <.001 |
| R5 | Participant in peer review | <--- | Professionalism | .679 | <.001 |

All items had statistically significant standardised regression weights above 0.315, indicating that items loaded significantly on the theoretical factors. The correlation coefficients amongst the factors of the NPVS-R are summarised in Table 4.13.

Table 4.13 Correlations amongst factors of the NPVS-R

| Factor | | Factor | Estimate |
|---|---|---|---|
| Trust | <--> | Justice | 1.00 |
| Trust | <--> | Activism | .869 |
| Trust | <--> | Caring | .869 |
| Professionalism | <--> | Justice | .821 |
| Professionalism | <--> | Trust | .893 |
| Justice | <--> | Activism | .891 |
| Justice | <--> | Caring | .866 |
| Activism | <--> | Caring | .836 |
| Professionalism | <--> | Activism | .800 |
| Professionalism | <--> | Caring | .736 |

The information in this table indicates that all relationships between the factors of NPVS-R are positive and very strong with coefficients higher than $r$ = 0.736. Trust has a perfect relationship of $r$ = 1.00 with justice as well as a strong relationship with activism and caring, both with a coefficient of $r$ = 0.869. The relationships of all the other factors with each other are also very strong with coefficients ranging from 0.800 to 0.893 with the relationship between professionalism and caring the lowest, but still strong, with a coefficient of $r$ = 0.736.

The measures of goodness of fit for the five-factor model yielded an acceptable CMIN/DF value of 2.674, a relatively acceptable CFI value of 0.838 although it was lower than 0.9 and an acceptable RMSEA value of 0.088 with a 90 % confidence interval of [0.080; 0.095]. These measures of goodness of fit are summarised in Table 4.14.

Table 4.14 Measures of goodness of fit for NPVS-R

| Factors | Chi Square | Chi Square/DF | CFI | RMSEA [90%] |
|---|---|---|---|---|
| 5 | <0.0001 | 2.674 | 0.838 | 0.088 [0.080; 0.095] |

### 4.4.3 Personality [Core Self-evaluations Scale (CSES)]

The Core self-evaluations Scale (CSES) as described in item 3.3.2.1 (iii) was used to measure personality of nurse respondents (Judge et al., 2003).

#### 4.4.3.1 Exploratory factor analysis of CSES

An exploratory factor analysis was done through principal axis factoring with Oblimin rotation of the CSES data which extracted 4 factors. The KMO measure of sampling adequacy for the analysis of this data were 0.883 and 48.55 % of the total variance was explained which is regarded as good. During the pattern matrix, Kaiser's criterion extracted the subscales presented in Table 4.15.

Table 4.15 Pattern matrix of the CSES

| Item No | ITEM | Reverse scored | Factor | | | |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 |
| CORE2 | Sometimes I feel depressed. | *(r )* | .702 | | | |
| CORE12 | There are times when things look pretty bleak and hopeless to me. | *(r )* | .641 | | | |
| CORE4 | Sometimes when I fail I feel worthless. | *(r )* | .603 | | | |
| CORE6 | Sometimes, I do not feel in control of work. | *(r )* | .535 | | | -240 |
| CORE1 | I am confident I get the success I deserve in life. | | | .676 | | |
| CORE7 | Overall, I am satisfied with myself. | | | .556 | | |
| CORE10 | I do not feel in control of my success in my career. | *(r )* | .306 | -527 | .347 | |
| CORE9 | I determine what will happen in my life. | | | | .437 | |
| CORE3 | When I try, I generally succeed. | | | .361 | .394 | |
| CORE11 | I am capable of coping with most of my problems. | | | | .342 | |
| CORE8 | I am filled with doubts about my competence. | *(r )* | | | | -740 |
| CORE5 | I complete tasks successfully. | | | | .206 | .471 |

*Rotation converged in 15 iterations.*

While the literature review identified the CSES as a one-dimensional factor, this analysis extracted four factors with the following items loading onto those factors:

- Factor 1 – 4 items: 2, 4, 6, 12
- Factor 2 – 2 items: 1 and 7
- Factor 3 – 4 items: 3, 9 10 and 11
- Factor 4 – 2 items: 5 and 8.

Even though this analysis makes sense theoretically, a one-dimensional factor would be the preferred option. Before rotation all items had loadings of 0.25 or higher on factor 1 which indicates that one factor would be acceptable. It was therefore decided to perform a confirmatory factor analysis for one factor.

#### 4.4.3.2 Confirmatory factor analysis for the CSES

A confirmatory factor analysis was done to confirm whether a one-dimensional factor for CSES would provide a suitable model for the data from this study. The confirmatory factor analysis that was performed is presented in Figure 4.15.

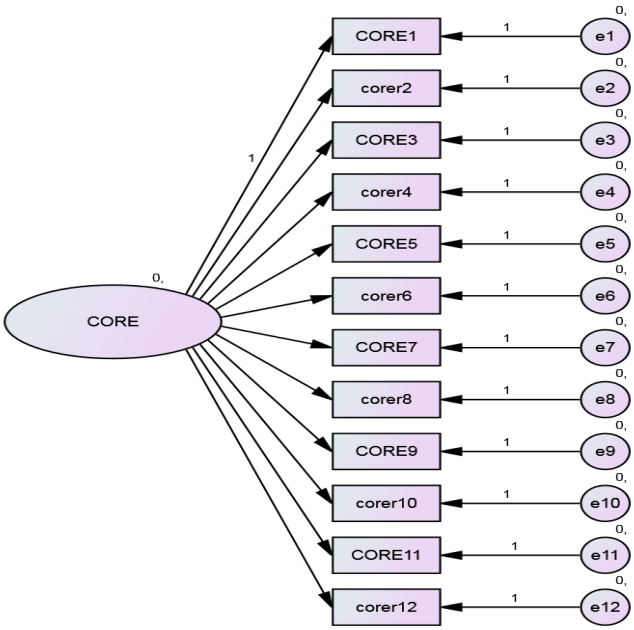


Figure 4.15 Confirmatory factor analysis for one-dimensional CSES

In Table 4.16 the standardised regression weights for a one-dimensional CSES are presented.

Table 4.16 Standardised regression weights for one-dimensional CSES

| Item No | Item | | Factor | Estimate | P |
|---|---|---|---|---|---|
| CORE1 | I am confident I get the success I deserve in life. | <--- | CORE | .340 | <0.001 |
| corer2 | Sometimes I feel depressed. | <--- | CORE | .513 | <0.001 |
| CORE3 | When I try, I generally succeed. | <--- | CORE | **.180** | 0.034 |
| corer4 | Sometimes when I fail I feel worthless. | <--- | CORE | .504 | <0.001 |
| CORE5 | I complete tasks successfully. | <--- | CORE | **.284** | 0.003 |
| corer6 | Sometimes, I do not feel in control of work. | <--- | CORE | .683 | <0.001 |
| CORE7 | Overall, I am satisfied with myself. | <--- | CORE | .384 | <0.001 |
| corer8 | I am filled with doubts about my competence. | <--- | CORE | .546 | <0.001 |
| CORE9 | I determine what will happen in my life. | <--- | CORE | **.221** | 0.014 |
| corer10 | I do not feel in control of my success in my career. | <--- | CORE | .564 | <0.001 |
| CORE11 | I am capable of coping with most of my problems. | <--- | CORE | **.226** | 0.012 |
| corer12 | There are times when things look pretty bleak and hopeless to me. | <--- | CORE | .601 | <0.001 |

This analysis indicated that all items had significant p-values lower than 0.05. However, while all the item loadings were significant, items 3, 5, 9 and 11 had weights under 0.3 which might be indicative that more factors might be needed.

The goodness of fit measures applied for the one-dimensional model generated a CMIN/DF value of 3.510 indicating a good model fit but the CFI value of 0.671 was lower than 0.9 and not acceptable. A RMSEA value of 0.108 with a 90 % confidence interval of [0.091; 0.124] was obtained which is higher than 0.10. A summary of the measures of goodness of fit is provided in Table 4.17. These results confirm that in this study population there was not only one factor as described in the literature, but rather four factors that would provide a more suitable model for the data. However, in order to compare the results with the literature, it was decided to use the one-dimensional factor.

Table 4.17 Measures of goodness of fit for CSES

| Items | Chi Square | CMIN/DF | CFI | RMSEA [90%] |
|---|---|---|---|---|
| 12 items | <0.0001 | 3.510 | 0.671 | 0.108 [0.091; 0.124] |

### 4.4.4 Situational Test of Emotion Management (STEM)

The Situational Test of Emotion Management (STEM) is described in item 3.3.2.1 (iv) (MacCann & Roberts, 2008). Only the questions that appeared in the latest version of the STEM instrument were scored for this study and analysis and interpretation of this instrument was approached with great caution.

#### 4.4.4.1 Exploratory factor analysis of STEM

Principal axis factor analysis with Oblimin rotation of the data obtained with this instrument extracted five factors. A KMO measure of sampling adequacy for this analysis was 0.678 and 57.643% of the total variance was explained after analysis which is regarded as good. Kaiser's criterion extracted subscales during the factor matrix which are presented in Table 4.18. The scenarios and the choices are too long to include in this table, but are available in annexure 1.

Table 4.18 Pattern matrix of STEM

| Item No | Item | Factor | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| stem16r | | .667 | | | | |
| stem17r | | .572 | | | | |
| stem20r | | .397 | | | | |
| stem4r | | .342 | | | | |
| stem13r | | .205 | | | | |
| stem18r | | | .784 | | | |
| stem2r | | .254 | .303 | | | .234 |
| stem7r | | | | .732 | | |
| stem3r | | | | .305 | | .216 |
| stem10r | | | | | .696 | |
| stem6r | | | | | .246 | |
| stem5r | | | | | | .544 |

*Rotation converged in 8 rotations*

While the literature review identified the STEM as a one-dimensional factor (MacCann & Roberts, 2008), this analysis extracted five factors with the following items loading onto those factors:

Factor 1 – Six items: 2r, 4r, 16r, 17r 13r and 20r.

Factor 2 – One item: 18r.

Factor 3 – Two items: 3r and 7r.

Factor 4 – Two items: 6r and 10r.

Factor 5 – One item: 5r.

As the literature identified this instrument as a one-dimensional factor, this was the preferred option. Excluding items 5 and 13, before rotation all the items loaded on 0.26 or higher onto factor 1, indicating that one factor would be an acceptable approach. The loading of item 13 was too low to reflect in the factor matrix, but in the pattern matrix it did load onto factor 1 with a value of 0.205. It was therefore decided to do a confirmatory factor analysis for a one-dimensional STEM.

#### 4.4.4.2 Confirmatory factor analysis for the STEM

In order to determine whether a one-dimensional factor for STEM would provide a suitable model for the data from this study, a confirmatory factor analysis was done. The confirmatory factor analysis performed is presented in Figure 4.16.

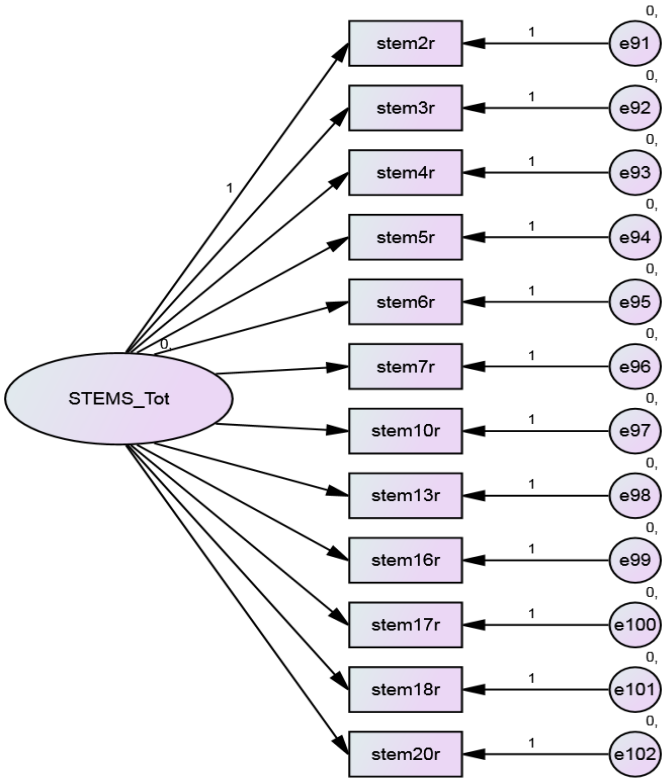


Figure 4.16 Confirmatory factor analysis of the one-dimensional STEM

In Table 4.19 the standardised regression weights for a one-dimensional STEM are presented.

Table 4.19 Standardised regression weights for one-dimensional STEM

| Item No | Item | | Factor | Estimate | P |
|---|---|---|---|---|---|
| stem2r | | <--- | STEM Tot | .443 | |
| stem3r | | <--- | STEM Tot | .312 | .002 |
| stem4r | | <--- | STEM Tot | .409 | <.001 |
| stem5r | | <--- | STEM Tot | **.123** | **.154** |
| stem6r | | <--- | STEM Tot | .281 | .003 |
| stem7r | | <--- | STEM Tot | .192 | .033 |
| stem10r | | <--- | STEM Tot | .195 | .030 |
| stem13r | | <--- | STEM Tot | **.130** | **.137** |
| stem16r | | <--- | STEM Tot | .496 | <.001 |
| stem17r | | <--- | STEM Tot | .583 | <.001 |
| stem18r | | <--- | STEM Tot | .223 | .016 |
| stem20r | | <--- | STEM Tot | .497 | <.001 |

This analysis indicated that items five and thirteen did not load significantly, all the others were significant with p-values lower than 0.05. However, while these item loadings were significant, items six, seven and ten had weights under 0.3 which is low.

Application of the multiple goodness of fit indices for the one factor model with twelve items, indicated a good fit for the data. The evaluation yielded a CMIN/DF value of 1.256 indicating a CFI of 0.891 and a RMSEA value of 0.034 with a 90 % confidence interval of [0.000; 0.058] confirming a good model fit. A summary of the measures of goodness of fit is provided in Table 4.20.

Table 4.20 Measures of goodness of fit for STEM

| Items | Chi Square | CMIN/DF | CFI | RMSEA |
|---|---|---|---|---|
| 12 items | <0.098 | 1.256 | 0.891 | 0.034 [0.000; 0.058] |

### 4.4.5 Empathy Quotient (EQ) Short Form

The Empathy Quotient (EQ) Short Form as described in 3.3.2.1 (v) was used to evaluate empathy amongst nurse respondents (Guan et al., 2012, Wakabayashi et al., 2006).

#### 4.4.5.1 Exploratory factor analysis of the EQ-Short (22 items)

A principal axis exploratory factor analysis with Oblimin rotation of the data obtained of the EQ-short instrument (22 items) extracted 6 factors instead of the one factor expected. The KMO measure of sampling adequacy for the analysis was found to be 0.753 and a 54.717% of the total variance was explained, which is considered good. During the pattern matrix, Kaiser's criterion extracted subscales. The pattern matrix as derived from the data, is presented in Table 4.21.

Table 4.21 Pattern matrix for 22 item EQ-Short

| Item No | ITEM | Reverse scoring | Factor | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 |
| EQ21 | I am good at predicting what someone will do. | | .731 | | | | | |
| EQ19 | I can easily work out what another person might want to talk about. | | .656 | | | | | |
| EQ9 | I am good at predicting how someone will feel. | | .561 | | | | .252 | |
| EQ20 | I can tell if someone is masking their true emotion. | | .477 | | | | | -.262 |
| EQ18 | I can tune in to how someone else feels rapidly and intuitively. | | .465 | | | | | |
| EQ13 | Other people tell me I am good at understanding how they are feeling and what they are thinking. | | .318 | | .216 | | | |
| EQ5 | In a conversation, I tend to focus on my own thoughts rather than on what my listener might be thinking. | (*r*) | | .634 | | | | |
| EQ4 | I often find it difficult to judge if something is rude or polite. | (*r*) | | .568 | | | | |
| EQ7 | It is hard for me to see why some things upset people so much. | (*r*) | | .538 | | | | |
| EQ3 | I find it hard to know what to do in a social situation. | (*r*) | | .500 | | .219 | | .221 |
| EQ11 | I can't always see why someone should have felt offended by a remark. | (*r*) | | .488 | | -.231 | | |
| EQ17 | Other people often say that I am insensitive though I don't always understand why. | (*r*) | | .378 | | .232 | | |
| EQ1 | I can easily tell if someone else wants to enter a conversation. | | | -.232 | | | .209 | |
| EQ14 | I can easily tell if someone else is interested in or bored by what I am saying. | | | | .707 | | | |
| EQ16 | I can sense if I am intruding, even if the other person doesn't tell me. | | .216 | | .591 | | | |
| EQ15 | Friends usually talk to me about their problems as they say that I am very understanding. | | | | .540 | -.248 | | |
| EQ22 | I tend to get emotionally involved with a friend's problems. | | | | .333 | | | |
| EQ2 | I really enjoy caring for other people. | | | | .260 | | | |
| EQ12 | I don't tend to find social situations confusing. | | | | | -.749 | | |
| EQ8 | I find it easy to put myself in somebody else's shoes. | | | | | | .719 | |
| EQ10 | I am quick to spot when someone in a group is feeling awkward or uncomfortable. | | .287 | | .203 | | .295 | |
| EQ6 | I can pick up quickly if someone says one thing but means another. | | .289 | | | | | -.685 |

*Rotation converged in 18 iterations.*

The analysis extracted six factors which included the following items:

- Factor 1 – Six items: 9, 13, 18, 19, 20 and 21
- Factor 2 – Six items: 3, 4, 5, 7, 11 and 17
- Factor 3 – Five items: 2, 14, 15, 16 and 33
- Factor 4 – One item 12
- Factor 5 - Three items: 1, 8 and 10
- Factor 6 – One item: 6.

It was notable in this analysis that:

(i) Item 5 (*In a conversation, I tend to focus on my own thoughts rather than on what my listener might be thinking*)

Further consideration of item 5 indicated that it is a long and difficult question that may have been misunderstood by respondents. Consideration could be given to excluding this question.

(ii) Item 17 (*Other people often say that I am insensitive though I don't always understand why*)

This question contains two questions in one and would only be meaningful if a respondent strongly agreed with the statement. The respondents would have to agree with both of these components of the question, namely that they are insensitive but do not understand why. Respondents may have agreed with only one part of the question making it difficult to respond to.

(iii) Factor 2 contains all the reverse scored items and these items did not load onto Factor 1, while all the other items did load onto factor 1 as indicated in the factor matrix in Table 4.23.

The literature indicated that this instrument is a one-dimensional tool for which a single score calculated as the sum of the ratings of all the items of the instrument. Before rotation all items except the reverse scored items loaded onto factor 1 with weights of more than 0.3. All the reverse scored items loaded onto the second factor. This indicated that a one factor solution would be suitable (Guan, Jin & Qian, 2012). A decision was taken to do a confirmatory factor analysis.

#### 4.4.5.2 Confirmatory factor analysis of the 22-item EQ-Short (one-dimensional)

A confirmatory factor analysis was done in order to confirm the factors that were determined from the literature. The confirmatory factor analysis that was performed is presented in Figure 4.17.

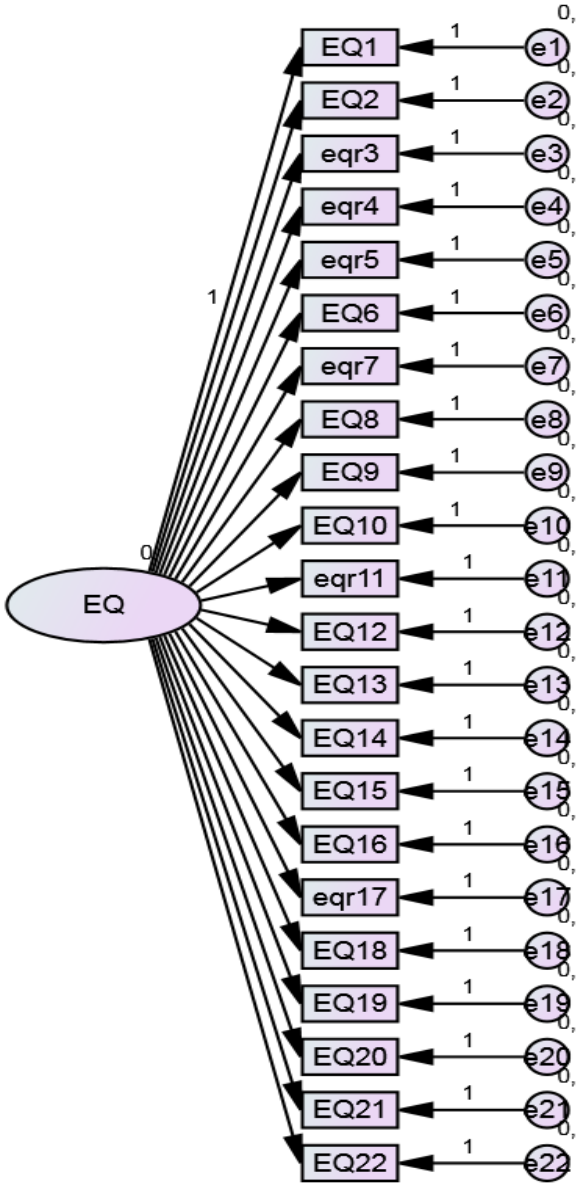


Figure 4.17 Confirmatory factor analysis EQ-Short [22 items]

In Table 4.22 the standardised regression weights for the EQ-short with 22 items are presented.

Table 4.22 Standardised regression weights of EQ-short with 22 items

| Item no. | Item | | Factor | Estimate | P |
|---|---|---|---|---|---|
| EQ1 | I can easily tell if someone else wants to enter a conversation. | <--- | EQ_tot | .346 | |
| EQ2 | I really enjoy caring for other people. | <--- | EQ_tot | .225 | .009 |
| eqr3 | I find it hard to know what to do in a social situation. | <--- | EQ_tot | .054 | **.476** |
| eqr4 | I often find it difficult to judge if something is rude or polite. | <--- | EQ_tot | .119 | **.127** |
| eqr5 | In a conversation, I tend to focus on my own thoughts rather than on what my listener might be thinking. | <--- | EQ_tot | .082 | **.282** |
| EQ6 | I can pick up quickly if someone says one thing but means another. | <--- | EQ_tot | .590 | <0.001 |
| eqr7 | It is hard for me to see why some things upset people so much. | <--- | EQ_tot | .130 | **.097** |
| EQ8 | I find it easy to put myself in somebody else's shoes. | <--- | EQ_tot | .292 | .002 |
| EQ9 | I am good at predicting how someone will feel. | <--- | EQ_tot | .524 | <0.001 |
| EQ10 | I am quick to spot when someone in a group is feeling awkward or uncomfortable. | <--- | EQ_tot | .554 | <0.001 |
| eqr11 | I can't always see why someone should have felt offended by a remark. | <--- | EQ_tot | .043 | **.569** |
| EQ12 | I don't tend to find social situations confusing. | <--- | EQ_tot | .234 | .007 |
| EQ13 | Other people tell me I am good at understanding how they are feeling and what they are thinking. | <--- | EQ_tot | .593 | <0.001 |
| EQ14 | I can easily tell if someone else is interested in or bored by what I am saying. | <--- | EQ_tot | .578 | <0.001 |
| EQ15 | Friends usually talk to me about their problems as they say that I am very understanding. | <--- | EQ_tot | .412 | <0.001 |
| EQ16 | I can sense if I am intruding, even if the other person doesn't tell me. | <--- | EQ_tot | .493 | <0.001 |
| eqr17 | Other people often say that I am insensitive though I don't always understand why. | <--- | EQ_tot | .080 | **.291** |
| EQ18 | I can tune in to how someone else feels rapidly and intuitively. | <--- | EQ_tot | .490 | <0.001 |
| EQ19 | I can easily work out what another person might want to talk about. | <--- | EQ_tot | .547 | <0.001 |
| EQ20 | I can tell if someone is masking their true emotion. | <--- | EQ_tot | .628 | <0.001 |
| EQ21 | I am good at predicting what someone will do. | <--- | EQ_tot | .500 | <0.001 |
| EQ22 | I tend to get emotionally involved with a friend's problems. | <--- | EQ_tot | .210 | .013 |

The negatively phrased items did not have significant regression estimates indicating that this is not a good fit for the data of this study.

#### 4.4.5.3 Confirmatory factor analysis of the sixteen-item EQ-Short (one-dimensional)

The literature identified that the EQ-short form was developed and tested as a 22-item version that was highly correlated with the full scale version of the instrument (Wakabayashi et al., 2006). However, in another study amongst Chinese healthcare professionals, 15 of the 22 items loaded heavily onto factor 1. Therefore the researcher performed a confirmatory factor analysis on a one-dimensional model excluding seven items, namely items 3, 4, 5, 7, 11, 12, and 22 which provided a good model fit for their data (Guan et al., 2012).

Based on this information and the confirmatory factor analysis for the EQ-short with 22-items described in item 4.4.5.2, the same approach was taken for this study. Before rotation all the

reverse scored items loaded onto factor 2 while all the other items loaded onto factor one with loadings of 0.206 and higher. This suggested that, if the reverse scored items were excluded, a one factor model would fit the data of this study. The researcher in consultation with the statistician and promoter decided to exclude only the six reverse scored items (3, 4, 5, 7, 11 and 17). This group of questions included the two difficult questions identified in the exploratory factor analysis, namely items 5 and 17. This differed slightly from the Chinese study, in that item 11 was excluded for this study but items 12 and 22 were not included in the excluded group for this study. A confirmatory factor analysis was done to determine whether a 16-item model provided a suitable fit for the research data. The confirmatory factor analysis that was performed is presented in Figure 4.18.

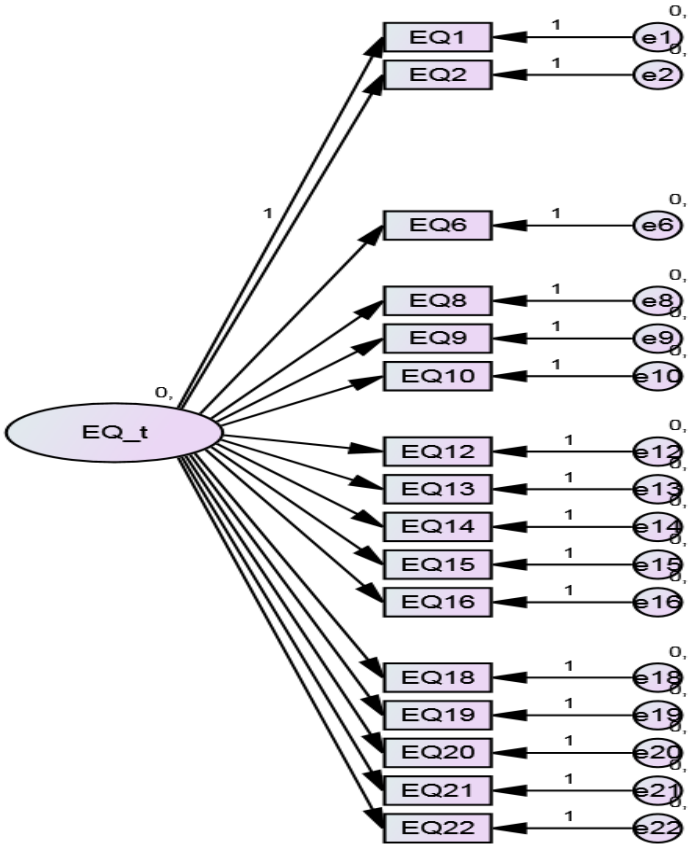


Figure 4.18 Confirmatory factor analysis EQ-Short [16-items]

The standardised regression weights for the EQ-short with 16 items are summarised in Table 4.23.

Table 4.23 Standardised regression weights EQ-Short (sixteen items)

| Item nr. | Item | | Factor | Estimate | P-value |
|---|---|---|---|---|---|
| EQ1 | I can easily tell if someone else wants to enter a conversation. | <--- | EQ_t | .333 | |
| EQ2 | I really enjoy caring for other people. | <--- | EQ_t | **.223** | .010 |
| EQ6 | I can pick up quickly if someone says one thing but means another. | <--- | EQ_t | .599 | <.001 |
| EQ8 | I find it easy to put myself in somebody else's shoes. | <--- | EQ_t | **.299** | .002 |
| EQ9 | I am good at predicting how someone will feel. | <--- | EQ_t | .532 | <.001 |
| EQ10 | I am quick to spot when someone in a group is feeling awkward or uncomfortable. | <--- | EQ_t | .548 | <.001 |
| EQ12 | I don't tend to find social situations confusing. | <--- | EQ_t | **.240** | .007 |
| EQ13 | Other people tell me I am good at understanding how they are feeling and what they are thinking. | <--- | EQ_t | .587 | <.001 |
| EQ14 | I can easily tell if someone else is interested in or bored by what I am saying. | <--- | EQ_t | .570 | <.001 |
| EQ15 | Friends usually talk to me about their problems as they say that I am very understanding. | <--- | EQ_t | .401 | <.001 |
| EQ16 | I can sense if I am intruding, even if the other person doesn't tell me. | <--- | EQ_t | .491 | <.001 |
| EQ18 | I can tune in to how someone else feels rapidly and intuitively. | <--- | EQ_t | .487 | <.001 |
| EQ19 | I can easily work out what another person might want to talk about. | <--- | EQ_t | .558 | <.001 |
| EQ20 | I can tell if someone is masking their true emotion. | <--- | EQ_t | .631 | <.001 |
| EQ21 | I am good at predicting what someone will do. | <--- | EQ_t | .513 | <.001 |
| EQ22 | I tend to get emotionally involved with a friend's problems. | <--- | EQ_t | **.216** | .012 |

In this analysis all the regression weights of items had a p-value of lower than 0.05 and therefore were significant. All the regression weights were higher than 0.333, except for item 8, which was borderline with a weight of 0.299 and three items with weights lower than 0.3 which is regarded as low.

Measures of good fit were determined for these models to quantify its goodness of fit and are summarised in Table 4.24.

Table 4.24 Measures of good fit for EQ-Short

| Items | Chi Square | CMIN/DF | CFI | RMSEA [90%] | AIC | BCC |
|---|---|---|---|---|---|---|
| 22 | <0.0001 | 2.772 | 0.565 | 0.090 [0.082; 0.099] | 711.283 | 726.932 |
| 16 | <0.0001 | 2.593 | 0.746 | 0.086 [0.073; 0.098] | 365.674 | 373.834 |

Analysis of these values indicates:

(i) CMIN/DF – both models are a good fit, with the 16-factor model closer to 2 which makes it the better fit for the data.

(ii) CFI – the 16-factor model has a higher value making it the better fit for the data.

(iii) RMSEA with 90% confidence interval indicate that the sixteen-factor model has a lower value suggesting that it would be the better fit.

(iv) AIC and BCC – both values are lower for the sixteen-factor model suggesting that it is the better fit for the data.

Therefore the sixteen-factor model was selected for the study as it provided for a better overall fit for the data of this study.

### 4.4.6 Kanungo Job Involvement Scale

The Kanungo Job Involvement scale as described in item 3.3.2.1 (vi) in Chapter 3 is a one-dimensional measure considering the job involvement of respondents (Bono and Judge, 2003).

#### 4.4.6.1 Kanungo Job Involvement Scale [ten items]

The first exploratory factor analysis was done including all ten items in the instrument completed by nurses.

##### 4.4.6.1.1 Exploratory factor analysis of Kanungo Job Involvement Scale [ten items]

In contrast to what was found in the literature, two factors were extracted after a principal axis exploratory factor analysis with Oblimin rotation of the data from the Kanungo Job Involvement instrument. The KMO measure of sampling adequacy was 0.890 and a 66.82% of the total variance was explained, which is considered good. The factors/subscales extracted with Kaiser's criterion during the pattern matrix, are presented in Table 4.25.

Table 4.25 Pattern matrix (ten-item analysis)

| Item No | ITEM | Factor | |
|---|---|---|---|
| | | 1 | 2 |
| JOB5 | Most of my interests are centred around my job. | .854 | |
| JOB4 | I live, eat, and breathe my job. | .786 | |
| JOB10 | I like to be absorbed in my job most of the time. | .749 | |
| JOB9 | I consider my job to be very central to my existence. | .728 | |
| JOB6 | I have very strong ties with my present job which would be very difficult to break. | .723 | |
| JOB8 | Most of my personal life goals are job-oriented. | .659 | |
| JOB1 | The most important things that happen to me involve my present job. | .533 | |
| JOB3 | I am very much involved personally in my job | .496 | |
| JOB2 | To me, my job is only a small part of who I am. | -.394 | .252 |
| JOB7 | Usually I feel detached from my job. | | .760 |

*Rotation converged in 3 iterations.*

With the ten factor analyses, the following were included in each factor:

- *Factor 1* – Eight items: 1, 3, 4, 5, 6, 8, 9 and 10
- *Factor 2* – Two items: 2 and 7.

According to the results, the following items stood out:

(i) Item 2: (*To me, my job is only a small part of who I am*)

Item 2 loaded onto both factors. Respondents might not have understood the question.

(ii) Item 7: (*Usually I feel detached from my job)*

Respondents might not have understood the question.

From the literature review only one factor was identified, therefore this study provided more factors with only one item not loading onto Factor 1. It was decided to do a confirmatory factor analysis to determine the model fit for the data.

#### 4.4.6.1.2 Confirmatory factor analysis of Kanungo Job Involvement Scale [ten items]

A confirmatory factor analysis was performed on the ten-factor model of the Kanungo Job Involvement Scale and is presented in Figure 4.19.

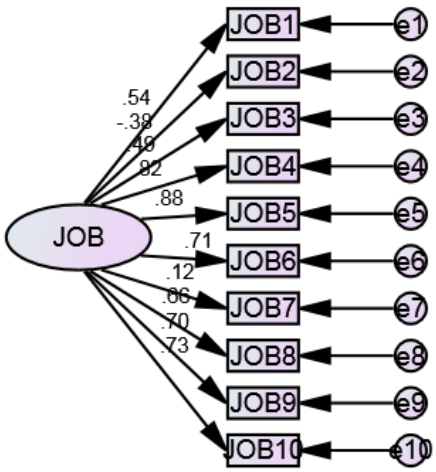


Figure 4.19 Confirmatory factor analysis for Kanungo Job Involvement Scale (ten items)

The standardised regression weights of the Kanungo Job Involvement Scale with ten items are presented in Table 4.26.

Table 4.26 Standardised regression weights of the Kanungo Job Involvement Scale with ten items

| Item nr. | Item | | Factor | Estimate | P-value |
|---|---|---|---|---|---|
| JOB1 | The most important things that happen to me involve my present job. | <-- | Job Involvement | .535 | |
| JOB2 | To me, my job is only a small part of who I am. | <-- | Job Involvement | -.376 | <.001 |
| JOB3 | I am very much involved personally in my job. | <-- | Job Involvement | .486 | <.001 |
| JOB4 | I live, eat, and breathe my job. | <-- | Job Involvement | .822 | <.001 |
| JOB5 | Most of my interests are centred around my job. | <-- | Job Involvement | .880 | <.001 |
| JOB6 | I have very strong ties with my present job which would be very difficult to break. | <-- | Job Involvement | .709 | <.001 |
| JOB7 | Usually I feel detached from my job. | <-- | Job Involvement | .118 | .106 |
| JOB8 | Most of my personal life goals are job-oriented. | <-- | Job Involvement | .657 | <.001 |
| JOB9 | I consider my job to be **very** central to **my** existence. | <-- | Job Involvement | .696 | <.001 |
| JOB10 | I like to be absorbed in my job most of the time. | <-- | Job Involvement | .535 | <.001 |

All the regression weights were significant and higher than 0.376, except for item 7 which had a very low regression weight of 0.118 which was not significant. All regression coefficients were positive except for item 2 which was negative.

#### 4.4.6.2 Kanungo Job Involvement Scale [nine items]

This is a one-dimensional measure for which the scores are linearly summed to produce a total score The researcher, in consultation with the statistician and promoter, decided to remove factor 2 (divided loading of which one is negative) to do a nine-factor analysis to see what emerged from the nine factor analysis.

#### 4.4.6.2.1 Confirmatory factor analysis of Kanungo Job Involvement Scale [nine items]

A confirmatory factor analysis was performed on the nine-factor model of the Kanungo Job Involvement Scale and is presented in Figure 4.20.

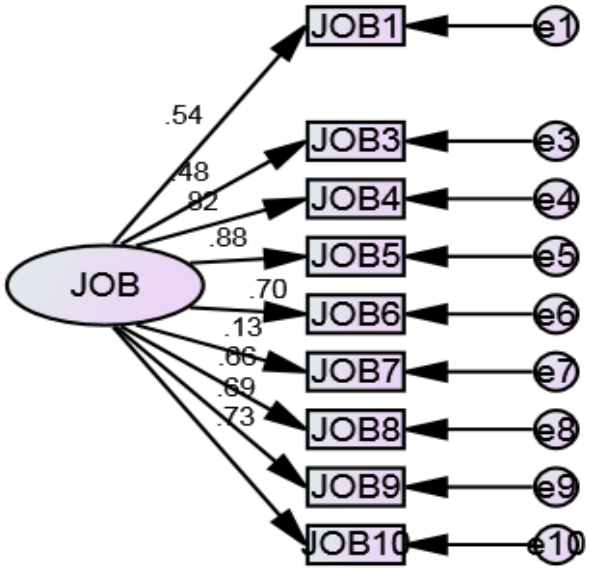


Figure 4.20 Confirmatory factor analysis of Kanungo Job Involvement Scale (nine items)

The standardised regression weights of the Kanungo Job Involvement Scale with nine items are presented in Table 4.27 together with the p-values.

Table 4.27 Regression weights [nine items]

| Item nr. | Item | | Factor | Estimate | P-value |
|---|---|---|---|---|---|
| JOB1 | The most important things that happen to me involve my present job. | <--- | Job Involvement | .536 | |
| JOB3 | I am very much involved personally in my job. | <--- | Job Involvement | .485 | <.001 |
| JOB4 | I live, eat, and breathe my job. | <--- | Job Involvement | .824 | <.001 |
| JOB5 | Most of my interests are centred around my job. | <--- | Job Involvement | .884 | <.001 |
| JOB6 | I have very strong ties with my present job which would be very difficult to break. | <--- | Job Involvement | .704 | <.001 |
| JOB7 | Usually I feel detached from my job. | <--- | Job Involvement | .127 | .081 |
| JOB8 | Most of my personal life goals are job-oriented. | <--- | Job Involvement | .659 | <.001 |
| JOB9 | I consider my job to be **very** central to **my** existence. | <--- | Job Involvement | .692 | <.001 |
| JOB10 | I like to be absorbed in my job most of the time. | <--- | Job Involvement | .728 | <.001 |

In this analysis all but one of the regression weights was positive, higher than 0.485 and significant. The regression weight of item 7 (*Usually I feel detached from my job*) was low (0.127) and not significant.

#### 4.4.6.3 Kanungo Job Involvement Scale [eight items]

The researcher in consultation with the statistician and promoter decided to remove factors 2 and 7 to do an 8-item analysis to see what emerged from the 8-item analysis.

##### 4.4.6.3.1 Confirmatory factor analysis of Kanungo Job Involvement Scale [eight items]

A confirmatory factor analysis of the 8-items of the Kanungo Job Involvement Scale is provided in Figure 4.21.

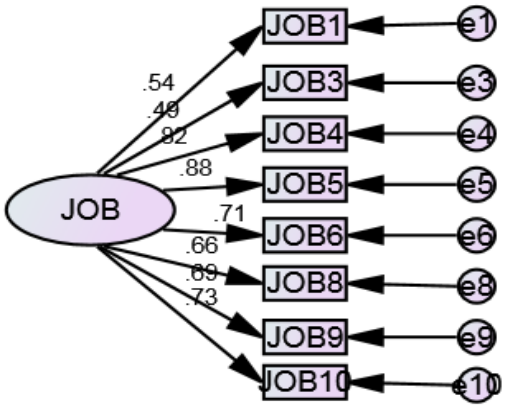


**Figure** 4.21 Confirmatory factor analysis of the Kanungo Job Involvement Scale (eight items)

In Table 4.28 the standardised regression weights of the Kanungo Job Involvement Scale with eight items is presented.

Table 4.28 Regression weights [8-items]

| Item nr. | Item | | Factor | Estimate | P-value |
|---|---|---|---|---|---|
| JOB1 | The most important things that happen to me involve my present job. | <-- | Job Involvement | .537 | |
| JOB3 | I am very much involved personally in my job. | <-- | Job Involvement | .486 | <.001 |
| JOB4 | I live, eat, and breathe my job. | <-- | Job Involvement | .822 | <.001 |
| JOB5 | Most of my interests are centred around my job. | <-- | Job Involvement | .884 | <.001 |
| JOB6 | I have very strong ties with my present job which would be very difficult to break | <-- | Job Involvement | .706 | <.001 |
| JOB8 | Most of my personal life goals are job-oriented. | <-- | Job Involvement | .658 | <.001 |
| JOB9 | I consider my job to be **very** central to **my** existence. | <-- | Job Involvement | .691 | <.001 |
| JOB10 | I like to be absorbed in my job most of the time. | <-- | Job Involvement | .730 | <.001 |

The regression weights of all the factors were higher than 0.486, positive and significant in the eight-factor model.

The measures of good fit for all three models for the Kanungo Job Involvement Scale were evaluated and these values are summarised in Table 4.29.

Table 4.29 Measures of goodness of fit for Kanungo Job Involvement Scale

| Items | Chi Square | CMIN/DF | CFI | RMSEA [90%] | AIC | BCC |
|---|---|---|---|---|---|---|
| 10 items | <0.0001 | 3.581 | 0.893 | 0.109 [0.089; 0.130] | 185.334 | 188.538 |
| 9 items | <0.0001 | 3.951 | 0.901 | 0.117 [0.94; 0.140] | 160.669 | 163.278 |
| 8 items | <0.0001 | 4.295 | 0.917 | 0.123 [0.097; 0.151] | 133.905 | 135.982 |

Based on this data, all three models are acceptable in terms of CMIN/DF while the CFI, AIC and BCC identify the eight-item model as the best fit for this data with a value of 0.971; 133.905 and 135.982 respectively. The RMSEA is larger than 0.10 for all three models which generally is not acceptable. Because all other measures of good fit indicated that the eight-factor model was the best fit, it was agreed to use this model for the study.

### 4.4.7 Caring Behaviours Inventory (CBI) for patients

The CBI measuring patients' perception of nurse caring as described in item 3.3.2.2 in Chapter 3, was completed by patients who were admitted in the same clinical wards where the nurses completed the 6-DSNP (Wu et al., 2006).

#### 4.4.7.1 Exploratory factor analysis of the CBI

An exploratory factor analysis with alpha factoring and Oblimin rotation of the CBI data extracted two factors which is less than the four factors identified in the literature. The KMO for the analysis was found to be 0.953 and a 71.312% variance was declared, which is considered excellent. Although two factors were extracted, the first factor already explained 67% of the variance, which is sufficient. During the pattern matrix, Kaiser's criterion extracted factors as presented in Table 4.30:

Table 4.30 Pattern matrix CBI

| Item no | ITEM | Factor | Factor | |
|---|---|---|---|---|
| | | | 1 | 2 |
| V19 | Meeting the patient's stated and unstated needs | Respect | .912 | |
| V16 | Returning to the patient voluntarily | Assurance | .909 | |
| V7 | Helping the patient grow | Connect | .897 | |
| V22 | Showing concern for the patient | Assurance | .887 | |
| V18 | Encouraging the patient to call if there are problems | Assurance | .883 | |
| V24 | Relieving the patient's symptoms | Assurance | .854 | |
| V11 | Demonstrating professional knowledge and skill | Knowledge | .849 | -.298 |
| V6 | Being empathetic or identifying with the patient | Respect | .848 | |
| V13 | Allowing the patient to express feelings about his or her disease and treatment | Respect | .836 | |
| V21 | Helping to decrease patient's pain | Assurance | .828 | |
| V17 | Talking with the patient | Assurance | .825 | |
| V8 | Being patient or tireless with the patient | Connect | .814 | |
| V20 | Responding quickly to the patient's call | Assurance | .794 | -.298 |
| V5 | Supporting the patient | Respect | .782 | .341 |
| V14 | Including the patient in planning his or her care | Connect | .780 | |
| V12 | Managing equipment skilfully | Knowledge | .776 | -.216 |
| V10 | Being confident with the patient | Knowledge | .774 | -.277 |
| V4 | Spending time with the patient | Connect | .767 | .245 |
| V2 | Giving instructions to teaching the patient | Connect | .767 | |
| V3 | Treating patient as an individual | Respect | .762 | .307 |
| V1 | Attentively listening to the patient | Respect | .758 | |
| V23 | Giving the patient's treatments and meds on time | Assurance | .755 | |
| V9 | Knowing how to give shots, IV's, etc. | Knowledge | .715 | |
| V15 | Treating patient information confidentially | Knowledge | .632 | |

*Extraction Method: Alpha Factoring; Rotation converged in one iteration.*

The pattern matrix did not indicate a clear separation between the two identified factors with all items loading above 0.63 on the first factor. This also indicates that a one factor solution is sufficient to describe the data and that patients see the different aspects of caring as one factor. In the literature review four factors were identified, namely assurance, knowledge & skill, respectfulness and connectedness (Wu et al., 2006). The researcher decided to do a confirmatory factor analysis for four factors to see whether the data of this study would fit a four factor model.

#### 4.4.7.2 Confirmatory factor analysis of the CBI

Confirmatory factor analysis was done to confirm the four factors/ subscales that were identified in the literature. The confirmatory factor analysis that was performed is presented in Figure 4.22.

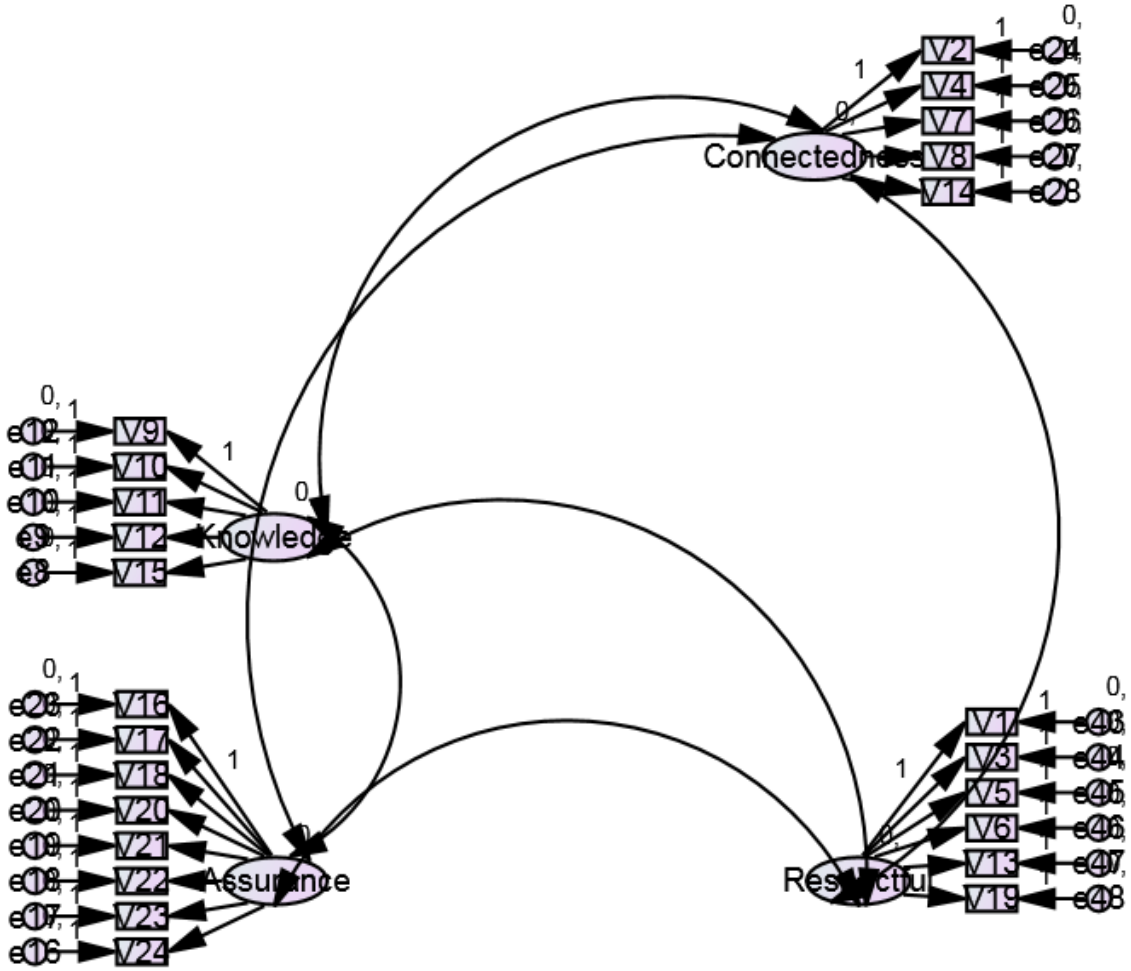


Figure 4.22 Confirmatory factor analysis of the CBI (4-factors)

The four factor model provided a satisfactory fit for the data from this study.

The standardised regression weights for the CBI with four factors are presented in Table 4.31. All these values were significant with p<0001.

Table 4.31 Standardised regression weights for CBI (4-factors)

| Item No | Item | | Factor | Estimate | P value |
|---|---|---|---|---|---|
| V15 | Treating patient information confidentially | <--- | Knowledge | .631 | <.001 |
| V12 | Managing equipment skilfully | <--- | Knowledge | .836 | <.001 |
| V11 | Demonstrating professional knowledge and skill | <--- | Knowledge | .910 | <.001 |
| V10 | Being confident with the patient | <--- | Knowledge | .839 | <.001 |
| V9 | Knowing how to give shots, IV's, etc. | <--- | Knowledge | .742 | |
| V24 | Relieving the patient's symptoms | <--- | Assurance | .862 | <.001 |
| V23 | Giving the patient's treatment and medication on time | <--- | Assurance | .794 | <.001 |
| V22 | Showing concern for the patient | <--- | Assurance | .900 | <.001 |
| V21 | Helping to decrease the patients pain | <--- | Assurance | .847 | <.001 |
| V20 | Responding quickly to the patient's call | <--- | Assurance | .802 | <.001 |
| V18 | Encouraging the patient to call if there are problems | <--- | Assurance | .889 | <.001 |
| V17 | Talking with the patient | <--- | Assurance | .830 | <.001 |
| V16 | Returning to the patient voluntarily | <--- | Assurance | .912 | |
| V2 | Giving instructions to teaching the patient | <--- | Connectedness | .775 | |
| V4 | Spending time with the patient | <--- | Connectedness | .798 | <.001 |
| V7 | Helping the patient grow | <--- | Connectedness | .916 | <.001 |
| V8 | Being patient or tireless with the patient | <--- | Connectedness | .815 | <.001 |
| V14 | Including the patient in planning his or her care | <--- | Connectedness | .774 | <.001 |
| V1 | Attentively listening to the patient | <--- | Respectful | .764 | |
| V3 | Treating the patient as an individual | <--- | Respectful | .766 | <.001 |
| V5 | Supporting the patient | <--- | Respectful | .809 | <.001 |
| V6 | Being empathetic or identifying with the patient | <--- | Respectful | .871 | <.001 |
| V13 | Allowing the patient to express feelings about his or her disease and treatment | <--- | Respectful | .849 | <.001 |
| V19 | Meeting the patient's stated and unstated needs | <--- | Respectful | .914 | <.001 |

All items had statistically significant standardised regression weights above 0.631, indicating that items loaded significantly on the theoretical factors. The correlation coefficients amongst the factors of the CBI are summarised in Table 4.32.

Table 4.32 Correlations amongst factors of the CBI

| Factor | | Factor | Estimate |
|---|---|---|---|
| Knowledge | <---> | Assurance | .915 |
| Knowledge | <---> | Connectedness | .893 |
| Respectful | <---> | Assurance | .971 |
| Respectful | <---> | Knowledge | .880 |
| Assurance | <---> | Connectedness | .945 |
| Respectful | <---> | Connectedness | 1.000 |

The very high correlation coefficients of $r$ = 0.880 and higher of this instrument indicated that factors are strongly related to the correlation coefficient of respectfulness and connectedness, indicating a perfect positive linear relationship at +1.

The multiple measures of goodness of fit were applied providing a CMIN/DF of 2.215, CFI of 0.905 and RMSEA of 0.099 with a 90% confidence interval [0,087; 0.111] which are all acceptable and indicative of a good fit. A summary of goodness of fit indices is provided in Table 4.33.

Table 4.33 Measures of good fit for CBI

| Factors | Chi Square | CMIN/DF | CFI | RMSEA [90%] |
|---|---|---|---|---|
| 4 | >0.0001 | 2.125 | 0.905 | 0.099 [0.087; 0.111] |

The four factor model provided a good fit for the data of this study and it was therefore selected for use.

## 4.5 RELIABILITY

Following the construct validity, reliability testing was done by calculating Cronbach's Alpha (coefficient) to determine the coherence and internal consistency of the scales and subscales (Gravetter and Forzano, 2012). Negatively phrased items were reverse scored. The Cronbach Alpha (**α**) coefficient of a scale are acceptable at values of 0.6 - 0.7. Values of 0.7 – 0.9 (low-stakes testing) is regarded as good with values higher than 0.9 regarded as excellent (high-stakes testing). Values of α $\geq$0.5 – 0.6 are regarded as poor and values lower

than 0.5 as unacceptable (Steyn, 2009; DeVellis, 2012). The Cronbach's Alpha values are summarised in Table 4.34.

Table 4.34 Cronbach's Coefficient **α** for the instruments used in the study

| Scale | Subscale/factor | Number of items | α |
|---|---|---|---|
| 6-DSNP | Leadership | 5 | 0.69 |
| | Critical care | 7 | 0.70 |
| | Teaching/ collaboration | 11 | 0.81 |
| | Plan/evaluate | 7 | 0.81 |
| | IPR/ Communication | 12 | 0.84 |
| | Professional development | 10 | 0.90 |
| NPVS | *Complete* | 26 | 0.95 |
| | Caring | 9 | 0.87 |
| | Activism | 5 | 0.77 |
| | Trust | 5 | 0.81 |
| | Professionalism | 5 | 0.83 |
| | Justice | 3 | 0.77 |
| STEM | *Complete* | 12 | 0.59 |
| CSES | *Complete* | 12 | 0.73 |
| EQ | *Complete* | 22 | 0.77 |
| Job Involvement | *Complete* | 10 | 0.78 |
| CBI | Assurance | 8 | 0.96 |
| | Knowledge/skill | 5 | 0.89 |
| | Respectful | 6 | 0.93 |
| | Connected | 5 | 0.91 |

The 6-DSNP Cronbach's Alphas for the seven critical care, eleven teaching/collaboration, seven plan/evaluate, 12 IPR/communication and 10 professional development items were 0.70; 0.81; 0.81; 0.84 and 0.90 respectively which is very good. The five leadership items of the 6-DSNP were 0.69 which is acceptable. The Cronbach's Alpha for the NPVS-R on nurses' values was 0.95 which is regarded as excellent. The Cronbach's Alphas for the subscales caring (9 items), activism (5 items), trust (5 items), professionalism (5 items) and justice (3items) were 0.86; 0.77; 0.81; 0.83 and 0.77 respectively, which are good. The Cronbach's Alpha for the 12-item STEM was 0.59, which is regarded as poor and the reason for this could be that the instrument used was not the latest version with the result that some of the questions had to be excluded. The result of this instrument was therefore used with great caution. The Cronbach's Alphas for the 12-items CSES; 22-item EQ-Short form and 10-item Kanungo Job Involvement scale were 0.73; 0.77 and 0.78 respectively, which is regarded as good. The CBI Cronbach's Alphas for the subscales assurance (8 items),

Knowledge/skill (5 items), respectful (6 items) and connectedness (5 items) were 0.96; 0.89; 0.93; and 0.91 respectively, which is regarded as very good.

## 4.6 NURSES' SELF-EVALUATION OF WORK PERFORMANCE (6-DSNP)

Schwirian's Six Dimension Scale of Nursing Performance (6-DSNP) as described in item 3.3.2.1 (i) was used for nurses' self-evaluation of work performance (Schwirian, 1978). The scale used ranged from 1 (not very well) to 4 (very well) indicating that the self-reported evaluation of work performance was very good. The first five dimensions focus on the behaviour expected from 'good nurses' while the last dimension considers issues of professional development and safe practice. Across the self-reported work performance behaviours in this study, professional development had the highest score (M = 3.55), closely followed by leadership, critical care and interpersonal relations/communication with the same score (M = 3.53). Planning/evaluation had a mean score of M = 3.48 with teaching/collaboration as the lowest score (M = 3.17). The distribution of work performance is summarised in Table 4.35.

Table 4.35 Descriptive statistics of work performance

| 6-DSNP dimensions | n | Minimum | Maximum | Mean (M) | Std Deviation |
|---|---|---|---|---|---|
| Leadership | 218 | 2 | 4 | 3.53 | 0.42 |
| Critical care | 217 | 2 | 4 | 3.53 | 0.40 |
| Teaching/ collaboration | 218 | 2 | 4 | 3.17 | 0.50 |
| Planning/evaluation | 218 | 2 | 4 | 3.48 | 0.47 |
| IPR/communication | 218 | 2 | 4 | 3.53 | 0.37 |
| Professional development | 217 | 2 | 4 | 3.55 | 0.46 |

## 4.7 DISTRIBUTION OF INTRAPERSONAL CHARACTERISTICS OF NURSES

Five instruments which assessed intrapersonal characteristics were selected for self-administration by nurses participating in this study which focused on professional values, personality, emotion management, empathy and job involvement. The distribution of intrapersonal characteristics is summarised in Table 4.36 (see p 192).

### 4.7.1 Professional values (NPVS-R)

The Nurses Professional Values Scale – Revised (NPVS-R) described in item 3.3.2.1(ii) was used to measure the professional values of nurses (Weis and Schank, 2009).The rating scale respondents used to rate the importance of the statements in the instrument, ranged from 1 (not important) to 5 (most important). In this study an overall mean score for professional values measured with this instrument was 103.37 with a minimum score of 63, maximum score of 130 and standard deviation of 14.22 as summarised in Table 4.36.

The NPVS-R measures five dimensions of professional values which all indicated high scores regarded as good for clinical practice. Across the self-reported professional values in this study, caring had a mean score of 37.13 and a standard deviation of 5.23. Activism had a mean score of 18.82 and standard deviation 3.16. The scores obtained for trust had a mean of 20.10 and a standard deviation of 2.95. For professionalism a mean of 15.35 and standard deviation of 2.93 were obtained. The final dimension measured with this instrument was justice where a mean of 11.9 and a standard deviation of 2.03 were obtained. The distribution of nurses' professional values is summarised in Table 4.36.

### 4.7.2 Personality (CSES)

Personality was measured with the Core self-evaluations Scale (CSES) described in item 3.3.2.1(iii) which provides a one-dimensional score (Judge et al., 2003). The rating scale ranged from 1 (strongly agree) to 7 (strongly disagree). A high mean score of M = 61.68 was obtained by the nurse respondents in this study, with a minimum score of 34, maximum score of 84 and a standard deviation of 10.54 as summarised in Table 4.36.

### 4.7.3 Emotional Intelligence [Emotion management (STEM)]

The Situational Test of Emotion Management (STEM) described in item 3.3.2.1(iv) 3 was used to measure emotion management (MacCann et al., 2003). The instrument used in this study was a previous version of the questionnaire with the result that it included some questions that were not included in the latest version of the STEM instrument. Only the

questions that appeared in the latest version of the STEM instrument were scored for this study – this includes items 2 – 5; 7; 10; 13; 16-18 and 20. Each question had four options to choose from with each of the options having its own score. The score obtained for this group of nurses was 0.63 with a possible maximum score of 1 as indicated in Table 4.36. The outcome of this should be approached with caution as the questionnaire was an older version of the current questionnaire in use.

### 4.7.4 Empathy (EQ-short)

The Empathy Quotient (EQ) Short Form described in item 3.3.2.1(v) was used to evaluate empathy (Guan et al., 2012, Wakabayashi et al., 2006). The rating scale used by respondents ranged from 1 (strongly disagree) to 4 (strongly agree). The minimum score was 44 and maximum score 88 with respondents in this study obtaining a mean score of 67.74 and a standard deviation of 7.98. These scores have been summarised in Table 4.36. This result presents a very high mean score.

### 4.7.5 Job Involvement (Kanungo Job Involvement Scale)

The Kanungo Job Involvement scale described in item 3.3.2.1(vi) was used to measure job involvement of the respondents  Judge et al., 2003). The rating scale that respondents had to use ranged from 1 (strongly disagree) to 6 (strongly agree). The minimum was 11.25 and maximum score 60 and in this study a mean score of 40.10 and a standard deviation of 11.14 were achieved. The results are summarised in Table 4.36.

Table 4.36 Distribution of intrapersonal characteristics of nurse respondents

| | N | Minimum | Maximum | Mean | Std Deviation |
|---|---|---|---|---|---|
| (NPVS-R): | | | | | |
| Professional values (total) | 218 | 63 | 130 | 103.37 | 14.22 |
| Caring | 218 | 24 | 45 | 37.13 | 5.23 |
| Activism | 218 | 9 | 25 | 18.82 | 3.16 |
| Trust | 218 | 12 | 25 | 20.10 | 2.95 |
| Professionalism | 218 | 7 | 20 | 15.35 | 2.93 |
| Justice | 218 | 6 | 15 | 11.99 | 2.03 |
| Core Self-evaluation (CSES) | 218 | 34 | 84 | 61.68 | 10.54 |
| STEM | 217 | | 1 | 0.63 | 0.142 |
| EQ (without reverse scored items) | 218 | 44.00 | 88.00 | 67.74 | 7.98 |
| Job Involvement (without items 2 and 7) | 217 | 11.25 | 60.00 | 40.10 | 11.14 |

## 4.8 CBI COMPLETED BY PATIENT RESPONDENTS

The Caring Behaviours Inventory (CBI) described in item 3.3.2.2 was used for completion by patients in the wards where nurse respondents were working to measure their perception of nurse caring. The scale used for this rating ranged from 1 (never) to 6 (always). Overall the scores for this instrument were high for all four dimensions of the instrument. The highest mean score was obtained for knowledge/skill of nurses (M = 4.95), followed by two almost similar mean scores for assurance (M = 4.79) and respectful (M = 4.78) and the lowest mean score (M = 4.59) for connectedness. These values have been summarised in Table 4.37.

Table 4.37 Distribution of means for CBI completed by patients

| CBI Factor | n | Minimum | Maximum | Mean (M) | Std. Deviation |
|---|---|---|---|---|---|
| Assurance | 116 | 2 | 6 | 4.79 | 1.19 |
| Knowledge/ skill | 116 | 3 | 6 | 4.95 | 0.98 |
| Respectful | 116 | 2 | 6 | 4.78 | 1.13 |
| Connected | 116 | 2 | 6 | 4.59 | 1.24 |

## 4.9 INFLUENCE OF DEMOGRAPHIC PROFILE OF NURSES AND PATIENTS ON FACTOR SCORES

The next section focuses on the influence of nurses' and patients' demographics on the factor scores of the dependent variables. Since the sample was obtained by inviting all nurses to participate, generalization of the results is not possible and p-values are not relevant. Statistical significance also does not confirm the practical significance or importance of the influence of the variable under assessment (Pallant, 2013). It has therefore become good practice to report effect size of statistical results. In all these analyses p-values are reported for completeness, but more emphasis is placed on the interpretation of effect sizes.

The R-squared ($R^2$) statistic, also referred to as the coefficient of multiple determination for multiple regression, was used as measure of the correlation between ordered demographic variables with the identified factors in the study. This indicates the proportion of variance explained by the relationship. $R^2$ is calculated as the square of the coefficient of multiple correlation with a value that ranges between 0 and 1. Zero would explain none of the variation while 1 would explain all the variation (Gravetter and Forzano, 2012). PROC SURVEYREG in SAS was used to determine $R^2$ to take into account the dependency of data from the same ward. $R^2$ itself is a measure of the effect size for correlations, where a value of 0.01 indicates a small effect; 0.1 a medium effect and 0.25 a large effect (Steyn, 2009).

To determine the difference in mean factor scores between nominal demographical variable groups, hierarchical linear models were used in which the dependence of data from nurses / patients within the same ward was taken into account. For all t-tests and ANOVA's Cohen's d-values were used as an effect size determined as the standardised difference between means, and the interpretation guided by the scale Cohen suggested, are d = 0.2 is small, d = 0.5 is medium and d = 0.8 or more is large effect size (Steyn, 2009).

### 4.9.1 Influence of ordered variables in nurse demographics on theoretical factors/constructs

The analysis for nurses included the influence of their age, number of children, academic and professional qualifications on their work performance and intrapersonal characteristics. The values are summarised in Table 4.38.

Table 4.38 Influence of nurses' ordered demographic characteristics on variables according to $R_2$

| Nurses' demographics | Age | Number of Children | Clinical Experience | Academic Qualification | Professional Qualification |
|---|---|---|---|---|---|
| **6 – Dimension Scale of Nursing Performance (6-DSNP)** | | | | | |
| Leadership | 0.0119 | 0.0128 | **0.0237*** | 0.0198 | **0.0402*** |
| Critical care | 0.0048 | 0.0038 | **0.0262*** | **0.0348*** | **0.0245*** |
| Teaching /collaboration | **0.0312*** | **0.0157*** | **0.0246*** | 0.0108 | 0.0075 |
| Planning /evaluation | 0.0222 | **0.0179*** | 0.0083 | **0.0275*** | 0.0031 |
| IPR /Communication | 0.0185 | **0.0469**** | 0.0147 | 0.0041 | 0.0059 |
| Prof Dev | 0.0005 | 0.0050 | 0.0014 | 0.0082 | 0.0127 |
| **Nurses Professional Values Scale (NPVS)** | | | | | |
| Caring | 0.0086 | 0.0009 | 0.0015 | 0.0072 | 0.0005 |
| Activism | 0.0089 | 0.0028 | 0.0002 | 0.0012 | 0.0107 |
| Trust | 0.0002 | 0.0010 | 0.0013 | 0.0126 | <0.001 |
| Professionalism | 0.0019 | 0.0001 | 0.0002 | 0.0007 | 0.0006 |
| Justice | 0.0055 | 0.0030 | 0.0001 | 0.0087 | 0.0008 |
| Total | 0.0059 | 6.282E-6 | 0.0002 | 0.0068 | 0.0002 |
| **Core Self-evaluation Scale (CSES)** | | | | | |
| CSES | 0.0140 | 0.0008 | 0.0034 | **0.0142*** | 0.0098 |
| **Emotional Intelligence (STEM)** | | | | | |
| STEM | 0.0235 | 0.0073 | 0.0107 | 0.0184 | 0.0021 |
| **Empathy Quotient (EQ-short)** | | | | | |
| Excluding reverse scored items | 0.0007 | 0.0104 | 0.0027 | 0.0002 | 0.0040 |
| **Kanungo Job Involvement Scale** | | | | | |
| Excluding items 2 & 7 | 0.0039 | 0.0062 | **0.0210*** | 0.0008 | 0.0013 |

*** Correlation is significant at the 0.01 level (2-tailed).*
** Correlation is significant at the 0.05 level (2-tailed).*

The summary of the $R_2$ values in Table 4.38, which also is a measure of the effect size, identified the following significant observations:

(i) Age of nurses has a significant influence on the teaching and collaboration skills of nurses at the 5% level of significance. This is, however, not important in practice as only 3% of the variation is explained by this relationship.

(ii) The number of children of nurses significantly influences the nurses' teaching/ collaboration and planning/evaluation at the1% level of significance. This is however not important in practice as only 2% of the variation is explained by each of the relationships.

(iii) The number of children of nurses also significantly influences the nurses' interpersonal relations/communication at the 5% level of significance. As only 5% of the variation is explained by the relationship, this is not important in practice.

(iv) Years of experience of nurses have an influence at the 5% level of significance on the work performance in their leadership, critical care (technical skills) and

teaching/collaboration dimensions as well as their job involvement. Only 2.4%%, 2.6%, 2.5% and 2.1% respectively of the relationship is explained by these relationships which is not important in practice.

(v) Academic qualifications have an influence at the 5% level of significance on work performance in the dimensions of critical care, planning/evaluation as well as their personality (CSES). These relationships explain 3.5%, 2.8% and 1.4% respectively of the variation which makes it not important in practice.

(vi) Professional qualifications on the other hand have an influence on leadership and critical care in work performance at the 5% level of significance. However, these relationships explain 4% and 2.5% of the variance which makes it not important in practice.

### 4.9.2 Difference in factor scores between nominal demographical variables

The next section highlights the difference in factor scores between nominal demographic variables of the study.

#### 4.9.2.1 Nurse respondents

The influence of nurses' demographics on their work performance and intrapersonal characteristics are discussed first. A value of *d* = 0 - 0.3 is a small effect size, if it is between 0.3 and 0.6 it is a moderate effect size, and an effect size bigger than 0.6 is a large effect size (Steyn, 2009).

##### 4.9.2.1.1 Gender distribution of nurse respondents

The means of factors for the gender of respondents was 205 female and 10 male respondents (n=215) with three respondents not completing this question. The effect size of the relationship of nurses' gender distribution with their work performance and intrapersonal characteristics indicated that only the relationship with interpersonal relations/communication in work performance was statistically significant (p=0.037) with a large effect of d=0.68. The effect size of gender distribution on the variables of the study is summarised in Table 4.39.

Table 4.39 Difference in means of factors with regard to gender

| Factors | Mean (n=215) | | MSE | HCM p-value | Effect size |
|---|---|---|---|---|---|
| | Female (n=205) | Male (n=10) | | | |
| 6-DSNP: | | | | | |
| Leadership | 3.519 | 3.640 | 0.177 | 0.377 | 0.29 |
| Critical care | 3.528 | 3.471 | 0.163 | 0.665 | 0.14 |
| Teach/collaboration | 3.176 | 2.990 | 0,253 | 0.257 | 0.37 |
| Plan/evaluation | 3.478 | 3.357 | 0.225 | 0.432 | 0.25 |
| Interpersonal relations/communication | 3.535 | 3.286 | 0.135 | **0.037** | **0.68** |
| Professional development | 3.546 | 3.590 | 0.215 | 0.768 | 0.10 |
| NPVS: | | | | | |
| Caring | 37.030 | 37.663 | 27.427 | 0.710 | 0.12 |
| Activism | 18.775 | 19.150 | 10.090 | 0.716 | 0.12 |
| Trust | 20.021 | 21.475 | 8.756 | 0.131 | 0.49 |
| Professionalism | 15.262 | 16.467 | 8.585 | 0.206 | 0.41 |
| Justice | 11.939 | 12.600 | 4.150 | 0.318 | 0.32 |
| Values - total | 103.014 | 107.320 | 203.141 | 0.352 | 0.30 |
| CSES | 61.536 | 66.300 | 110.979 | 0.164 | 0.45 |
| STEM | 0.619 | 0.639 | 0.020 | 0.664 | 0.14 |
| EQ (excl reverse scored items) | 67.786 | 66.394 | 64.691 | 0.294 | 0.17 |
| Job Involvement (excl items 2 & 7) | 40.299 | 36.625 | 123.900 | 0.309 | 0.33 |

#### 4.9.2.1.2 Marital status of nurses

The means of factors with regard to marital status amongst nurses are summarised in Table 4.40 with the 217 respondents completing this question. One respondent did not complete this question. The only statistically significant effect size was for teaching/collaboration (d=0.247; p=0.028) and justice (d=4.012; p=0.027). In both cases the widowed group (n=8) showed the highest mean values with effect sizes larger than 0.8 for all other groups. The group was small and interpretation should be done with caution.

Table 4.40 Difference in means of factors with regard to nurses' marital status

| Factors | Mean (n=217) | | | | | MSE | HCM p-value |
|---|---|---|---|---|---|---|---|
| | Single (n=77) | Married (n=102) | Partner (n=13) | Divorce (n=17) | Widowed (n=8) | | |
| 6-DSNP: | | | | | | | |
| Leadership | 3.487 | 3.536 | 3.673 | 3.490 | 3.725 | 0.177 | 0.383 |
| Critical care | 3.543 | 3.528 | 3.514 | 3.452 | 3.668 | 0.164 | 0.795 |
| Teach/collaboration | 3.071 | 3.216 | 3.270 | 3.098 | 3.612 | **0.247** | **0.028** |
| Plan/evaluation | 3.389 | 3.541 | 3.465 | 3.363 | 3.726 | 0.222 | 0.103 |
| Interpersonal relations/communication | 3.492 | 3.569 | 3.503 | 3.431 | 3.697 | 0.135 | 0.302 |
| Professional development | 3.498 | 3.590 | 3.632 | 3.504 | 3.533 | 0.216 | 0.685 |
| NPVS-R: | | | | | | | |
| Caring | 36.938 | 37.228 | 37.538 | 35.338 | 41.719 | 26.625 | 0.076 |
| Activism | 18.764 | 18.858 | 18.808 | 17.824 | 21.313 | 9.918 | 0.154 |
| Trust | 20.127 | 20.299 | 19.077 | 18.868 | 21.750 | 8.571 | 0.111 |
| Professionalism | 15.173 | 15.477 | 15.077 | 14.941 | 16.750 | 8.676 | 0.608 |
| Justice | 12.026 | 12.034 | 11.385 | 11.176 | 13.875 | **4.012** | **0.027** |
| NPVS-R Values - total | 103.014 | 103.878 | 101.895 | 98.113 | 115.387 | 198.296 | 0.078 |
| CSES | 60.638 | 63.118 | 58.175 | 60.390 | 61.239 | 111.359 | 0.364 |
| STEM | 0.627 | 0.621 | 0.597 | 0.636 | 0.509 | 0.020 | 0.229 |
| EQ (excl reverse scored items) | 67.943 | 66.987 | 68.115 | 67.860 | 75.132 | 68.772 | 0.097 |
| Job (excl items 2 & 7) | 40.891 | 39.571 | 38.264 | 38.130 | 46.719 | 124.473 | 0.372 |

#### 4.9.2.1.3 Difference in means of factors with regard to nurses as sole breadwinner

The difference in means of factor scores regarding nurses' status as sole breadwinners obtained small values. Only two of the effect sizes for the relationship with work performance and intrapersonal characteristics were found statistically significant, namely for the professional development factor of work performance (p=0.013; d=0.34) and personality as measured with CSES (p=0.004; d=0.40), both indicating a moderate effect in practice.

Table 4.41 Difference in means of factors with regard to nurses as sole breadwinners

| Factors | Mean | | MSE | HCM p-value | Effect size |
|---|---|---|---|---|---|
| | Yes (n=113) | No (n=105) | | | |
| 6-DSNP: | | | | | |
| Leadership | 3.539 | 3.518 | 0.178 | 0.707 | 0.05 |
| Critical care | 3.514 | 3.546 | 0.163 | 0.564 | 0.08 |
| Teach/collaboration | 3.163 | 3.184 | 0.255 | 0.768 | 0.04 |
| Plan/evaluation | 3.440 | 3.515 | 0.2224 | 0.243 | 0.16 |
| Interpersonal relations/communication | 3.510 | 3.547 | 0.138 | 0.465 | 0.10 |
| Professional development | 3.474 | 3.628 | 0.209 | **0.013** | **0.34** |
| NPVS: | | | | | |
| Caring | 37.111 | 37.148 | 27.427 | 0.958 | 0.01 |
| Activism | 18.903 | 18.737 | 10.052 | 0.699 | 0.05 |
| Trust | 20.062 | 20.133 | 8.734 | 0.859 | 0.02 |
| Professionalism | 15.304 | 15.406 | 8.624 | 0.797 | 0.03 |
| Justice | 120.097 | 11.871 | 4.163 | 0.413 | 0.11 |
| Values - total | 103.462 | 103.277 | 203.035 | 0.924 | 0.01 |
| CSES | 59.704 | 63.803 | 107.390 | **0.004** | **0.40** |
| STEM | 0.612 | 0.626 | 0.020 | 0.476 | 0.10 |
| EQ (excl reverse scored items) | 68.060 | 67.399 | 63.908 | 0.542 | 0.08 |
| Job Involvement (excl items 2 & 7) | 41.469 | 38.606 | 122.696 | 0.059 | 0.26 |

#### 4.9.2.1.4 Difference in means of factors with regard to nurses as single parent

The differences in factor scores of nurses regarding whether they are single parents or not, were only significant for personality as measured with CSES (p=0.034; d= 0.31) which indicate a moderate effect in practice.

Table 4.42 Difference in means of factors with regard to single parents

| Factors | Mean (n=217) | | MSE | HCM p-value | Effect size |
|---|---|---|---|---|---|
| | Yes (n=71) | No (n=146) | | | |
| 6-DSNP: | | | | | |
| Leadership | 3.538 | 3.525 | 0.178 | 0.824 | 0.03 |
| Critical care | 3.532 | 3.526 | 0.163 | 0.920 | 0.01 |
| Teach/collaboration | 3.175 | 3.175 | 0.255 | 0.999 | 0.00 |
| Plan/evaluation | 3.459 | 3.485 | 0.227 | 0.712 | 0.05 |
| Interpersonal relations/communication | 3.559 | 3.511 | 0.138 | 0.371 | 0.13 |
| Professional Development | 3.488 | 3.576 | 0.214 | 0.195 | 0.19 |
| NPVS-R: | | | | | |
| Caring | 37.239 | 37.036 | 27.398 | 0.788 | 0.04 |
| Activism | 18.947 | 18.740 | 10.050 | 0.652 | 0.07 |
| Trust | 19.996 | 20.132 | 8.755 | 0.752 | 0.05 |
| Professionalism | 150296 | 15.363 | 8.633 | 0.874 | 0.02 |
| Justice | 11.986 | 11.983 | 4.164 | 0.992 | 0.00 |
| Values - total | 103.458 | 103.235 | 203.041 | 0.914 | 0.02 |
| CSES | 54.435 | 62.658 | 108.592 | **0.034** | **0.31** |
| STEM | 0.602 | 0.625 | 0.020 | 0.269 | 0.16 |
| EQ (excl reverse scored items) | 67.653 | 67.721 | 63.787 | 0.940 | 0.01 |
| Job Involvement (excl items 2 & 7) | 40.808 | 39.671 | 124.471 | 0.482 | 0.10 |

#### 4.9.2.1.5 Difference in means of factors with regard to public and private sector

A total of 217 nurses responded to this question with one not answering the question. Whether nurses worked in the public or private sector had small effect. Only the association between the sector where nurses worked with their work performance in planning and evaluation (p=0.021; d= 0.33) as well as professional development (p=0.004; d= 0.41) were found to be statistically significant as indicated in Table 4.43. These effect sizes indicate a moderate effect in practice.

Table 4.43 Difference in means of factors with regard to public and private sector

| Factors | Mean (n=217) | | MSE | HCM p-value | Effect size |
|---|---|---|---|---|---|
| | Public (n=143) | Private (n=74) | | | |
| 6-DSNP: | | | | | |
| Leadership | 3.489 | 3.602 | 0.175 | 0.062 | 0.27 |
| Critical care | 3.492 | 3.595 | 0.160 | 0.075 | 0.26 |
| Teach/collaboration | 3.126 | 3.257 | 0.251 | 0.70 | 0.26 |
| Plan/evaluation | 3.421 | 3.577 | 0.221 | **0.021** | **0.33** |
| Interpersonal relations/communication | 3.508 | 3.568 | 0.137 | 0.228 | 0.17 |
| Professional development | 3.482 | 3.671 | 0.207 | **0.004** | **0.41** |
| NPVS-R: | | | | | |
| Caring | 37.055 | 37.244 | 27.531 | 0.802 | 0.04 |
| Activism | 18.795 | 18.846 | 10.083 | 0.912 | 0.02 |
| Trust | 20.173 | 19.949 | 8.765 | 0.598 | 0.08 |
| Professionalism | 15.184 | 15.671 | 8.611 | 0.248 | 0.17 |
| Justice | 12.056 | 11.858 | 4.160 | 0.499 | 0.10 |
| Values - total | 103.242 | 103.563 | 203.864 | 0.875 | 0.02 |
| CSES | 61.131 | 62.922 | 110.542 | 0.236 | 0.17 |
| STEM | 0.612 | 0.630 | 0.020 | 0.383 | 0.13 |
| EQ (excl reverse scored items) | 37.396 | 68.631 | 62.713 | 0.277 | 0.16 |
| Job Involvement (excl items 2 & 7) | 40.9889 | 38.369 | 123.776 | 0.102 | 0.24 |

#### 4.9.2.1.6 Difference in means of factors with regard to working day and night duty

The differences in factor scores for working day or night duty were not statistically significant and the data is summarised in Table 4.44. This question was completed by 201 of the respondents with 17 not responding to the question. No statistically significant associations were found.

Table 4.44 Difference in means of factors with regard to day or night duty

| Factors | Mean (n=201) | | MSE | HCM p-value | Effect size |
|---|---|---|---|---|---|
| | Day duty (n=158) | Night duty (n=43) | | | |
| 6-DSNP: | | | | | |
| Leadership | 3.544 | 3.501 | 0.176 | 0.556 | 0.10 |
| Critical care | 3.531 | 3.506 | 0.164 | 0.721 | 0.06 |
| Teach/collaboration | 3.181 | 3.163 | 0.252 | 0.833 | 0.04 |
| Plan/evaluation | 3.471 | 3.508 | 0.225 | 0.656 | 0.08 |
| Interpersonal relations/communication | 3.541 | 3.486 | 0.137 | 0.385 | 0.15 |
| Professional development | 3.568 | 3.494 | 0.217 | 0.362 | 0.16 |
| NPVS: | | | | | |
| Caring | 37.229 | 36.727 | 28.123 | 0.582 | 0.09 |
| Activism | 18.890 | 18.506 | 10.138 | 0.488 | 0.12 |
| Trust | 20.149 | 19.640 | 9.079 | 0.327 | 0.17 |
| Professionalism | 15.346 | 15.062 | 8.724 | 0.577 | 0.10 |
| Justice | 12.073 | 11.581 | 4.190 | 0.164 | 0.24 |
| Values - total | 103.661 | 101.531 | 209.299 | 0.393 | 0.15 |
| CSES | 61.957 | 60.947 | 112.600 | 0.581 | 0.10 |
| STEM | 0.620 | 0.599 | 0.020 | 0.378 | 0.15 |
| EQ (excl reverse scored items) | 67.359 | 69.321 | 64.737 | 0.158 | 0.24 |
| Job Involvement (excl items 2 & 7) | 40.136 | 40.046 | 122.978 | 0.962 | 0.01 |

#### 4.9.2.1.7 Difference in means of factors with regard to full-time, part-time and agency employment

The differences in factor scores for working full-time, part-time or through agencies were not statistically significant. The data is summarised in Table 4.45. This question was completed by 201 of the respondents with 17 not responding to the question. No statistically significant relationships were found.

Table 4.45 Difference in means of factors with regard to full-time, part-time or agency employment

| Factors | Mean (n = 217) | | | MSE | HCM p-value |
|---|---|---|---|---|---|
| | Full-time (n=210) | Part time (n=5) | Agency (n = 2) | | |
| 6-DSNP: | | | | | |
| Leadership | 3.538 | 3.330 | 3.200 | 0.177 | 0.297 |
| Critical care | 3.529 | 3.514 | 3.500 | 0.164 | 0.992 |
| Teach/collaboration | 60169 | 30304 | 30318 | 0.257 | 0.775 |
| Plan/evaluation | 3.472 | 3.514 | 3.929 | 0.225 | 0.396 |
| Interpersonal relations/communication | 3.543 | 3.424 | 3.333 | 0.138 | 0.610 |
| Professional development | 3.550 | 3.500 | 3.522 | 0.217 | 0.970 |
| NPVS - R: | | | | | |
| Caring | 37.119 | 35.20 | 39.500 | 27.324 | 0.582 |
| Activism | 18.849 | 17.200 | 18.000 | 10.003 | 0.484 |
| Trust | 20.124 | 19.000 | 18.500 | 8.725 | 0.527 |
| Professionalism | 15.348 | 15.200 | 14.500 | 8.638 | 0.916 |
| Justice | 12.026 | 10.800 | 10.000 | 4.098 | 0.158 |
| Values - total | 103.447 | 97.496 | 100.500 | 202.251 | 0.628 |
| CSES | 61.833 | 58.800 | 57.000 | 111.894 | 0.670 |
| STEM | 0.620 | 0.551 | 00556 | 0.020 | 0.468 |
| EQ (excl reverse scored items) | 67.677 | 70.125 | 67.375 | 64.452 | 0.756 |
| Job Involvement (excl items 2 & 7) | 40.390 | 28.393 | 41.250 | 122.497 | 0.058 |

#### 4.9.2.1.8 Difference in means of factors with regard to surgical and medical wards

A total of 211 respondents completed this question with seven not completing it. Working in surgical or medical wards had a small effect overall on work performance and intrapersonal characteristics of nurses as indicated in Table 4.46. Only two of these were found to be statistically significant, namely the leadership dimension (p=0.032; d=0.30) and the professional development dimension (p=0.039; d=0.29) in work performance. These effect sizes indicate a small practical effect.

Table 4.46 Difference in means of factors with regard to surgical and medical wards

| Factors | Mean (n=211) | | MSE | HCM p-value | Effect size |
|---|---|---|---|---|---|
| | Surgical (n=113) | Medical (n=98) | | | |
| 6-DSNP: | | | | | |
| Leadership | 3.463 | 3.588 | 0.176 | **0.032** | **0.30** |
| Critical care | 3.477 | 3.566 | 0.161 | 0.107 | 0.22 |
| Teach/collaboration | 3.129 | 3.190 | 0.252 | 0.377 | 0.12 |
| Plan/evaluation | 3.419 | 3.526 | 0.227 | 0.103 | 0.23 |
| Interpersonal relations/communication | 3.482 | 3.559 | 0.137 | 0.135 | 0.21 |
| Professional development | 3.482 | 3.615 | 0.213 | **0.039** | **0.29** |
| NPVS-R: | | | | | |
| Caring | 36.966 | 37.315 | 27.622 | 0.631 | 0.07 |
| Activism | 18.681 | 19.039 | 10.104 | 0.416 | 0.11 |
| Trust | 20.002 | 20.242 | 8.843 | 0.559 | 0.08 |
| Professionalism | 15.360 | 15.374 | 8.798 | 0.972 | 0.00 |
| Justice | 11.942 | 12.031 | 4.195 | 0.756 | 0.04 |
| Values - total | 102.956 | 103.962 | 205.542 | 0.612 | 0.07 |
| CSES | 61.559 | 62.077 | 107.036 | 0.717 | 0.05 |
| STEM | 0.629 | 0.610 | 0.020 | 0.330 | |
| EQ (excl reverse scored items) | 67.048 | 68.848 | 61.591 | 0.098 | 0.23 |
| Job Involvement (excl items 2 & 7) | 40.244 | 39.930 | 123.971 | 0.839 | 0.03 |

#### 4.9.2.2 Influence of patients' demographics on their perception of caring behaviours

The effect size of patients' demographics on their perceptions of nurses' caring behaviours is presented next.

##### 4.9.2.2.1 Age and academic qualifications of patient respondents

The practically significant effect of the patients' age and their academic qualifications on their perceptions of nurses' caring behaviours are summarised in Table 4.47. The R-squared ($R^2$) statistic was used to measure the correlation between ordered demographic variables with the identified factors in the study. PROC SURVEYREG in SAS was used to determine $R^2$ where values of 0.01 indicates a small effect; 0.1 a medium effect and 0.25 a large effect (Steyn, 2009).

The age of patients did not have a practically significant effect on their experience of nurses' caring behaviours, while their academic qualifications did have a statistically significant effect at the 5% level of significance on the assurance ($R^2$=0.077) knowledge/skill ($R^2$ = 0.071) and

connectedness ($R^2$ =0.093) dimensions of caring behaviours and respectfulness ($R^2$ = 0.101) at the 1% level of significance. These effects explain 7 – 10% of the variance

Table 4.47 Influence of patients' age and academic qualifications

| Caring Behaviours Inventory (CBI) | Assurance | Knowledge/Skill | Respectful | Connectedness |
|---|---|---|---|---|
| Age (n=116) | 0.001 | 0.004 | 0.021 | 0.007 |
| Academic qualification (n=112) | **0.077*** | **0.071*** | **0.101**** | **0.093*** |

**Significant at 95%*
*** Significant 99%*

#### 4.9.2.2.2 Admission in public or private sector

A total of 116 patients completed this question and the effect sizes are summarised in Table 4.48. All the effect sizes were small and none of these values were found to be statistically significant.

Table 4.48 Difference in means of factors with regard to public or private admission to hospital

| Factors | Mean (n=116) | | MSE | HCM p-value | Effect size |
|---|---|---|---|---|---|
| | Public (n=58) | Private (n=58) | | | |
| Assurance | 5.007 | 4.594 | 1.300 | 0.77 | 0.36 |
| Knowledge | 5.098 | 4.821 | 0.865 | 0.151 | 0.30 |
| Respectful | 4.979 | 4.591 | 1.221 | 0.69 | 0.35 |
| Connected | 4.794 | 4.379 | 1.500 | 0.070 | 0.34 |

#### 4.9.2.2.3 Gender distribution of patients

Four respondents in the study did not complete this question with a total of 112 patients completing the question. The effect sizes of the gender distribution of respondents on the perception of caring behaviours of nurses summarised in Table 4.49 are small and none of these effect sizes was found to be statistically significant.

Table 4.49 Difference in means of factors with regard to gender of patients

| Factors | Mean (n=112) | | MSE | HCM p-value | Effect size |
|---|---|---|---|---|---|
| | Female (n=67) | Male (n=45) | | | |
| Assurance | 4.859 | 4.826 | 1.250 | 0.884 | 0.03 |
| Knowledge | 4.913 | 5.111 | 0.792 | 0.276 | 0.022 |
| Respectful | 4.856 | 4.794 | 1.173 | 0.772 | 0.06 |
| Connected | 4.611 | 4.657 | 1.492 | 0.848 | 0.04 |

#### 4.9.2.2.4 Marital status

A total of 116 respondents completed this question with four not doing so. The difference in means of the marital status of patient respondents on the perception of caring behaviours of nurses is summarised in Table 4.50. No statistically significant values were found.

Table 4.50 Influence of patients' age and academic qualifications on their perceptions of nurses' caring behaviours

| Factors | Mean (n=112) | | | | | MSE | HCM p-value |
|---|---|---|---|---|---|---|---|
| | Single (n=29) | Married (n=63) | Partner (n=3) | Divorced (n=11) | Widowed (n=6) | | |
| Assurance | 4.977 | 4.774 | 5.392 | 4.402 | 4.111 | 1.277 | 0.340 |
| Knowledge | 5.037 | 4.947 | 5.321 | 4.661 | 4.697 | 0.879 | 0.740 |
| Respectful | 5.065 | 4.757 | 5.245 | 4.349 | 3.905 | 1.155 | 0.109 |
| Connected | 4.831 | 4.509 | 5.193 | 4.390 | 3.848 | 1.437 | 0.349 |

## 4.10 INFLUENCE OF NURSES' INTRAPERSONAL CHARACTERISTICS ON WORK PERFORMANCE

The evaluation of the influence of the intrapersonal characteristics of nurses on their work performance is summarised in Table 4.51. The R-squared ($R^2$) statistic, also referred to as the coefficient of multiple determination for multiple regression, was used as measure of the correlation between selected **intrapersonal** variables and **work performance** in the study. This indicates the proportion of variance explained by the relationship. PROC SURVEYREG in SAS was used to determine $R^2$ to take into account the dependency of data from the same ward. $R^2$ is a measure of the effect size, where a value of 0.01 indicates a small effect; 0.1 a medium effect and 0.25 a large effect (Steyn, 2009).

Table 4.51 Influence of intrapersonal characteristic on work performance according to $R_2$ (n=218)

| 6-Dimension Scale of Nursing Practice | Leadership | Critical care | Teach/Coll | Plan/eval | IPR/Comm | Prof Dev |
|---|---|---|---|---|---|---|
| NPVS-R: | | | | | | |
| Values-caring | **0.137**** | **0.054**** | **0.074**** | **0.062**** | **0.124**** | **0.102**** |
| Values-activism | **0.092**** | **0.081**** | **0.106**** | **0.078**** | **0.123**** | **0.113**** |
| Values-trust | **0.169**** | **0.075**** | **0.092**** | **0.120**** | **0.131**** | **0.131**** |
| Values- professionalism | **0.130**** | **0.084**** | **0.122**** | **0.141**** | **0.121**** | **0.158**** |
| Values-justice | **0.155**** | **0.076**** | **0.102**** | **0.084**** | **0.146**** | **0.119**** |
| Values-total | **0.189**** | **0.094**** | **0.125**** | **0.119**** | **0.166**** | **0.157**** |
| CSES (total) | 0.0126 | 0.018 | **0.029*** | **0.028*** | 0.0157 | **0.034*** |
| STEM | 0.003 | 0.002 | 0.017 | 6.594E-6 | 0.002 | 0.001 |
| EQ (excl reverse scored items) | **0.049**** | **0.024*** | **0.068**** | 0.023 | **0.032**** | **0.061**** |
| Job Involvement (excl items 2 & 7) | 0.006 | 0.003 | **0.030*** | 0.011 | **0.045**** | 0.001 |

*** Correlation is significant at the 0.01 level (2-tailed);*
** Correlation is significant at the 0.05 level (2-tailed).*

The information in Table 4.51 provides the following observations:

(i) There was significant correlation of all dimensions of professional values with all dimensions of work performance of nurses at the 1% level of significance. All the correlations are positive and of medium importance in practice with $R^2$ values between 0.062 and 0.189.

(ii) Personality as measured in the CSES shows a positive correlation at the 5% level of significance with the teaching/collaboration ($R^2$=0.029), planning/evaluation ($R^2$=0.028) and professional development ($R^2$=0.034) dimensions of nurses' work performance. However, these relationships are not important in practice.

(iii) The EQ has a significant positive correlation with the leadership ($R^2$=0.049), teaching and collaboration ($R^2$=0.068), interpersonal relations/communication ($R^2$=0.032) and professional development ($R^2$=0.061) components of the work performance of nurses at the 1% level of significance and a correlation with critical care dimension ($R^2$=0.024) at 5% level of significance. These relationships are of small to medium importance in practice.

(iv) Job involvement shows a significant correlation with interpersonal relations/communication ($R^2$=0.045) at the 1% level of significance and with

teaching/collaboration ($R^2$=0.030) at the 5% level of significance. These relationships are of small to medium importance in practice.

### *4.11 STRUCTURAL EQUATION MODELLING (SEM)*

As a final step in the analysis of the data of nurses, structural equation modelling was applied to test the hypothetical model provided at the outset of the study which indicates that all the intrapersonal characteristics selected for this study do have an influence on nurses' work performance. Each of the six dimensions included in the 6-DSNP was estimated by testing causal pathways between work performance and the selected intrapersonal characteristics. For ease of reference the data would be referred to as the names of the instruments applied during this study, namely NPVS-R for nurses' professional values, CSES for personality, STEM for emotion management, EQ (-short) for empathy and Job Involvement for the Kanungo Job Involvement Scale. Only the structural parts of the models will be reported on as the measurement part had already been reported in the CFA's.

The evaluation of the models presented was evaluated based on the following values:

(i) Correlation coefficients of <0. 3 were considered to be a weak relationship, 0.3 – 0.5 a moderate relationship and >0. 5 a strong relationship (Burns & Grove, 2009).

(ii) The Chi-squared test statistic with a p<0.000 is regarded as too strict as it detects small deviations from the proposed model. Mueller recommends that it should be divided by degrees of freedom (DF) (Mueller, 1996).

(iii) The CMIN/DF indicating a good model fit at values close to 2 but ratios as high as 4 or 5 (Mueller, 1996).

(iv) The CFI of above 0.9 indicates an overall good fit (Mueller, 1996).

(v) The RMSEA with a 90 % confidence interval of 0.10 and larger should not be accepted (Blunch, 2013).

### 4.11.1 6-DSNP: Professional development with intrapersonal characteristics

In Figure 4.23 the relationship of the 6-DSNP: Professional development is evaluated with the data obtained from all the instruments applied in the study, namely NPVS-R, CSES, STEM, EQ and Job involvement.

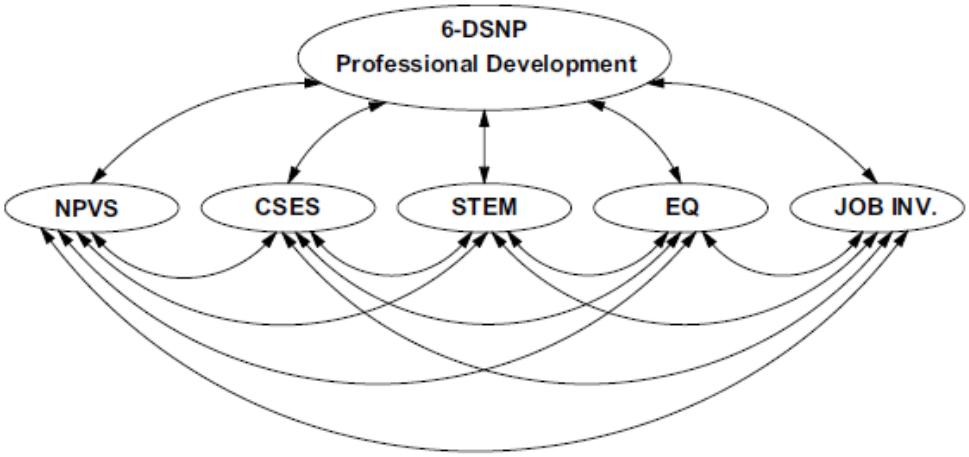


Figure 4.23 6- DSNP: Professional development with intrapersonal characteristics

The standardised regression weights of Model 6-DSNP: Professional development with intrapersonal characteristics is presented in Table 4.52.

Table 4.52 Standardised regression weights

| 6-DSNP: Professional Development | | Factors | Estimate | P |
|---|---|---|---|---|
| 6-DSNP : Professional Development | <-- | NPVS-R | .426 | **<.0001** |
| 6-DSNP : Professional Development | <-- | EQ | .175 | .066 |
| 6-DSNP : Professional Development | <-- | Job Involvement | -.037 | .605 |
| 6-DSNP : Professional Development | <-- | CSES | .074 | .340 |
| 6-DSNP : Professional Development | <-- | STEM | -.062 | .447 |

The data in this table indicates that the only statistically significant relationship was between NPVS-R assessing nurses' professional values with 6-DSNP: Professional Development. The standardised regression weight of 0.43 indicates an important effect in practice.

The correlation coefficients (*r)* for the model 6-DSNP: professional development with the selected intrapersonal characteristics is presented in Table 4.53.

Table 4.53 Correlations in Model 6-DSNP: professional development with intrapersonal characteristics

| Correlation of factors | | | *r* | P |
|---|---|---|---|---|
| NPVS-R | <--> | EQ | .209 | **.049** |
| NPVS-R | <--> | Job Involvement | .165 | **.033** |
| EQ | <--> | Job Involvement | .131 | .153 |
| NPVS-R | <--> | CSES | .160 | .069 |
| EQ | <--> | CSES | .126 | .201 |
| Job Involvement | <--> | CSES | -.127 | .144 |
| STEM | <--> | Job Involvement | -.113 | .215 |
| STEM | <--> | EQ | -.015 | .868 |
| STEM | <--> | CSES | .098 | .321 |
| STEM | <--> | NPVS-R | .138 | .127 |

This information reflects a significant correlation between NPVS-R and two of the other measures, namely EQ (0.209) and job involvement (0.165). These correlations are, however, small to medium and not important in practice.

The measures of good fit are summarised in Table 4.54. The CMIN/DF provides a value of 1.573 which is lower than 5. An unacceptable CFI of 0.757 was found as it was lower than 0.9 while a RMSEA of 0.051 with a 90 % confidence interval of [0.048; 0.053] was obtained, which is acceptable as this value was lower than 0.10.

Table 4.54 Measures of good fit: 6-DSNP and intrapersonal characteristics

| Dimension of work performance | Chi Square | CMIN/DF | CFI | RMSEA [90%] |
|---|---|---|---|---|
| Professional development | <.0001 | 1.573 | 0.757 | 0.051 [0.048; 0.053] |

### 4.11.2 6-DSNP: Communication with intrapersonal characteristics

In Figure 4.24 the relationship of the 6-DSNP: Communication is evaluated with the data obtained from all the instruments applied in the study, namely NPVS-R, CSES, STEM, EQ and Job involvement.

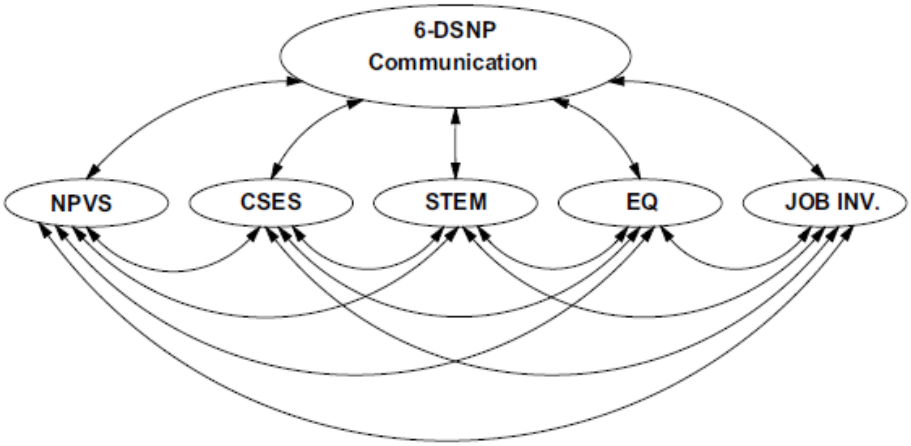


Figure 4.24 Model 6-DSNP: Communication with intrapersonal characteristics

The standardised regression weights of the Model - 6-DSNP: Communication with the selected intrapersonal characteristics is presented in Table 4.55.

Table 4.55 Standardised regression weights

| 6-DSNP: Communication | | Subscale | Estimate | P |
|---|---|---|---|---|
| 6-DSNP: Communication | <-- | NPVS-R | .423 | **<.0001** |
| 6-DSNP: Communication | <-- | EQ | .077 | .344 |
| 6-DSNP: Communication | <-- | Job Involvement | .156 | .052 |
| 6-DSNP: Communication | <-- | CSES | .082 | .319 |
| 6-DSNP: Communication | <-- | STEM | -.080 | .355 |

The data in this table indicates that the only statistically significant relationship was between NPVS-R assessing nurses' professional values with 6-DSNP: Communication. The standardised regression weight of 0.423 indicates an important effect in practice. The relationship between 6-DSNP: Communication with Job Involvement is borderline significant, but the value is below 0.3 and not important in practice.

The correlation coefficients (*r*) for Model - 6-DSNP: Communication with the selected intrapersonal characteristics is presented in Table 4.56.

Table 4.56 Correlations in Model 6-DSNP: Communication with intrapersonal characteristics

| Correlation of factors | | | *r* | P |
|---|---|---|---|---|
| NPVS-R | <--> | EQ | .210 | **.045** |
| NPVS-R | <--> | Job Involvement | .166 | **.032** |
| EQ | <--> | Job Involvement | .132 | .148 |
| NPVS-R | <--> | CSES | .158 | .072 |
| Job Involvement | <--> | CSES | -.129 | .140 |
| EQ Total | <--> | CSES | .124 | .203 |
| STEM | <--> | Job Involvement | -.114 | .211 |
| STEM | <--> | EQ | -.014 | .879 |
| STEM | <--> | CSES | .098 | .321 |
| STEM | <--> | NPVS-R | .139 | .122 |

This data indicates that NPVS-R was significantly correlated with EQ (0.210) and with job involvement (0.166). The standardised regression weights of 0.210 and 0.166 respectively are small and not important in practice.

The measures of good fit for the structural equation modelling for the IPR/communication dimension of work performance are summarised in Table 4.57. Two of these measures confirm the model as a good fit for the data of this study with the CMIN/DF (1.518) providing a value lower than 5, CFI (0.736) not acceptable with a value lower than 0.9, and an acceptable RMSEA (0.049) with a 90**%** confidence interval [0.045; 0.052]) with a value of less than 0.10.

Table 4.57 Measures of good fit: 6-DSNP and intrapersonal characteristics

| Dimension of work performance | Chi Square | CMIN/DF | CFI | RMSEA [90%] |
|---|---|---|---|---|
| IPR/communication | <.0001 | 1.518 | 0.736 | 0.049 [0.045; 0.052] |

### 4.11.3 6-DSNP: Planning/ Evaluation with intrapersonal characteristics

In Figure 4.25 the relationship of the 6-DSNP: Planning/Evaluation is evaluated with the data obtained from all the instruments applied in the study, namely NPVS-R, CSES, STEM, EQ and Job involvement.

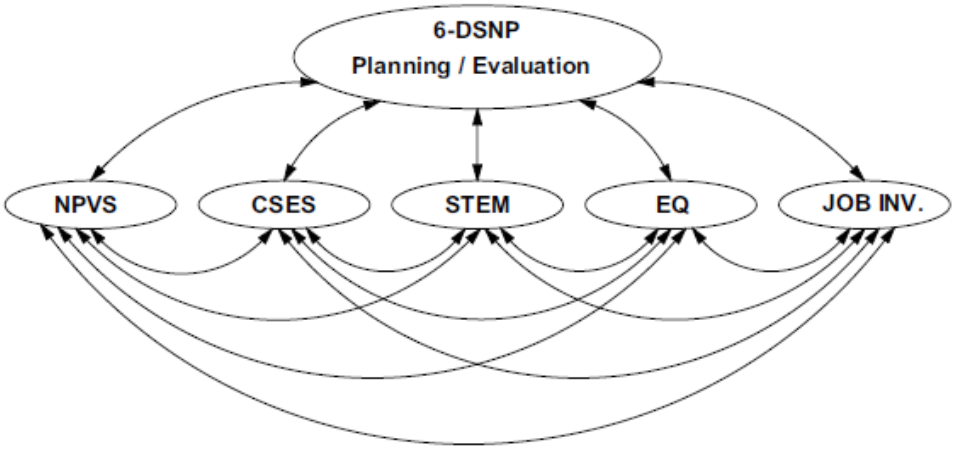


Figure 4.25 6-DSNP: Planning/evaluation with intrapersonal characteristics

The standardised regression weights for 6-DSNP: Planning/evaluation and the selected intrapersonal characteristics are presented in Table 4.58.

Table 4.58 Standardised regression weights

| 6-DSNP: Planning/ Evaluation | | Subscale | Estimate | P |
|---|---|---|---|---|
| 6-DSNP: Planning/ Evaluation | <-- | NPVS-R | .369 | **<.0001** |
| 6-DSNP: Planning/ Evaluation | <-- | EQ | .063 | .445 |
| 6-DSNP: Planning/ Evaluation | <-- | Job Involvement | .066 | .392 |
| 6-DSNP: Planning/ Evaluation | <-- | CSES | .109 | .204 |
| 6-DSNP: Planning/ Evaluation | <-- | STEM | -.015 | .869 |

The data in this table indicates that the only statistically significant relationship was between NPVS-R assessing nurses' professional values with 6-DSNP: planning/evaluation. The standardised regression weight of 0.369 indicates an important effect in practice.

The correlation coefficients (*r)* for 6-DSNP: Planning/ Evaluation with the selected intrapersonal characteristics are presented in Table 4.59.

Table 4.59 Correlations: 6-DSNP: Planning/ Evaluation with intrapersonal characteristics

| Correlation of factors | | | *r* | P |
|---|---|---|---|---|
| NPVS | <--> | EQ | .209 | **.046** |
| NPVS-R | <--> | Job Involvement | .165 | **.034** |
| EQ | <--> | Job Involvement | .131 | .151 |
| NPVS-R | <--> | CSES | .160 | .069 |
| EQ | <--> | CSES | .126 | .199 |
| Job Involvement | <--> | CSES | -.127 | .145 |
| STEM | <--> | Job Involvement | -.112 | .220 |
| STEM | <--> | EQ | .099 | .317 |
| STEM | <--> | CSES | -.014 | .882 |
| STEM | <--> | NPVS-R | .140 | .123 |

The data in this table indicates that the only statistically significant relationship was between NPVS-R and job involvement (0.165) as well as NPVS-R and EQ (0.209). The correlation coefficients are small and therefore not important in practice.

The measures of good fit for the structural equation modelling of the planning/evaluate dimension of work performance were determined and is summarised in Table 4.60. This model provided a CMIN/DF value of 1.535 which indicates a good model fit. A relatively unacceptable CFI of 0.755 was found while a RMSEA value of 0.050 with a 90 % confidence interval of [0.046; 0.053] is acceptable as this value.

Table 4.60 Measures of good fit: 6-DSNP and intrapersonal characteristics

| Dimension of work performance | Chi Square | CMIN/DF | CFI | RMSEA [90%] |
|---|---|---|---|---|
| Plan/evaluate | <.0001 | 1.535 | 0.755 | 0.050 [0.046; 0.053] |

### 4.11.4 6-DSNP: Teaching/Collaboration with intrapersonal characteristics

In Figure 4.26 the relationship of the 6-DSNP: teaching/collaboration is evaluated with the data obtained from all the instruments applied in the study, namely NPVS-R, CSES, STEM, EQ and job involvement.

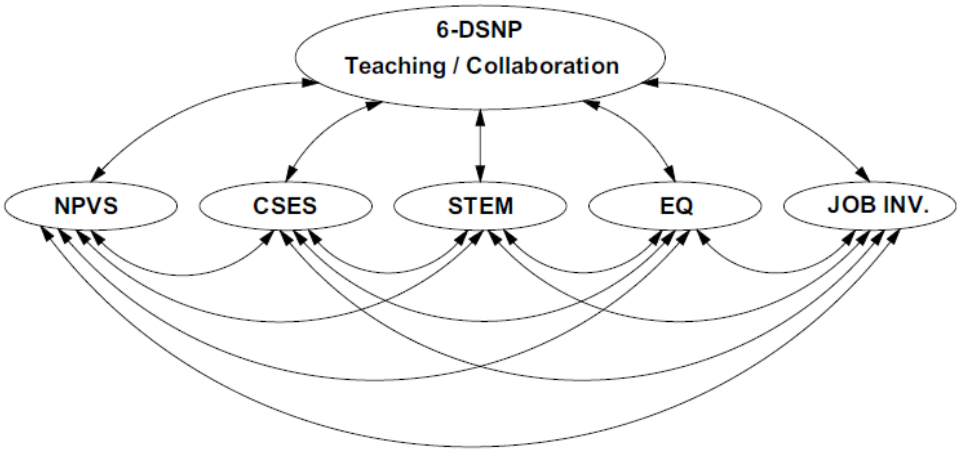


Figure 4.26 6-DSNP: teaching/collaboration with intrapersonal characteristics

The standardised regression weights for 6-DSNP: teaching/collaboration and the selected intrapersonal characteristics are presented in Table 4.61.

Table 4.61 Standardised regression weights

| 6-DSNP: Teaching/Collaboration | | Subscale | Estimate | P |
|---|---|---|---|---|
| 6-DSNP: Teaching/Collaboration | <-- | NPVS-R | .336 | **<.0001** |
| 6-DSNP: Teaching/Collaboration | <-- | EQ | .183 | .066 |
| 6-DSNP: Teaching/Collaboration | <-- | Job Involvement | .146 | .058 |
| 6-DSNP: Teaching/Collaboration | <-- | CSES | .135 | .112 |
| 6-DSNP: Teaching/Collaboration | <-- | STEM | -.199 | **.032** |

In this table the data indicates that the only statistically significant relationships were between NPVS-R and 6-DSNP: teaching/collaboration and between STEM and 6-DSNP: teaching/collaboration. The NPVS-R relationship with 6-DSNP: teaching/collaboration is positive with a regression weight of 0.336 which is important in practice. The STEM relationship is negative with a low regression weight of -0.199 which makes it not important in practice.

The correlation coefficients (*r)* for 6-DSNP: teaching/collaboration and intrapersonal characteristics are presented in Table 4.62.

Table 4.62 Correlations for 6-DSNP: teaching/collaboration and intrapersonal characteristics

| Correlation of factors | | | *r* | P |
|---|---|---|---|---|
| NPVS-R | <--> | EQ | .209 | **.047** |
| NPVS-R | <--> | Job Involvement | .166 | **.033** |
| EQ | <--> | Job Involvement | .131 | .151 |
| NPVS-R | <--> | CSES | .160 | .069 |
| EQ | <--> | CSES | .126 | .200 |
| Job Involvement | <--> | CSES | -.126 | .147 |
| STEM | <--> | Job Involvement | -.113 | .213 |
| STEM | <--> | EQ | -.010 | .911 |
| STEM | <--> | CSES | .143 | .115 |
| STEM | <--> | NPVS-R | .101 | .309 |

The data in this table indicates that the only statistically significant relationships were NPVS-R assessing nurses' professional values with EQ (0.209) and job involvement (0.166). These correlations are however small and not important in practice.

The measures of goodness of fit considered are summarised in Table 4.63. The model yielded a CMIN/DF value of 1.545 which indicates a good model fit. A relatively unacceptable CFI of 0.740 was found as it was lower than 0.9 while a RMSEA value of 0.050 with a 90 % confidence interval of [0.047; 0.054] was obtained, which is acceptable as this value was lower than 0.10.

Table 4.63 Measures of good fit: 6-DSNP and intrapersonal characteristics

| Dimension of work performance | Chi Square | CMIN/DF | CFI | RMSEA [90%] |
|---|---|---|---|---|
| Teach/collaborate | <.0001 | 1.545 | 0.740 | 0.050 [0.047; 0.054] |

### 4.11.5 6-DSNP: Critical Care and intrapersonal characteristics

In Figure 4.27 the relationship of the 6-DSNP: Critical Care and intrapersonal characteristics is evaluated with the data obtained from all the instruments applied in the study, namely NPVS-R, CSES, STEM, EQ and Job involvement.

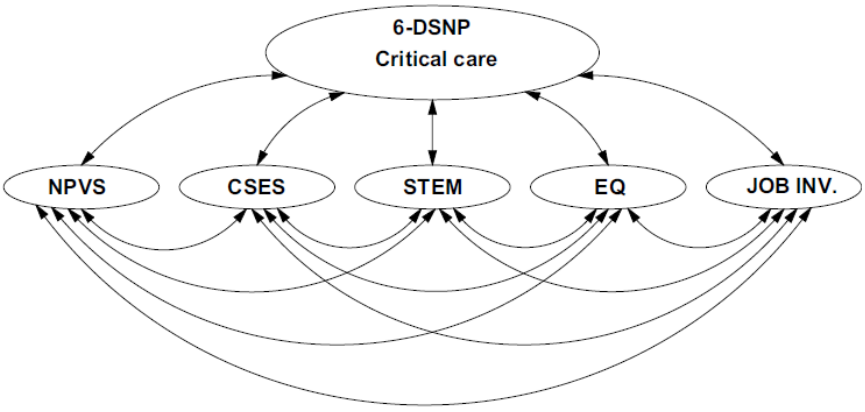


Figure 4.27 Model 6-DSNP: Critical care and intrapersonal characteristics

The standardised regression weights of Model 6-DSNP: critical care and the selected intrapersonal characteristics are presented in Table 4.64.

Table 4.64 Standardised regression weights

| 6-DSNP: Critical Care | | Subscale | Estimate | P |
|---|---|---|---|---|
| 6-DSNP: Critical Care | <-- | NPVS-R | .350 | **.001** |
| 6-DSNP: Critical Care | <-- | EQ | .106 | .267 |
| 6-DSNP: Critical Care | <-- | Job Involvement | .020 | .811 |
| 6-DSNP: Critical Care | <-- | CSES | .122 | .204 |
| 6-DSNP: Critical Care | <-- | STEM | -.036 | .712 |

The data in this table indicates that that the only statistically significant relationship was between NPVS-R and 6-DSNP: critical care. The standardised regression weight of 0.35 indicates a moderate effect in practice. The correlations coefficients (*r)* for 6-DSNP: critical care and intrapersonal characteristics are presented in Table 4.65.

Table 4.65 Correlations: 6-DSNP: Critical care and intrapersonal characteristics

| Correlation of factors | | | *r* | P |
|---|---|---|---|---|
| NPVS-R | <--> | EQ | .209 | **.047** |
| NPVS-R | <--> | Job Involvement | .165 | **.033** |
| EQ | <--> | Job Involvement | .130 | .153 |
| NPVS-R | <--> | CSES | .158 | .072 |
| EQ | <--> | CSES | .125 | .203 |
| Job Involvement | <--> | CSES | -.128 | .141 |
| STEM | <--> | Job Involvement | -.112 | .219 |
| STEM | <--> | EQ | .099 | .318 |
| STEM | <--> | CSES | -.014 | .877 |
| STEM | <--> | NPVS-R | .139 | .124 |

The data in this table indicates that only the NPVS-R assessing nurses' professional values were significantly correlated with EQ (0.209) and job involvement (0.166). These correlations are however small and not important in practice.

The measures of good fit for the structural equation modelling are summarised in Table 4.66. The CMIN/DF provided a value of 1.546 which is acceptable. An unacceptable CFI of 0.734 was found as the value was lower than 0.9 while a RMSEA value of 0.050 with a 90 % confidence interval of [0.046; 0.054] was obtained, which is acceptable as this value was lower than 0.10.

Table 4.66 Measures of good fit: 6-DSNP and intrapersonal characteristics

| Dimension of work performance | Chi Square | CMIN/DF | CFI | RMSEA [90%] |
|---|---|---|---|---|
| Critical care | <.0001 | 1.546 | 0.734 | 0.050 [0.046; 0.054] |

### 4.11.6 6-DSNP: Leadership and intrapersonal characteristics

In Figure 4.28 the relationship of the 6-DSNP: Leadership and intrapersonal characteristics is evaluated with the data obtained from all the instruments applied in the study, namely NPVS-R, CSES, STEM, EQ and job involvement.

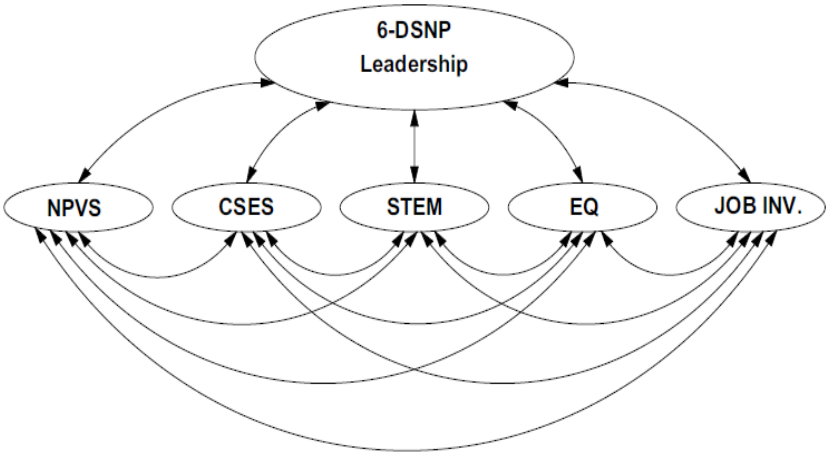


Figure 4.28 Model 6-DSNP: Leadership with intrapersonal characteristics

The standardised regression weights for Model 6-DSNP: Leadership and intrapersonal characteristics are presented in Table 4.67.

Table 4.67 Standardised regression weights

| 6-DSNP: Leadership | | Subscale | Estimate | P |
|---|---|---|---|---|
| 6-DSNP: Leadership | <-- | NPVS-R | .524 | **<.0001** |
| 6-DSNP: Leadership | <-- | EQ | .195 | .076 |
| 6-DSNP: Leadership | <-- | Job Involvement | -.034 | .665 |
| 6-DSNP: Leadership | <-- | CSES | .003 | .969 |
| 6-DSNP: Leadership | <-- | STEM | .031 | .735 |

The data in this table indicates that that the only statistically significant relationship was between NPVS-R and 6-DSNP: Leadership. The standardised regression weight of 0.524 indicates an important effect in practice.

The correlation coefficients (*r)* for 6-DSNP: Leadership and the selected intrapersonal characteristics are presented in Table 4.68.

Table 4.68 Correlations: 6-DSNP: Leadership and intrapersonal characteristics

| Correlation of factors | | | *R* | P |
|---|---|---|---|---|
| NPVS-R | <--> | EQ | .208 | **.049** |
| NPVS-R | <--> | Job Involvement | .164 | **.034** |
| EQ | <--> | Job Involvement | .131 | .153 |
| Values | <--> | CSES | .158 | .071 |
| EQ | <--> | CSES | .125 | .203 |
| Job Involvement | <--> | CSES | -.128 | .141 |
| STEM | <--> | Job Involvement | -.112 | .218 |
| STEM | <--> | EQ | -.014 | .881 |
| STEM | <--> | CSES | .140 | .123 |
| STEM | <--> | NPVS-R | .099 | .317 |

The data in this table indicates that only the NPVS-R assessing nurses' professional values was significantly correlated with two other scales, namely job involvement and EQ measuring empathy.

The measures of goodness of fit for this model were determined. The model yielded a CMIN/DF value 1.550 which indicates a good fit. An unacceptable CFI of 0.747 was found as it was lower than 0.9. The RMSEA value of 0.050 with a 90 % confidence interval of [0.046; 0.054] was obtained, which is acceptable as this value was lower than 0.10. A summary of the measures of goodness of fit is provided in Table 4.69.

Table 4.69 Measures of good fit: 6-DSNP and intrapersonal characteristics

| Dimension of work performance | Chi Square | CMIN/DF | CFI | RMSEA [90%] |
|---|---|---|---|---|
| Leadership | <.0001 | 1.550 | 0.747 | 0.50 [0.046; 0.054] |

## 4.12 RELATIONSHIP BETWEEN 6-DSNP AND CBI

The next presentation of results focuses on the relationship between nurses' self-evaluation of work performance and their intrapersonal characteristics with patients' perceptions of nurses' caring behaviours. The dependent variable of this study consisted of the nurses' self-evaluation of their work performance with the 6-DSNP and patients' experience of nurse caring behaviours as measured with the CBI. It was not possible to determine the relationship on an individual nurse level but only on ward level, because individual nurses are not linked with individual patients. Therefore the nurses' and patients' factor scores were collapsed to ward level which produced 45 units.

Spearman's correlation was determined as a measure of the relationship between nurses' work performance, their intrapersonal characteristics and patient perceptions of caring behaviours. The Spearman rank-order correlation coefficient is a nonparametric measure of the statistical relationship between variables. When reporting this statistic, it is indicated by the symbol $r_{s.}$ The value of r ranged from +1 (perfect positive association) to -1 (perfect negative association) with values nearer to 0 indicating a weak association between the measures (Gravetter and Forzano, 2012). Correlations of 0.1 are regarded as small; 0.3 as medium and 0.5 as large.

Table 4.70 contains the correlations between nurses' self-evaluation of work performance and their intrapersonal characteristics with patients' perceptions of nurses' caring behaviours.

Table 4.70 Spearman's rho: Correlation of nurses' work performance, their intrapersonal characteristics and patients' CBI

| | | Hypothesis: H02 | | | | | | Hypotheses: H03-H07 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Work performance | | | | | | Professional values | | | | | | CSES | STEM | EQ | Job Inv |
| | | DSNP - Leadership | DSNP – Critical care | DSNP – Teach/collaborate | DSNP – Plan/evaluate | DSNP – IPR/communication | DSNP – Professional development | Values - caring | Values - activism | Values - trust | Values - professionalism | Values - justice | Values - total | CSES | STEM | EQ | Job Involvement |
| CBI Assurance | Correlation coefficient | **-.270** | **-.242** | **.158** | -.040 | **-.130** | **-.105** | -.014 | **.356*** | **.151** | **.369*** | **.138** | **.203** | **.122** | **-.108** | .004 | **.208** |
| | Sig. (2-tailed) | .072 | .109 | .299 | .794 | .395 | .494 | .928 | .016 | .323 | .013 | .366 | .182 | .424 | .481 | .981 | .171 |
| | N | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| CBI Knowl_skill | Correlation coefficient | **-.242** | **-.339*** | .021 | **-.097** | **-.177** | **-.099** | -.056 | **.346*** | .076 | **.269** | .077 | **.134** | **.128** | **-.114** | **-.084** | **.133** |
| | Sig. (2-tailed) | .110 | .023 | .890 | .527 | .244 | .518 | .716 | .020 | .618 | .073 | .613 | .379 | .402 | .455 | .585 | .385 |
| | N | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| CBI Respectful | Correlation coefficient | **-.183** | **-.221** | **.211** | .031 | **-.122** | -.068 | -.001 | **.410**** | **.207** | **.422**** | **.189** | **.275** | **.091** | **-.107** | **.084** | **.189** |
| | Sig. (2-tailed) | .230 | .145 | .165 | .839 | .424 | .657 | .997 | .005 | .172 | .004 | .214 | .068 | .550 | .482 | .582 | .214 |
| | N | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| CBI Connected | Correlation coefficient | **-.174** | **-.230** | **.197** | .027 | **-.094** | -.047 | .004 | **.352*** | **.192** | **.385**** | **.196** | **.238** | **.117** | -.066 | -.028 | .088 |
| | Sig. (2-tailed) | .253 | .128 | .194 | .858 | .541 | .757 | .979 | .018 | .206 | .009 | .197 | .116 | .443 | .666 | .857 | .566 |
| | N | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |

*** Correlation is significant at the 0.01 level (2-tailed).*

** Correlation is significant at the 0.05 level (2-tailed).*

*NOTE: bold figures indicate effective values, bold and shaded indicate significant and effective*

Considering the information in Table 4.70, all the correlations between nurses' professional values related to activism and professionalism correlated positively with patients' CBI evaluations with medium practical importance. All of these correlations, except one, were significantly correlated with patients' perception and evaluation of nurses' caring behaviours in assurance (r=0.356* and r=0,369* respectively), knowledge and skill (r=0.346* for caring only), respectfulness (r=0.410** and r=0.422** respectively) and connectedness (r=0.352* and r=0.385** respectively).

The correlation between nurses' leadership and critical care dimensions of work performance and patients' CBI perceptions are significantly and negatively correlated, but none of the values were practically significant.

### *4.13 CONCLUSION*

This chapter presented the results of the study starting with the realisation of the study sample of professional nurses and patients from public and private hospitals in the Tshwane district of the Gauteng Province. The demographic descriptors of nurses and patients participating in the study were provided. The data obtained with the administration of the six selected instruments for nurses and one instrument for patients were presented through exploratory dimension analysis and confirmatory factor analysis to confirm construct validity and Cronbach's Alpha to confirm reliability. The R-squared ($R^2$) statistic, also referred to as the coefficient of multiple determination for multiple regression, was used as measure of the correlation between intrapersonal characteristics and ordered biographical variables with work performance. Finally the proposed model was evaluated with structural equation modelling. Spearman's rho was used to determine the correlation between nurses' self-evaluation of work performance and patients' perceptions of nurses' caring behaviours. Chapter 5 provides a discussion on the results of the study.

# CHAPTER 5

# DISCUSSION AND CONCLUSION OF THE FINDINGS

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## 5.1 INTRODUCTION

In Chapter 4 the results of the influence of selected intrapersonal characteristics on the work performance and caring behaviours of professional nurses in the Tshwane district of the Gauteng province were presented. In Chapter 5 the results and the discussion of the results in relation to the research questions of the study, are discussed.

The context within which the discussion of the results takes place, is the theoretical framework for the study which was the RNAO *Comprehensive Conceptual Model for Healthy Work Environments for Nurses* as described in item 1.9.1. This study specifically contributed to knowledge of the individual nurse factors in the professional/occupational component of the conceptual model that contributes to healthy work environments. Within this framework, a model for the study was created to develop predictions about the influence of selected intrapersonal characteristics of professional nurses on their work performance and caring behaviours with a view to improve the understanding of practitioners' own influence on their delivery of care and to contribute to the theoretical debate on the safety, quality and standard of the delivery of nursing care. For ease of reference the model for the study included as Figure 1.2 is used in this chapter to highlight the discussion points in this chapter.

## 5.2 RESEARCH QUESTION 1: WHAT IS THE DISTRIBUTION AND INFLUENCE OF SELECTED DEMOGRAPHIC CHARACTERISTICS?

This section focuses on the results related to the distribution and influence of the selected demographic characteristics of nurses (sex, marital status, age, number of children, sole bread winner, single parent, sector and shift of employment, experience and education) and patients (sex, marital status, age and education) on nurses work performance and patients'

perceptions of nurses' caring behaviours. The focus of this discussion is highlighted in the proposed model for the study in Figure 5.1.

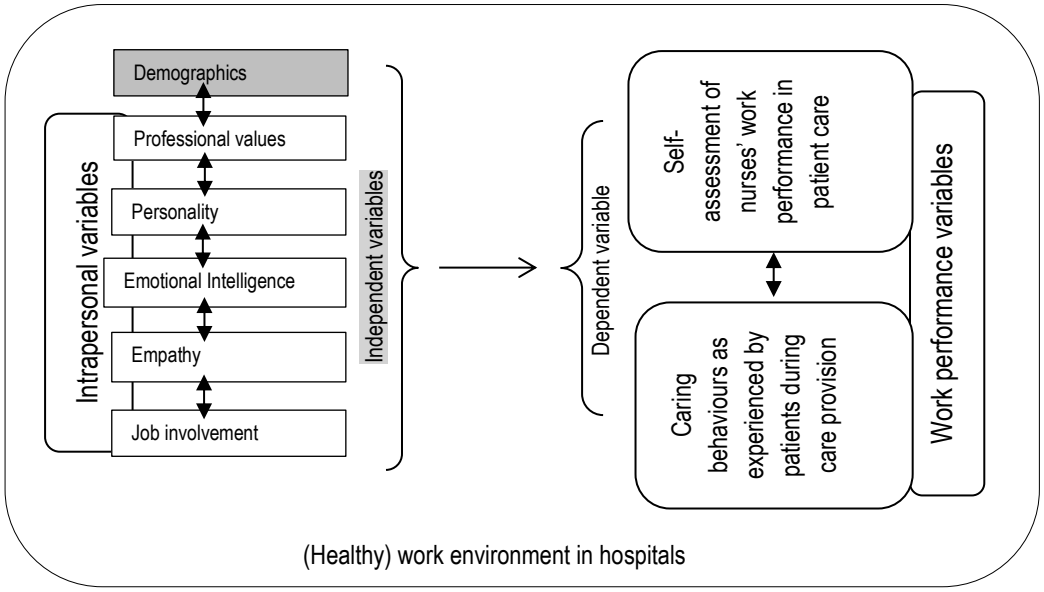


Figure 5.1 Influence of selected demographic characteristics on work performance

### 5.2.1 Demographic descriptive characteristics of nurses

A total of 218 professional nurses participated in the study. In summary the results of the study indicated that the overwhelming majority of the nurse respondents were female [205 (94%)]; [66 (30.3%)] were in the age group 40 – 49 years of age; married [102 (46.8%)] with 1 – 2 children [113 (51.8%)]; sole bread winners of the family [113 (51.8%)] as well as single parents [71 (32.6%)]. With regard to the clinical involvement of nurse respondents, the distribution of working in surgical and medical units was 113 (51.8%) and 98 (46.4%) respectively, with the largest single proportion having more than 20 years' clinical experience [62 (28.4%)] followed by 47 (21.6%) with 2 – 5years' experience; employed full-time [210 (96.3%)] and working day duty [158 (72.5%)]. The majority of the respondents (80.6%) had a diploma or basic B-degree as their highest academic qualification.

#### 5.2.1.1 Gender distribution of nurse respondents

The results of the study indicating that the majority [205 (95%)] of the nurse respondents were female and 10 (5%) male (see item 4.3.1.1), differs slightly from the gender distribution of professional nurses on the SANC register at the end of 2013 as indicated in Figure 5.2. The SANC statistics indicate a 92% (118 198) female and 8% (10 817) male distribution as at December 2013 (SANC, 2013e).

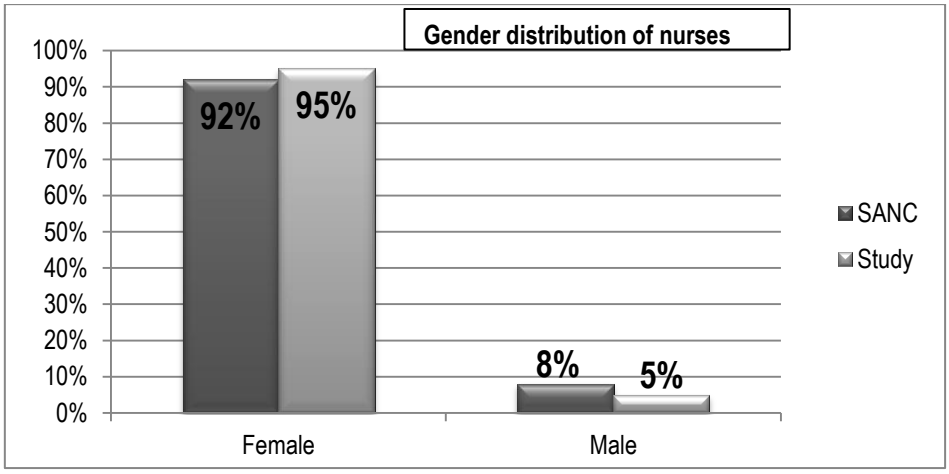


Figure 5.2 Gender distribution of professional nurses (%) (Council, 2013e)

Globally nursing is a female-dominated profession. Many potential reasons for this phenomenon have been raised ranging from status and pay to gender stereotyping. One of the more controversial debates on this aspect is that the title 'nurse' is identified as a title 'loaded with feminine connotations' which makes it difficult for males to enter the profession – and then be called a male nurse. The difficulty with changing this terminology is that no portion of the word can be removed to make the term more gender neutral as for example with chairman or policeman. Furthermore, few men in nursing remain in clinical practice as they quickly move into supervisory or other management and leadership positions with what one of the authors refers to as a 'glass elevator' (Boucher, 2011; Breyer, Wildschut, & Mgqolozana, 2009; Scridevy, 2011; Vere-Jones, 2008).

In this study, as indicated in Table 4.39, the only statistically significant effect of the gender distribution was with the interpersonal relations/communication dimension of work performance (d=0.68; p=0.037) indicating that females had better interpersonal relations/communication than males in the clinical care context. Even though the gender distribution of the group is very similar to the distribution in the total profession, this interpretation should be done with caution as there were only ten male respondents in this study. However, it supports the finding by Johnson et al. (2010) that gender was not related to professional development and coaching. On the other hand it has been found that the expectations of caring behaviours were significantly lower for men than their female counter parts (Lee, Chen & Young, 2010; Ouzouni & Nakakis, 2012) with a previous study in Jordan in 1995 finding that male nursing students had more desire to control interpersonal relations than did female nursing students (Al-Ma'aitah, Rajacich & Khasawneh, 1995).

#### 5.2.1.2 Age distribution

In terms of the age distribution of nurses, when compared with the statistics of the SANC as illustrated in Figure 5.3, there are some differences between the age groups. The younger than 30 year age group shows the largest difference. The study sample has a distribution of 6% under 25 years of age with 10% between 25 and 29 years of age. The SANC statistics only provides statistics for younger than 30 years of age (see item 4.3.1.2).

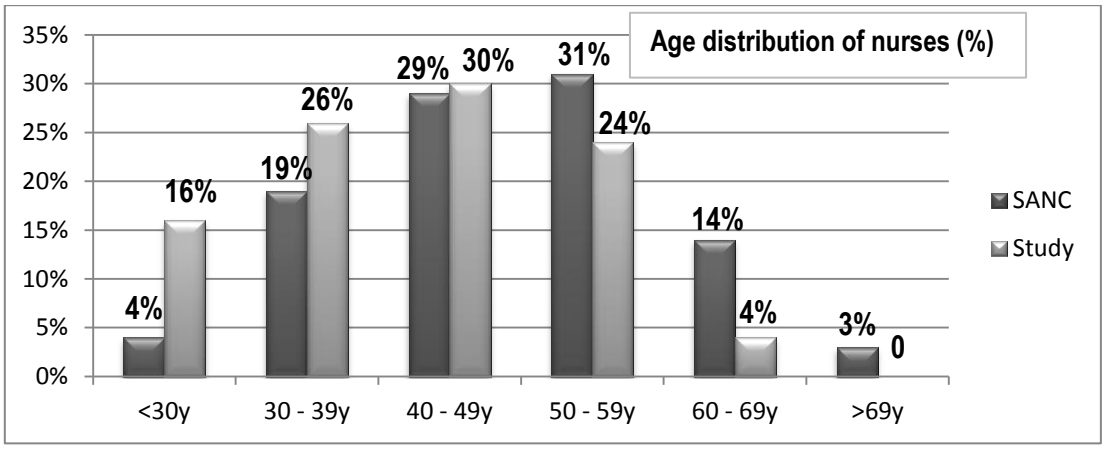


Figure 5.3 Age distribution of nurse respondents compared with SANC distribution (Council, 2013f)

The possible reasons for the high number of younger nurses in clinical practice in this study are twofold. Firstly, the undergraduate education and training of nurses take place in the clinical situation. On conclusion of their programme students usually have contract obligations related to bursaries awarded to them to fund their studies. Students sign a contract with the provincial departments of health or private sector employer to work for the grantor of the bursary for the number of years that they received funding, usually four years. This keeps both young male and female professionals in clinical practice for a few years before they can move to any other employment opportunities.

Secondly, the public sector is the area of placement for community service for professional nurses who have completed their undergraduate programmes. Professional nurses are required by law to do one year of community service in the public sector on conclusion of their undergraduate programmes to register as a professional nurse. Community service is a legal obligation prescribed by SANC regulation for all professional nurses who have completed their R 412 undergraduate nursing programme following which practitioners are fully registered with the SANC as a professional nurse (SANC, 2007).

Another trend, apparent in the comparison of age data between this study data and SANC statistics, is that this study had fewer nurses aged 50 and above. This may be because senior and experienced nurses tend to move into education or management positions which take them out of the clinical situation – South Africa's career ladder does not make provision for retaining experienced nurses at the patient's bedside. In order to be promoted, nurses therefore have to move into management and/or education positions, often removing experienced clinical practitioners who would have liked to remain in clinical practice. However, it has been reported that nurses over 50 years of age tend to have a decreasing tolerance for shift work as they age, also contributing to their moving out of the clinical situation to other spheres of nursing (Clendon, 2013). Quite controversially, a study found that while older nurses have higher mental health well-being and higher pain scores, they

also have a 12% higher prevalence of health problems and higher health related productivity loss than younger nurses which influence work performance (Letvak, Ruhm & Gupta, 2013).

The results indicate that the age of nurses significantly influences work performance in the teaching and collaboration dimension of work performance ($R^2$ = 0.03) at the 5% level of significance, but because it only explains 3.1% of the variance it is not regarded as important in practice. This supports the findings of other studies that age was statistically significantly associated with coaching activities (Johnson et al., 2010; Towell, Nel & Müller, 2013) but not practically important (Nabirye et al., 2011; Roud et al., 2005). Coaching of junior members of the profession is an important support system to ensure that young professionals develop confidence in their clinical competence and also managerial roles they take up as they become more senior in the workplace (Johnson et al., 2010). Age was not significantly correlated with any of the other intrapersonal characteristics which are supported by McNeese-Smith and Cook (2003) who found that there was little difference in values amongst age groups with younger nurses placing higher value on economic return and variety with Harper and Jones-Schenk (2012) indicating that empathy declines with age. Gurková et al. (2012) reported that age amongst Slovak and Czekh nurses was positively associated with job satisfaction which was not measured in this study.

#### 5.2.1.3 Marital status and family responsibilities

This section considers the results related to the family responsibilities of nurses, namely marital status, number of children, as well as nurses as sole bread winners and single parents. These aspects are encompassed in the non-work related stressors that can influence nurses' work performance (Edwards et al., 2007).

The summary of the marital status of nurses in item 4.3.1.3 indicates that the largest single proportion (46.8%) of the professional nurses were married, followed by 35.3% single and never married which can be expected of the age group distribution depicted in Figure 5.3. The majority (51.8%) had 1-2 children and 51.8% indicated that they were the sole

breadwinners of their families with 32.6% also being single parents. This profile is very similar to the population of a Ugandan study highlighting that married nurses with higher educational level and longer service experienced more occupational stress which influences their work performance (Nabirye et al., 2011). While this similarity may suggest that the nurses participating in this study also experience more occupational stress influencing their work performance, this study did not assess occupational stress.

In this study marital status had a significant influence on the teaching/collaboration dimension of work performance (d=0.247; p=0.028) and the justice dimension of professional values (d=4.012; p=0.027) (see item 4.9.2.1.2). The widowed group (N=8) showed the highest mean value for both of these dimensions with effect sizes larger than d=0.8, indicating that this group was more positive than the other groups regarding the teaching/collaboration and justice dimensions. It was not clear why this is so. However, this group only consists of eight respondents which may not be representative of all widowed people, so care should be taken in interpreting this result. This finding differs from the finding of Nabirye et al. (2011) that marital status did not have an influence on any dimensions of work performance. No literature was found to support or dispute the finding of this study. However, there is no doubt that widowhood signal a new season in the life of all women and men compounded by the reality of meeting all responsibilities previously shared. This increases the need to collaborate with others for support during this time and into the future. Many women have to seek employment to enable them to meet their financial responsibilities and nursing skills have always been in demand often enabling such individuals to go back to a nursing position for this reason. Culturally females who are widowed are more vulnerable that men, often regarded as lesser human beings, with many cultures imposing cultural practices and rituals on these women who may find it increasingly difficult to sustain the existence of themselves and their dependents (Oyeoku, Anyanwu, Ezegbe, & Abiogu, 2013). This may very well be a situation leading to justice becoming an important concept for the widowed individual.

The number of children of respondents had a statistically significant influence on the teaching/collaboration ($R^2$ = 0.016; $p \leq 0.05$), planning/evaluation ($R^2$ = 0.018; $p \leq 0.05$) and IPR/communication ($R^2$ = 0.047; $p \leq 0.01$) dimensions of work performance (see item 4.3.1.4 and Table 4.38). However, because only 2%, 2% and 5% respectively of the variation is explained, this finding was not practically important. This finding supports the findings of Nabirye et al. (2011) that while marital status did not have an influence on work performance, the number of children did have a statistically significant effect due to the emotional and financial implications of larger families, caring for other family members and possibly limited or no social support. These would be some of the same reasons that influence work performance of nurses in South Africa, particularly for those nurses who are sole bread winners and single parents. Nurses who have children was one of the predictors for moonlighting (Rispel et al., 2014). This predictor is relevant, as nurses who are solely responsible for their families often have to work overtime or 'moonlight' to make ends meet. This would be supported by the study on moonlighting indicating that 28% nurses moonlighted during a twelve-month period with 56% working overtime (Rispel et al., 2014).

A total of 113 (51.8%) of the respondents were the sole breadwinners (see item 4.3.1.4 and Table 4.41) in their families with 71 (32.6%) indicating that they were also single parents (see item 4.3.1.4 and see Table 4.42). Only two of the effect sizes for the relationship of being a sole bread winner with work performance and intrapersonal characteristics were found statistically significant, namely for the professional development dimension of work performance (d=0.34; p=0.013) and personality as measured with CSES (d=0.40; p=0.004). These results imply that nurses who are not sole breadwinners scored higher regarding professional development and personality or core self-evaluations. While no specific literature was found on such a relationship, it may indicate that nurses who are not sole breadwinners or single parents, have a more positive view of their self-worth, and have more resources and time to attend professional development activities.

Only the relationship of being a single parent and personality as measured with CSES (d=0.31; p=0.034) had a practically significant effect, also supporting the view that nurses who are not single parents have a more positive view of their self-worth.

#### 5.2.1.4 Clinical involvement of nurse respondents

This section considers the findings related to the clinical involvement of nurses, namely their experience, sector of employment, working day or night duty and surgical or medical ward where they were working at the time of data collection (see item 4.3.1.5).

The largest single proportion (28.4%) of the professional nurses in the study had more than 20 years' experience followed by 21.6% with 2-5 years' experience and 9.3% with less than one year's experience as illustrated in Figure 4.7. This profile reflects the high percentage of younger nurses in clinical practice participating in this study as compared to the SANC statistics highlighted in Figure 5.4. The younger practitioners have little clinical experience which generally increases the supervision and mentoring responsibility of more experienced practitioners. It is only with experience that the perception of nurses of their clinical competence improves as highlighted by other studies (Failla, Maher & Duffy, 1999; Johnson et al., 2010; Roud, Giddings & Koziol-McLain, 2005). The OSD has been structured in a way to attract and retain experienced practitioners in clinical practice. Anecdotal reports indicate that the OSD for nurses have recruited nurses from educational institutions back into practice in some areas. However, OSD did not seem to make a very big difference on retention of experienced nurses to improve clinical practice (Rispel et al., 2014). As pointed out in Chapter 2, remuneration is not the only factor that influences retention of staff in clinical practice (Alken et al. 2012; Coetzee et al., 2013; Klopper et al. 2012).

In this study the clinical experience of nurse respondents had a statistically significant influence at the 5% level on work performance in the leadership ($R^2$ =0.024), critical care ($R^2$ =0.026) and teaching/collaboration ($R^2$ =0.025) dimensions (see Table 4.38), but because each of these only explained less than 3% of the variance, these were not practically

important which is similar to the finding by Roud et al. (2005). However, this finding does not support reports that experience does matter as reported by Cathcart (2013) who illustrates how practical wisdom develops in managerial practice. Clinical experience also had a statistically significant influence on job involvement ($R^2$=0.021; $p \leq 0.05$) (see Table 4.38). No specific evidence supporting this finding was found, but indirectly it seems to support the finding that job involvement was predicted by career orientations (Van Wyk, Boshoff & Celliers, 2003). Career orientations refer to an individual's organisational self-concept consisting of their own perception of their competencies, needs and expectations in the development of a career. These concepts are strengthened as a practitioner gains more experience over time and becomes more confident in the work they do. In this process commitment and motivation improve and it has been reported that teaching quality and efficiency of nurse educators are influenced by the level of nurse educators' involvement in their work (Freund & Drach-Zahavy, 2007; Kanungo, 1982; Yang, Kao & Huang, 2006).

Whether nurses worked in the public or private sector had small effects. Only the association between the sector where nurses worked with their work performance in planning and evaluation (d= 0.33; p=0.021) as well as professional development (d= 0.41; p=0.004) were found to be statistically significant as shown in Table 4.43. These results imply that nurses in the private sector are more positive regarding professional development and planning/evaluation than those in public sector. This supports the finding in the Ugandan study that nurses in the public sector had the lowest score for work performance (Nabirye et al., 2011). There are several possible reasons in this study for the high score of the private sector. Professional development is a component of the key performance areas of professional nurses in the private sector even though the SANC has not yet finalised the continuous professional development system for nurses and midwives in the country. More resources are available in the private sector for professional development. Furthermore, for the business approach of the private sector, planning and evaluation are important skills required to assess outcomes of patient care and to ensure that services continue to run

smoothly and cost effectively. Therefore, the practice environment is more favourable in the private sector than the public sector where the morale is low with limited resources (Coetzee et al., 2013; Klopper et al., 2012).

The majority [158 (72.5%)] indicated that they work day duty and 43 (19.7%) night duty with 17 (7.8%) not indicating which shift they work – this might be due to staff at some wards working both night and day duty during the same month. The effect sizes summarised in Table 4.44 are small and there were no statistically significant relationships.

Respondents are mainly full-time employed [210 (96.3%)] with only five (2.3%) indicating part-time employment and two (0.5%) indicating employment through a nursing agency as indicated in Table 4.45. The study of Rispel et al. (2013) indicated that the frequency of agency nursing was 37.8% during 2009 with 53.6% of nurses in Gauteng reporting agency nursing. Furthermore, the study of Rispel et al. (2013) highlights that agency nursing was the highest for the private sector (58.4%) as opposed to the public sector (28.4%) and for nurses and enrolled nurses (40.9%) as opposed to professional nurses (39.6%). While this study did not ask nurses to report on whether they have done agency nursing, but only whether their placement during data collection was through an agency, it does seem to suggest a different prevalence of agency nursing in the sample of hospitals for the study which would not influence the quality of nursing care as suggested (Takase, Maude & Manias, 2006).

Based on the response of the 211 respondents who completed this question, whether nurses worked in surgical or medical wards had small practical importance related to work performance as summarised in Table 4.46. Only two of these were found to be statistically significant, namely the dimensions of leadership (d=0.30; p=0.032) and professional development (d=0.29; p=0.039) in work performance, while medical wards are more positive than surgical wards regarding these aspects. This finding is similar to the findings of the Ugandan study (Nabyire et al., 2011). This phenomenon could be due to the pace of activity in surgical wards that can be very busy and stressful as a result of the increased prevalence

of high acuity patients. However, this finding was not important in practice as it only explains 4% of the variance.

#### 5.2.1.5 Academic qualifications of nurse respondents

The question on the highest academic qualifications achieved by the nurse respondents depicted in Figure 4.8 revealed that 139 (67.5%) had a diploma and 27 (13.1%) a Bachelor's degree as their highest qualification (see 4.3.1.6 and Figure 4.8). This indicates that the highest academic qualification of the majority (80.6%) of the nurse respondents was their undergraduate programme that qualifies them to register with the SANC as professional nurses. This is in line with the age distribution discussed in 5.2.1.2. If the division of these undergraduate qualifications to register as a nurse is analysed, it yields a division of 84% nurses with a diploma and 16% nurses with a degree which differs slightly from the general production of professional nurses in the country over the last four years. The SANC statistics show a 77%-80% diploma and 20%-23% degree division of graduates produced annually as illustrated in Figure 5.4. Additional qualifications of respondents in this study following on their undergraduate programmes, included 21 (10.2%) with specialisation, eight (3.9%) with a post basic Bachelor's, one (0.5%) specialist short course, seven (3.4%) Masters' degrees and three (1.5%) PhDs. SANC statistics to compare post graduate qualifications are not publicly available, but the importance of additional educational preparation for safe, quality patient care cannot be overemphasised (Judge & Hurst, 2007b; Kanungo, 1982).

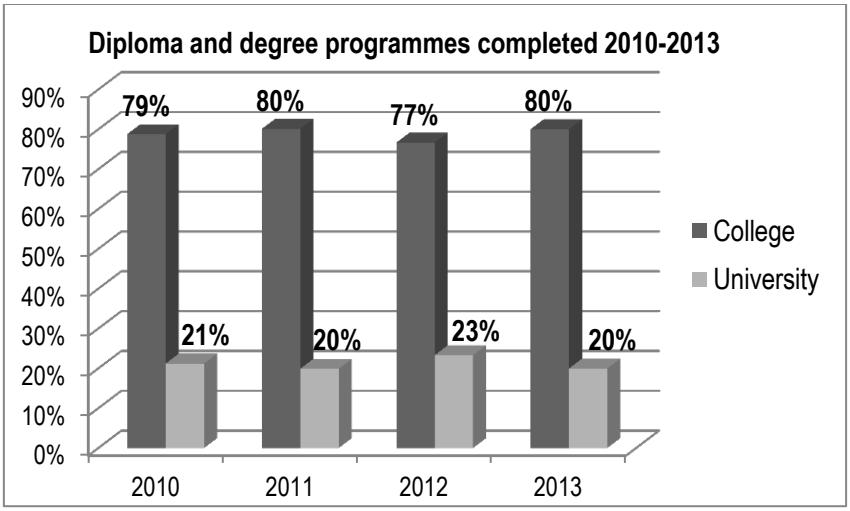


Figure 5.4 Diploma and degree programmes completed (2010 – 2013) (SANC, 2013g)

In this study the academic qualifications of nurses have an influence at the 5% level of significance on work performance in the dimensions of critical care ($R^2$ = 0.035) and planning/evaluation ($R^2$ = 0.028) as well as their core self-evaluations ($R^2$ = 0.014). These relationships explain 3.5%, 2.8% and 1.4% respectively of the variation, which makes them unimportant in practice. Nevertheless, the finding seems to support various studies indicating that higher educational qualification contributes to better patient outcomes (Aiken et al., 2011; Caspar & O'Rourke, 2008; Idvall et al., 2012). If the influence of academic qualifications with CSES is considered in conjunction with the high mean score of the CSES (M = 61.68) with a possible maximum score of 84, this relationship seems to contribute to a higher core self-evaluation by nurses of their self-worth. It therefore seems to suggest that obtaining academic qualifications increase an individual's self-worth and confidence resulting in more positive employees, which are seen as more motivated to work (Judge, Erez & Bono, 1998). Furthermore it has been argued that persons with high core self-evaluation grow and rise faster in their work, partly because they are more capable of engaging in further education opportunities (Judge and Hurst, 2008).

**MAIN FINDINGS:**

Nurses' demographics had limited influence on work performance. Items with a practically important significant influence on work performance include:

- Gender with the interpersonal relations/communication dimension of work performance indicating that females were better with interpersonal relations and communication than their male counterparts;
- Marital status with the planning/evaluation dimension of work performance as well as the professional value of justice with widowed nurses more positive with planning/evaluation and the value of justice.

### 5.2.2 Distribution and effect of demographics of the patient respondents

The patient population of the study consisted of 116 patients. The majority of patient participants were female [67 (57.8%)], the greatest single proportion fell in the age group 30 – 49 years [54 (46.5%)], the majority were married [63 (56.25%)] and the greatest single proportion had at least a Grade 12 certificate [44 (37.9%)]. Only the academic qualifications of the patients' demographics presented in Table 4.47 had a statistically significant relationship with the patients' perceptions of nurses' caring behaviours, namely assurance ($R^2$=0.077) knowledge/skill ($R^2$ = 0.071) and connectedness ($R^2$ =0.093) at the 5% level of significance and respectfulness ($R^2$ = 0.101) at the 1% level of significance. These results show, according to the regression estimates, a negative relationship of medium strength which indicates that patients with higher qualifications are less positive about the care they receive. The patient population are becoming better informed about all aspects of health and life in general. The 2011 census statistics for South Africa (StatsSA, 2011) indicate that there has been a significant increase in the educational levels of the South African population. These statistics show that the proportion of persons aged 20 years and older who have no schooling decreased from 19.1% in 1996 to 8.6% in 2011, with a considerable increase in the percentage of persons who completed higher education from 7,1% in 1996 to 11,8% in 2011. An educated patient is better prepared to participate in the treatment and care they should receive, but it also makes them more critical on matters affecting them. With the internet everyone can access information to become more informed, but the public is also careful about the quality of the information they receive from healthcare team members or other sources (Peterson & Fretz, 2003).

**MAIN FINDINGS:**

Patients' academic qualifications showed a significant negative correlation of practical importance on their perceptions of nurses' caring behaviours indicating that patients with higher qualifications are less positive about the care they receive.

## 5.3 RESEARCH QUESTION 2: WHAT IS THE DISTRIBUTION OF SELECTED INTRAPERSONAL CHARACTERISTICS AMONG NURSES WORKING IN CLINICAL SETTINGS IN HOSPITALS?

This section focuses on the results related to the distribution of selected intrapersonal characteristics of nurses (professional values, personality, emotional intelligence, empathy and job involvement) among nurse respondents and its influence on their work performance. The focus of this discussion is highlighted in the proposed model for the study in Figure 5.5.

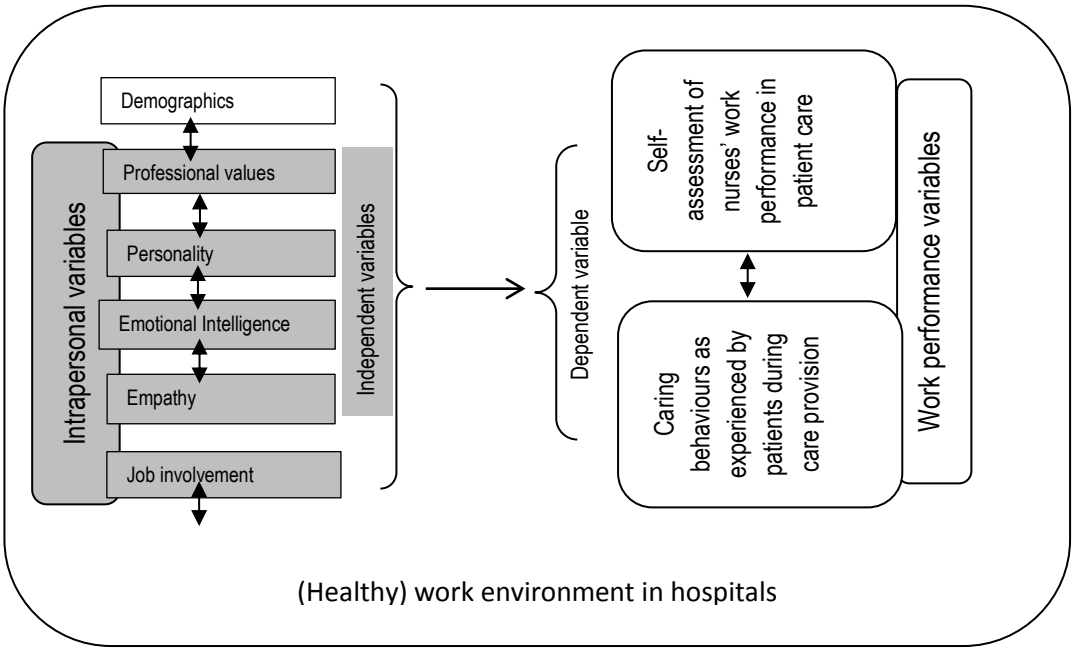


Figure 5.5 Distribution of selected intrapersonal characteristic of nurses

The profile of the selected intrapersonal characteristics of nurse respondents is discussed next. In summary this profile indicated a high professional values score supporting a strong professional value orientation amongst this group of professional nurses. Personality as measured by CSES provided a moderate to high score suggesting that these professional nurses have a high self-worth and the personality to perform well at work. Their EI, and specifically their ability to manage emotions as measured with STEM, provided a moderate score indicating the ability to manage their emotions. They also showed a high empathy score and moderate to high job involvement suggesting that their work is important to them.

The results of the distribution of the intrapersonal characteristics are summarised in Table 4.36.

### 5.3.1 Professional values (NPVS-R)

Professional values as measured with the self-report instrument, NPVS-R, consistently attracted high scores. The high total mean score obtained for this instrument (M = 103.37 with a possible total score of 130) indicates that nurse respondents think that professional values are important in patient care which is good (see item 4.7.1). The five dimensions measured by the NPVS-R include trust, professionalism, caring, activism and justice (Weis & Schank, 2009).

The correlation of the five dimensions of the NPVS-R provided strong positive coefficients ranging from $r$ = 0.736 to $r$ = 1.00 (see Table 4.13). These strong relationships can be expected in nursing which is seen as a caring profession with high moral values which influence how nurses make choices and respond in the clinical situation (Hensel, 2014; Shih et al., 2009; Taylor, 1995). Trust shows a perfect relationship with justice ($r$ = 1.00) which echoes what happens with relationships in clinical practice. It also supports the finding that the relationship between justice and trustworthiness is reciprocal (Colquitt & Rodell, 2011). Justice generally refers to fairness and doing what is morally the right thing to do which forms the basis of nursing interventions and activities in care settings. Nurses can only build a trusting relationship with patients and colleagues if they are seen to be just and fair in their actions and behaviour (Belcher & Jones, 2009; Bell & Duffy, 2009; Zamanzadeh et al., 2010). This also relates to how all citizens in the country perceive and react to unfairness in society, as seen every day in the public media. Tyler highlighted this with research on social justice and the reactions to experiences with authorities, suggesting that seeking justice is a basic human impulse (Tyler, 1991). Procedural and interpersonal justice was found to be significant predictors of subsequent levels of compassion and integrity, with integrity predicting the level of justice (Colquitt & Rodell, 2011). The quest for justice therefore often results in activism, accounting for the strong correlation between justice and activism ($r$ =

0.891) when activists take up issues that are unfair, to protect others or themselves from harm (Gordon, 2002).

For South Africa the protection of human rights is contained in the Constitution of the Republic of South Africa (RSA) (South Africa, 1996) but mostly the reason for taking up such issues is altruistic because people want to make a difference with nurses being obliged to do their duty to care (Armstrong, 2013; Gordon, 2002). Settle (2014) highlights that duty to care is influenced by nurses' concern for the ethical aspects of clinical practice and their ability to influence ethical decision-making which makes them more likely to show activist behaviour.

One aspect highlighted by Weiss and Schank (2000) as part of the activism role of nurses is their participation in public policy and participation in nursing organisations, which does not feature strongly amongst nurses in South Africa. When activism is undertaken for others as nurses often do, there should be a trust relationship allowing the patient to trust the nurse to address the issue at hand creating the strong relationship between trust and activism ($r$ = 0.869) in nursing (Gordon, 2002). The reciprocity of this relationship is seen when nurses make the care of patients their first concern and treat all patients (and colleagues) in a fair and equitable manner with respect and dignity (Tschudin, 2003). The behaviour of nurses further contributes to a trusting relationship through aspects such as truthfulness, maintaining confidentiality and appropriate professional boundaries and not being persistently rude. To the same extent, this trust relationship allows the nurse to provide the nursing care, often very intimate care tasks, providing for the strong relationship between trust and caring ($r$ = 0.869) (College of Nurses of Ontario, 2013). The trust that a patient has in the nurse to provide quality and safe health and nursing care is established through the professionalism of the nurse, explaining the strong correlation between professionalism and trust ($r$ = 0.893).

Professionalism relates to nurses' fitness to practice, which means that they have the skills, knowledge, attitude, judgement, experience and motivation to provide the highest standard of practice and care (Tschudin, 2003). These elements put nurses in a position to detect early signs of potential harm or injustice that spur nurses on to impact the care of their patients explaining the high correlation between professionalism with justice ($r$ = 0.821) and professionalism with activism ($r$ = 0.800). Based on this, the strong correlation between justice and caring ($r$ = 0.869) amongst this group of nurses can be explained as the need to prevent suffering and harm to their patients (ICN, 2012). This view is supported by the high correlation between activism and caring ($r$ = 0.836) and also professionalism and caring ($r$ = 0.736). While the correlation between professionalism and caring ($r$ = 0.736) is high, it is the lowest of the group of correlations. This could be ascribed to the general shortage of nurses in clinical practice resulting in mainly the technical skills being applied and not enough time for the softer skills showing the care and empathy patients may be expecting (McCabe, 2004; Chang et al., 2005; Shattel, 2005). Patients experience nurses as focusing on their technical nursing tasks rather than talking to them (McCabe, 2004).

It has also been argued that nurses seem to think that engaging with patients in conversation is not 'work' but this myth should be dispelled because engaging with patients in this way not only provides a wealth of information on the patient, but also strengthens and deepens the therapeutic relationship (Chang et al., 2005; Shattel, 2005; McCabe, 2004; Van den Heever, Poggenpoel & Myburgh 2013). Quality care reflects walking the extra mile to do above and beyond the minimum required (Graber & Mitcham, 2004) – as described by Tschudin it should be competence with a human face, therefore accompanied by warmth, kindness and sensitivity (Tschudin, 2003).

These correlations also have implications for work performance as they influence the motivation of workers in the workplace if their employer as represented by nursing management is perceived as fair and just (Latham & Pinder, 2005). Research indicated that

improving the perception of justice in the workplace, improves productivity and performance (Karriker & Williams, 2009). Where the trust of employees can continue in the workplace in terms of their expectations of fairness, especially procedural fairness, it creates a reciprocal relationship between trust and justice (Cohen-Charash & Spector, 2001), decreases absenteeism (Johns, 2001), burnout (Cohen-Charash & Spector, 2001; Johns, 2001) and provides for higher job satisfaction (Al-Zu'bi, 2010). All these contribute to a healthy workplace which is to the benefit of nurses and their patients as well as the employer. An example of procedural injustice that could create conflict for nurses in the workplace is where nurses' own values differ from the rules of the organisation where they work. This can create counterproductive behaviour (Zoghbi-Manrique-de-Lara & Verano-Tacoronte, 2007), while it has been found that value congruence of leadership support contributes to job satisfaction and possibly also a decrease in intention of nurses to leave the organisation (Hunt, 2014).

### 5.3.2 Personality (CSES)

Personality was measured with the Core Self-evaluations Scale (CSES) which measures an individual's own evaluation of self-worth indirectly with four core characteristics (self-esteem, self-efficacy, neuroticism and locus of control) as discussed in item 2.4.2. In this study a high mean score of M = 61.68 out of a possible maximum score of 84 was obtained (see item 4.7.2 and Table 4.36) This suggests that the nurses in this study do well at work, are more satisfied with their work and lives, experience less conflict and cope better with challenges in their lives and the workplace (Judge, 2009).

This finding holds important implications for the work performance of nurses. Nurses with a high CSE will tend to process information about their work environment in a manner that will lead to positive conclusions resulting in job satisfaction that may ultimately positively influence their life satisfaction. However, Judge et al (1998) argued that increase in job

satisfaction is partially mediated by perceptions of job characteristics. The finding by Best, Stapleton and Downey (2005) addresses this argument stating that employees high in CSE are less likely to view their job tasks and work environment as stressful thus shielding them from burnout and its negative effects on job satisfaction. This adds an interesting dimension to the debate of 'poor' versus 'good' care in one hospital which raised the question in the first place leading to this research. This finding could explain why local nurses continue to do the best they can for their patients in spite of unsupportive and resource poor environments indicated by various studies (Coetzee et al. 2013; Klopper et al., 2012). CSE affect work performance via its influence on motivation (Best et al., 2005; Judge et al., 1998), therefore individuals with high CSE should be more likely to persist in the face of setbacks, experience less fear and anxiety in challenging situations and believe in their capabilities irrespective of the discrepancy of public media reporting on nursing. The high values of the self-rated work performance as summarised in Table 4.35 supports this.

### 5.3. 3 Emotional Intelligence [Emotion management (STEM)]

The Situational Test of Emotion Management (STEM) described in item 3.3.2.1(iv) 3 was used to measure emotion management as a component of emotional intelligence (MacCann et al., 2003). The instrument used in this study was a previous version of the questionnaire with the result that it included some questions that were not included in the latest version of the STEM instrument. Only the questions that appeared in the latest version of the STEM instrument was therefore scored for this study – this includes items 2 – 5; 7; 10; 13; 16-18 and 20. Each question had four choices to select from with each of the choices having its own score. The score obtained for this group of nurses was 0.63 with a possible maximum score of 1 as indicated in item 4.7.3 and Table 4.36. While the outcome of this evaluation is approached with caution, it does seem to suggest that the nurses in this study have a moderate ability to regulate their emotions optimally, curb negative feelings and foster positive feelings (Austin, 2010). This would support the findings of Beauvais, et al. (2011)

who found that student nurses have moderate emotional intelligence. However, this study also found that there was a significant correlation between EI and four of the work performance dimensions which was not supported by the study of Beauvais et al. (2011).

### 5.3.4 Empathy (EQ-short)

The EQ-short form described in item 3.3.2.1(v) completed by the nurses provided a mean score of 67.74 with possible maximum of 88 (see item 4.7.4 and Table 4.36). This result presents a high mean score suggesting that the nurses in this study have a moderate to high level of empathy. This suggests that the respondents in this study apply an empathetic approach in care provision to patients which reportedly increases the quality of care and positive impact on healing (Ozcan & Cicek, 2010; Ward et al., 2012; Williams et al., 2014) but seems to contradict the findings that continued exposure to clinical experience leads to a decline in empathy (Ward et al., 2012). However, this can only be confirmed by a longitudinal study indicating how empathy changed, or did not change, over time. Being able to show empathy is important in nursing and empathy-based education seems to show positive outcomes (Brunero, Lamont & Coates, 2010). Then again, empathy is defined as a skill where nurses with low empathy may be unaware of their limitations if they are not given feedback (Wakabayashi et al., 2006). This raises the question whether the high self-rated score is in fact exhibited in the behaviour of the nurses in clinical practice. On the one hand the high mean score for EQ-short form seems to contradict what we read in the public media on poor nursing care and uncaring nurses, but on the other hand the high mean scores of the CBI (see item 5.6) completed by patients seem to support the result of the EQ-short form that nurses in this study are empathetic, which also supports other similar findings (Guan, Jin & Qian 2012).

### 5.3. 5 Job Involvement (Kanungo Job Involvement Scale)

Completion of the Kanungo Job Involvement scale described in item 3.3.2.1(vi) produced a mean score of 40.10 out of a possible 60 (see item 4.7.5 and Table 4.36). These scores

indicate a moderate level of job involvement. This concurs with an earlier study finding that job involvement was moderately high amongst nurses (Kaplan, Boshoff & Kellerman, 1991). Job involvement is reported to be highly correlated with self-esteem (core self-evaluation), social support and the level of participation in work (Katrinli et al., 2008; Yan & Su, 2012) and in this study was not influenced by any of the demographic characteristics of nurses other than their years of clinical experience (Arogundade & Olunubi, 2013). It can therefore be said that the nurses in this study exhibit the characteristics identified by Brown (1996), namely that they are committed to their job which they find motivating and challenging, committed to their organisations which makes them less inclined to leave their current place of employment and engage closely in professional relationships with team members.

**MAIN FINDINGS:**

The distribution of the selected intrapersonal characteristics among nurse respondents and its influence on their work performance presented the following:

- High professional values orientation which positively influence work performance and contributes to a healthy workplace.
- Moderately high emotional intelligence related to emotion management with the ability to regulate emotions optimally, curb negative feelings and foster positive feelings.
- Moderately high core self-evaluations suggesting that nurses are more satisfied with their work and lives, experience less conflict, cope better with challenges in their lives and the workplace and are less likely to view their job tasks and work environment as challenging suggesting that nurses do their best in spite of unsupportive work environments.
- Moderate to high level of empathy applied in care provision for patients with a positive influence on the quality of care and patients' healing seemingly contradicting findings that continued exposure to clinical experience leads to a decline in empathy.

- Moderately high level of job involvement with commitment to their job which they find motivating and commitment to their organisations which make them less inclined to leave their current place of employment and engage closely in professional relationships with team members.

## 5.4 RESEARCH QUESTION 3: WHAT IS NURSES' SELF-ASSESSMENT OF THEIR WORK PERFORMANCE IN HOSPITALS?

The instrument used for nurses' self-assessment of work performance was the 6-DSNP (Schwirian, 1978). In this study nurses had the highest mean [3.55 (SD 0.46)] for professional development with a similar rating for IPR/communication [3.53 (SD 0.37)]; critical care [3.53 (SD 0.40)] and leadership [3.53 (SD 0.42)]. The lowest scores were for planning/evaluation [3.48 (SD 47)] and teaching/collaboration [3.17 (SD 0.50)] (see item 4.6). It has been pointed out earlier that nurses tend to think that engaging with patients indicate that they are not working while it could strengthen therapeutic patient relationships (Chang et al., 2005; Shattel, 2005; McCabe, 2004; Van den Heever, Poggenpoel & Myburgh 2013). During the collection of nurse respondent questionnaires by the researcher, the consistent challenge of staffing shortage and insufficient time was raised as reasons for only focusing on the technical issues of care and thus not attending to emotional and supportive needs as they felt they should be doing. Teaching and education of patients and their family seemingly is not a technical task that nurses involve themselves in. The question arose when nurses indicated that some of the questions can only be given a good score if they had enough time to fulfil the care task. The distribution in this study of the self-rated quality of work performance is similar to the findings of the Ugandan study, where professional development (M=3.23) and critical care (M=3.17) had the highest mean score and teaching/collaboration the lowest mean score at 3.17 (Nabirye et al., 2011) while a USA study showed a ranking from high to low for professional development, interpersonal relationships, critical care, planning/evaluation, leadership and teaching/collaboration (Reid,

2010). The ratings obtained in this study do raise the question whether nurses could have overrated their work performance as highlighted by Ludikhuize et al. (2012) but as this was not the focus of this study, no information was collected to make any findings in this regard.

The strong relationships shown (see Table 4.9) are understandable as all these dimensions are required to support the delivery of quality nursing care to patients. The strongest relationship ($r$ = 0.929) is between leadership and communication which makes sense as the professional nurse is the team leader in the ward who communicates with staff, other healthcare team members, patients and their families (Apker et al. 2006; Pera & Van Tonder, 2011; Nash & Govier, 2009; Armstrong, 2013; Stanton & Garfield, 2013). Professional development and leadership are also strongly related ($r$ = 0.911) which is most probably due to the responsibility of the professional nurse as the team leader to remain updated and to ensure that new policy and clinical information are made available to the team (Nash & Govier, 2009; Shih et al., 2009; Stanton & Garfield, 2013; Zhang et al., 2001). The relationship of leadership and critical care ($r$ = 0.877), planning and evaluation ($r$ = 0.811) as well as teaching and collaboration ($r$ = 0.782) further supports the notion that the professional nurse is the person who has to take note of patient needs to ensure that the required care is provided, while also checking that both patients and staff understand what is expected to be done (Nash and Govier, 2009). The relationship of critical care with communication ($r$ = 0.844); planning ($r$ = 0.741) and teaching ($r$ = 0.679) underlies this important responsibility of the professional nurse who has to make sure that appropriate and quality patient care are delivered (Idvall et al., 2012; Carter et al., 2010). This is achieved with thorough planning of nursing care, clearly communicating with the nursing team to ensure that all know what is expected of them and providing teaching for individual staff members where it may be required to improve the quality and safety of nursing care. The relationship of teaching and planning ($r$ = 0.821) and communication ($r$ = 0.770) speaks to the essential requirement to plan all teaching responsibilities to provide for appropriate and effective patient or staff learning, but also essentially that it is done at a level that the target

audience would understand (Hinchliff, 2009). Similarly the relationship of professional development to communication (*r* = 0.811) and planning (*r* = 0.675) is essential for the practitioner to meet her or his own development needs particularly in view of the pending obligatory continuous professional development system that is being developed by the SANC for all nurses (South Africa, 2005).

**MAIN FINDINGS:**

Nurses self-rated work performance provided a very high score for all dimensions of work performance (professional development; interpersonal relations/communication; critical care; leadership; planning/evaluation and teaching/collaboration).

## 5.5 RESEARCH QUESTION 4: HOW DO PATIENTS PERCEIVE THE CARING BEHAVIOURS OF NURSES IN CLINICAL SETTINGS IN HOSPITALS?

The completion of the CBI by patients provided the perceptions of patients of nurses' caring behaviours (Wu, Larrabee & Putman, 2006). Overall the scores summarised in Table 4.37 for CBI were high for all four dimensions of the instrument ranging from knowledge/skill of nurses (M = 4.95), to assurance (M = 4.79) and respectfulness (M = 4.78) with the lowest score for connectedness (M = 4.59). These scores were good, suggesting that patients perceive nurses in the wards where they were admitted as knowledgeable, skilled and respectful providing patients with a sense of security even though their perception of nurses' willingness to assist and connect presented the lowest mean score. It also highlights the importance patients bestow on the two aspects of caring behaviours, namely the instrumental activities relating to the skills and knowledge of nurses to provide quality care, and the expressive component or soft skills relating to assurance of human presence and emotional warmth (Van der Wal, 2011; Zamanzadeh et al., 2010). This also supports the finding in another South African study that nurses are perceived by the public as caring and understanding (Meiring & Nel 2013).

In this study patients experienced nurses' knowledge and skill as the behaviour that was most frequently met in the clinical situation supporting the findings of other researchers (Palese et al., 2011) and differing from studies such as the Ugandan study where knowledge and skill did not receive the highest rating (Nabirye et al., 2011). However, connectedness, which includes the non-instrumental care behaviours (warmth, closeness, involvement, time spent with patients) has an influence on patient satisfaction, while knowledge and skill does not influence patient satisfaction (Azizi-Fini, Mousavi, Mazoui-Sabdani & Adib-Hajbaghery, 2012; Palese et al., 2011). In this study behaviours related to connectedness were the behaviours that were the least experienced by patients, which also supports the study of Palese et al. (2011). The staffing shortage limits opportunities to spend time with the patient (Ward et al., 2012) as also indicated by one of the respondents in a public hospital who wanted to discuss her response to some of the questions with the researcher of this study. As indicated earlier patients experience nurses to focus on nursing care tasks and not to engage them in conversation because they do not have time (Deppoliti, 2008; Chang et al., 2005; McCabe, 2004; Shattel, 2005) which also seems to support the finding of the study by Meiring and Nel (2013) indicating that nurses are extremely hard working.

The dimensions of the CBI were strongly correlated with each other (see Table 4.32) ranging from $r$ = 0.880 for the relationship between respectful and knowledge to a perfect $r$ = 1.00 for the relationship between respectfulness and connectedness. This relationship between respectfulness and connectedness is centred in the therapeutic and caring relationship that the nurse has with the patient, and the nurse's ability to meaningfully engage with the patient while providing nursing care (Bulmer Smith, Profetto-McGarth & Cummings, 2009; Mlinar, 2010; Shih et al., 2009; Van der Wal, 2011). The relationship between knowledge and assurance ($r$ = 0.915) emphasises that nurses' provision of skilled care strengthens patient trust in the nursing care provided, reassuring patients that they are in good hands (Palese et al., 2011; Van der Wal, 2011). The engagement with the patient must be meaningful to keep patients positive about their care, as connectedness mainly relates to how satisfied the

patient is with the care provided, resulting in a correlation of assurance and connectedness ($r$ = 0.945) that should be maintained (Palese et al., 2011). Skilled care provided with humanity and respect improves the caring relationship, explaining the correlations of respectfulness and assurance ($r$ = 0.971) as well as respectfulness and knowledge ($r$ = 0.880) (Palese et al., 2011; Tschudin, 2003; Van der Wal, 2011). When the patient trusts the nurses' knowledge and skill, they want the nurse to care for them, highlighting the importance of professional values of nurses in providing care to patients, supporting that good nursing is defined by values (Mlinar, 2010; Zamanzadeh et al., 2010). However, the relationship of knowledge and connectedness ($r$ = 0.893) is not only about the 'big' nursing interventions, but also about the smaller sometimes non-nursing things of providing care such as writing a letter, doing make-up or hair (Zamanzadeh et al., 2010) or just making time to engage in conversation with the patient (Chang et al., 2005; Deppoliti, 2008; McCabe, 2004; Shattel, 2005).

**MAIN FINDINGS:**

Patient perceptions of nurses' caring behaviours provided high scores for all dimensions of caring behaviours (knowledge/skill, assurance, respectfulness and connectedness) suggesting that patients regard nurses as knowledgeable, skilled and respectful providing patients with a sense of security even though their perception of nurses' willingness to assist and engage with patients presented the lowest score.

## 5.6 RESEARCH QUESTIONS 5 AND 6: IS THERE A RELATIONSHIP BETWEEN INTRAPERSONAL CHARACTERISTICS OF NURSES AND THEIR SELF-ASSESSMENT OF WORK PERFORMANCE AND THEIR CARING BEHAVIOURS AS PERCEIVED BY PATIENTS? WHAT MODEL CAN BE DEVELOPED TO TEST THE INFLUENCE OF SELECTED INTRAPERSONAL CHARACTERISTICS ON WORK PERFORMANCE AND CARING BEHAVIOURS?

This section considers the relationship of nurses' intrapersonal variables and nurses' self-assessment of work performance and patients' perceptions of caring behaviours.

### 5.6.1 Influence of selected intrapersonal characteristics of nurses on their work performance

The influence of professional values, personality, EI, empathy and job involvement with nurses' self-rated work performance as measured with the 6-DSNP is discussed next. Figure 5.6 highlights the component of discussion in the model of the study.

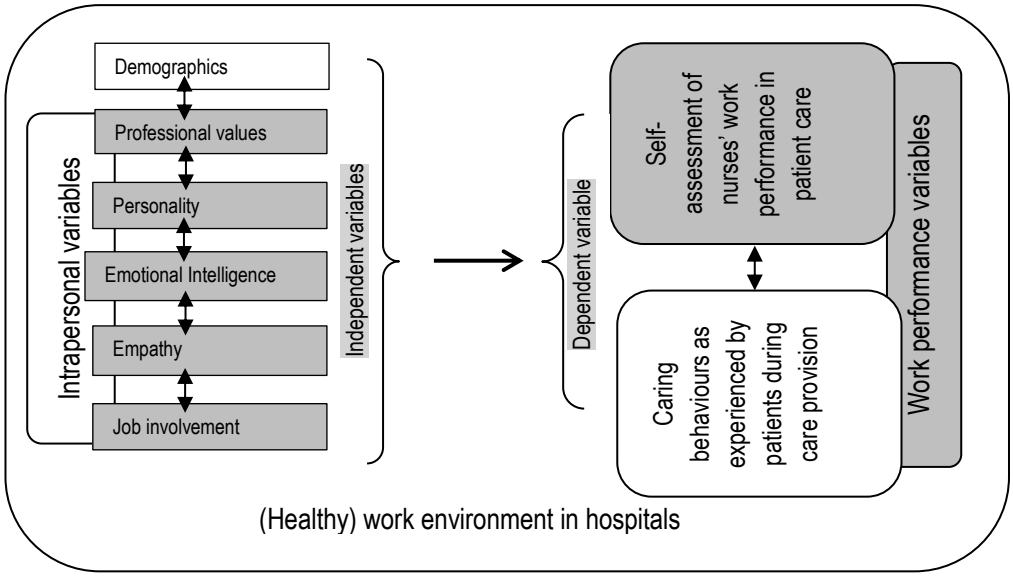


Figure 5.6 Relationship between selected intrapersonal variables and self-assessment of work performance of nurses

All five the professional values (trust, professionalism, caring, activism and justice) are positively correlated with all the dimensions of work performance at the 1% level of significance with moderate importance in practice as indicated by $R^2$ values ranging from 0.062 to 0.189, explaining 6% to 19% of the variance (see Table 4.51). Considering that good nursing is seen to be defined by values (Mlinar, 2010; Zamanzadeh et al., 2010), the work performance of nurses in this study is positively influenced by their professional values. As discussed in item 5.4.2.1 the caring relationship of nurses with patients is established and

maintained through trust and justice with nurses taking up an activist role in patient care with the aim to promote health and to protect patients from harm. This trusting relationship is strengthened by the professionalism of the nurse which includes the nurses' fitness to practice based on their competence, attitude and commitment to provide quality care to their patients (Belcher & Jones, 2009; Bell & Duffy, 2009; College of Nurses of Ontario, 2013; Zamanzadeh et al., 2010;Tschudin, 2003).

Two other characteristics were significantly correlated with some of the dimensions of work performance. Empathy as measured with the EQ-short is positively and significantly correlated with five of the six dimensions of work performance which excludes the planning/evaluation dimension of work performance (see Table 4.51). This could possibly be because planning and evaluation focus on factual observation and response which does not require empathy. These values are of low practical importance, but are discussed taking into consideration that the literature supports some of the statements. The other dimensions of work performance all require empathy to a larger or lesser extent, and empathy is seen as an essential professional quality for nurses to have (Guan et al., 2012; Ozcan et al., 2010; Yu & Kirk 2009). This is particularly important for nurses in leadership positions such as the team leader in the ward, as confirmed by the relationship of empathy with the leadership performance dimension ($R^2$=0.049). Unfair and uncaring behaviours in the workplace by supervisors and colleagues tend to cascade down in the institution, thus creating an unhealthy work environment that negatively influences work performance (Katrinli et al., 2008; Rafferty, Restubog & Jimmieson, 2010). It is essential for management to promote a healthy work environment if nurses are expected to continue to be empathetic practitioners and to continue to work for the organisation. Healthy work environments improve nurses' job satisfaction, allowing nurses to provide empathetic care, and in turn nurse caring improves patient satisfaction (Jacobs & Roodt, 2008; Johnson et al., 2010; Larrabee et al., 2004; Mokoka, Oosthuizen & Ehlers, 2010). According to Shapiro (Shapiro, 2008) 'walking a mile in a patient's shoes' is what is necessary to provide for good interpersonal relations and

communication as reflected by the relationship with empathy ($R^2$=0.032) and to provide appropriate teaching and learning (Graber & Mitcham, 2004). The relationship of empathy with teaching and collaboration ($R^2$=0.068) supports the finding that education and personal characteristics affect empathetic communication (Ozcan et al., 2010). The relationship of empathy with professional development ($R^2$=0.061) therefore is important as it has been reported that empathy can be taught, emphasising that professional development for nurses should not only focus on strengthening skills and knowledge (Norfolk, Birdi & Walsh, 2007; Öz, 2001; Reynolds & Scott, 1999; Stepien & Baernstein, 2006). The focus on both components should be maintained though, because developing clinical practice is reported to be a predictor of performance (Johnson et al., 2010) and developing clinical practice improved self-rated work performance (Burtson and Stichler, 2010).

The last characteristic correlating significantly but not proving to be important in practice, is job involvement with interpersonal relations/communication ($R^2$=0.045) at the 1% level of significance and with teaching/collaboration ($R^2$=0.030) at the 5% level of significance (see Table 4.51). Job involvement of nurses holds benefits for both the staff and organisation, as it improves organisational commitment and teamwork in the workplace, which makes it unlikely that staff would leave the organisation (Akinbobola, 2011; Freund & Drach-Zahavy, 2007; Katrinli et al., 2009). The relationship of job involvement and interpersonal relations/communication in this study supports the finding that communication and teamwork are positively related to job involvement (Keng Boon, Arumugam, Safa & Abu Bakar, 2007). Job involvement also moderates the quality of communication in the workplace and employee job satisfaction (Orpen & Pool, 1996). It is reported that job involvement is correlated with self-esteem (Kanungo, 1982). Self-efficacy in teaching readiness and professional competence of nurse educators yield improved concentration, work performance and enjoyment of work (Yang, Kao & Huang 2006). This information seems to suggest that job involvement increases the teaching, collaboration and communication dimensions of work performance of nurses.

**MAIN FINDINGS:**

The relationship between the intrapersonal characteristics and work performance indicated that:

- All five professional values (trust, professionalism, caring, activism and justice) are positively and significantly correlated with all the dimensions of work performance with moderate importance in practice.
- Empathy is positively and significantly correlated with five of the six dimensions of work performance, excluding the planning/evaluation dimension of work performance. These values are of low and not of practical importance.
- Job involvement is positively and significantly correlated with interpersonal relations/communication with low and not of practical importance.

### 5.6.2 Relationship between selected intrapersonal characteristics and caring behaviours (CBI)

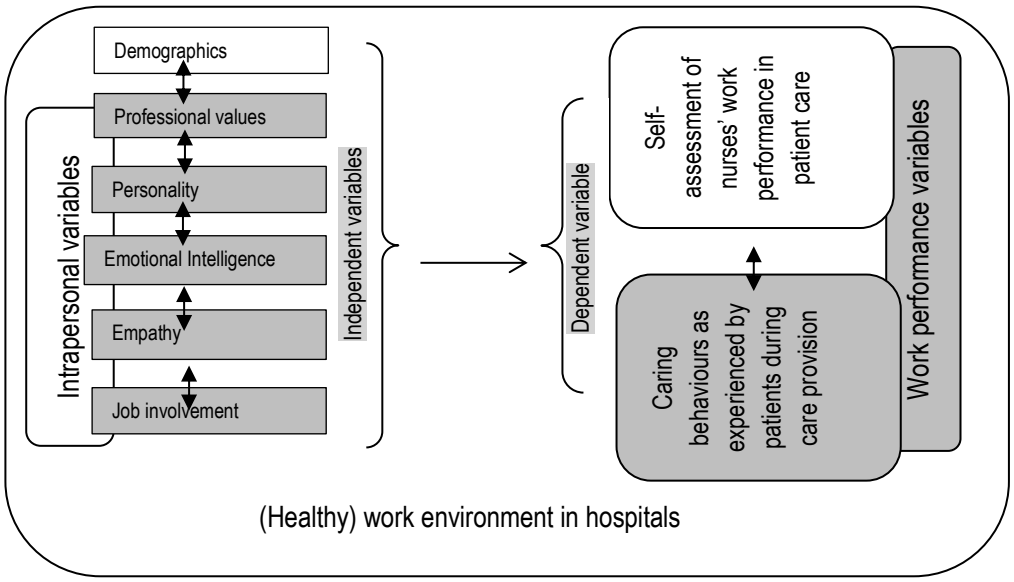


Figure 5.7 Relationship between selected intrapersonal characteristics and caring behaviours

The $R^2$ values of the relationship of CBI with nurses' intrapersonal characteristics are summarised in Table 5.2 with statistically significant values in red and practically significant relationships indicated in bold font. Only statistically significant values are discussed.

Of small to medium practical importance were all the CBI dimensions that were positively correlated with the activism ($R^2$=0.35 – $R^2$=0.41) and professionalism ($R^2$=0.27 – $R^2$=0.42) dimensions of professional values (NVPS-R). Professional values direct the behaviour of nurses (Mlinar, 2010; Zamanzadeh et al., 2010) with their professionalism directing nurses' activist behaviour as they utilise their knowledge and skills to provide care and to protect patients from harm (ICN, 2012). The CBI respectful and connectedness dimensions are positively correlated with activism, trust, professionalism and justice dimensions of the NPVS-R with values ranging from $R^2$=0.019 to $R^2$=0.42 indicating small to moderate effect in practice. However, the values for the justice and trust components are below $R^2$=0.3 making it not important in practice (see Table 5.1). The patients' perception of the respect and humane treatment by nurses and connectedness is influenced by the nurses' interpersonal understanding reflected by their behaviour, characteristics and willingness to attend to the patient's issues (Zhang et al., 2001). This is about the ability to apply the art and science of nursing to engage with the patient and to influence patient care which contributes to establishing and strengthening a trust relationship (Belcher & Jones, 2009; Bell & Duffy, 2009; College of Nurses of Ontario, 2013; Zamanzadeh et al., 2010). Connectedness as indicated encompasses the softer skills of care and influences patients' perceptions of the care they are receiving, supporting the statement in Chapter 1 that caring is highly regarded by patients. It warrants mention that justice in the workplace creates healthy work environments which improve productivity and performance of nurses (Karriker & Williams, 2009). The caring dimension of NPVS-R which indicates a focus on the patient did not yield any significant relationships with three of these relationships being negative indicating an inverse relationship. This is most probably due to the nursing shortage which compels nurses to focus on technical care procedures to ensure that everything gets done, leaving

limited or no opportunity to engage with patients to promote connectedness (Chang, Lin & Change, 2005; McCabe, 2004; Shattel, 2005; Zhang et al., 2001). The interpretation of this inverse result, even though it is not significant, is interesting as it indicates that even though nurses rate themselves low on their caring value relating to issues such as patient advocacy, respectfulness and safety, patients perceived the opposite with regard to the assurance of human presence, knowledge/skill and respectfulness. While the reason for this is not clear, it could possibly be that nurses experience their work environment as challenging and unsatisfactory, influencing their well-being and satisfaction in their work, which may even influence their evaluation of their self-worth (Coetzee et al., 2013; French, Du Plessis & Scrooby, 2011; Judge et al., 2003; Klopper et al., 2012; Towell, Nel & Müller, 2013).

The CBI assurance and respectfulness dimensions are statistically significantly correlated with job involvement which seems to support the meta-analysis of Brown (1996) who found that 'job-involved' practitioners are committed to their jobs and engage more closely with professional relationships. However, these values are lower than 0.3 and therefore not important in practice.

Table 5.1 Relationship between nurses' intrapersonal characteristics and patient perceptions of nurses' caring behaviour

| **Variable** | **Spearman Rank Order Correlations**<br>**MD pairwise deleted**<br>**Marked correlations are significant at p<0.30000** | | | |
|---|---|---|---|---|
| | **CBI Assurance** | **CBI Knowledge, Skill** | **CBI Respectful** | **CBI Connected** |
| Professional values (NPVS-R) | | | | |
| Caring | -0.0138 | -0.0557 | -0.0007 | 0.0041 |
| Activism | **0.3563** | **0.3462** | **0.4104** | **0.3524** |
| Trust | 0.1509 | 0.0764 | 0.2072 | 0.1921 |
| Professionalism | **0.3694** | 0.2695 | **0.4218** | **0.3852** |
| Justice | 0.1379 | 0.0774 | 0.1887 | 0.1961 |
| Total | 0.2027 | 0.1342 | 0.2745 | 0.2379 |
| Personality (CSES) | 0.1221 | 0.1280 | 0.0914 | 0.1174 |
| EI (STEM) | -0.1077 | -0.1143 | -0.1075 | -0.0661 |
| EQ (Total) | 0.0036 | -0.0835 | 0.0842 | -0.0277 |
| Job Involvement | 0.2078 | 0.1327 | 0.1888 | 0.0878 |

**MAIN FINDINGS:**

The relationship between nurses' intrapersonal characteristics and patients' perceptions of caring behaviours yielded the following results:

- All the CBI dimensions were positively correlated with the activism, trust, professionalism and justice dimensions of professional values with small to medium practical importance:
  - The relationship of all CBI dimensions with the activism dimension of professional values was of practical importance.
  - The relationship of CBI assurance, respectful and connectedness with the professionalism dimension of professional values was practically important.
  - The relationship of CBI respectful and connectedness with the trust and justice dimensions of the professional values was not important in practice.
- The caring dimension of professional values did not yield any significant relationships with CBI, and three dimensions of CBI (assurance, knowledge/skill and respectful) had inverse relationships with the caring dimension of professional values.
- CBI assurance and respectfulness dimensions were significantly correlated with job involvement but were not important in practice.

### 5.6.3 Structural Equation Modelling of the influence of selected intrapersonal characteristics on professional nurses' work performance

The model depicted in Figure 1.2 was used to test the hypothesized relationships in this study. Structural Equation Modelling (SEM) was used to test the influence of selected intrapersonal characteristics on professional nurses' work performance. The statistically significant correlations are summarised in Table 5.2.

Table 5.2 SEM: statistically significant correlations

| Factors | | Dimensions | Estimate | p | Correlation of intrapersonal variables with NPVS-R (p) | |
|---|---|---|---|---|---|---|
| | | | | | EQ | Job Involvement |
| Professional Development | <-- | NPVS-R | 0.426 | <.0001 | 0.209 (0.049) | 0.165 (0.033) |
| IPR/communication | <-- | NPVS-R | 0.423 | <.0001 | 0.210 (0.045) | 0.166 (0.032) |
| | <-- | Job Involvement | 0.156 | 0.052 | | |
| Planning/evaluation | <-- | NPVS-R | 0.369 | <.0001 | 0.209 (0.046) | 0.165 (0.034) |
| Teaching/collaboration | <-- | NPVS-R | 0.336 | <.0001 | 0.209 (0.047) | 0.166 (0.033) |
| | <-- | STEM | -0.199 | 0.032 | | |
| Critical care | | NPVS-R | 0.350 | 0.001 | 0.209 (0.047) | 0.166 (0.033) |
| Leadership | <-- | NPVS-R | 0.524 | <.0001 | 0.208 (0.049) | 0.164 (0.034) |

The NPVS-R measuring professional values of nurses correlated significantly with all dimensions of the 6-DSNP measuring nurses' work performance ranging from $r$ = 0.336 (with teaching/collaboration) to $r$ = 0.524 (with leadership). In spite of the less than ideal work environments for the majority of nurses, the nurses in this study have high professional values which is regarded as the foundation of nursing that guide and motivate nurses' behaviour in the workplace (Coetzee et al., 2013; Eygelaar & Stellenberg, 2012; French, 2011; George et al., 2012; Leners, Roehrs & Piccone, 2006; Özcan et al., 2012; Weis & Schank, 2009). While professional values are acquired during educational programmes, these values are consolidated in clinical practice where nurses' values are challenged by the realities of current clinical environments where situations are not the same or as easily managed as taught in the class room (Cerit & Dinç, 2012; Deppoliti, 2008; Kubsch, Hansen & Huyser-Eatwell, 2008; Özcan, Oflaz & Sutcu Cicek, 2010; Özcan, Akpinar, & Ergin, 2012; Weis & Schank, 2009). Although it has been argued that experience is not necessary to develop professional values (LeDuc and Kotzer, 2009), it has also been indicated that strengthening professionalism can assist nurses with decision-making skills when facing challenges in the workplace (Cerit and Dinç, 2012).

Job Involvement had a borderline statistically significant relationship with the interpersonal relations/communication dimension of 6-DSNP with a positive regression weight lower than $r$ = 0.3 which makes this relationship not important in practice (see Table 5.3). This finding

differs from the findings of other studies indicating that job involvement is correlated with positive self-esteem, job satisfaction and work performance (Kanungo, 1982; Katrinli et al., 2008; Yan & Su, 2012). The score obtained by nurse respondents in this study indicated a moderate job involvement which was linked to low job satisfaction in a previous study (Kaplan, Boshoff & Kellerman 1991) which may indicate that job satisfaction is low amongst the study population while another study indicated that nurses' resilience allows them to cope with their working environment (Koen, Van Eeden & Wissing, 2011).

Similarly the STEM had a statistically significant relationship with the teaching/collaboration dimension of 6-DSNP with a regression weight of lower than $r$ = -0.3 which makes it not important in practice (see Table 5.3). STEM is a branch of the higher order of emotional intelligence (strategic intelligence), explained as the ability to manage one's emotions which are expected to play a role in well-being (Austin, 2010; Burrus et al., 2012, MacCann and Roberts, 2008) The average to high mean obtained by the respondents indicate a higher range of EI in this group of nurses. This supports the findings of other studies that higher scores obtained in an EI measurement indicate a potentially greater ability of EI (Beauvais et al., 2011; Harper & Jones-Schenk, 2012). McQueen (2003) stated that the current day challenges of nursing are dependent on nurses' emotional intelligence skills to manage patient care and collaboration with team members which may explain the finding of a significant relationship.

Amongst the independent variables of the study, significant correlations were only found between NPVS-R and the EQ-short as well as NPVS-R and job involvement. The correlation coefficients for these relationship between professional values were $r$ = 0.208 – 0.210 with EQ and 0.164 – 0.165 with job involvement which both are lower than $r$ = 0.03 and therefore not important in practice. While not a practically meaningful finding, based on the findings of this study related to caring behaviours, the professional values (NPVS-R) and empathy (EQ-short) are linked, indicating that empathy which is central to the nursing role (Ward, Cody &

Schaal, 2012), in some way contributes to nursing care. Similarly the relationship between professional values and job involvement may support the view that it is unlikely that they would leave their current employment even though they experience their workplace as challenging to expressing their professional values in their work performance (Akinbobola, 2011; Freund & Drach-Zahavy, 2007; Katrinli et al., 2009).

Therefore the professional values as measured with the NPVS-R were the only selected intrapersonal characteristic in this study that had a statistically significant relationship with work performance with values higher than $r$ = 0.3 representing a medium strength relationship. This group of nurses have high professional values orientation which inform their work performance (Mlinar, 2010; Zamanzadeh et al., 2010), as discussed in item 5.6.1.

**MAIN FINDINGS:**

Structural Equation Modelling of the influence of selected intrapersonal characteristics on professional nurses' work performance and each other yielded the following results:

- Relationships with work performance:
  - All dimensions of professional values had a significant and positive relationship with all dimensions of work performance which were all practically important.
  - Job Involvement had a positive but borderline statistically significant relationship with the interpersonal relations/communication dimension of work performance, but was not important in practice.
  - STEM had a significant positive relationship with the teaching/collaboration dimension of work performance but was not important in practice.
- Relationship among intrapersonal characteristics:
  - Significant positive relationships were found between professional values and empathy as well as professional values and job involvement, but both were not important in practice.

### 5.6.4 Relationship between CBI and 6-DSNP

The next relationship discussed is the nurses' self-assessment of work performance as measured with the 6-DSNP and the patient perceptions of caring behaviours as measured with CBI which is highlighted in Figure 5.8.

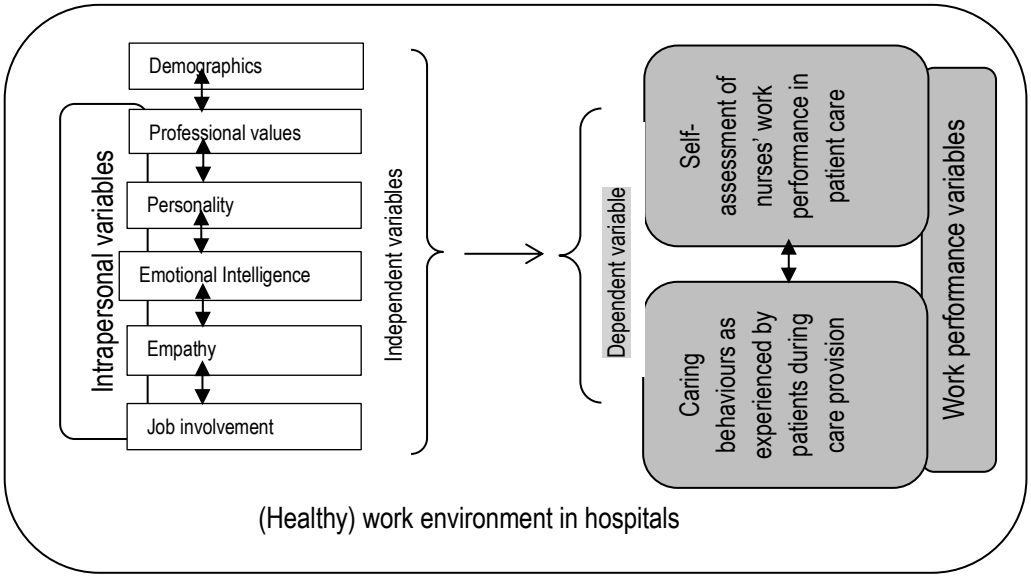


Figure 5.8 Relationship between the work performance variables of the study

The performance of nurses was measured by nurses completing a self-report instrument on work performance (6-DSNP) and patients' perceptions on nurses' caring behaviours with completion of the CBI by patients. The dataset was aggregated to ward level (45 wards) to determine this relationship (see item 4.12 and Table 4.70). The 45 wards were the wards where nurses and patients who participated in the study were present at the time of data collection.

Spearman's correlation statistic was applied to determine the relationship between patients' perceptions of nurses' caring behaviours with nurses' work performance. The values obtained are summarised in Table 5.4 with all statistically significant values marked in red with practically important findings in bold. Negative correlations were found between CBI evaluations and the 6-DSNP dimensions of leadership, critical care and teaching/collaboration, but only the correlation between the critical care dimension of work

performance and CBI knowledge and skill ($R^2$ = -0.34*)* was practically significant. This negative relationship indicates that the higher patients' perceptions of nurses' knowledge and skill become, the lower nurses rate their critical care or technical nursing care skills. Looking at Table 5.3, the overall tendency between the leadership and critical care dimensions of the DSNP and the CBI, is that the higher the patients' perceptions of the nurses' caring behaviours, the lower the nurses rate their work performance. Although not practically significant, this may indicate that nurses who have a higher level of work performance, such as leaders and critical care nurses, are experienced as less caring because they have less time to spend with patients, or as in the case of leaders do not do the bedside caring of the patient. The literature has also identified that there is a general lack of awareness of patients' emotional needs (Van den Heever, Poggenpoel & Myburgh, 2013) and not showing such caring in their provision of nursing care (Chokwe & Wright, 2013). One question that arise based on the finding of a negative relationship between CBI and 6-DSNP, is whether nurse leaders and managers perhaps contribute to nurses' low evaluation of their work performance through insufficient recognition and praise for the work nurses do under challenging circumstances.

The statistically significant negative relationship between CBI knowledge and skill with the interpersonal relations and communication dimension of nurses' work performance ($R^2$ = -0.18) show that while knowledge and skill are regarded as important by patients, they may experience nurses and particularly those in leadership positions, as distant and not engaging with them. This is supported by the findings of Van den Heever, Poggenpoel and Myburgh (2013) that there is a general insensitivity and lack of awareness and reflection by nurses and care workers in private sector hospitals of patients' emotional needs. Furthermore, while nurses may have the theoretical knowledge of caring, some are not showing this in their clinical practice, (Chokwe & Wright, 2013) indicating that the teaching and assessment of caring competencies should receive attention (Chokwe & Wright, 2012). The relationship between CBI dimensions and the teaching/collaboration dimension of work performance

shows three statistically significant and positive values for CBI, namely assurance ($R^2$ = 0.16), respectfulness ($R^2$ = 0.21) and connectedness ($R^2$ = 0.20). Teaching and collaboration of nurses with their patients is a time where there is more engagement of nurses with patients. This may contribute to patients feeling that there is interest in them as human beings and not just a disease.

Table 5.3 Relationship between patient perceptions of nurses' caring behaviours and nurses' work performance as provided by $R_2$

| **Variable** | **Spearman Rank Order Correlations**<br>**MD pairwise deleted**<br>**Marked correlations are significant at p<0.30000** | | | |
|---|---|---|---|---|
| | **CBI Assurance** | **CBI Knowledge, Skill** | **CBI Respectful** | **CBI Connected** |
| Work performance (6-DSNP) | | | | |
| Leadership | -0.2704 | -0.2417 | -0.1826 | -0.1740 |
| Critical care | -0.2421 | **-0.338** | -0.2207 | -0.2303 |
| Teach/Collaborate | 0.1583 | 0.0212 | 0.2108 | 0.1971 |
| Plan/Evaluate | -0.0400 | -0.0968 | 0.0311 | 0.0274 |
| IPR/Communication | -0.1300 | -0.1774 | -0.1221 | -0.0936 |
| Professional Development | -0.1046 | -0.0990 | -0.0680 | -0.0474 |

**MAIN FINDINGS:**

The influence of patient perceptions of caring behaviours was found to be as follows:

- All dimensions of CBI had a significant negative influence on the leadership and critical care dimensions of work performance with only the CBI knowledge/skill and critical care dimension of work performance being practically important. This indicates that the higher patients' perceptions of nurses' caring behaviours become, the lower nurses rate their work performance, particularly technical skills.
- CBI assurance, respectfulness and connectedness had a significant positive relationship with the teach/collaborate dimension of work performance, but were not practically important.
- CBI knowledge/skill had a negative significant relationship with the interpersonal relations/communication dimension of professional values but was not practically important.

- No statistically significant relationships were found between caring behaviours and the plan/evaluate and professional development dimensions of work performance.

## 5.7 RESEARCH QUESTION 7: WHAT IS THE INFLUENCE OF INTRAPERSONAL CHARACTERISTICS ON THE WORK PERFORMANCE AND CARING BEHAVIOURS OF NURSES?

With regard to predictions that can be developed, the relationship of intrapersonal characteristics and caring behaviours on work performance is presented separately.

### 5.7.1 Predictions about the relationship between intrapersonal characteristics and work performance

The following prediction equations for the standardised variables can be derived from the structural equation models:

6-DSNP: Leadership = 0.524 NPVS-R + 0.195 EQ

6-DSNP: Critical care = 0.350 NPVS-R

6-DSNP: Teaching/collaboration = 0.336 NPVS-R + 0.183 EQ + 0.146 job involvement – 0.199 STEM

6-DSNP: Planning/evaluation = 0.369 NPVS-R

6-DSNP: Communication = 0.423 NPVS-R + 0.156 job involvement

6-DSNP: Professional development = 0.426 NPVS-R + 0.175 EQ

From these results follow that the importance of professional values (NPVS-R) as predictor for the dimensions of work performance (6-DSNP) is two to three times that of any other predictor that can be added to the equation on a 10% level of significance. Therefore, if the

nurses have a high professional values orientation (NPVS-R), there is a 90% probability that there would be a positive influence on their work performance.

The only two other selected intrapersonal characteristics that had a statistically significant relationship with work performance was empathy (EQ) and job involvement but neither was practically important. However, this supports to some extent what other studies have found (Guan et al., 2012; Ozcan & Cicek, 2010; Ward, Cody & Schaal 2012).

In this study the personality (CSES: M= 61.68 of possible 84) and emotional intelligence (STEM: 0.63 of possible 1) intrapersonal characteristics of nurses did not have a significant influence on their work performance. The reason for this is not clear as both had high mean scores and this finding is not supported by the literature (Bono & Judge, 2003; Bowling, 2007; Judge, 2009; Van Wyk, Boshoff & Celliers, 2003).

### 5.7.2 Predictions about the CBI and work performance

The following prediction equations for the standardised variables can be derived from the stepwise linear regression models based on the dataset aggregated to ward level. Although no statistically significant predictors were found due to sample size of 45, the best predictor equations are given below:

6-DSNP: Leadership=-0.27 CBI: Assurance

6-DSNP: Critical Care=-0.20 CBI: Knowledge/skill

6-DSNP: Teaching/collaboration =-0.38 CBI: Knowledge/skill + 0.45 CBI: Respectful

6-DSNP: Planning/evaluation =-0.36 CBI: Knowledge/skill + 0.27 CBI: Respectful

6-DSNP: Communication – no predictors could be found

6-DSNP: Professional development =-0.16 CBI: Knowledge/Skill

From these results follow that CBI: Knowledge/skill was the most important predictor for the dimensions of work performance (6-DSNP). All the predictor estimates are negative, indicating that the better patients perceive the nurses' caring behaviours, the lower nurses rate their own work performance as discussed in item 5.7.3 and vice versa.

**MAIN FINDINGS:**

- The importance of professional values as predictor for work performance is two to three times that of any other predictor that could be added to the equation on a 10% level of significance. Therefore if nurses have a high professional values orientation, there is a 90% probability that there would be a positive influence on their work performance
- Although not practically important, the most important predictor of caring behaviours for work performance was patients' perception of nurses' competence. These predictor estimates were negative indicating that the better patients perceive the nurses' caring behaviours, the lower nurses rate their own work performance and vice versa.

## 5.8 SUMMARY

This chapter provided a discussion of the results of the influence of selected intrapersonal characteristics on the work performance and caring behaviours of professional nurses in a selected district of the Gauteng province. This discussion included the discussion of the results in relation to the research questions raised in Chapter 1. The findings as discussed in Chapter 5 included:

- Nurses' demographics had a small influence on work performance. Items that had a practically significant positive influence on work performance are gender with the interpersonal relations/communication dimension of work performance; widowed nurses with the planning/evaluation dimension of work performance and the professional value of justice.
- Patients' demographics indicated that the patients' level of education had a significant influence on their perceptions of nurses' caring behaviours. This finding showed a negative correlation with higher qualified patients being more critical of the care they receive.

- Professional values orientation of nurses was the only intrapersonal characteristic identified that significantly influenced nurses' work performance. Empathy and job involvement also had an influence on nurses' work performance, but these were not practically important.
- Patient perceptions of caring behaviours had a significant negative influence on the leadership and critical care dimensions of work performance, but only patients' perception of nurses' knowledge/skill had a practically important influence on the interpersonal/communication dimension of work performance. Therefore, the higher patients' perceptions of nurses' caring behaviours become, the lower nurses rate their work performance, particularly their technical skills.
- Predictors of nurses' work performance flowing from the results of the study were that the importance of professional values as predictor for work performances is two to three times that of any other predictor that could be added to the equation on a 10% level of significance. No statistically significant predictor was found for caring behaviours, but the best identified was perceptions of nurses' knowledge/skill in caring behaviours.

The next chapter will address the evaluation, significance, limitations and recommendations of the study.

# CHAPTER 6

## EVALUATION OF THE STUDY, SIGNIFICANCE, LIMITATIONS AND RECOMMENDATIONS FOR PRACTICE, EDUCATION, RESEARCH AND POLICY

# CHAPTER 6

# EVALUATION OF THE STUDY, SIGNIFICANCE, LIMITATIONS AND RECOMMENDATIONS FOR PRACTICE, EDUCATION, RESEARCH AND POLICY

## 6.1 INTRODUCTION

In Chapter 5 the results of the study on the influence of selected nurses' intrapersonal characteristics on their work performance and caring behaviours were discussed and summarised. In this chapter the study is evaluated and the significance, limitations and recommendations for professional nurses, practice, education, research and policy of the study are presented.

## 6.2 EVALUATION OF THE STUDY

The study was performed in fulfilment of the requirements for a PhD degree.

The aim of the study was to determine whether selected intrapersonal characteristics of professional nurses have an influence on their work performance and caring behaviours.

A need for the study was identified when the public media reported on numerous adverse events and poor healthcare provision involving nurses, but patients often reported that they had received 'good care' in the same hospitals where it was reported that poor care was being provided. In the literature there was information that highlighted the influence of the workplace on nurses' work performance, but limited information was available about the influence of nurses' intrapersonal characteristics on their work performance and caring behaviours, particularly in South Africa. The selected intrapersonal characteristics included professional values, personality, emotional intelligence, empathy and job involvement. In view of literature evidence that healthcare practitioners tend to overrate the effectiveness of their actions (Ludikhuize et al., 2012) it was decided to obtain patients' perceptions on nurses' caring behaviours.

A cross-sectional survey, predictive correlation model-testing design was used to answer the research questions: 1) What is the distribution and influence of demographic variables on nurses' work performance and patients' perceptions of caring behaviours? 2) What is the distribution of selected intrapersonal characteristics among nurses working in clinical settings in hospitals? 3) What is the self-assessment of their work performance by nurses working in clinical settings in hospitals'? 4) How do patients perceive the caring behaviours of nurses in clinical settings in hospitals? 5) Is there a relationship between nurses' intrapersonal characteristics and their self-assessment of work performance and caring behaviours of nurses as perceived by patients? 6) What model can be developed to test the influence of selected intrapersonal characteristics on work performance and caring behaviours of nurses? 7) What predictions can be made about the relationship between intrapersonal characteristics with the work performance and caring behaviours of nurses?

Data were collected by means of validated self-report instruments measuring the nurses' work performance (6-DSNP), caring behaviours (CBI) and the selected intrapersonal characteristics [professional values (NPVS-R); personality (CSES); emotional intelligence (STEM); empathy (EQ-short) and job involvement (Kanungo Job Involvement scale)]. Descriptive and inferential statistics were generated to answer the questions identified in the study.

Based on the discussion above, the hypotheses of the study as listed in Chapter 1 are presented.

1.6.8 $H_{01}$ - There is no relationship between demographic variables and nurses' self-assessment of work performance and patients' perceptions of caring behaviours.

This hypothesis is rejected. Excluding shift work and full- or part-time employment, the demographic characteristics of the nurses in this study had statistically significant relationships with the dimensions of work performance and other intrapersonal

characteristics, but effect sizes were small making the majority practically unimportant. The only statistically significant relationships of practical importance among nurses were:

- gender with the interpersonal relations/communication dimension of work performance indicating that females had better interpersonal relations and communication than their male counterparts;
- widowed nurses with the teaching/collaboration dimension of work performance and the professional value of justice indicating that widowed persons were more positive than other groups about teaching, collaboration and the value of justice;
- sole breadwinners with the professional development dimension of work performance and personality suggesting that nurses who are not sole bread winners may have a more positive view for their self-worth and have more resources to attend to their professional development.

The demographic variables of patients had one statistically significant result. Patients' level of education had a statistically significant influence of practical importance on their perceptions of nurses' caring behaviours indicating that the higher their educational level, the more critical patients were regarding the care they received.

6.2.2 $H_{02}$ - There is no relationship between nurses' self-assessment of work performance and patients' assessment of caring behaviours.

This hypothesis is rejected. Statistically significant relationships were found between all the dimensions of caring behaviours with five of the six (excluding professional develop pment) dimensions of work performance as discussed in item 5.6.4. All the relationships were negative except the relationship between the teach/collaborate dimension of work p erformance and caring behaviours of nurses which was positive. The relationship between nurses' self-assessment of work performance and patients'

assessment of caring behaviours yielded the following statistically significant relationships:

- The leadership and critical care dimensions of work performance with all dimensions of caring behaviours (assurance $R^2$ = -0.27; $R^2$ = -0.24, knowledge/skill $R^2$ = -0.24; $R^2$ = -0.34, respectful $R^2$ = -0.18; $R^2$ = -0.22, connected $R^2$ = -0.17; $R^2$ = -0.23). Only the relationship of the critical care dimension of work performance with the knowledge/skill dimension of caring behaviours was of practical importance indicating that the higher patients rated nurses' caring behaviours, the lower nurses rated their work performance.
- The teach/collaborate dimension of work performance with three dimensions of caring behaviours (assurance $R^2$ = 0.16, respectful, $R^2$ = 0.21, connected $R^2$ = 0.20). None of these were of practical importance.

The relationship of the interpersonal relations/communication dimension of work performance and the knowledge/skill ($R^2$ = -0.18) dimension of caring behaviours was negative but not statistically significant. Therefore only the relationship between the critical care dimension of work performance and knowledge/skill dimension of caring behaviours ($R^2$ = -0.34) was practically important.

*6.2.3* $H_{03}$ - There is no relationship between professional values and nurses' self-assessment of work performance and patients' assessment of caring behaviours

This hypothesis is rejected. There were strong relationships between nurses' professional values and all dimensions of their work performance with values ranging from 0.062 to 0.189 (Table 4.51) which indicates a moderate importance in practice. Therefore nurses' professional values have a positive influence on their work performance and nurses regard professional values as essential for practice.

The professional values were related to all the dimensions of the caring behaviours of which the following were statistically significant:

- Professional value activism dimension with all caring behaviour dimensions (assurance $R^2$ = 0.36, knowledge/skill $R^2$ = 0.35, respectful $R^2$ = 0.41, connectedness $R^2$ = 0.035). All these relationships were of moderate practical importance indicating that patients' have a high regard for nurses' caring behaviours. Good nursing care is based on professional values and nurses' activism role is informed by their competence and used to act in the interest of their patients thus positively influencing patients' view of their caring behaviours.
- Professional values professionalism dimension with all caring behaviour dimensions (assurance $R^2$ = 0.37, knowledge/skill $R^2$ = 0.27, respectful $R^2$ = 0.42, connected $R^2$ = 0.39) indicating a small to moderate effect in practice. Excluding the relationship of the professional value dimension of professionalism and the knowledge/skill dimension of caring behaviours, all the relationships were of practical importance supporting the importance that patients' assign to caring behaviours of nurses with strong professional values.
- Professional values trust and justice dimensions had statistically significant relationships with CBI respectful and connectedness but these were not important in practice.

6.2.4 $H_{04}$ - There is no relationship between personality and nurses' self-assessment of work performance and patients' assessment of caring behaviours

This hypothesis is rejected. Personality showed three statistically significant relationships with the teach/collaborate ($R^2$ = 0.029), plan/evaluate ($R^2$ = 0.028) and professional development ($R^2$ = 0.034) dimensions of work performance. All of these

were not important in practice. None of the relationships of personality with caring behaviours were statistically significant.

6.2.5 $H_{05}$ - There is no relationship between emotional intelligence and nurses' self-assessment of work performance and patients' assessment of caring behaviours

The hypothesis is rejected. However, no statistically significant relationships between emotional intelligence with work performance and emotional intelligence with caring behaviours were found.

6.2.6 $H_{06}$ - There is no relationship between empathy and nurses' self-assessment of work performance and patients' assessment of caring behaviours

This hypothesis is rejected. Empathy had statistically significant relationships with five of the dimensions of work performance, namely leadership $R^2$ = 0.049, critical care $R^2$ = 0.024, teach/collaborate $R^2$ = 0.068, interpersonal relations/communication $R^2$ = 0.032, and professional development $R^2$ = 0.061. No statistically significant relationships were found between empathy and caring behaviours.

6.2.7 $H_{07}$ - There is no relationship between job involvement and nurses' self-assessment of work performance and patients' assessment of caring behaviours

This hypothesis is rejected. Job Involvement showed statistically significant relationships with two dimensions of work performance, namely teach/collaborate ($R^2$ = 0.030) and interpersonal relations/communication ($R^2$ = 0.045). Both were not of practical importance. The relationship of job involvement with caring behaviours included statistically significant relationships with two of the dimensions of caring

behaviours, namely assurance ($R^2$ = 0.21) and respectful ($R^2$ = 0.19). Both were not of practical importance.

The study was successfully completed and all the questions raised were answered. The conclusions of the study are:

(1) Nurses' and patients' demographics have a statistically significant and practical important influence on nurses' work performance and caring behaviours:

- The influence of nurses' demographics on work performance include
  - gender (females had better intrapersonal communication than males)
  - marital status (widowed nurses were more positive about planning and evaluation)
  - employment sector (nurses in private sector were more positive about professional development and planning/evaluation than nurses working in public sector)
  - clinical unit (nurses working in medical ward were more positive about leadership and professional development than nursing working in surgical wards
- The educational level of patients had an influence on their view of nurses' caring behaviours indicating that patients with higher educational qualifications were less positive about the care they receive.

(2) Nurses' demographics have an influence on nurses' intrapersonal characteristics included marital status (widowed nurses were more positive about justice as professional value).

(3) Professional values orientation of nurses positively influence their work performance and caring behaviours.

(4) The relationship of patient perceptions of nurses' caring behaviours and their work performance has a negative correlation, thus when patients perceive nurses' caring behaviours to be high, nurses rate their work performance as low.

(4) One significant predictor of nurses' work performance was identified, namely professional values, which is a two to three times better predictor of all dimensions of nurses' work performance than any other predictor that could be added to the equation on a 10% level of significance.

## *6.3* SIGNIFICANCE OF THE STUDY

In South Africa limited information is available on the influence of intrapersonal characteristics of nurses on their work performance and caring bhaviours. As indicated in the literature review in Chapter 2 there are some studies that address specific intrapersonal characteristics of nurses but these are often limited to individual units, for example oncology unit (Van Rooyen, Le Roux & Kotzé, 2008) and a single intrapersonal characteristic such as emotional intelligence in intensive care nursing (Towell, Nel & Müller 2013).

The significance of this study lies therein that a more comprehensive approach was followed to provide an overview of nurses' and patients' perceptions of the influence of nurses' intrapersonal characteristics on their work performance and caring behaviours in general practice areas, namely surgical and medical ward in hospitals. This study contributes to the growing understanding of the phenomenon of work performance through creating a framework for understanding of the phenomenon as an important component contributing to healthy workplaces (RNAO, 2008) and patient satisfaction (Tzeng et al., 2002; Vahey et al., 2004) The contribution is significant particularly in view of the evidence indicating poor or fair work environments in South Africa with inadequate resources, high burnout, job dissatisfaction and intention to leave (Coetzee et al., 2013; Klopper et al., 2012).

The findings of the study furthermore contribute to the discourse on establishing healthy workplaces for nurses in South Africa by creating awareness of the influence of professional nurses' intrapersonal characteristics on their work performance and caring behaviours. In this country health services are nurse driven and nurses are therefore an essential component of the delivery of safe, quality care to the consumers of the services. Healthy

work environments that contribute to the well-being of nurses and patients must be promoted and are essential to recruit and retain nurses in the health services.

## 6.4 LIMITATIONS OF THE STUDY

Although this study contributes to the limited information on the influence of nurses' intrapersonal characteristics on their work performance and caring behaviours, there are limitations. The instrument measuring work performance of nurses was used as a self-report measure. As self-report measures may threaten validity of research through response bias and inflated inferences about correlational and causal relationships due to common method variance (Donaldson & Grant-Vallone, 2002) it was decided to use an additional instrument to obtain the views of the consumers of service delivery by nurses. For this the CBI instrument which captured patients' perceptions of nurses' caring behaviours, was selected for patients to complete. This information was used jointly with the nurses' self-report on work performance to determine the influence of intrapersonal characteristics on their work performance.

Due to the shortage of registered professional nurses it was not possible to randomly select nurses to participate in the study. To ensure that sufficient respondents were obtained for statistical analysis, all professional nurses in the selected hospitals and wards were invited to participate. Similarly the patients invited to participate could not be randomly selected as they were too ill or in pain, discharged early from private hospitals and were patients in public hospitals with mental health conditions that rendered them unable to participate. This limits the opportunity to generalise the finding to the general population.

The self-report questionnaire on work performance completed by nurse respondent presented very high ratings as indicated in Table 4.35. These high ratings restrict the range and therefore also restrict possible correlations with other variables.

## 6.5 RECOMMENDATIONS

The recommendations from the study are presented separately for professional nurses, practice, education, research and policy. A separate section for individual practitioners is included as professional values are the individual practitioners' own professional responsibility. Professional values can be taught and are internalised over time as nurses become more experienced in clinical practice (Özcan, Akpinar, & Ergin, 2012; Shih et al., 2009). The recommendations for this study therefore take this information into consideration.

### 6.5.1 Recommendations for professional nurses

As professionals, registered professional nurses are accountable for their own acts and omissions as indicated in the Nursing Act (South Africa, 2005). It is important that nurses develop a clear understanding of their role and what they are accountable for as professionals. This requires nurses to continue to be well informed on their profession, their area of work or specialisation and developments in these areas. Based on the results of this study, the importance of professional values highlights the responsibility of the professional nurse to develop and maintain such values as it informs their practice. It is fundamental that nurses should be aware of their own professional and personal values and should attend opportunities to assist with value clarification. Understanding one's own values is essential for the selection of a workplace to prevent employment in an institution that would be in contradiction of one's own value system. Nurses have to take responsibility for this, particularly so as mandatory professional development for nurses has not been instituted yet. One activity undertaken by nurses to take responsibility to access information and improve competence is active membership of professional societies. Professional societies refer to specialist nursing groups who focus their business on the nursing speciality by keeping their members informed and strengthening the specialty area. Informed nurses are able to be vocal about their practice and can become professional activists who take up issues on behalf of their profession, safe clinical practice and quality patient care.

### 6.5.2 Recommendations for practice

In the management of nursing services the nursing care provided to patients can provide an indication of the professional values of the nurses involved. Nurses must have the opportunity to reflect on their professional values in their clinical practice and such reflection could be made part of the performance management system for nurses. However, of more importance is that nurses should be empowered to deliver quality and safe patient care. The shortage of nurses may result in nurses becoming unable to perform their duties through practice informed by their professional values and nurses should speak up on such issues from an informed and factual position. Considering that professional values influence nurses' work performance, they contribute to healthy workplaces and that these values can be strengthened through education, in-service and continuous professional development programmes. These activities should make provision for inclusion of events to strengthen professional values. In service education or continuous professional development for nurses working in clinical services should therefore not only concentrate on updating clinical skills, but also create opportunity for reflection and strengthening of professional values and caring behaviours. It must be kept in mind that nurses' intrapersonal characteristics is only one component contributing to the establishment of healthy workplaces and accomplishing healthy workplaces requires transformational change encompassing a whole range of other stakeholders and concepts. One such concept that could be strengthened is the connectedness of nurses with their patients which was found to be low in this study. Consideration should be given to implement a patient-centred nursing care approach to replace the task orientated approach that results in nurses being focused on the technical aspects of nursing.

### 6.5.3 Recommendations for education

The literature had identified that education is essential for the development of professional values and that professional values can be learned (Leners, 2006; Özcan et al., 2012; Weis & Schank, 2009). In nursing education attention should be paid to the socialisation of

professional values in under- and post-graduate programmes. However, not all nurses choose to enrol for post-graduate programmes and it is essential that all nurses continue to have the opportunity to develop and strengthen their professional values. The development of the compulsory Continuous Professional Development (CPD) system for nurses in South Africa provides the ideal opportunity to build professional values into the system.

Nursing education institutions and educators initiate the socialisation of professional values for new entrants into nursing and the follow-on post-graduate education of nurses. It is recommended that an analysis be done of the programme content related to the teaching and facilitation of learning of professional values in under- and post-graduate programmes to determine the effect of such programme content. The NPVS-R instrument provides an ideal tool to assist with such evaluation. A core curriculum or guidelines can be developed based on this information supported with innovative teaching and learning strategies to assist all participants to engage with continuing development opportunities in professional values. This should include the development of better strategies for reflection and integration of both personal and professional philosophies and values. As a foundation, value clarification workshops should be developed to create awareness of professional values in the South African multi-cultural working environment. With regard to the finding on the influence of nurses' gender on communication/interpersonal relations in work performance, it is recommended that life skills programmes with a focus on interpersonal relations be offered for both male and female students to improve those skills. To strengthen the interpersonal relations amongst male students, student group sessions led by senior male nurses or senior male students can be arranged to focus on specific issues related to male nurses in the nursing profession.

From this study the connectedness dimension of caring behaviours of nurses appears to be an area of concern. Although it may be due to the staffing shortage that nurses do not have time to engage with patients on a more personal level while they have the competence to do

so, it is necessary for educators to develop strategies to teach and effectively assess empathy and caring behaviours of nurses during their enrolment in nursing programmes.

### 6.5.4 Recommendations for research

Bearing in mind that the information on the influence of intrapersonal characteristics on nurses' work performance is limited, it would be wise to extend this study to a broader population of nurses to obtain a better understanding of the influence of nurses' intrapersonal characteristics on their work performance. In view of the fact that the STEM instrument used in this study was not the latest version of the instrument, EI measurement could be repeated with the full format of the questionnaire. Standardisation of all the instruments used in this study can be considered for future research.

Of the instruments used in this study only the professional values was found to influence work performance. It would be interesting to investigate and understand the reasons why some of the other intrapersonal characteristics did not show any significant relationships with nurses' work performance and this offers another area for research. The finding that nurses in this study applied an empathetic approach in care provision to patients, raises a question to be answered. Reportedly empathy increases the quality of care and positive impact on healing (Ozcan & Cicek, 2010; Ward et al., 2012; Williams et al., 2014) and while most studies have indicated that continued exposure to clinical experience leads to a decline in empathy (Guan, Yin & Qian, 2012), the finding of this study seems to contradict this. To answer this question, a longitudinal study should be done to determine how nurses' empathy change, or do not change, over time.

In view of the significance of professional values in this study, analysis of the values of new entrants into nursing and how these influence their socialisation of professional values in nursing could add value to this topic. In addition it would be important to assess professional values of nurses in a longitudinal study to determine how these values change over time as it would provide valuable information to inform education and training. It is critical to assess

what has caused such changes. Understanding how professional values and caring behaviours can be influenced and shaped through education and mentoring opportunities therefore also becomes imperative.

The negative correlation between patients' perception of caring behaviours and nurses' self-evaluation of work performance requires further investigation to improve understanding of this relationship and how it could be influenced by leadership and managers in nursing services. It may well be that these two variables are interdependent. The evaluation of nurses work performance could also be investigated in another manner that will provide for simultaneous self-evaluation and independent evaluation using the same format.

### 6.5.5 Recommendations for policy

In line with the recommendation of the Nursing Strategy for Education, Training and Practice 2013/14 – 2016/17 to strengthen professional ethos, attention should be given to the development, strengthening and reflection of professional values and how it influences work performance and patient satisfaction at all levels of nursing. The challenges of modern day clinical practice in continuously changing work environments require nurses to understand how professional values inform their roles and responsibilities. The outstanding revised scope of practice regulation is essential to provide nurses with a legal framework for practice to assist with the understanding of their roles and responsibilities. In the current climate nurses experience themselves as having to perform care responsibilities that are not provided for in the current scope of practice, which is in contradiction with professional values. This regulation must be published as a matter of urgency.

## 6.6 CONCLUSION

This chapter is the final chapter of this report. It focused on an evaluation of the study, the significance, limitations and recommendations for professional nurses, practice, education, research and policy. The study has been successfully completed by answering the research questions raised in Chapter 1 of this report.

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# Annexures

**Annexure 1: Questionnaire for nurses: 6-DSNP; NPVS-R; CSES; STEM; EQ-Short and Job Involvement.**

## Demographic data

Please circle the option that applies to you and provide the additional information where required:

1. Sex

| | | | |
|---|---|---|---|
| Female | 1 | Male | 2 |

2. Marital status

| | |
|---|---|
| Single – never married | 1 |
| Married | 2 |
| Living with partner | 3 |
| Divorced | 4 |
| Widowed | 5 |

3. Your age:

| | |
|---|---|
| < 25 years | 1 |
| 25 – 29 years | 2 |
| 30 – 39 years | 3 |
| 40 - 49 years | 4 |
| 50 – 59 years | 5 |
| 60 – 69 years | 6 |
| >70 years | 7 |

4. Number of dependent children you have:

| | |
|---|---|
| None | 1 |
| 1 - 2 | 2 |
| 3 - 5 | 3 |
| More than 5 | 4 |

5. Are you the sole bread winner in your household?

| | | | |
|---|---|---|---|
| Yes | 1 | No | 2 |

6. Are you a single parent?

| | | | |
|---|---|---|---|
| Yes | 1 | No | 2 |

7. Hospital sector where you work

| | | | |
|---|---|---|---|
| Public | 1 | Private | 2 |

8. Unit where you currently work

| | | |
|---|---|---|
| Surgical unit | 1 | |
| Medical unit | 2 | |
| Specific unit where you currently work (Ward/unit number) | | |

9. Shift you are working

| | |
|---|---|
| Day duty | 1 |
| Night duty | 2 |

10. Are you working

| | |
|---|---|
| Full time | 1 |
| Part time | 2 |
| Through agency | 3 |

11. Years of experience working in the clinical situation after completion of your basic training:

| | |
|---|---|
| < 1 year | 1 |
| 2 - 5 years | 2 |
| 6 - 10 years | 3 |
| 11 - 15 years | 4 |
| 16 - 20 years | 5 |
| >20 years | 6 |

**12.** Your highest academic qualification:

| | |
|---|---|
| Diploma: Basic programme | 1 |
| Degree: Basic programme | 2 |
| Post Basic B-degree | 3 |
| Short course: Specialist programme | 4 |
| Diploma: Specialist qualification | 5 |
| Degree: Specialist programme | 6 |
| Degree - Masters | 7 |
| Degree - PhD | 8 |

13. Your professional qualifications:

| | |
|---|---|
| General | 1 |
| Midwifery | 2 |
| Psychiatry | 3 |
| Community health | 4 |
| Tutor | 5 |
| Specialisation(s) registered with SANC | 6 |

Please specify _____

## SIX DIMENSION SCALE OF NURSING PERFORMANCE (6-DNSP)

Patricia M. Schwirian, Ph.D., R.N. (The Ohio State University College of Nursing)

**Instructions:** The following is a list of activities in which nurses engage with varying degrees of frequency and skill.

For those activities that you do perform please circle the number that best describes how well you perform them.

1= Not very well 2=Satisfactorily 3= Well 4= Very well 5=Not applicable

| Item | Not very well | Satisfactorily | Well | Very well | Not applicable |
|---|---|---|---|---|---|
| 1. Teach a patient's family members about the patient's needs. | 1 | 2 | 3 | 4 | 5 |
| 2. Coordinate the plan of nursing care with the medical plan of care. | 1 | 2 | 3 | 4 | 5 |
| 3. Give praise and recognition for achievement to those under his/her direction | 1 | 2 | 3 | 4 | 5 |
| 4. Teach preventive health measures to patients and their families. | 1 | 2 | 3 | 4 | 5 |
| 5. Identity and use community resources in developing a plan of care for a patient and his/her family. | 1 | 2 | 3 | 4 | 5 |
| 6. Identify and include in nursing care plans anticipated changes in patient's conditions. | 1 | 2 | 3 | 4 | 5 |
| 7. Evaluate results of nursing care. | 1 | 2 | 3 | 4 | 5 |
| 8. Promote the inclusion of patient's decision and desires concerning his/her care. | 1 | 2 | 3 | 4 | 5 |
| 9. Develop a plan of nursing care for a patient. | 1 | 2 | 3 | 4 | 5 |
| 10. Initiate planning and evaluation of nursing care with others. | 1 | 2 | 3 | 4 | 5 |
| 11. Perform technical procedures: e.g. oral suctioning, tracheostomy care, IV therapy, catheter care, dressing changes. | 1 | 2 | 3 | 4 | 5 |
| 12. Adapt teaching methods and materials to the understanding of the particular audience: e.g., age of patient, educational background and sensory deprivation. | 1 | 2 | 3 | 4 | 5 |
| 13. Identify and include immediate patient needs in the plan of nursing care. | 1 | 2 | 3 | 4 | 5 |
| 14. Develop innovative methods and materials for teaching patients. | 1 | 2 | 3 | 4 | 5 |
| 15. Communicate a feeling of acceptance of each patient and a concern for the patient's welfare. | 1 | 2 | 3 | 4 | 5 |
| 16. Seek assistance when necessary. | 1 | 2 | 3 | 4 | 5 |
| 17. Help a patient communicate with others. | 1 | 2 | 3 | 4 | 5 |
| 18. Use mechanical devices: e.g., suction machine, cardiac monitor, respirator | 1 | 2 | 3 | 4 | 5 |
| 19. Give emotional support to family of dying patient. | 1 | 2 | 3 | 4 | 5 |
| 20. Verbally communicate facts, ideas, and feelings to other health care team members. | 1 | 2 | 3 | 4 | 5 |
| 21. Promote the patients' rights to privacy. | 1 | 2 | 3 | 4 | 5 |
| 22. Contribute to an atmosphere of mutual trust, acceptance, and respect among other health team members. | 1 | 2 | 3 | 4 | 5 |
| 23. Delegate responsibility for care based on assessment of priorities of nursing care needs and the abilities and limitations of available health care personnel. | 1 | 2 | 3 | 4 | 5 |

| Item | Not very well | Satisfactorily | Well | Very well | Not applicable |
|---|---|---|---|---|---|
| 24. Explain nursing procedures to a patient prior to performing them. | 1 | 2 | 3 | 4 | 5 |
| 25. Guide other health team members in planning for nursing care. | 1 | 2 | 3 | 4 | 5 |
| 26. Accept responsibility for the level of care under your direction. | 1 | 2 | 3 | 4 | 5 |
| 27. Perform appropriate measures in emergency situations. | 1 | 2 | 3 | 4 | 5 |
| 28. Promote the use of interdisciplinary resource persons. | 1 | 2 | 3 | 4 | 5 |
| 29. Use teaching aids and resource materials in teaching patients and their families. | 1 | 2 | 3 | 4 | 5 |
| 30. Perform nursing care required by critically ill patients. | 1 | 2 | 3 | 4 | 5 |
| 31. Encourage the family to participate in the care of the patient. | 1 | 2 | 3 | 4 | 5 |
| 32. Identify and use resources within the health care agency in developing a plan of care for a patient and his/her family. | 1 | 2 | 3 | 4 | 5 |
| 33. Use nursing procedures as opportunities for interaction with patients. | 1 | 2 | 3 | 4 | 5 |
| 34. Contribute to productive working relationships with other health team members. | 1 | 2 | 3 | 4 | 5 |
| 35. Help a patient meet his/her emotional needs. | 1 | 2 | 3 | 4 | 5 |
| 36. Contribute to the plan of nursing care for a patient. | 1 | 2 | 3 | 4 | 5 |
| 37. Recognize and meet the emotional needs of a dying patient. | 1 | 2 | 3 | 4 | 5 |
| 38. Communicate facts, ideas, and professional opinions in writing to patients and their families. | 1 | 2 | 3 | 4 | 5 |
| 39. Plan for the integration of patient needs with family needs. | 1 | 2 | 3 | 4 | 5 |
| 40. Function calmly and competently in emergency situations. | 1 | 2 | 3 | 4 | 5 |
| 41. Remain open to the suggestions of those under your direction and use them when appropriate. | 1 | 2 | 3 | 4 | 5 |
| 42. Use opportunities for patient teaching when they arise. | 1 | 2 | 3 | 4 | 5 |
| 43. Use learning opportunities for ongoing personal and professional growth. | 1 | 2 | 3 | 4 | 5 |
| 44. Display self-direction. | 1 | 2 | 3 | 4 | 5 |
| 45. Accept responsibility for own actions. | 1 | 2 | 3 | 4 | 5 |
| 46. Assume new responsibilities within the limits of capabilities. | 1 | 2 | 3 | 4 | 5 |
| 47. Maintain high standards of performance. | 1 | 2 | 3 | 4 | 5 |
| 48. Demonstrate self-confidence. | 1 | 2 | 3 | 4 | 5 |
| 49. Display a generally positive attitude. | 1 | 2 | 3 | 4 | 5 |
| 50. Demonstrate knowledge of the legal boundaries of nursing. | 1 | 2 | 3 | 4 | 5 |
| 51. Demonstrate knowledge in the ethics of nursing. | 1 | 2 | 3 | 4 | 5 |
| 52. Accept and use constructive criticism. | 1 | 2 | 3 | 4 | 5 |

## Nurses Professional Values Scale-R©

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Indicate the importance of the following value statements relative to nursing practice. Please circle the degree of importance (1 = not important to 5 = most important) for each statement.

| Not Important | Somewhat Important | Important | Very Important | Most Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

| Item | Not important | Somewhat important | Important | Very important | Most important |
|---|---|---|---|---|---|
| 1. Engage in on-going self-evaluation | 1 | 2 | 3 | 4 | 5 |
| 2. Request consultation/collaboration when unable to meet patient needs | 1 | 2 | 3 | 4 | 5 |
| 3. Protect health and safety of the public | 1 | 2 | 3 | 4 | 5 |
| 4. Participate in public policy decision affecting distribution of resources | 1 | 2 | 3 | 4 | 5 |
| 5. Participant in peer review | 1 | 2 | 3 | 4 | 5 |
| 6. Establish standards as a guide for practice | 1 | 2 | 3 | 4 | 5 |
| 7. Promote and maintain standards where planned learning activities for students take place | 1 | 2 | 3 | 4 | 5 |
| 8. Initiate action to improve environments of practice | 1 | 2 | 3 | 4 | 5 |
| 9. Seek additional education to update knowledge and skills | 1 | 2 | 3 | 4 | 5 |
| 10. Advance the profession through active involvement in health related activities | 1 | 2 | 3 | 4 | 5 |
| 11. Recognise role of professional nursing associations in shaping healthcare policy | 1 | 2 | 3 | 4 | 5 |
| 12. Promote equitable access to nursing and healthcare | 1 | 2 | 3 | 4 | 5 |
| 13. Assume responsibility for meeting health needs of the culturally diverse population | 1 | 2 | 3 | 4 | 5 |
| 14. Accept responsibility for meeting health needs of the culturally diverse population | 1 | 2 | 3 | 4 | 5 |
| 15. Maintain competency in area of practice | 1 | 2 | 3 | 4 | 5 |
| 16. Protect moral and legal rights of patients | 1 | 2 | 3 | 4 | 5 |
| 17. Refuse to participate in care of ethical opposition to own professional values | 1 | 2 | 3 | 4 | 5 |
| 18. Act as a patient advocate | 1 | 2 | 3 | 4 | 5 |
| 19. Participate in nursing research and/or implement research findings appropriate to practice | 1 | 2 | 3 | 4 | 5 |
| 20. Provide care without prejudice to patients of varying lifestyles | 1 | 2 | 3 | 4 | 5 |
| 21. Safeguard patient's right privacy | 1 | 2 | 3 | 4 | 5 |
| 22. Confront practitioners with questionable or inappropriate practice | 1 | 2 | 3 | 4 | 5 |
| 23. Protect rights of participants in research | 1 | 2 | 3 | 4 | 5 |
| 24. Practice guided by principle of fidelity and respect for person | 1 | 2 | 3 | 4 | 5 |
| 25. Maintain confidentiality of patient | 1 | 2 | 3 | 4 | 5 |
| 26. Participate in activities of professional nursing associations | 1 | 2 | 3 | 4 | 5 |

# THE CORE SELF-EVALUATION SCALE

*(Judge, Erez, Bono & Thoresen, 2003)*

Indicate to what extent you agree or disagree with the following statements. Please circle the extent of agreement or disagreement (**1 = strongly disagree to 7 = strongly agree)** for each statement.

***Scale:***

| | | | | | | |
|---|---|---|---|---|---|---|
| 1= Strongly Disagree | 2=Moderately Disagree | 3= Slightly Disagree | 4= Neither Disagree nor Agree | 5= Slightly Agree | 6=Moderately Agree | 7= Strongly Agree |

| Item | Strongly disagree | Moderately disagree | slightly disagree | Neither agree or disagree | Slightly agree | Moderately agree | Strongly agree |
|---|---|---|---|---|---|---|---|
| 1. I am confident I get the success I deserve in life. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Sometimes I feel depressed. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. When I try, I generally succeed. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Sometimes when I fail I feel worthless. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. I complete tasks successfully. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Sometimes, I do <u>not</u> feel in control of work. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Overall, I am satisfied with myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. I am filled with doubts about my competence. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. I determine what will happen in my life. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. I do <u>not</u> feel in control of my success in my career. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. I am capable of coping with most of my problems. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. There are times when things look pretty bleak and hopeless to me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# Self-Evaluation Situational Test of Emotion Management (STEM)
# Short Form Questionnaire

***Instructions (multiple-choice form)***

In this questionnaire, you will be presented with a few brief details about an emotional situation, and asked to choose from four responses the ***most effective*** course of action to manage both the emotions the person is feeling and the problems they face in that situation.

Although more than one course of action might be acceptable, you are asked to choose what you think the most effective response for that person in that situation would be. Please circle the option you select.

Remember, you are not necessarily choosing what you would do, or the nicest thing to do, but choosing the ***most effective response f***or that situation.

1. Pete has specific skills that his workmates do not have and he feels that his workload is higher because of it.
   *What action would be the most effective for Pete?*

(1) Speak to his boss about this.
(2) Start looking for a new job.
(3) Be very proud of his unique skills.
(4) Speak to his workmates about this.

2. Wai-Hin and Connie have shared an office for years but Wai-Hin gets a new job and Connie loses contact with her. *What action would be the most effective for Connie?*

(1) Just accept that she is gone and the friendship is over.
(2) Ring Wai-Hin and ask her out for lunch or coffee to catch up.
(3) Contact Wai-Hin and arrange to catch up but also make friends with her replacement.
(4) Spend time getting to know the other people in the office, and strike up new friendships.

3. Surbhi starts a new job where he doesn't know anyone and finds that no one is particularly friendly.
   *What action would be the most effective for Surbhi?*

(1) Have fun with his friends outside of work hours.
(2) Concentrate on doing his work well at the new job.
(3) Make an effort to talk to people and be friendly himself.
(4) Leave the job and find one with a better environment.

4. Andre moves away from the city his friends and family are in. He finds his friends make less effort to keep in contact than he thought they would.
   *What action would be the most effective for Andre?*

(1) Try to adjust to life in the new city by joining clubs and activities there.
(2) He should make the effort to contact them, but also try to meet people in his new city.
(3) Let go of his old friends, who have shown themselves to be unreliable.
(4) Tell his friends he is disappointed in them for not contacting him.

5. Clayton has been overseas for a long time and returns to visit his family. So much has changed that Clayton feels left out.
   *What action would be the most effective for Clayton?*

(1) Nothing – it will sort itself out soon enough.
(2) Tell his family he feels left out.
(3) Spend time listening and getting involved again.
(4) Reflect that relationships can change with time.

6. Daniel has been accepted for a prestigious position in a different country from his family, who he is close to. He and his wife decide it is worth relocating.

*What action would be the most effective for Daniel?*

(1) Realize he shouldn't have applied for the job if he didn't want to leave.
(2) Set up a system for staying in touch, like weekly phone calls or emails.
(3) Think about the great opportunities this change offers.
(4) Don't take the position.

7. Mei Ling answers the phone and hears that close relatives are in hospital critically ill.
*What action would be the most effective for Mei Ling?*

(1) Let herself cry and express emotion for as long as she feels like.
(2) Speak to other family to calm herself and find out what is happening, then visit the hospital.
(3) There is nothing she can do.
(4) Visit the hospital and ask staff about their condition.

8. Upon entering full-time study, Vincent cannot afford the time or money he used to spend on water-polo training, which he was quite good at. Although he enjoys full-time study, he misses training.
*What action would be the most effective for Vincent?*

(1) Concentrate on studying hard, to pass his course.
(2) See if there is a local league or a less expensive and less time-consuming sport.
(3) Think deeply about whether sport or study is more important to him.
(4) Find out about sporting scholarships or bursaries.

9. Greg has just gone back to university after a lapse of several years. He is surrounded by younger students who seem very confident about their ability and he is unsure whether he can compete with them.
*What action would be the most effective for Greg?*

(1) Focus on his life outside the university.
(2) Study hard and attend all lectures.
(3) Talk to others in his situation.
(4) Realize he is better than the younger students as he has more life experience.

10. Shona has not spoken to her nephew for months, whereas when he was younger they were very close. She rings him but he can only talk for five minutes.
*What action would be the most effective for Shona?*

(1) Realize that he is growing up and might not want to spend so much time with his family any more.
(2) Make plans to drop by and visit him in person and have a good chat.
(3) Understand that relationships change, but keep calling him from time to time.
(4) Be upset about it, but realize there is nothing she can do.

11. Joel has always dealt with one particular client but on a very complex job his boss gives the task to a co-worker instead. Joel wonders whether his boss thinks he can't handle the important jobs.
*What action would be the most effective for Joel?*

(1) Believe he is performing well and will be given the next complex job.
(2) Do good work so that he will be given the complex tasks in future.
(3) Ask his boss why the co-worker was given the job.
(4) Not worry about this unless it happens again.

12. Hasina is overseas when she finds out that her father has passed away from an illness he has had for years.

*What action would be the most effective for Hasina?*
(1) Contact her close relatives for information and support.
(2) Try not to think about it, going on with her daily life as best she can.
(3) Feel terrible that she left the country at such a time.
(4) Think deeply about the more profound meaning of this loss.

13. Mina and her sister-in-law normally get along quite well, and the sister-in-law regularly baby-sits for her for a small fee. Lately she has also been cleaning away cobwebs, commenting on the mess, which Mina finds insulting.
*What action would be the most effective for Mina?*
(1) Tell her sister-in-law these comments upset her.
(2) Get a new babysitter.
(3) Be grateful her house is being cleaned for free.
(4) Tell her only to baby-sit, not to clean.

14. Juno is fairly sure his company is going down and his job is under threat. It is a large company and nothing official has been said.
*What action would be the most effective for Juno?*
(1) Find out what is happening and discuss his concerns with his family.
(2) Try to keep the company afloat by working harder.
(3) Start applying for other jobs.
(4) Think of these events as an opportunity for a new start.

15. Mallory moves from a small company to a very large one, where there is little personal contact, which she misses.
*What action would be the most effective for Mallory?*

(1) Talk to her workmates, try to create social contacts and make friends.
(2) Start looking for a new job so she can leave that environment.
(3) Just give it time, and things will be okay.
(4) Concentrate on her outside-work friends and colleagues from previous jobs.

16. Blair and Flynn usually go to a cafe after the working week and chat about what's going on in the company. After Blair's job is moved to a different section in the company, he stops coming to the cafe. Flynn misses these Friday talks.
*What action would be the most effective for Flynn?*
(1) Go to the cafe or socialize with other workers.
(2) Don't worry about it, ignore the changes and let Blair be.
(3) Not talk to Blair again.
(4) Invite Blair again, maybe rescheduling for another time.

17. Michelle's friend Dara is moving overseas to live with her partner. They have been good friends for many years and Dara is unlikely to come back.
*What action would be the most effective for Michelle?*
(1) Forget about Dara.
(2) Spend time with other friends, keeping herself busy.
(3) Think that Dara and her partner will return soon.
(4) Make sure she keeps in contact through email, phone or letter writing.

18. Hannah's access to essential resources has been delayed and her work is way behind schedule. Her progress report makes no mention of the lack of resources.
*What action would be the most effective for Hannah?*
(1) Explain the lack of resources to her boss or to management.

(2) Learn that she should plan ahead for next time.
(3) Document the lack of resources in her progress report.
(4) Don't worry about it.

19. Jacob is having a large family gathering to celebrate him moving into his new home. He wants the day to go smoothly and is a little nervous about it.
    *What action would be the most effective for Jacob?*

(1) Talk to friends or relatives to ease his worries.
(2) Try to calm down, perhaps go for a short walk or meditate.
(3) Prepare ahead of time so he has everything he needs available.
(4) Accept that things aren't going to be perfect but the family will understand.

20. Julie hasn't seen Ka for ages and looks forward to their weekend trip away. However, Ka has changed a lot and Julie finds that she is no longer an interesting companion.
    *What action would be the most effective for Julie?*

(1) Cancel the trip and go home.
(2) Realize that it is time to give up the friendship and move on.
(3) Understand that people change, so move on, but remember the good times.
(4) Concentrate on her other, more rewarding friendships.

# EQ-Short Form Questionnaire

(Wakabayashi et al., 2006)

Indicate to what extent you agree or disagree with the following statements. Please circle the extent of agreement or disagreement (**1 = strongly disagree to 4 = strongly agree**) for each statement.

1= Strongly Disagree 2 = Disagree 3= Agree 4= Strongly Agree

| Item | Strongly disagree | Disagree | Agree | Strongly agree |
|---|---|---|---|---|
| 1. I can easily tell if someone else wants to enter a conversation. | 1 | 2 | 3 | 4 |
| 2. I really enjoy caring for other people. | 1 | 2 | 3 | 4 |
| 3. I find it hard to know what to do in a social situation. | 1 | 2 | 3 | 4 |
| 4. I often find it difficult to judge if something is rude or polite. | 1 | 2 | 3 | 4 |
| 5. In a conversation, I tend to focus on my own thoughts rather than on what my listener might be thinking. | 1 | 2 | 3 | 4 |
| 6. I can pick up quickly if someone says one thing but means another. | 1 | 2 | 3 | 4 |
| 7. It is hard for me to see why some things upset people so much. | 1 | 2 | 3 | 4 |
| 8. I find it easy to put myself in somebody else's shoes. | 1 | 2 | 3 | 4 |
| 9. I am good at predicting how someone will feel. | 1 | 2 | 3 | 4 |
| 10. I am quick to spot when someone in a group is feeling awkward or uncomfortable. | 1 | 2 | 3 | 4 |
| 11. I can't always see why someone should have felt offended by a remark. | 1 | 2 | 3 | 4 |
| 12. I don't tend to find social situations confusing. | 1 | 2 | 3 | 4 |
| 13. Other people tell me I am good at understanding how they are feeling and what they are thinking. | 1 | 2 | 3 | 4 |
| 14. I can easily tell if someone else is interested in or bored by what I am saying. | 1 | 2 | 3 | 4 |
| 14. Friends usually talk to me about their problems as they say that I am very understanding. | 1 | 2 | 3 | 4 |
| 16. I can sense if I am intruding, even if the other person doesn't tell me. | 1 | 2 | 3 | 4 |
| 17. Other people often say that I am insensitive though I don't always understand why. | 1 | 2 | 3 | 4 |
| 18. I can tune in to how someone else feels rapidly and intuitively. | 1 | 2 | 3 | 4 |
| 19. I can easily work out what another person might want to talk about. | 1 | 2 | 3 | 4 |
| 20. I can tell if someone is masking their true emotion. | 1 | 2 | 3 | 4 |
| 21. I am good at predicting what someone will do. | 1 | 2 | 3 | 4 |
| 22. I tend to get emotionally involved with a friend's problems. | 1 | 2 | 3 | 4 |

## Job Involvement Questionnaire

(Kanungo, 1982)

Indicate to what extent you agree or disagree with the following statements. Please circle the extent of agreement or disagreement (**1 = strongly disagree to 6 = strongly agree**) for each statement.

*Scale:*

*l=Strongly Disagree; 2=Disagree; 3=Mildly Disagree; 4=Mildly Agree; 5=Agree; 6=Strongly Agree*

| Item | Strongly disagree | Disagree | Mildly disagree | Mildly agree | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| 1. The most important things that happen to me involve my present job. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. To me, my job is only a small part of who I am. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. I am very much involved personally in my job. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. 1 live, eat, and breathe my job. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Most of my interests are centred around my job. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. I have very strong ties with my present job which would be very difficult to break. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. Usually I feel detached from my job. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Most of my personal life goals are job-oriented. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. **I** consider my job to be **very** central to **my** existence. | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. I like to be absorbed in my job most of the time. | 1 | 2 | 3 | 4 | 5 | 6 |

*This was the last questionnaire to complete.*

*Thank you very much for your time and contribution to this important study!*

**Annexure 2: Questionnaire for patients: Caring Behaviours Inventory (CBI)**

## Demographic data: Patients

14. Hospital sector

| | | | |
|---|---|---|---|
| Public | 1 | Private | 2 |

15. Which unit are you receiving your care? [ ]

16. Sex

| | | | |
|---|---|---|---|
| Female | 1 | Male | 2 |

17. Marital status

| | |
|---|---|
| Single – never married | 1 |
| Married | 2 |
| Living with a partner | 3 |
| Divorced | 4 |
| Widowed | 5 |

18. Your age:

| | |
|---|---|
| > 15 years | 1 |
| 15 – 19 years | 2 |
| 20 - 25 years | 3 |
| 25 – 29 years | 4 |
| 30 – 39 years | 5 |
| 40 - 49 years | 6 |
| 50 – 59 years | 7 |
| 60 – 69 years | 8 |
| <70 years | 9 |

19. Highest academic qualification

| | |
|---|---|
| Adult Basic Education & Training (ABET) | 1 |
| Grade 5/Std 3 or lower | 2 |
| Grade 7/Std 5 | 3 |
| Grade 10/Std 8 | 4 |
| Grade 12/Matric | 5 |
| Certificate | 6 |
| Diploma | 7 |
| Degree | 8 |
| Degree - Masters | 9 |
| Degree - PhD | 10 |

## Caring Behaviours Inventory

(Wu, Larrabee, & Putnam, 2006)

In this questionnaire you will be presented with a few brief statements about way that nurses in this ward provide care to you and other patients. You are asked to choose from six responses and circle the one that best reflect the way that nurses provide the care in the ward where you are.

| Item | Never | Almost never | Seldom | Frequently | Very frequently | Always |
|---|---|---|---|---|---|---|
| 1. Attentively listening to the patient | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Giving instructions to teaching the patient | 1 | 2 | 3 | 4 | 5 | 6 |
| 3.Treating the patient as an individual | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Spending time with the patient | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Supporting the patient | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. Being empathetic or identifying with the patient | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. Helping the patient grow | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Being patient or tireless with the patient | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. Knowing how to give shots, IV's, etc | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Being confident with the patient | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. Demonstrating professional knowledge and skill | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. Managing equipment skilfully | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. Allowing the patient to express feelings about his or her disease and treatment | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. Including the patient in planning his or her care | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. Treating patient information confidentially | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. Returning to the patient voluntarily | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. Talking with the patient | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. Encouraging the patient to call if there are problems | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. Meeting the patient's stated and unstated needs | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. Responding quickly to the patient's call | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. Helping to decrease the patients pain | 1 | 2 | 3 | 4 | 5 | 6 |
| 22. Showing concern for the patient | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. Giving the patient's treatment and medication on time | 1 | 2 | 3 | 4 | 5 | 6 |
| 24. Relieving the patient's symptoms | 1 | 2 | 3 | 4 | 5 | 6 |

***These were the last questions to answer.***

***Thank you very much for your time and contribution to this important study!***

**Annexure 2 Patient questionnaire**

## Demografiese inligting: Pasiente

20. Hospitaal sektor

| | | | |
|---|---|---|---|
| Staat/openbare sektor | **1** | Privaat sektor | **2** |

21. In watter saal word u tans versorg? [ ]

22. Geslag

| | | | |
|---|---|---|---|
| Vroulik | 1 | Manlik | 2 |

23. Huwelik status

| | |
|---|---|
| Enkel – nooit getroud | 1 |
| Getroud | 2 |
| Woon saam met lewensmaat | 3 |
| Geskei | 4 |
| Weduwee/wewenaar | 5 |

24. U ouderdom:

| | |
|---|---|
| 15 – 19 jaar | 2 |
| 20 - 25 jaar | 3 |
| 25 – 29 jaar | 4 |
| 30 – 39 jaar | 5 |
| 40 - 49 jaar | 6 |
| 50 – 59 jaar | 7 |
| 60 – 69 jaar | 8 |
| Ouer as 70 jaar | 9 |

25. Hoogste kwalifikasie:

| | |
|---|---|
| Adult Basic Education & Training (ABET) | 1 |
| Graad 5/Std 3 of minder | 2 |
| Graad 7/Std 5 | 3 |
| Graad 10/Std 8 | 4 |
| Graad 12/Matriek | 5 |
| Sertifikaat | 6 |
| Diploma | 7 |
| Graad | 8 |
| Graad - Meesters | 9 |
| Graad - PhD | 10 |

## Omgee optrede van verpleegkundiges

Hierdie vraelys bevat stellings aangaande verpleegkundiges in die saal waar u is en die versorging wat u en ander pasiënte van hulle ontvang. Kies een van die moontlikhede wat volgens u mening die versorging die beste weergee in die saal waar u tans is.

| Item | Nooit | Amper nooit | Selde | Dikwels | Gereeld | Altyd |
|---|---|---|---|---|---|---|
| 1. Luister aandagtig na die pasiënt | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Gee instruksies en voorligting aan die pasiënt | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Hanteer die pasiënt as ‘n individu | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Spandeer tyd saam met die pasiënt | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Ondersteun die pasiënt | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. Indentifiseer met empatie met die pasiënt | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. Help die pasiënt om te groei en vorder | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Onvermoeide interaksie met die pasiënt | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. Weet hoe om inspuitings, infusies, ens te gee | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Is gemaklik met pasiënte | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. Toon professionele kennis en vaardigheid | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. Vaardig met die gebruik van toerusting | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. Laat pasiënte toe om oor hul gevoelens oor hul siekte en behandeling te praat | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. Sluit die pasiënt in by die beplanning van sy/haar sorg | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. Hanteer pasiënt inligting as vertroulik | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. Kom vrywillig terug na die pasiënt | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. Praat met die pasiënt | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. Moeding pasiënte aan om te roep wanneer hulp nodig is | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. Voldoen aan al die pasiënt se behoeftes, insluitend die wat nie gesê is nie | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. Reageer dadelik as pasiënt hulp nodig het | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. Help om die pasiënt se pyn te verlig | 1 | 2 | 3 | 4 | 5 | 6 |
| 22. Wys pasiënt dat hulle bekommerd is oor hom of haar | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. Gee die pasiënt se behandeling en medikasie betyds | 1 | 2 | 3 | 4 | 5 | 6 |
| 24. Verlig die pasiënt se simptome | 1 | 2 | 3 | 4 | 5 | 6 |

*Dit was die laaste vrae om te beantwoord*

*Baie dankie vir u samewerking en bydrae tot hierdie belangrike studie!*

## Demographic data: Patients

1. Hospital sector – Lefapha la bookelo

| | | | |
|---|---|---|---|
| Public<br>Bja Mmušo | 1 | Private<br>Poraefete | 2 |

2. Which unit are you receiving your care?
O robaditšwe ka otong/uniting ya malwetši afe?

| |
|---|
| |

3. Sex
Bong

| | | | |
|---|---|---|---|
| Female<br>Mosadi | 1 | Male<br>Monna | 2 |

4. Marital status
Tša Nyalo

| | |
|---|---|
| Single – never married<br>Botee – ga ka nyalwa/nyala | 1 |
| Married<br>Ke nyetšwe/nyetše | 2 |
| Living with a partner<br>Ke dula le molekani | 3 |
| Divorced<br>Ke hladile | 4 |
| Widowed<br>Ke hwetšwe | 5 |

5. Your age:
Mengwaga ya gago

| | |
|---|---|
| > 15 years<br>Ka tlase ga 15 | 1 |
| 15 – 19 years<br>mengwaga | 2 |
| 20 - 25 years<br>Mengwaga | 3 |
| 25 – 29 years<br>Mengwaga | 4 |
| 30 – 39 years<br>Mengwaga | 5 |
| 40 - 49 years<br>Mengwaga | 6 |
| 50 – 59 years<br>mengwaga | 7 |
| 60 – 69 years<br>mengwaga | 8 |
| <70 years<br>Go godimo ga | 9 |

6. Highest academic qualification
Thuto yeo o e feditšego

| | |
|---|---|
| Adult Basic Education & Training (ABET)<br>Thuto ya babagolo(ABET) | 1 |
| Grade 5/Std 3 or lower<br>Kreiti ya bohlano/ Mphato wa boraro goba ka tlase | 2 |
| Grade 7/Std 5<br>Kreiti ya bošupa/ Mphato wa bohlano | 3 |
| Grade 10/Std 8<br>Kreiti ya lesome/ Mphato wa borobedi | 4 |
| Grade 12/Matric<br>Kreiti ya lesome - pedi/ Mphato matriki | 5 |
| Certificate<br>Mangwalo/Setifikeiti | 6 |
| Diploma<br>Lengwalo la diploma | 7 |
| Degree<br>Lengwalo la degree | 8 |
| Degree – Masters<br>Lengwalo la Masters | 9 |
| Degree – PhD<br>Lengwalo la PhD | 10 |

## Caring Behaviours Inventory

(Wu, Larrabee, & Putnam, 2006)

In this questionnaire you will be presented with a few brief statements about way that nurses in this ward provide care to you and other patients. You are asked to choose from six responses and circle the one that best reflect the way that nurses provide the care in the ward where you are.

Lenaneopotšišo le le hlagiša mafoko a makopana go nyaka go kwišiša gore naa baoki ka otong yeo o robetšego ka go yona, ba hlokometše bjang balwetši? O kgopelwa go kgetha karabo e tee ka go e direla lešakana go ennwe le enngwe ya dipotšišo tše go hlagiša ka moo o bonago baoki ba hlokometše balwetši ka gona ka moo tong ye o leng ka go yona.

| | |
|---|---|
| **Never – Le gatee/ ga nke ba dira** | **Almost never – Ba nale go diranyana** |
| **Seldom - E se ba go gantši** | **Frequently – Gantši v** |
| **Very frequently - Gantši –ntši** | **Always – Ka nako tšohle** |

| Item | Never | Almost never | Seldom | Frequently | Very frequently | Always |
|---|---|---|---|---|---|---|
| 2. Attentively listening to the patient<br>Ba kwelela ka hloko ge balwetši ba bolela | 1 | 2 | 3 | 4 | 5 | 6 |
| 2.Giving instructions to teaching the patient<br>Ba laela le go ruta molwetši ka tša kalafo | 1 | 2 | 3 | 4 | 5 | 6 |
| 3.Treating the patient as an individual<br>Ba tshwara molwetši bjalo ka motho | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Spending time with the patient<br>Ba ipha nako ya go ba le molwetši | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Supporting the patient<br>Ba segetša molwetši | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. Being empathetic or identifying with the patient<br>Ba ipea seemong sa molwetši e ka ke bona molwetši | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. Helping the patient grow<br>Ba thuša molwetši go gola ka kakanyo | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Being patient or tireless with the patient<br>Ba pelotelele ga ba lape go thuša molwetši | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. Knowing how to give shots, IV's, etc<br>Ba nale tsebo ya go fa dihlare le go hlaba, le tše dingwe | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Being confident with the patient<br>Ba bontšha go itshepa ge ba šoma le molwetši | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. Demonstrating professional knowledge and skill<br>Ba bontšha temogo le tsebo ge ba šoma le molwetši | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. Managing equipment skilfully<br>Ba šomiša ditlabakelo tša go alafa ka tsebo | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. Allowing the patient to express feelings about his or her disease and treatment<br>Ba dumelela molwetši go ntšha maikutlo a gagwe le go bolele ka bolwetši bja gagwe | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. Including the patient in planning his or her care<br>Ba rerišana le molwetši ka kalafo ya gagwe | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. Treating patient information confidentially<br>Ba swara sephiri ka ga ditaba tše mabapi le bolwetši bja gago | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. Returning to the patient voluntarily<br>Ba tla go molwetši ka ntle bobona, ntle le kgapeletšo | 1 | 2 | 3 | 4 | 5 | 6 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 17. Talking with the patient<br>Ba tšea dikgang le molwetši | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. Encouraging the patient to call if there are problems<br>Ba rotloetša molwetši gore a ba bitše ge a na le bothata | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. Meeting the patient's stated and unstated needs<br>Ba fa molwetši seo ba bonago a se hloka, ka nntle le gore a ba kgopele | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. Responding quickly to the patient's call<br>Ba tla ka potlako ge molwetši a ba bitša | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. Helping to decrease the patients pain<br>Ba thuša molwetsi go okobatša dihlabi | 1 | 2 | 3 | 4 | 5 | 6 |
| 22. Showing concern for the patient<br>Ba bontšha go swenyega ka molwetši | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. Giving the patient's treatment and medication on time<br>Ba fa molwetši kalafo le dihlare ka nako | 1 | 2 | 3 | 4 | 5 | 6 |
| 24. Relieving the patient's symptoms<br>Ba thuša molwetši ke a bontšha go se ikwe gabotse | 1 | 2 | 3 | 4 | 5 | 6 |

## Uhla lwendlela yokunakekela

(Wu, Larrabee, & Putnam, 2006)

| Uhla | Akwenzeki nhlobo | Akujwayelekile | Ngesinye isikhathi | Kujwayelekile | Kujwayelekekakhulu | Kwenzeka njalo |
|---|---|---|---|---|---|---|
| 1.Lalelisisa isiguli | 1 | 2 | 3 | 4 | 5 | 6 |
| 2.Fundisa isiguli ngokusinika imiyalo | 1 | 2 | 3 | 4 | 5 | 6 |
| 3.Nakekela isiguli ngokwesidingosaso | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Chitha isikhathi nesiguli | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Yeseka isiguli | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. Ukuzwelana nesiguli noma ukuzibeka esimweni sesiguli | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. Siza isiguli Sikhule | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Ukuba nesineke noma ukubekezelela isiguli | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. Ukwazi ukuthi kujovwa kanjani,emithanjeni | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Ukuzethemba uma unesiguli | 1 | 2 | 3 | 4 | 5 | 6 |
| 11.Khombisa ulwazi lokuqeqesheka ngendlela enekhono | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. Phatha izinsizakusebenza ngekhono | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. Vumela isiguli sisho imizwa yaso ngesifo nangokwelashwa kwaso | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. Bandakanya isiguli ohlelweni lokwelashwa kwaso | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. Gcina ulwazi lwesiguli luyifihlo | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. Zibuyelele esigulini ngaphandle kokuphoqwa | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. Xoxisana nesiguli | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. Qqugquzela isiguli ukuthi sibize uma sinezinkinga | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. Hlangabezana nezidingo zesiguli ezishiwo nezingashiwongo | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. Sabela ngokushesha ekubizweni isiguli | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. Siza ekwehliseni izinhlungu zesiguli | 1 | 2 | 3 | 4 | 5 | 6 |
| 22.Tshengisa ukukhathezeka ngesiguli | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. Nikeza ukwelashwa nemithi esigulini ngesikhathi | 1 | 2 | 3 | 4 | 5 | 6 |
| 24. Dambisa izimpawu zokugula esigulini | 1 | 2 | 3 | 4 | 5 | 6 |

*Ukunakekela: Ukunakekela komhlengikazi kuyindlela yokwenza izinto ngokubonisana okwenzeka ngethuba lokubambisana komhlengikazi neziguli ezingakwazi ukuzisiza*

## Annexure 3: Information sheet and consent form for nurses

Dear Colleague,

**UNDERSTANDING NURSES**

The South African health system is a nurse-based health system challenged by an extensive and changing burden of disease; poor health outcomes, particularly mother and child care, serious shortages of health professionals and a variety of other factors. This is accompanied media reports about poor patient care and cases of malpractice or negligence by all categories of healthcare practitioners, but mostly by nurses and midwives. While scientific literature highlights the system factors contributing to challenging work environments and its impact on service delivery by nurses and midwives, very little information is available about the influence of intrapersonal factors of practitioners on service delivery and their ability to cope under these circumstances. The purpose of this study is therefore to identify and analyse intrapersonal factors of professional nurses that influence the way they practice nursing in order to improve the understanding of practitioners' own influence on their delivery of care in the environments they work.

Your assistance is really important for this study, but we cannot pay you for your participation. However, your name will be put in a lucky draw. Your participation will consist of completing a set of six instruments that will take about 40 minutes. Participation is voluntary and you can withdraw at any stage during this time without any negative consequence by not responding to the invitation to participate or not submitting the questionnaire. However, once you have submitted it, you will not be able to withdraw it as it was completed anonymously. Your responses will be treated in a confidential manner and the questionnaire will be separated from your signed permission. Anonymity is ensured so that your identity and the identity of the institution where you are employed will be kept confidential. The only information requested in the questionnaire that you are requested to complete is some demographic information such as your age, work experience, qualifications, etc; and your workplace only as public or private sector and the unit where you work. Only the researcher will have your name on a list with all the names of participants in the study, but this list cannot be linked to the questionnaires you completed.

Your participation will require some of your time. The benefits would include that you have contributed to a study that will assist all of us to better understand nurses in their work performance. If you would like to discuss this in more detail, please do not hesitate to contact Nelouise Geyer at 012 333 1415 or 082 881 4090. You are also welcome to contact the study supervisor, Prof Leana Uys, UKZN at 082 8251651 Dr Siedine Coetzee, NWU at 018 299 187.

Nelouise Geyer
B Cur (UP), M Cur (UP)
UKZN PhD Student number: 212558769

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I, …… **(full names of participant)** the undersigned hereby agree that I have been informed of the research project and understand the nature of the project and that my participation is voluntary. I understand that I may withdraw at any stage of the research if I so desire until I have submitted the questionnaire without any negative consequences. **I consent to participating in the research project.**

Signed: …… Date: ……..

## Annexure 4: Information and consent form for patients

Dear Patient,

**UNDERSTANDING NURSES**

The South African health system is a nurse-based health system challenged by an extensive and changing burden of disease; poor health outcomes, particularly mother and child care, serious shortages of health professionals and a variety of other factors. This is accompanied by media reports about poor patient care and cases of malpractice or negligence by all categories of healthcare practitioners, but mostly by nurses and midwives. While scientific literature highlights the system factors contributing to challenging work environments and its impact on service delivery by nurses, very little information is available about the influence of intrapersonal factors of practitioners on service delivery and their ability to cope under these circumstances.

**We need your participation**

Your assistance is really important for this study. Your participation will consist of completing a questionnaire that will take about 15 minutes about your experiences at the hospital. Participation is voluntary and you can withdraw at any stage by declining the invitation to participate, not completing or submitting the questionnaire during this time without any negative consequences. However, once you have completed the questionnaire, it will no longer be possible to withdraw because the questionnaire has been completed and submitted anonymously and will not be identifiable. Your responses will be treated in a confidential manner and will be collected by a field worker who is an independent person who is not part of the hospital team. Anonymity is ensured so that your identity and the identity of the institution where you are cared for will be kept confidential. The only information that will be requested on the questionnaire that you complete, is some demographic information such as your age, sex, occupation, etc without your name; and your hospital only as public or private sector and the type of unit where you are being treated.

Your participation will require some of your time but will not limit you in any way. The benefits would include that you have contributed to a study that will assist all of us to better understand nurses in their work performance. If you would like to discuss this in more detail, please do not hesitate to contact Nelouise Geyer at 012 333 1415 or 082 881 4090. You are also welcome to contact the study supervisor, Prof Leana Uys, UKZN at 0828251651 or co-supervisor Dr Siedine Coetzee, NWU at 018 299 1879.

Thank you for taking the time to consider this information on the study.

Nelouise Geyer
B Cur (UP), M Cur (UP)
UKZN PhD Student number: 212558769

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I, …… **(full names of participant)** the undersigned hereby agree that I have been informed of the research project and understand the nature of the project and that my participation is voluntary. I understand that I may withdraw at any stage of the research if I so desire until I have submitted the questionnaire without any negative consequences. **I consent to participating in the research project.**

Signed: …… Date: …….

Beste Pasiënt,

**STUDIE OM VERPLEEGKUNDIGES TE BEGRYP**

Die Suid Afrikaanse gesondheidstelsel is gebaseer op verpleegkundiges en is 'n stelsel met vele uitdagings soos 'n veranderende en uitgebreide siekte profiel (beeld), swak gesondheidsuitkosmte, veral vir moeder en kind dienste, personeel tekorte en ander faktore. Media berigte oor swak gesondheidsorg sluit swak pasiëntsorg en wanpraktyke deur alle tipes gesondheidspersoneel in, maar veral verpleegsters en vroedvroue. Wetenskaplike literatuur voorsien inligting oor die faktore in die werksplek wat die werksprestasie van verpleegkunidges beinvloed maar min is beksikbaar oor die invloed wat intrapersoonlike eiensakppe van verpleegkundiges op hul vermoë het om diens te lewer en onder moeilike omstandighede te werk.

**Ons het u deelname nodig**

U hulp is regtig nodig en belangrik vir hierdie studie. Dit behels dat u die aangehegte vraelys voltooi wat omtrent 15 minute kan neem. U kan te eniger tyd onttrek sonder enige probleme sou u dit so verkies. U antwoorde sal vertroulik behandel word en sal nie aan u naam gekoppel kan word nie. Die vraelyste sal deur 'n onafhanklike persoon gekollekteer word wat nie deel van hospital span is nie. Die identiteit van die hospitaal waar u tans is sal vertroulik gehou word. Die enigste persoonlike inligting wat versoek word is demografiese inligting soos u ouderdom, geslag, beroep en die hospitaal sal slegs as privaat of staat sektor aangedui word en die saal waarin u huidiglik is. Die vraelys word naamloos voltooi en van die toestemmingsbriefie geskei voordat die navorsers die vraelyste in ontvangs neem.

U deelname sal van u tyd in beslag neem maar sal u nie benadeel nie. Die voordele sluit in dat u sal bydra tot 'n studie wat ons sal help om verpleegkundiges beter te verstaan.

Indien u met ons oor die studie wil praat, kan u gerus vir Nelouise Geyer by 012 333 1415 of 082 881 4090 kontak. U kan ook die studieleiers, Prof Leana Uys, UKZN by 0828251651 en Dr Siedine Coetzee, NWU by 018 299 187 kontak.

Weereens baie dankie dat u tyd maak om hierdie inligting deur te lees en dit sal oorweeg om deel te neem.

Nelouise Geyer
B Cur (UP), M Cur (UP)
UKZN PhD Student nommer: 212558769

---

Ek, …… **(volle name van deelnemer)** ondergetekende verklaar dat ek ingelig is oor die navorsingsprojek en die aard van die projek verstaa. Ek verstaan dat my deelname vrywillig is en dat ek te envier tyd kan onttrek van die navorsitng sonder enige negatiewe gevolge totdat die voltooide vorm in gedien is. **Ek gee hiermee toestemming om aan die navorsingsprojek deel te neem.**

Geteken: …… Datum: ……

## Annexure 5: Research project approval from the UKZN Humanities & Social Research Ethics Committee

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

26 March 2013

**Ms Nelouise-Marie Geyer 212558769**
**School of Nursing and Public Health**
**Howard College Campus**

Dear Ms Geyer

**Protocol reference number: HSS/0129/013D**
**Project title: The influence of intrapersonal characteristics of individual nurses on their work performance: A predictive correlational study in a selected province in South Africa**

**EXPEDITED APPROVAL**

I wish to inform you that your application has been granted Full Approval through an expedited review process.

**Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the school/department for a period of 5 years.**

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....
**Professor Steven Collings (Chair)**

**/pm**

cc Supervisor: Professor LR Uys and Dr S Knobloch-Coetzee
cc Academic Leader: Professor Maurice Mars
cc School Admin.: Mrs Caroline Dhanraj

**Professor S Collings (Chair)**
**Humanities & Social Sc Research Ethics Committee**
**Westville Campus, Govan Mbeki Building**
**Postal Address:** Private Bag X54001, Durban, 4000, South Africa
**Telephone:** +27 (0)31 260 3587/8350 **Facsimile:** +27 (0)31 260 4609 **Email:** ximbap@ukzn.ac.za / snymanm@ukzn.ac.za

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

INSPIRING GREATNESS

## Annexure 6: Permission: Central and regional public hospitals

UNIVERSITEIT VAN PRETORI
UNIVERSITY OF PRETORI
YUNIBESITHI YA PRETORI

Faculty of Health Sciences Research Ethics Committee

**24/10/2013**

**Dear Investigator / Study Leader**

The **New Application / Study documents** was reviewed by the members of the Faculty of Health Sciences Research Ethics Committee on the **23 October 2013** and the below mentioned recommendations have been made for the Main Committee meeting of **23 October 2013.**

**Kindly adhere to the following when submitting your amended documents:**

- Cover letter ( X 2) indicating all amendments made (hard copy format only);
- Amended documents:
  - 1 hard copy format plus 1 readable CD (please make sure that the changes are …BOLD, Italic and underline… /or Track changes…) *How to do Track-changes: (Ctrl+Shift+E) (Open the document that need the corrections/ Go to the Toolbar/ Click on Review/ Click on Track Changes / then work on the document and save it: "…with track changes".)*

| | |
|---|---|
| **ETHICS REFERENCE NO. PROTOCOL NUMBER.** | **380/2013** |
| **PRINCIPAL INVESTIGATOR / STUDENT** | **Name & Surname:** Ms: Nelouise Geyer **Dept:** Nursing and Public Health **PhD student:** University of Kwazulu Natal (School of Nursing and Public Health, Private BagX54001, Durban, 4000) Employed at the Nursing Education Association (NEA) |
| **TITLE OF RESEARCH PROJECT** | The influence of intrapersonal characteristics of individual nurses on their work performance: a predictive correlational study in a selected province in South Africa |
| **CORRESPONDENCE TO BE SENT TO** | Nelouise Geyer **E-mail:** ceo.nea@edunurse.co.za **Dept:** Nursing Education Association (NEA) |
| **SUB INVESTIGATOR/S** IF APPLICABLE | Not Applicable |
| **STUDY COORDINATOR** IF APPLICABLE | Not Applicable |
| **SUPERVISOR** IF APPLICABLE | Prof Leana R Uys, UKZN; Dr Siedine Coetzee, NWU (c0-supervisor) **E-mail:** UYS@ukzn.ac.za / leanauysr@gmail.com Siedine.Knobloch@nwu.ac.za |
| **DEGREE PURPOSES** | PhD |
| **DURATION OF STUDY** | **Start date:** Jan.2011 **End date:** Dec. 2014 **Duration:** 3 years |
| **DOCUMENTS SUBMITTED AT OFFICES of the RESEARCH ETHICS COMMITTEE** | Date: 16/09/2013 |
| **MEETING DATE** (anticipated) | 16 & 23 October 2013 |

**Minutes of meeting 23 October 2013**

- Outstanding queries have been addressed and handed in.
- Conditionally approved if researcher changes the data storage period data to 15 years.
- Approval can then be given for 3 years.
- Votes 16/16

**Yours sincerely**

**DR R SOMMERS;** MBChB; MMed(Int); MPharmMed.
Deputy Chairperson of the Faculty of Health Sciences Research Ethics Committee
University of Pretoria

☎ 012 354 1677 0866516047 fhsethics@up.ac.za http://www.healthethics-up.co.za
✉ Private Bag X323, Arcadia, 0007 - 31 Bophelo Road, HW Snyman South Building, Level 2, Room 2.33, Gezina, Pretoria

[redacted] Hospital

**Declaration of intent from the clinic manager or hospital CEO**

I give preliminary permission to Nelouise-Marie Geyer to do her research on (research topic): ***The influence of intrapersonal characteristics of individual nurses on their work performance: a predictive correlational study in a selected province in South Africa***

at the [redacted] Hospital (name of hospital).

I know that the final approval will be from the University of Pretoria Research Committee and that this is only to indicate that the clinic/hospital is willing to assist.

Other comments or conditions prescribed by the clinic or CHC manager or hospital CEO:

[redacted]

Signature

Clinic Manager/CHC Manager/CEO

DR. TAE KEMOSHI
CHIEF EXECUTIVE OFFICER
[redacted] HOSPITAL

31/10/2013

Date

GAUTENG PROVINCIAL GOVERNMENT
DEPARTMENT OF HEALTH
[redacted] HOSPITAL
2013 -10- 31
PRIVATE BAG X 169 PRETORIA 0001
GAUTENG PROVINCIAL GOVERNMENT
DEPARTMENT OF HEALTH

## Annexure 7: Permission: District public hospitals

**GAUTENG PROVINCE**
HEALTH
REPUBLIC OF SOUTH AFRICA

*Kuyasheshwa! Gauteng Working Better*

427 Hilda Street, The Fields Building, Pretoria 0001 South Africa. Tel: +27 12 451 9000 Fax: +27 12 451 9125
Enquiries: Dr. K. E. Letebele-Hartell.
e-mail: Manei.Letebele@gauteng.gov.za

**TSHWANE RESEARCH COMMITTEE**

**CLEARANCE CERTIFICATE**

**Meeting Date: 31st July 2013**

**PROJECT NUMBER: 32/2013**

**Title: The influence of intrapersonal characteristics of individual nurses on their work performance: a predictive correlational study in a selected province in South Africa**

**Researcher: Nelouise Geyer**
**Supervisor: Prof L R Uys**
**Co-Supervisor: Dr S Coetzee**
**Department: School of Nursing and Public Health, University of KwaZulu Natal**

**DECISION OF THE COMMITTEE**

**Approved**

***NB: THIS OFFICE REQUESTED A FULL REPORT ON THE OUTCOME OF THE RESEARCH DONE***

**Date: 1st August 2013**

.....
**Dr. K.E Letebele-Hartell**
**Chairperson Tshwane Research Committee**
**Tshwane District**

.....
**Mrs. M Morewane**
**Acting Chief Director: District Health Services Support**
**Tshwane District**

NOTE: Resubmission of the protocol by researcher(s) is required if there is departure from the protocol procedures as approved by the committee.

COMMISSIONER OF OATHS

**Annexure 1**

**Declaration of intent from the clinic manager or hospital CEO**

I give preliminary permission to Nelouise Geyer (name of researcher) to do his or her research on The influence of intrapersonal characteristics (research topic) in of indiv. nurses on their work performance: ~~(name of clinic) or~~ A Predictive correlation study in a selected province in South Africa ~~(name of CHC) or~~ [redacted] Hospital (name of hospital).

I know that the final approval will be from the Tshwane Research Committee and that this is only to indicate that the clinic/hospital is willing to assist.

Other comments or conditions prescribed by the clinic or CHC manager or hospital CEO:

Approval from UKZN is attached.

Signature
Clinic Manager/CHC Manager/CEO

01/07/2013
Date

[redacted] Hospital
Private Bag X179
PRETORIA 0001
2013 -07- 01
[redacted] Hospitaal
Privaatsak X179
PRETORIA 0001

COMMISSIONER OF OATHS

**Annexure 1**

**Declaration of intent from the clinic manager or hospital CEO**

I give preliminary permission to Nebuise Geyer (name of researcher) to do ~~his or~~ her research on The influence of intrapersonal characteristics of individual nurses on their work performance: a predictive ~~study~~ correlational study in a selected province in South Africa. (research topic) in N/A. (name of clinic) or

N/A. (name of CHC ) or

[redacted] hospital. (name of hospital).

I know that the final approval will be from the Tshwane Research Committee and that this is only to indicate that the clinic/hospital is willing to assist.

Other comments or conditions prescribed by the clinic or CHC manager or hospital CEO:

(H. Steyn)
Signature
Clinic Manager/CHC Manager/CEO Acting.

5/7/2013.
Date

GAUTENG
PROVINSIALE ADMINISTRASIE
2013 -07- 09
[redacted] HOSPITAAL
[redacted]

**Annexure 1**

**Declaration of intent from the clinic manager or hospital CEO**

I give preliminary permission to Nelouise-Marie Geyer (name of researcher) to do his or her

research on **The influence of intrapersonal characteristics of individual nurses on their work performance: a predictive correlational study in a selected province in South Africa** (research topic) in

_____ (name of clinic) or

_____ (name of CHC ) or

_____ Hospital _____ (name of hospital).

I know that the final approval will be from the Tshwane/Metsweding Regional Research Ethics Committee and that this is only to indicate that the ~~clinic~~/hospital is willing to assist.

Other comments or conditions prescribed by the clinic or CHC manager or hospital CEO:

NB. Recommended on condition that the findings will be made available to the hospital.

FMlehana ACTING CEO

Signature
Clinic Manager/CHC Manager/CEO

2013/07/30

Date

## Annexure 8: Permission: Private hospitals

**RESEARCH OPERATIONAL COMMITTEE FINAL APPROVAL OF RESEARCH**

Approval number: UNIV-2013-0023

Mrs N Geyer

E mail: ceo.nea@edunurse.co.za

Dear Mrs N Geyer

**RE: THE INFLUENCE OF INTERPERSONAL CHARACTERISTICS OF INDIVIDUAL NURSES ON THEIR WORK PERFORMANCE: A PREDICTIVE CORRELATION STUDY IN SELECTED PROVINCES IN SOUTH AFRICA**

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

i) Research may now commence with this FINAL APPROVAL from the Committee.

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

iii) Company's name will not be mentioned without written consent from the 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) Company 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 as well as a FINAL REPORT with

reference 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 Company once it is finally approved by the tertiary institution, or once complete.

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

xi) Company 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.

xii) APPROVAL IS VALID FOR A PERIOD OF 36 MONTHS FROM DATE OF THIS LETTER.

We wish you success in your research.

Yours faithfully

Prof Dion du Plessis
Full member: Research Operational Committee & Medical Practitioner evaluating research applications as per Company Policy

Shannon Nell
Chairperson: Research Operational Committee
**Date:** 12/8/2013

This letter has been anonymised to ensure confidentiality in the research report. The original letter is available with author of research

You're in safe hands

NETCATRE [ ] HOSPITAL

**Instructions: Please copy content onto hospital/site/division letter head**

**LETTER CONFIRMING KNOWLEDGE OF NON-TRIAL RESEARCH TO BE CONDUCTED IN THIS NETCARE FACILITY**

Dear **NELOUISE GEYER** (Name of applicant)

**Re**: **APPLICATION TO CONDUCT NON-TRIAL RESEARCH IN A NETCARE FACILITY**
(Title of research)

We hereby confirm knowledge of the above named research application to be made to the Netcare Research Operational Committee and in principle agree to the research application for **NETCARE** [ ] **HOSPITAL** hospital/site/division, subject to the following:

1. That the data collection may not commence prior to receipt of FINAL APPROVAL from the Sustainability Committee of Netcare (Research Operational Committee).
2. A copy of the research report will be provided to Netcare Research Operational Committee once it is finally approved by the tertiary institution, or once complete.
3. Netcare has the right to implement any Best Practice recommendations from the research.
4. That the Hospital/Site/Division Management 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

2013/07/02

**Signed by Hospital/Site/Division Management** **Date**

NURSING SERVICES MANAGER

**(Specify designation)**

Tel: +27 (0) 12 677 8000
Fax: +27 (0) 12 664 6225
Clifton Avenue, Lyttelton, Centurion, South Africa
PO Box 15123, Lyttelton, Centurion, 0140, South Africa
www.netcare.co.za

4 July 2013

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

Dear Ms Nelouise-Marie Geyer,

THE INFLUENCE OF INTERPERSONAL CHARACTERISTICS OF INDIVIDUAL NURSES ON THEIR WORK PERFORMANCE: A PREDICTIVE CORRELATIONAL STUDY IN A SELECTED PROVINCE IN SOUTH AFRICA

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

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

iv) That the Hospital Management 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

**Hospital Manager**

4/7/13
**Date**

**Netcare Hospitals (Pty) Ltd T/A Netcare Unitas Hospital**
**Directors:**
J Du Plessis, R H Friedland, K N Gibson, I Soomra
**Company Secretary:** L Bagwandeen **Reg. No.** 1996/006591/07

Netcare [redacted] Hospital

[redacted]

www.netcare.co.za

**LETTER CONFIRMING KNOWLEDGE OF NON-TRIAL RESEARCH TO BE CONDUCTED IN THIS NETCARE FACILITY**

Dear Nelouise-Marie Geyer__(Name of applicant)

**Re __CONFIRMING KNOWLEDGE OF NON-TRIAL RESEARCH TO BE CONDUCTED AT NETCARE HOSPITAL _____**

Title of research: _____*The influence of intrapersonal characteristics of individual nurses on their work performance: a predictive correlational study in a selected province in SA*____

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

1. That the data collection may not commence prior to receipt of FINAL APPROVAL from the Sustainability Committee of Netcare (Research Operational Committee).
2. A copy of the research report will be provided to Netcare Research Operational Committee once it is finally approved by the tertiary institution, or once complete.
3. Netcare has the right to implement any Best Practice recommendations from the research.
4. That the Hospital/Site/Division Management 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

_____ 2013/07/29

**Signed by Hospital/Site/Division Management** **Date**

NETCARE [redacted] HOSPITAL MANAGER.

**(Specify designation)**

Life Healthcare Head Office
Oxford Manor, 21 Chaplin Road, Illovo 2196
Private Bag X13, Northlands 2116, South Africa
Telephone: +27 11 219 9000
Telefax: +27 11 219 9001
www.lifehealthcare.co.za

Life Healthcare group (Pty) LTD is registered as a
Private Higher Education College with the DHET.
Registration number: 2008/HEO7/003

21 August 2013

ATTENTION: N GEYER

**APPROVAL FOR RESEARCH STUDY**
**TITLE: The influence of intrapersonal characteristics of individual nurses on their work performance: a predictive correlation study in a selected province in South Africa.**

Our previous correspondence refers.

The Research Committee of the Life Healthcare College of Learning has granted permission for your study.

We look forward to seeing the results of your research once it is completed.

Yours sincerely

**Anne Roodt**
**Nursing Education Specialist**

Life Healthcare Group (Proprietary) Limited
Reg. no. 2003/024367/07 Registered address Oxford Manor, 21 Chaplin Road, Illovo 2196, Private Bag X13, Northlands 2116
Directors: Prof GJ Gerwel (Chairman), CMD Flemming (Managing Director), RJ Hogarth (Financial Director),
MA Brey, Dr MP Ngatane, GC Solomon

## Annexure 9 Permission for the use of the NPVS-R

July 12, 2013

Nelouise Geyer
Chief Executive Officer (NEA)
1177 Woodlands Drive PO Box 35763
Queenswood Menlo Park
Pretoria Pretoria
0186 0102

Dear Ms. Geyer:

Thank you for your interest in our work on professional values.

An abstract, as well as The Nurses Professional Values Scale (NPVS-R) are enclosed. You have our permission to use the NPVS-R in your proposed research. We are requesting persons who use the NPVS-R to provide the following at the completion of the research:

> An abstract of your research findings using the NPVS-R which includes a description of the sample.

Our most recent publication regarding the NPVS-R can be found in the *Journal of Nursing Measurement*:

Weis, D., & Schank, M.J. (2009). Development and Psychometric Evaluation of the Nurses Professional Values Scale—Revised. Journal of Nursing Measurement, 17(3), 221-231.

Best wishes for success with your research.

Sincerely,

Darlene Weis, PhD, RN
Associate Professor
414-288-3819
414-288-1597 (fax)
darlene.weis@marquette.edu

Mary Jane Schank, PhD, RN
Professor Emeritus
414-288-3858
414-288-1597 (fax)
maryjane.schank@marquette.edu

DW/MJS:bja

**From:** Carolyn Maccann [mailto:carolyn.maccann@sydney.edu.au]
**Sent:** 31 March 2014 01:03 AM
**To:** Nelouise Geyer
**Cc:** Nelouise Geyer; RRoberts@ETS.ORG
**Subject:** RE: STEM scoring rubric/key

Hi Nelouise (Cc Richard),

Please see attached the tests and scoring protocol (SPSS syntax).

Note that we have also now developed short versions of the STEU and STEM. These can be used if time is limited, but are not as reliable as the full forms.

If you do decide to use the STEU and STEM in your research, we would appreciate it if you could send us files of the de-identified item responses with basic demographic information (sex, age) for our master file.

Yours sincerely

Carolyn MacCann

**Carolyn MacCann** | Senior Lecturer
School of Psychology | Faculty of Science

**THE UNIVERSITY OF SYDNEY**
449, Brennan MacCallum Building | The University of Sydney | NSW | 2006
**T** +61 2 9351 4236 | **F** +61 2 9036 5223
**E** **carolyn.maccann@sydney.edu.au** | **W** **http://sydney.edu.au/science/psychology/staff/carolynm**

Citations: http://scholar.google.com/citations?user=a0-QcY4AAAAJ&hl=en

CRICOS 00026A
This email plus any attachments to it are confidential. Any unauthorised use is strictly prohibited. If you receive this email in error, please delete it and any attachments.
**Please think of our environment and only print this e-mail if necessary**

Enclosures (3)