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Nurses' and physicians' attitudes toward physician-nurse collaboration in private hospital critical care units.

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CHAPTER 1

INTRODUCTION

1.0 BACKGROUND TO THE STUDY

Mitchell, Shannon, Cain & Hegyvary (1996) characterised the Critical Care Unit as being unpredictable, uncertain and variable which required that the physician stay close at hand. The increasing complexities of needs of the critically ill patient necessitate an increase in the demand for effective physician- nurse collaboration (Baggs, Schmitt & Muslin, 1999).

It is known that the care of a patient in the Critical Care Unit is multidimensional and collaboration needs to exist between all members of the team. Mckay and Crippen (2008) have emphasized the need for collaborative high quality patient care in the complex specialty of Critical Care. This collaboration involves the recognition and appreciation of each team member's role and how it contributes towards a common purpose (Yildirim, Ates & Akinci, 2005).

In South Africa there is a dire shortage of Professional and Enrolled Nurses. According to Williams and Clarke in 2001, the ideal nurse-to-bed ratio for Critical Care beds is 6.7 nurses to1 critical care bed. In 2010 the South African nurse-to-bed ratio in the Critical Care setting was 1.1:1. (Klopper, Coetzee, Pretorius, & Bester, 2012). This emphasises the urgent need to attract and retain quality nursing personnel into the profession and into the critical care environment.

This study seeks to elicit both the nurses' and physicians' attitudes towards physician-nurse collaboration in the Critical Care Unit as well as to identify the perceptions of both the nurse and the physician on constraints to collaboration and facilitators to collaboration. Collaboration has been identified as being a

major role player in the formation of positive practice environments which in turn have been shown to retain and attract nursing personnel, (Baumann, 2007).

Physician-Nurse collaboration has been examined for decades. In 1985 Weiss and Davis defined collaboration as "the interactions between nurse and physician that enable the knowledge and skills of both professions to synergistically influence the patient care provided" (p. 299).

The patient benefit of effective physician-nurse collaboration is well documented. This includes better patient outcomes (Bags, Schmitt, Muslin, Mitchell, Eldrege, Oaks & Huston, 1999), decreased mortality (Aiken, Clark, Sloane, Sochalski, & Huber, 2002), improved patient care and economy of decision making (Schmalenberg, Krammer, King, Krugman, Lund & Poduska, 2005), and lower morbidity rates (Tschannen & Kalisch, 2009).

The organizational benefits of effective physician-nurse collaboration have also been stressed. Physician-nurse collaboration is a pivotal role player in the creation of a healthy work environment (Pinkerton, 2005; Stein-Parbury & Liaschenko, 2007; Shirey & Fischer, 2008, Kuehn, 2010; Kramer, Maguire, & Brewew, 2011). And in turn, a healthy work environment has been directly linked to the retention of high quality nursing staff in a hospital setting (Nelson, King & Brodine, 2008; Mays, Hrabe & Stevens, 2011; Ritter, 2011).

In the United States it is suggested that 10 – 30% of new registered nurses leave their positions within 1 to 2 years (James & Gates, 2007). Given that trend, it is expected that in the State of California there will be a registered nurse shortage of 29% of the entire nursing population by the year 2020 (Lin, Juraschek, Xu, Jones & Turek, 2008).

In South Africa 3000 nurses enter the profession annually, it is anticipated that this number needs to increase to 13 000 by the end of 2012 in order to address the health care needs as 45 646 nurses will be retiring in the next 10 years (Jooste & Jasper, 2012). The South African health care needs are multifaceted. Increasing population numbers put a tremendous strain on the health care system, as does the co-morbidities of the South African population. These include chronic illnesses such as obesity, type

II diabetes, hypertension, HIV/AIDS, and acute illnesses including tuberculosis and other infectious diseases. The prevalence of violence is a constant threat affecting all South Africans.

Despite the well validated benefits of effective physician-nurse collaboration, it has been found that the relationship between physicians and nurses has not changed over time (Nelson, King 2008). In 2005, Gardener asserted that collaboration was seldom practiced and in 2010, Hughes & Fitzpatrick stated that a collaborative practice model was the exception rather than the dominant norm.

South Africa has a dual health care system, a public and a private system. The public health care system cares for approximately 80% of the population and accounts for 40% of the total health expenditure. The public health care system is available to all South Africans but mainly services the impoverished. The private health care system on the other hand services middle to high income earners, services about 20% of the population and accounts for 60% of the health expenditure (Pillay, 2009). The private health care system in South Africa is run by three main competitor hospital groups.

Collaboration in the private health sector faces many challenges which include poor communication skills, interpersonal conflicts, lack of role clarification, perceived hierarchal boundaries, gender, language, educational and cultural barriers (Fewste-Thuente & Velsor-Friedrich, 2008).

Studies that have examined the attitudes of nurses and physicians to collaboration have yielded varying results. Nurses seem to demonstrate a more positive attitude towards collaboration than physicians (Sayeed & Sleem, 2011), however it has been shown that nurses withdraw during ward rounds and that staff nurses (registered nurses) interact well with nurse specialists but not with physicians (Hill, 2003; Vazirani, Hays, & Shapiro, 2005). Even though it has been demonstrated that physicians in general display a more negative attitude towards physician-nurse collaboration it has been noted that physicians in the public sector and those in large practices have a slightly more positive attitude than those in private practice (Street & Cossman, 2010).

1.2 PROBLEM STATEMENT

Collaboration between health care providers is essential in contributing towards a better patient outcome, a healthy work environment and can decrease institutional costs. Effective physician-nurse collaboration is however not the norm. In the complex and challenging environment of the Critical Care Unit, team work is vital and the absence of effective collaboration could result in negative patient outcomes and hinder the development of a healthy work environment which is essential for staff retention.

International studies looking at the attitudes of both nurses and physicians with regards to physician-nurse collaboration have been done. No studies have been conducted with the specific purpose of exploring the attitudes of nurses and physicians in the Critical Care Units of private hospitals in Johannesburg, South Africa. This study will explore these attitudes.

1.3 RESEARCH QUESTIONS

- What are nurses' and physicians' attitudes regarding collaboration in the Critical Care Units in privately owned hospitals?
- What do nurses' and physicians' perceive as constraints and facilitators of physician-nurse collaboration in the Critical Care Units?
- What measures can nurses' and physicians' recommend to enhance collaboration in the Critical Care Unit?

1.4 PURPOSE OF THE STUDY

The purpose of the study is to describe nurses' and physicians' attitudes towards physician-nurse collaboration and to elicit their recommendations on how to enhance this collaboration within the Critical Care Units of three private sector hospitals in Johannesburg.

1.5 RESEARCH OBJECTIVES

- To elicit nurses' and physicians' attitudes towards collaboration in the Critical Care Unit.
- To identify factors which facilitate and/or constrain effective physician-nurse collaboration in the Critical Care Units.
- To elicit recommendations for enhancing physician nurse collaboration in the Critical Care Unit.

1.6 SIGNIFICANCE OF THE STUDY

This study will examine and describe both the nurses and the physicians' attitudes toward collaboration within the critical care environment. It is hoped that the complexities of this collaborative relationship will be better understood through exploring the perceived facilitators and constraints of this relationship. Once published, it is hoped that the study will assist all health team members of the critical care unit to better understand the need for collaboration and to provide these team members with tools to assist them in developing collaborative practices. In addition, it is hoped that the study will be of assistance to nursing managers in the creation of healthy work environments, as collaboration is a pivotal role player in the creation of such environments. I feel that this is of particular importance in South Africa where there is a severe shortage of skilled critical care nursing personnel and the retention of skilled critical care nurses is vital to positive patient outcomes .

1.7 OPERATIONAL DEFINIFTIONS

Attitudes: Refers to the outlooks, opinions and approaches to the understanding of a concept.

Nurses: A person who is registered with the South African Nursing Council as a Professional Nurse or Enrolled Nurse and who is permanently employed

	in the Adult Critical Care Units of the three privately administered hospitals to be used as research sites.
Physician:	A person who is registered with the Health Professions Council of South Africa as a Medical Practitioner and licensed to practice medicine. In this study, the term refers to a person who is an admitting or treating doctor in the Adult Critical Care Units of the three privately administered hospitals to be used as research sites.
Collaboration:	Nurses' and physicians' cooperatively working together in the Critical Care Unit discussing patients care plans, identifying, discussing and solving patient problems, shared planning and goal setting, developing a relationship based on mutual respect and trust.
Critical Care Unit:	A specific area where patients are admitted for close observation and receive specialized care and treatment of actual or potential problems.

1.8 OVERVIEW OF RESEARCH METHODOLOGY

The study protocol was approved by the Faculty of Health Sciences Post Graduate Committee and ethical clearance was granted by the Human Ethics Research Committee (Medical) of the University of the Witwatersrand. The ethical clearance number is **M120624**.

The study population consisted of physicians (N=65) and nurses (N=90) working in the critical care units of three private hospitals in Johannesburg. The nursing population was restricted to Professional Nurses and Enrolled Nurses. The Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration was used to collect the data. This is a four point Likert scale comprising 15 statements. Additional demographic information was requested from both the nurses and physicians, and additional questions were asked at

the end of the 15 statements to cover the research objectives. Statistical assistance was sought from a statistician at Data Management & Statistical Analysis.

1.9 PILOT STUDY

A pilot study was carried out preceding the main study. It consisted of a small scale simulation of the main study. Five nurses and five physicians from similar environments as the research sites took part in the pilot study during the month of February 2013. The results of the pilot study have been excluded from the main study. The purpose of the pilot study was to ensure feasibility of the study by ensuring that the questions were clearly understood prior to commencement of the main study April 2013.

1.10 ETHICAL CONSIDERTIONS

Research requires knowledgeable expertise, diligence, honesty and integrity (Burns & Grove, 2005). It is essential to lay down evidenced bases for practice. However, the rights of participants must always be protected and research misconduct avoided. The following ethical considerations have been applied for this study:

- The protocol was submitted to the Department of Nursing Education at the University of the Witwatersrand for review and to assess feasibility.
- The protocol was submitted to the Faculty of Health Sciences Post Graduate Committee at the University of the Witwatersrand for approval and a clearance certificate was awarded, (Appendix E).
- The protocol was submitted to the Human Ethics Research Committee (Medical) of the University of the Witwatersrand for ethical clearance to conduct the study and a clearance certificated number **M120624** was awarded, (Appendix F).

- Application was made to the Hospital Managers of the private institutions requesting permission to conduct the research at their hospitals and permission was granted, (Appendix G, Appenidx H & Appendix I).
- To ensure anonymity and confidentiality, no names or any other identifying details were required or used during data collection and reporting. Completed questionnaires were posted anonymously into a pre sealed box. Completing the questionnaire was taken to indicate consent.
- Participants were able to withdraw from the study at any time up to the posting of the questionnaire without any repercussions.
- An information letter accompanied each data collection tool detailing the purpose of the study. The letter contained my contact details should the participants have had any queries, (Appendix A).
- Findings of the study have been made available to the participants and the management of the three private hospitals in the form of a report.

1.11 FINANCIAL CONSIDERATIONS

All costs incurred during conduction and completion of the study has been carried by the researcher.

1.12 SUMMARY

In this chapter a background of the study has been presented. The problem statement, purpose and significance of the study as well as the study objectives have been detailed. Applicable definitions were defined and an overview of the methodology used in the study was presented. The necessary ethical considerations as applied to the study have also been well described. In the following chapter a detailed review of the literature related to physician-nurse collaboration is presented.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The nature of research, according to Burns & Grove (2005), is the process of building on previous acquired knowledge and identifying links between new and existing knowledge through the review of prior research on a specific topic.

In this chapter literature pertaining to various aspects of this study will be examined. A closer look at physician-nurse collaboration will be presented. Healthy work environments, also termed positive practice environment, and the nursing reality in South Africa will be unpacked and the interconnecting thread of collaboration will be demonstrated.

2.2 PHYSICIAN-NURSE COLLABOARTAION

Physician-nurse collaboration has been examined for decades. In 1985 Weiss and Davis defined collaboration as "the interactions between nurse and physician that enable the knowledge and skills of both professions to synergistically influence the patient care provided" (p. 299).

Yildirim, Ates, & Akinci in 2005 stated that collaboration involves the recognition and appreciation of each team member's role, and how that role contributes towards a common purpose. This is especially true when referring to the critical care unit which, by its nature, is a multidimensional complex speciality.

It has been emphasised that there is a need for high quality collaboration to facilitate appropriate patient care within this environment (McKay & Crippen, 2008).

2.2.1 Physician and Nurse Attitudes toward Collaboration

When reviewing the literature, there is evidence to support the belief that nurses have a more positive attitude towards physician-nurse collaboration and there is also evidence to support the opposite, that physicians have a more positive attitude towards physician-nurse collaboration. In addition there is evidence to support the theory that there has been a significant move towards a more collegial relationship between the two professions paving a pathway toward true collaborative professional partnerships.

In 2007, Sterchi surveyed 137 nurses and physicians in a Midwestern metropolitan community hospital. Sterchi found that overall, nurses attitudes toward physician-nurse collaboration was significantly higher than that of physicians. Her study did reveal that the length of experience of each group had a surprising influence on their scoring. Nurses' attitudes towards collaboration became less positive with years of experience. This, Sterchi believed, was due to the conflict faced by nurses from physicians when they attempted to demonstrate actions of autonomy and involvement with decision making and policy. In contrast, the physicians' attitudes towards collaboration became more positive with years of service. This was due to the physicians initially having a very limited knowledge on the nurses role and this adversely affected their ability to visualise a collaborative practice. This is supported by McDonald & Katz (2002).

Hughes & Fitzpatrick depicted similar results when they evaluated the attitudes of nurses and physicians towards collaboration in an acute care community hospital in Cleveland, in 2010. Both groups had a positive attitude towards collaboration but the nurses attitude was significantly more positive. This was in particular relation to two factors namely, shared education and physician autonomy.

In 2011, the positive attitude toward collaboration by nurses was demonstrated in an Egyptian study conducted by Sayeed and Sleem. A total of 135 staff from the medical and general surgical wards took part in the study. Even though the attitudes of the nurses were more positive towards collaboration than that of the physicians, Sayeed and Sleem noted that collaboration was rare when a wide difference in power existed between the two groups. Factors such as tradition, subordination of nurses to physicians, socialisation, sexism and the apprenticeship model of nursing education affected the attitudes of physicians and nurses. Here, a hierarchical model of health care is the norm.

Studies demonstrating that physicians have a more positive attitude toward collaboration than nurses are available in the literature.

In 1994, King & Lee measured perceptions of collaborative practice in a critical care unit of a United Kingdom Military Navy Hospital. Although similar to previous studies, this study was unique due to the military ranking structure which is based on length of service. This meant that a senior ranking nurse could work alongside a junior ranking physician. Despite this ranking structure, the study outcomes showed that physicians perceived collaborative practice to exist to a greater extent than nurses. The difference was statistically significant.

A study in 2003 showed that physicians were more satisfied with physician-nurse collaboration than nurses. The study covered six Texan Hospitals and included 90 Physicians and 230 nurses. Nurses related the collaboration with other nurses as very high and physicians rated the collaboration with other physicians as very high. However, nurses rated collaboration with physicians as very low. In contrast physicians rated collaboration with nurses as very high. Overall, physicians appeared more satisfied with collaboration than nurses (Thomas, Sexton & Helmreich).

Later in 2007, Hamric & Blackhall published a study set in fourteen critical care units of Virginia. 29 physicians and 196 registered nurses participated in the study. The study revealed that physicians had a higher level of collaboration than nurses and were more satisfied with the overall quality of care in their units than were nurses.

Large cross cultural studies have been undertaken to compare the attitudes of physicians and nurses toward physician-curse collaboration. Hojat, Nasca & Cohen (2001) looked at collaboration between physician and nurses from the United States and Mexico in 2001. Outcomes showed that both physicians and nurses from the United States had a more positive attitude toward collaboration than the physicians and nurses from Mexico, but that nurses in both the United States and Mexico had a more positive attitude toward collaboration than physicians overall. It was concluded from this study that social learning and culture played a major role in determining collaboration. Two years later on 2003 Hojat et al undertook another cross cultural study of physician-nurse collaboration covering America, Israel, Italy and Mexico. Again, social learning and cultural factors were displayed as important in forming attitudes toward physician-nurse collaboration. In Italy and Mexico where a hierarchical model of professional roles is practiced, there was a less positive attitude toward collaboration. In America and Israel, where a complementary model of professional roles is practiced, there was a more positive attitude toward collaboration.

There seems to be a documented trend showing an improvement in the collaboration between nurses and physicians. Weller, Barrow & Gasquoine (2011), examined inter-professional collaboration between junior doctors and nurses in the hospital setting. They found that junior members of the health team were vividly aware of the value of sharing information and recognised their interdependency in making good health care decisions. Furthermore, it was indicative that doctors and nurses saw themselves as having complimentary and non-competitive roles in patient care. Also, Schneider wrote that more collegial relationships are developing, particularly in places where team work is crucial for positive patient

outcomes in complex settings such as the Intensive Care Unit (2012). However Nelson, in 2008, found that there was not much change in physician-nurse collaboration and that perceptions and attitudes to such collaboration were low to moderate, and in addition, Thomson (2007) found that there was no statistically significant difference in the attitudes of nurses or physicians toward collaboration in a medical-surgical setting. She attributed this to the average ages of the study participants indicating they were born of the same generation, a generation where equality of the sexes both in the work and the home environment had been a prominent issue.

2.2.2 Significance of Effective Physician-Nurse Collaboration

In the health care industry the patient should be the focus of attention and all actions should be directed towards the patient's best interests. As far back as the 1980's effective collaboration has been demonstrated to improve patient outcomes, increase patient satisfaction (Knaus, Draper, Wagner & Zimmerman, 1986; Bags, Ryan, Phelps, Richardson, & Johnson, 1992; Schmalenberg et al, 2005) and lower morbidity and mortality rates (Aiken et al, 2002).

A positive correlation between effective collaboration and patient length of stay has been extensively studied. A significant decrease in patient length of stay was reported from units that practiced daily collaboration between nurses and physicians in regards to patient care (Aiken et al, 2001; Naraisumhan, Eisert, Mahoney, Acerra, & Rosen, 2006). In 2008, Tschannen & Kalisch found that physician nurse collaboration resulted in an increase in patient length of stay, but prevented complications that may otherwise have gone untreated.

Throughout the world a large part of the healthcare industry has become profit seeking. In South Africa a dual health care system exists: the public health care system and the private health care system. In the private sector three major health care groups dominate the industry. With the expected arrival of the

National Health Insurance in 2014, it is important to acknowledge that collaboration decreases organisational costs thus increases the profit margin (Schmalenberg et al, 2005).

For the purpose of this study perhaps the most crucial significance of physician-nurse collaboration is the documented correlation to a healthy work environment or positive practice environment (Lindeke & Sieckert, 2005; Hughes & Fitzpatrick, 2010; Kramer et al, 2011; Mays et al, 2011; Pretorius & Klopper, 2011; Ritter, 2011; Weller et al, 2011), which in turn directly influences staff retention and job satisfaction.

2.2.3 Constraints to Effective Physician-Nurse Collaboration

The advantages of efficient and true physician-nurse collaboration have been well validated. Why then, is effective collaboration not a standard practice in the health care environment? To understand this, it is necessary to look at the factors that have a negative influence on physician-nurse collaboration. These are factors are characterised as constraints to effective collaboration.

- Communication and Co-ordination Problems

  Effective communication and co-ordination are vital in the pursuit of improved quality and safety in acute medical settings (Baggs et al, 1992). Deficient communication among care providers, according to Burke, Boal & Mitchell (2004), is responsible for frustration, bitter feelings, and distrust resulting in inferior care and a greater risk of errors. Reader, Flin & Mearns (2007) suggested that hierarchical practice models, gender, social factors, and the differences in training methods experienced by health care workers contribute to communication problems.

- Failure of Team Decision Making

  In the health care environment a team is considered to be a group of people with a variety of skills and professional backgrounds working together with a common goal and so making

decisions together (Blackwell's Nursing Dictionary, 2005). In the ICU setting, Coombs & Ersser (2004) found that physicians dominated decision making leaving nurses feeling unappreciated and undervalued. This automatically broke down the link between team decision making and effective collaboration. This finding is supported by Ulrich in 2006 who reported that the physicians' respect for nurses' decisions were extremely low.

- Conflict Resolution Skills

  According to Hendel, Fish & Berger (2007) nurses and physicians deal with conflict very differently. physicians, when faced with a conflict situation, opted for a lose-lose resolving approach in which there was no compromise and negotiation instead of a win –win approach which necessitated compromise and negotiation. When faced with conflict, nurses opted for a non-confrontational approach which allowed the avoidance of real issues. Neither the lose-lose nor the non-confrontational approach foster constructive conflict resolution. Tappen, (1989) suggested that conflicts should not be avoided or stimulated, but instead should be timeously managed.

- Lack of Role Clarification

  Fewster-Thuente & Velsor-Friedrich (2008) noted that overlapping of responsibilities is a major constraint to effective collaboration and that health care providers experience role distinction to be problematic. Particularly related to who has the responsibility for the patient.

2.2.4 Measure to Enhance Effective Physician-Nurse Collaboration

Factors thought to be of value in the nurturing and teaching of effective collaboration which are highlighted in the literature are reflected below.

- Communication and Interpersonal Interaction

  Ulrich et al, 2006, recommended that skilled open communication and respect between team members must be prerequisites for establishing communication in an Intensive Care Unit. Stein-

Parbury & Liaschenko (2008) observed that in non-hierarchical work environments, interdisciplinary members effectively interacted and collaborated and this automatically involves the team into open communication. Mc Caffrey, Hayes, Stuart et al (2012) showed that, to improve communication skills between multidisciplinary members of a team, teaching of the followings was essential: improved listening skills, use of self-disclosure, expressing a clear message, understanding the significance of body language, dealing with cultural and gender issues, use of assertive instead of aggressive communication styles of negotiation and conflict resolution.

- Role Clarification and Shared Responsibility

  A clear leader is necessary with in the multidisciplinary team. This leader needs to provide role clarity and ensure that each discipline performs its shared responsibility in an effort to avoid duplication of care and decrease the margin of errors (Fewster-Thuente & Velsor-Friedrich, 2008). This sentiment was echoed by McKay & Crippen in 2008.

- Co-ordination and Co-operation

  Effective patient care in the critical care unit depends on effective collaboration between all members of the multidisciplinary team, not merely effective collaboration between the physicians and the nurses. In 1999, Bucher and Melander suggested that the critical care nurse be the co-ordinator of patient care delivery as the nurse comes into contact and interacts with all multidisciplinary team members. This has since been supported by Alspach (2006), and Li & Lambert (2008) who in addition felt that this would increase the nurses' autonomy which in time would result in an improved sense of self-worth and job enhancement.

- Orientation and Training

  In the study by McCaffrey, Heyes & Stuart (2010) it is noted that, by teaching collaboration to team members in the health care environment, it helped the team members gain both clinical and professional competencies. In addition, the team members were able to work creatively together, interact and communicate while being taught. There are ten 'lessons' in collaboration proposed by Gardner (2005) which should be addressed in order to comprehensively understand the concept of teaching the challenging skill of effective collaboration:

- Know thyself
- Learn to value and manage diversity
- Develop constructive conflict resolution skills
- Use your power to create win-win situations
- Master interpersonal and process skills
- Recognise that collaboration is a journey
- Make adventitious use of all multidisciplinary forums
- Appreciate that collaboration can occur spontaneously
- Balance autonomy and unity in collaborative relationships
- Remember that collaboration is not required for all decisions.

2.3 HEALTHY WORK ENVIRONMENT

In the literature the terms 'Healthy Work Environment' and 'Positive Practice Environment' are used interchangeably.

Multiple definitions of a healthy work environment are available. It is defined by Shirey (2006) as a work setting in which policies, procedures and systems are designed so that employees are able to meet the organisational objectives and achieve personal satisfaction in their work. The International Council of Nurses defines a healthy work environment as an environment that supports excellence and has the power to attract and retain nurses (Bauman, 2007).

Although the definitions are varied, there are clear elements described in the literature (Pinkerton, 2005; Kramer et al, 2011; Mays et al, 2011; Ritter, 2011; & Klopper et al, 2012) which are essential to a healthy work environment. These elements or characteristics have been described by several bodies including the International Council for Nurses, Institute of Medicine, Nurses Organisational Alliance, and the American Association of Critical Care Nurses. They are:

- True collaborative nurse-physician relationships
- Communication rich culture where skilled communication is practiced
- Culture of accountability
- Appropriate numbers and quality of staff, competent peers
- Authentic leadership which is competent, credible, and visible
- Shared effective decision making at all levels and clinical autonomy
- Support for education encouraging continuous growth and development
- Meaningful recognition to the value of the nursing contribution

The link between healthy work environments and the retention of staff are consistently supported. Ritter (2010) demonstrated that there was a positive between link between a healthy work environment and the retention of staff in a hospital environment. Institutions where healthy work environments are established have a lower level of nurse burnout, higher level of job satisfaction, higher nurse to patient ratios and a well skilled staffing component. This sentiment has been supported by Mays et al (2010), Kramer et al (2011), Pretorius & Klopper (2011), and Klopper et al (2012). Not only is a healthy work environment essential in the clinical field of nursing but also for nursing faculty. In 2010, Kuehn identified the need to accurately assess the academic environments of nursing schools. She believed that a there was a strong connection between a healthy academic environment and the recruitment and retention of nursing faculty which is vital for the future of nursing.

Pretorius & Klopper (2011) looked at the practice environments of critical care units in South Africa. They found that nurses rated the "critical care family" as being a core element in a positive practice environment. This involved a reciprocal relationship with mutual trust and respect between nurses and other members of the multidisciplinary team, especially physicians. It was vital that physicians trusted the judgement of the nursing staff.

It is the responsibility of nurse leader to set the stage for healthy work environments. Collaboration, the principles of collaboration, and nursing recognition are key elements to maintaining a healthy work environment. Given the advantages of staff retention, increased job satisfaction and lower levels of burnout it is fundamental that nurse managers implement strategies to improve work environments.

2.4 SOUTH AFRICAN CONTEXT

It is relevant to understand that South Africa has a dual health system comprised of a public sector and a private sector. The public sector consists of government institutions providing free health care and the private sector consists of organisations driven by profit margins providing health care for those willing to pay or who are covered by medical health insurance. In 2009, Pillay published some alarming statistics comparing the public and private sectors. He revealed that the public sector services approximately 82% of the population, most of whom are impoverished, and accounts for 40% of the total health expenditure. In contrast, the private sector services less than 20% of the population, most of whom are middle to high income earners, but utilises 60% of the health expenditure.

In 2002, a total of 244 024 patients were admitted to Critical Care Units in South Africa. A total of 63% of the patients were admitted to the private sector and 37% were admitted to the public sector. A national audit revealed that the majority of critical care beds are located in the private sector (Bhagwanjee & Scribante, 2007).

There are approximately 4168 high care and critical care beds in South Africa which are staffed by 4584 Professional Registered Nurses (Gillespie, Kyriacos & Mayers, 2006). The South African Nursing Council review of critical care units, showed that, of the 4584 Professional Nurses, only 55% (2537) were registered as trained in critical care with the South African Nursing Council (South African Nursing Council , 2007), putting the nurse-to-bed ratio at 1.1 nurse to 1 patient. It is worthy to note that not all of

the trained nurses may have been in full time employ, some nurses may have left the critical care environment but maintained their registration with the South African Nursing Council. It is suggested that the ideal nurse-to-bed ratio in the critical care environment is 6.7 nurses to1 patient, with at least 50% of the nurses having a critical care qualification (Williams & Clark, 2001). It is clear that the South African health care system falls short of this ideal.

The reason for the nursing shortage is plentiful. In Southern Africa migration is a major reason. Nurses migrate internationally, regionally and between different levels of health care resulting in an uneven distribution of skilled resources (Scheffler, Mahoney, Fulton, Dal Poz, & Preker, 2009). The impact of HIV/AIDS has placed a tremendous strain on the health services both directly through increased patient load and indirectly through increased absenteeism of personnel and attrition due to mortality (Ehlers, 2006). In addition, Jooste & Jasper (2011) highlight the shortage of nurse educators. Of the 22 University Schools of Nursing affiliated with the Forum of University Nursing Deans of South Africa, less than half offer a post graduate qualification in nursing management. This is due to a shortage of nurse educators with a higher degree, either masters or doctoral, in nursing management. It is the nurse managers' responsibility to ensure that healthy work environments are established and maintained, and healthy work environments are positively linked to staff retention (Pinkerton, 2005; Kramer et al, 2011; Mays et al, 2011; Ritter, 2011; & Klopper et al, 2012).

The role of the media in shaping the professional image of nursing is extremely important. In 2010, Meiring associated the negative South African public image of nursing with a decline in nursing as a carer option for school leavers, thus aggravating the current nursing shortage. A review of South African print media coverage of nursing from 2005 till 2009 by Oosthuizen in 2012, revealed a largely negative association with nursing. The nursing shortage and emigration of nursing personnel was highlighted. A major theme emerging from the study was poor working conditions and a declining public healthcare system. Issues raised included poor medical supplies, inadequate equipment, verbal and physical abuse

by patients. Poor remuneration, unsociable work hours, lack of recognition and a lack of career advancement, highlighted extremely poor work environments. The unprofessional conduct of nurses was also identified as a predominant theme. Nurses were described as being inhumane, negligent, rude, uncaring, obstructive, and incompetent. Allegations of bribery, sexual and physical abuse, theft, and abandonment were publicised.

Bauman (2007) stated that internationally nurses felt that a healthy work environment was a key factor to retaining staff and that physician-nurse collaboration is a key element in providing this healthy work environment. South African studies have shown the importance of peer relationships in the retention of nursing staff (Nyathi & Jooste, 2008) and the importance of physician-nurse collaboration in the creation of healthy work environments (Pretorius & Klopper, 2011). Delobelle, Rawlinson, Ntuli et al (2012), suggested a need to examine physical work environments of primary health care nurses in South Africa in an attempt to curb turnover.

Pillay (2009) compared the work satisfaction levels of both public and private sector nurses in South Africa. He found that public sector nurses were generally dissatisfied and that private sector nurses were generally satisfied. However, overall nurses were marginally dissatisfied. What most dissatisfied the public sector was the safety of the work environment, resources available to them, career opportunities and remuneration. What satisfied the private sector most was the relationship with colleagues both nurses and doctors, safety of their environment and the gratification obtained from patient care.

In 2009 Pillay also examined retention strategies for professional nurses in South Africa and found the emergence of a persistent theme which was the importance of work place organisation, employment security, the working environment and the professional practice environment in which collaboration plays a major role.

There is a fundamental difference between critical care units in the public health sector and critical care units in the private health sector. In the public sector the critical care units are predominantly academic and are closed. In closed units patients are medically managed by a specialist consultant and registrars in conjunction with the admitting medical practitioner. In the private sector critical care units are predominantly open and patients are managed by the admitting doctor. These are two very different models of care. Little is known on collaboration in South African critical care units, and whether it is different between the closed and open system. The importance of collaboration that has been demonstrated in international studies has highlighted the need to examine the South African situation. Attitudes of nurses in the South African public sector towards collaboration were marginally explored by Bodole in 2009 however, the attitudes of the physicians' toward physician –nurse collaboration were not examined. This study aims to take a look at the attitudes of both nurses and physicians working in the critical care units of three private hospitals in Johannesburg, South Africa.

2.5 SUMMARY

In conclusion, physician-nurse collaboration has been examined since the 1980's. The existence of effective collaboration has been found to have a positive influence on patient outcomes, decreased mortality, improved patient care and economy of decision making and lower morbidity rates. The constraints of effective collaboration and measures to enhance collaboration have been looked at. Physician-nurse collaboration is a pivotal role player in the creation of a healthy work environment. In turn, a healthy work environment has been directly linked to the retention of high quality nursing staff in a hospital setting. The plight of the nursing reality in South Africa has been explored and the dire need for skilled nursing personnel highlighted. With collaboration playing such a vital role in the creation of a healthy work environment and the retention of nursing staff, the collaborative practices in Critical Care Units in South Africa needs to be further explored.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The methodology of research is the road map that the process of the research will follow. According to Polit & Hungler 1997, the methodology of research is the steps, procedures and strategies which will be used by the researcher to gather and analyze the research data. In the pages that follow I will describe the methodology used to conduct this research report. Included will be the research design, research setting, study population, sample and sampling, data collection, and the research instrument used to collect the data including its validity and reliability. All ethical considerations pertaining to the research will be discussed and finally the validity and reliability of this study as a whole.

3.2 RESEARCH DESIGN

A quantitative, prospective, non-experimental, descriptive design was chosen for this research. The research design guides the researcher through the planning and implementation of the study while achieving control of any factors that may influence the study (Burns & Grove, 2005), and is based on the purpose of the study. The purpose of this study is to describe nurses' and physicians' attitudes towards physician-nurse collaboration, identify factors facilitating or constraining collaboration, and to elicit recommendations on how to enhance this collaboration within the Critical Care Units of private sector hospitals in Johannesburg. According to Burns & Grove 2005, quantitative research is formal, objective, systematic and examines the interactions amongst variables. A descriptive design focuses on what the current situation is (Punch, 2005) which is essential to understand before we can look at why the situation is the way it is. No variables were manipulated during the study making the chosen design appropriate.

3.3 RESEARCH SETTING

This study was conducted in five adult Critical Care Units of one of the predominant private hospital groups in South Africa. Three of the groups hospitals located in Johannesburg, South Africa were approached to participate in the study. Approval was granted by all three of those hospitals, (Appendix J, Appendix K & Appendix L). At the time of the study two of the hospitals had two Critical Care Units and the third hospital had one Critical Care Unit. The patient population admitted to these units covered a variety of surgical disciplines: colorectal surgery, genito-urinary surgery, hepato-biliary surgery, neuro surgery, orthopaedic surgery, vascular surgery, transplantation (solid organ), poly trauma and interventional radiography. A variety of medical disciplines are also treated in the same units: cardiology, nephrology, neurology, oncology, pulmonology and geriatrics.

One of the units is a closed academic unit which is involved in a private public partnership with a government facility. In this unit there is a consultant physician who oversees the medical treatment of all patients. All admissions into the unit by other physicians are co-ordinated by the consultant. This particular unit allows for the training of specialists and sub-specialist physicians in the private sector. The other four units are open critical care units. This means that any doctor can admit his or her patient into the critical care unit and they will manage the medical care of that patient. Within the Critical Care Unit the nurses are responsible for carrying out nursing activities according to the scientific nursing process which is assessing, planning, implementing, and evaluating. The doctors are responsible for the integration of medical care.

3.4 STUDY POPULATION

The study population consisted of enrolled nurses, professional nurses, and physicians working in the critical care units of the site hospitals at the time of the data collection. The total number of potential nurses (N=93) were all registered with the South African Nursing Council as either a Professional Nurse

or as an Enrolled Nurse and were permanently employed to work in the critical care units of the site hospitals. The total number of potential physicians (N=72) were all registered with the Health Professions Council of South Africa as Medical Practitioners and had admitting or treating privileges within the critical care units of the site hospitals. The total number of potential participants was (N=165).

3.5 SAMPLE AND SAMPLING METHOD

All potential participants meeting the inclusion criteria were invited to participate in the study. A sample of 59 nurses and 44 physicians from the five critical care units voluntarily participated in the study, yielding a response rate of 63% for nurses and 61% for physicians. The overall response rate was 62%. For this study, the research assistant approached the nursing staff of the units via the respective Nursing Unit Managers within the units. Numerous visits were made to the Critical Care Units to ensure that nursing staff working all shifts were afforded the opportunity of participation in the study. Physicians were approached by the research assistant either in the Critical Care Units while on rounds or in their consultation rooms.

Inclusion criteria for participating nurses were:

- Current registration with the South African Nursing Council as a Professional Nurse or as an Enrolled Nurse.
- Permanent employment in one of the five critical care units of the site hospitals.

Inclusion criteria for participating physicians were:

- Current registration with the Health Professions Council of South Africa as a Medical Practitioner.
- Admitting or treating privileges in any of the four critical care units of the site hospitals.

3.6 DATA COLLECTION

3.6.1 The Procedure

Permission to use the Jefferson Scale of Attitudes towards Physician-Nurse Collaboration was requested from M. Hojat at the Jefferson Medical College and was granted, (Appendix B). Requests to conduct the study were submitted to the Faculty of Health Sciences Post Graduate Committee of the University of the Witwatersrand and the request was granted (Appendix E). Ethical clearance was sought from the Human Ethics Research Committee (Medical) of the University of the Witwatersrand, ethical approval was granted and a clearance certificate was issued (Appendix F). Permission to conduct the study within the private hospital group was sought from the private hospital groups' research committee and granted. From there, permission was sought from three of the private hospitals in Johannesburg within the group, all three of the Hospital Managers granted permission, (Appendix J, Appendix K, &Appendix L).

Two individual data collection packs were created, one for the nurses, (Appendix C), and one for the physicians, (Appendix D). Each pack contained the participant information letter and a copy of the data collection instrument, the Jefferson Scale of Attitudes toward Physician-Nurse Collaboration. There was a slight difference in the demographic information requested between the two packs. The nurses' data collection instrument required the category of nurse and the highest level of training to be indicated, and the physician data collection instrument required the area of speciality to be indicated. The participant information letter and the Jefferson Scale of Attitudes toward Physician-Nurse Collaboration was the same for both groups.

The help of a research assistant was enlisted at the request of the Human Ethics Research Committee. This was to avoid any possibility of coercion as the researcher is a senior member of staff in one of the critical care units participating in the study. The research assistant approached the nursing staff in the critical care units, discussed the relevance of the study, explained the rights of a study participant and stressed the voluntary nature of participation. Several visits were made to each unit in an attempt to cover the various nursing shifts. The participant information letter and the data collection instrument were

issued to all the nursing staff who met the inclusion criteria. During these visits to the critical care units the research assistant had opportunities to speak with the physicians. The relevance of the study was explained to the physicians, their rights as a potential study participant and the voluntary nature of participation was explained. The physicians that were not spoken to in the critical care units were approached in their consulting rooms.

Sealed red post boxes were placed in the critical care units at the nursing duty station. All completed data collection instruments were posted anonymously by the participants into the sealed boxes and collected by the research assistant. Completion of the data collection instrument was taken to indicate consent. Incomplete data collection instruments were taken to indicate refusal to participate. No incomplete data collection instruments were returned. The data collection instruments from all five of the critical care units were then collated by the research assistant and grouped prior to being handed over to the researcher.

3.6.2 The Instrument

The instrument used to collect data for this research was the Jefferson Scale of Attitudes toward Physician-Nurse Collaboration (Strechi, 2007). Additional information was requested for both the nurses and physicians under the demographic component of the instrument. This information was specifically related to each profession. Three open ended questions were included at the end of the questionnaire to cover the research objectives, these questions were identical to both professions. The three questions were:

- What do you perceive as a constraint to Physician-Nurse Collaboration in the Critical Care Unit?
- What do you perceive as a facilitator to Physician-Nurse Collaboration in the Critical Care Unit?
- What measures, if any can you recommend to enhance Physician-Nurse Collaboration in the Critical Care Unit?

The Jefferson Scale of Attitudes toward Physician-Nurse Collaboration was developed by researchers from the Jefferson Medical College. A total of 15 statements are listed and scored on a 4-point Likert scale ranging from "strongly agree" to "strongly disagree". The development of the instrument originated in 1985, it was initially 20 items long and designed to measure nursing services and attitudes towards nurses (Hojat & Herman, 1985). More than a decade later (Hojat, Fields, Ratter, et al, 1997) the instrument was modified to investigate the attitudes towards physician-nurse alliances. Shortly after this in 1999, four noticeable factors were identified through an exploratory factor analysis. Of the original 20 items, 5 items did not have a significant factor coefficient and were removed from the scale (Hojat, Fields, Veloski, et al, 1999). From this time the Jefferson Scale of Attitudes toward Physician-Nurse Collaboration has remain unchanged and was used with the permission of the Jefferson Medical College in this study (Appendix B).

3.6.3 Validity and reliability of the Instrument

Burns & Grove (2007), explain validity and reliability as assessing whether a tool measures what it is designed to measure, and whether it will continue to measure accurately in different conditions and over time. Several cross cultural studies have supported the validity of the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration. In 2001 a study involving physicians and nurses from the United States and Mexico (Hojat, Nasca, Cohen, et al), was followed by a study including physicians and nurses from the United States, Mexico, Italy and Israel (Hojat, Gonnella, Nasca, et al, 2003). In addition, Turkish studies have also supported the psychometrics of the scale (Yildrem, Ates, Akinci, et al, 2005 and 2006). In these cross cultural studies the test-re-test reliability, Cronbach's alpha, was 0.71 and 0.75. In Dougherty and Larson's (2005) Review of Instruments Measuring Nurse-Physician Collaboration, reliability of the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration was supported with a Cronbach alpha of 0.84 and 0.85 for medical students and nursing students respectfully.

A pilot study was conducted prior to the commencement of the main study. This included five nursing staff and five physicians which met the inclusion criteria for the study. No amendments were needed to the questionnaire which authenticated the instruments validity in the South African context.

3.6.4 Data Analysis

Individual responses were grouped and any identifying data was removed to ensure anonymity. Responses requiring written answers were typed by the research assistant prior to being handed over to the researcher. Any references to a particular unit, hospital or person were deleted. The data collected was then tabulated and organised onto an excel spread sheet. Most of the study variables were analyse using descriptive statistics. Total scores of the nurses were compared with respect to age, level of training, category of nurse, and years of experience in critical care. The total scores for the physicians were compared to age, years of experience in critical care, and speciality. Both the nurses and physicians attitudes towards collaboration in relation to the four constructs of collaboration, as defined with in the scale, were examined. The four constructs being: shares education and collaboration, caring versus curing, nurses' autonomy, and physicians' dominanca. Statistical assistance was sought from a statistician working at Data Management and Statistical Analysis (DMSA). Data analysis was carried out in SAS, (SAS Institute Incorporated, SAS Software, version 9.3 for Windows).

3.7 ETHICAL COSIDERATIONS

Research requires knowledgeable expertise, diligence, honesty and integrity (Burns & Grove, 2005). It is essential to lay down evidenced bases for practice. However, the rights of participants must always be protected and research misconduct avoided. The following ethical considerations were applied to this study:

- The protocol was submitted to the Department of Nursing Education at the University of the Witwatersrand for review and to assess feasibility.

- Permission to use the Jefferson Scale of Attitudes toward Physician-Nurse Collaboration was requested from the Jefferson Medical College and was granted, (Appendix B).
- The protocol was submitted to the Faculty of Health Sciences Post Graduate Committee at the University of the Witwatersrand for approval and clearance was granted, (Appendix E).
- The protocol was submitted to the Human Ethics Research Committee (Medical) of the University of the Witwatersrand for ethical clearance and was awarded an ethical clearance certificate numbered **M120624**, (Appenidx F).
- Application was made to the research committee of the private hospital group requesting permission to conduct this study, application was successful.
- Application was made to the Hospital Managers of the three Johannesburg private hospitals with in the private hospital group requesting access to the Critical Care Units of their hospitals (Appendix G, appendix H, & appendix I). All of the Hospital Managers granted the application, (Appendix J, appendix K, & appendix L).
- To ensure anonymity and confidentiality no names or any other identifying details have been used during data collection and reporting.
- Completed questionnaires were posted anonymously into a pre sealed box.
- Completing the questionnaire indicated consent.
- Participants were able to withdraw from the study at any time, up to the posting of the questionnaire, without any repercussions and voluntary participation was explained.
- A potential participant information letter accompanied each data collection instrument detailing the purpose of the study. The letter contained the researchers contact details should the participants have had any need to contact the researcher (Appendix A) .
- Use was made of a research assistant to collect and collate all data collection instruments.
- Findings of the study were made available to the study participants and the management of the three private hospitals in the form of a report.

3.8 VALIDITY AND RELIABILITY OF THIS STUDY

The methodology of the study was specifically designed to minimize the introduction of bias. The research sites were geographically related and functioned within the same corporate banner. Use was made of a research assistant who was independent of the research sites and the corporation within which the research sites operate. Recognised statistical tests and the assistance of a qualified statistician ensured the statistical conclusions were valid. Interpretation of the instrument was done in accordance to the scoring algorithm for the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration. The researcher did not deviate from the accepted and authorised protocol which was submitted to the Faculty of Health Sciences Post Graduate Committee and the Human Ethics research Committee (Medical) of the University of the Witwatersrand. Results of the study would only be generalised to nurses and physicians with similar characteristics to those in the study.

Literature sited a Cronbach alph for this instrument to be as high as 0.85, but for this study the statistician found the Cronbach alpha to be 0.67 for the nurse group and 0.74 for the physician group. These low values were attributed to the small sample size of the study.

3.9 SUMMARY

In this chapter, the methodology of the study was discussed. This included the research design and setting, the study population and sampling method. Focus was placed on the data collection process and the data collection instrument including the validity and reliability of the instrument as well as the analysis of the data collected. Ethical considerations relating to the study were expanded upon and the validity and reliability of this particular study was discussed. The upcoming chapter will look at the results found after analysis of the data collected.

CHAPTER 4

DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

This chapter deals with analysis of the data and discussion of the results. A brief explanation on the approach to analysis of the data is presented. The demographic data of the nurse group and the physician group are analyzed separately, using descriptive statistics, and then the two groups are compared to one another. The attitude of both the nurse group and the physician group to collaboration, according to the Jefferson Scale of Attitudes Toward Collaboration, is looked at individually and then compared to one another. Only statistically significant findings have been unpacked. Finally the opinions of both the nurse group and the physician group to constraints, and facilitators of collaboration are looked at including recommendations by the two groups to enhance collaboration from their perspective.

4.2 APPROACH TO DATA ANALYSIS

A quantitative approach was used to analyze both the nurses' and physicians attitudes towards physician nurse collaboration. An existing instrument, the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration, was used to determine the extent of each groups attitude toward collaboration. The instrument was used with the permission of the developer, Mohammadreza Hojat, and consists of 15 statements which are answered on a 4 point Likert scale ranging from strongly agree to strongly disagree. In addition to authorizing the use of the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration, Mohammadreza Hojat supplied the researcher with the scoring algorithm for the scale. This scoring algorithm was meticulously followed during the data analysis process.

The assistance of a statistician from Data Management & Statistical Analysis (DMSA) was sought. Data analysis was carried out using SAS Software version 9.3 for windows. All data was collated on a Microsoft excel spread sheet prior to analysis by the statistician. In Dougherty and Larson's Review of Instruments Measuring Nurse-Physician Collaboration (2005), reliability of the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration was supported with a Cronbach alpha of 0.84 and 0.85 for medical students and nursing students respectfully. Burns and Grove (2001), considered a reliability of 0.80 to be the lowest acceptable coefficient for a well developed tool. In this study the Cronbach alpha was determined by the statistician to be 0.71, this has been attributed to the small sample size of only 103 participants.

Descriptive statistics were applied to the demographic data of the nurses and the physicians. Percentages, standard deviations, medians and interquartile ranges are demonstrated. Tables and graphs have been used to augment the interpretation of the data. Total scores for the nurses were analysed as well as variables including age, years of experience in critical care units, category of nurse and highest level of training. Total scores for the physicians were analysed as well as variables including age, years of experience in critical care units and area of speciality. The relationship between continuous and categorical variables was assessed by t-test, or ANOVA for more than two categories. Where the data did not meet the assumptions of these tests, a non-parametric alternative, the Wilcoxon rank sum test, or the Kruskal-Wallis test for more than two categories, was used. The 5% significance level was used throughout the data analysis, unless otherwise specified.

The strengths of any associations were measured by Cohen's d for parametric tests and the r-value for the non-parametric tests. The following scale of interpretation was used:

0.80 and above	large effect
0.50 to 0.79	moderate effect
0.20 to 0.39	small effect
Below 0.2	near zero effect

Open ended questions were added at the end of the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration, to meet the research objectives. Data collected regarding the nurses and physicians opinions on constraints of collaboration, facilitators of collaboration and recommendations to enhance collaboration were analysed. These opinions were categorized into meaningful themes.

4.3 DATA ANALYSIS OF SAMPLE

The total population comprised of the permanently employed nurses and physicians working in the critical care units of the research sites (N=165). Of these 56% (n=93) were nurses and 43% (n=72) were physicians. There was a nursing response rate of 63% (n=59), and a physician response rate of 61% (n=44), yielding a total response rate of 62% (n=103). One nursing participant failed to answer at least 12 of the 15 items in the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration. In keeping with the scoring algorithm guidelines this participant was excluded from the data analysis. There were 5 nursing participants for whom all responses were 'strongly agree', including the two revers scored items 8 & 10. Given that there were other participants whose answers varied between 'strongly agree' and 'agree', including the two reverse scored items, a strong case for elimination of the above 5 participants from the data cannot be made.

4.4 DATA ANALYSIS OF DEMOGRAPHIC INFORMATION

4.4.1 Participant Nurses

The demographic data for the nurses includes the following variables: age, gender, years of experience in critical care units, category of nurse, and highest level of education.

- The mean age of the nursing group was 37.5 years with a standard deviation of 8.4 years, median of 38 years and an interquartile range of 30-42 years. Figure 4.1 below indicates the percentage of nursing participants in a particular age group. From 42 years of age there was a sharp decline in the age of the nurses with only 15% (n=9) of the nurses falling between the ages of 48 years – 60 years.

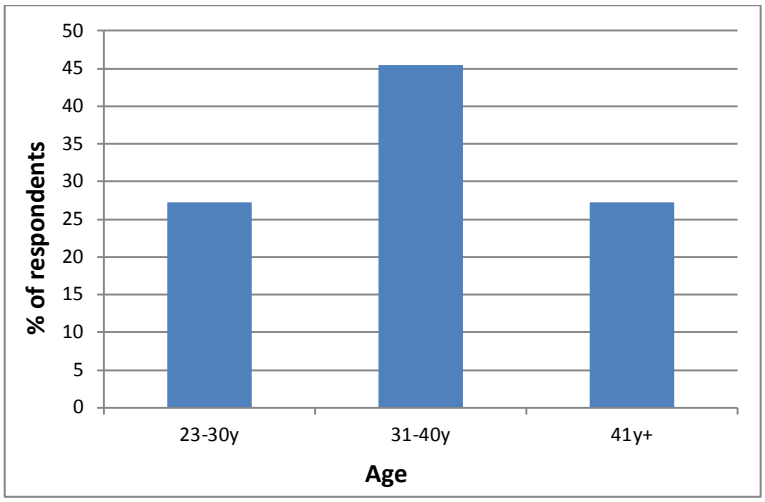


Figure 4.1: Age Distribution of Nurses

- Most of the nurse participants were female 86.32% (n=50) and 13.8% (n=8) were male.
- When looking at the years of experience in critical care units the mean was found to be 6.3 years with a standard deviation of 5.6 years, a median of 5 years, and an interquartile range of 2-10 years. From the data it is noted that only 28% (n=17) of the nurses had more than 10 years' experience in the critical care environment and 63% (n=37) had less than 7 years experience in the critical care environment. Figure 4.2 graphically demonstrates the distribution of years of experience across the nursing group.

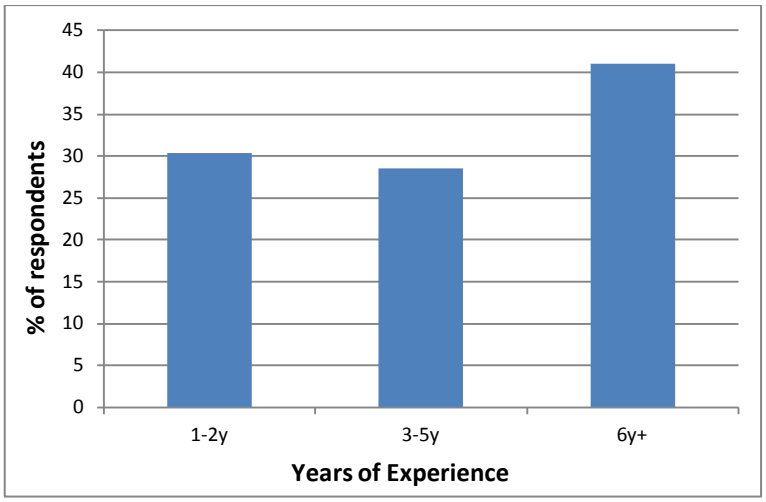


Figure 4.2: Participant Nurses Years of Experience in Critical Care Unit

- The categories of nurses included in the sample were enrolled nurses and professional nurses. The professional nurses were further categorized as experienced in critical care nursing or trained in critical care nursing with either a diploma or a degree which has been registered with the South African Nursing Council. The enrolled nurses comprised 31% (n=18) of the sample and the professional nurses 69% (n=40). Of the 69% professional nurses, 41.4% (n=24) were experienced in critical care nursing, 27.6% (n=16) were trained in critical care nursing. Figure 4.3 represents these findings graphically.

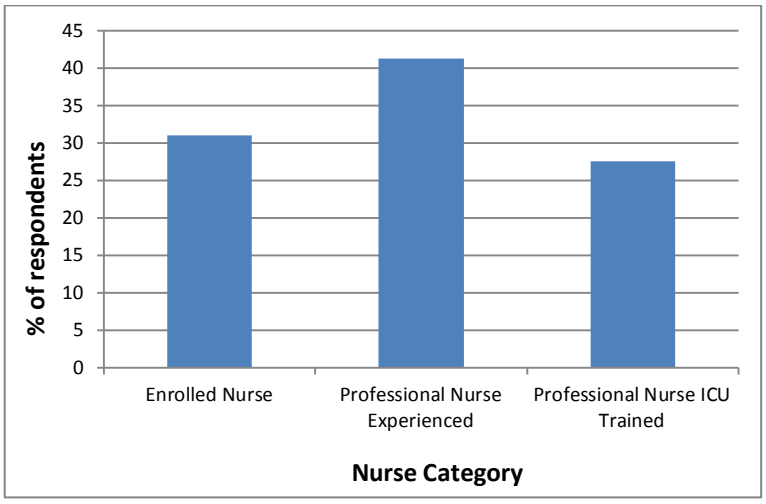


Figure 4.3: Participant Nurses According to Nurse Category

- The highest level of training for the nurse participants was differentiated into the following categories: certificate, diploma, degree, masters and PhD. None of the participants had a masters or a PhD so these categories were eliminated from the data analysis. Enrolled nurses are by nature of their qualification certificate trained which comprised 29.3% (n=17) of the nursing sample. Professional nurses obtain their basic qualification as a diploma or a degree. The same is applied to post basic qualifications in Critical Care Nursing, they can be either diploma or degree qualifications. From the sample it can be seen that 50% (n=29) of the nurses are diploma trained and 20.7% (n=12) are degree trained. Figure 4.4 graphically represents these findings.

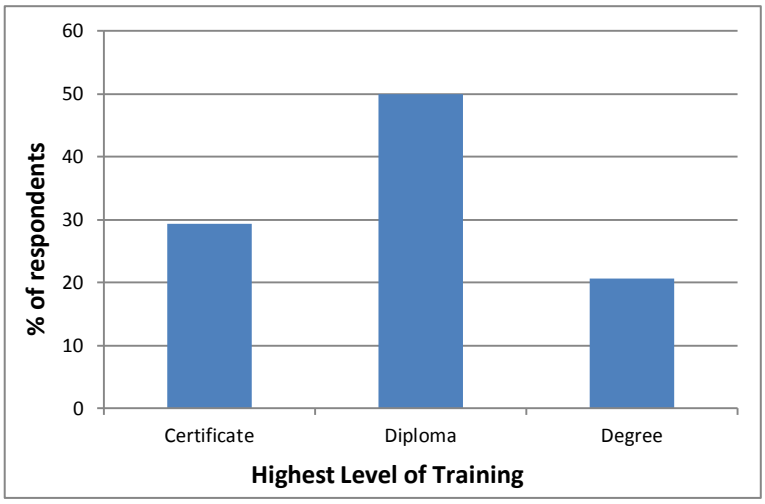


Figure 4.4: Participant Nurses Highest Level of Training

4.4.2 Participant Physicians

The demographic data for the physicians includes the following variables: age, gender, years of experience in critical care units, and speciality.

- The mean age of the physician group was 40.0 years with a standard deviation of 7.6 years, a median of 38.5 years, and an interquartile range of 34.5 - 45 years. The highest percentage of participants, 47.7% (n=21) fall into the age group 35-44 years of age. There is almost an equal distribution of participants between the preceding age group and the older age group. The age

group aged 28-34years constitutes 25% (n=11) participants the older age group, 45+ years, consists of 27.3% (n=12) participants. Figure 4.5 demonstrates the distribution of age in the physician sample.

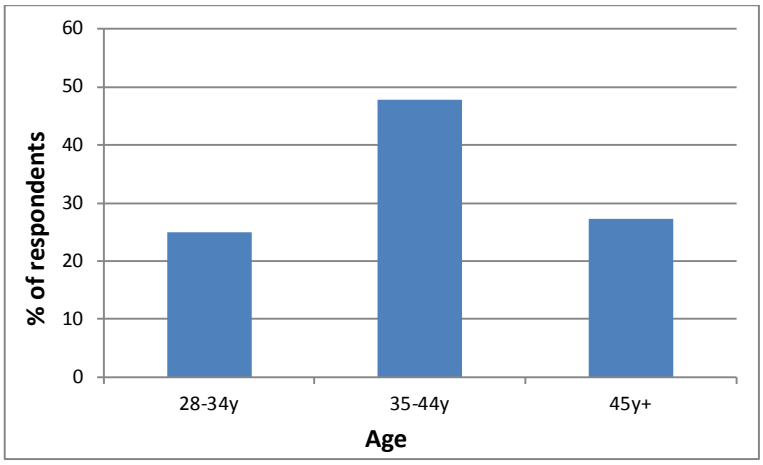


Figure 4.5: Age Distribution of Physicians

- Most of the physician participants were male 77.3% (n=34) and 22.7% (n=10) were female.
- The physician group have a mean of 10.9 years of experience in critical care units with a standard deviation of 9.1 years, a median of 8 years, and an interquartile range of 4-15 years. Figure 4.6 graphically represents the years of experience of the physicians. From this graph it is clear that there is almost an even distribution of participants through the three age groupings. The largest percentage of physicians, 37.2% (n=13) have more than 11 years of experience in the critical care unit, followed by 32.6% (n=14) having less than 5 years of experience and lastly 30.2% (n=13) who have between 6-10 years of experience in the critical care unit. Figure 4.6 graphically represents the physician participants years of experience in Critical Care Units.
- For the purpose of analysis the physician participants were grouped into four domains of medical speciality namely: anaesthetists, nephrologists, physicians, and surgeons. A small amount of participants (n=3) were grouped under 'other' as they could not be classified into any of the four main domains. The largest group, 30.2% (n=13) of physicians were comprised of surgeons, followed by anaesthetists 25.6 % (n=11), then nephrologists and physicians at 18.6% (n=8) each.

Figure 4.7 graphically represents the four speciality domains identified within the physician sample group.

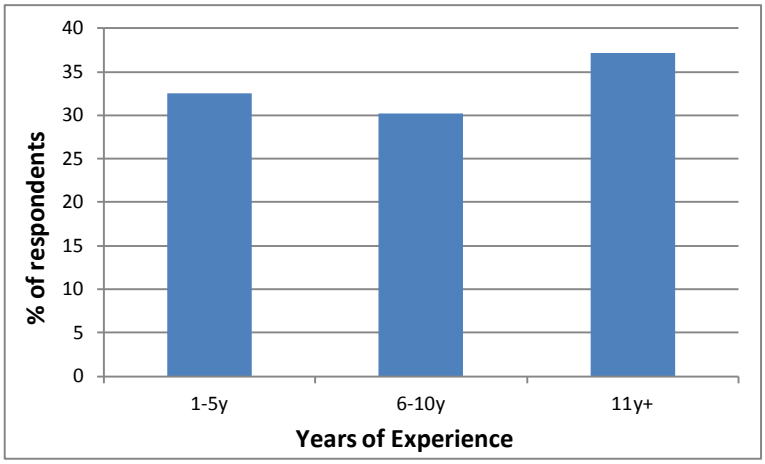


Figure 4.6: Participant Physicians Years of Experience in Critical Care Units

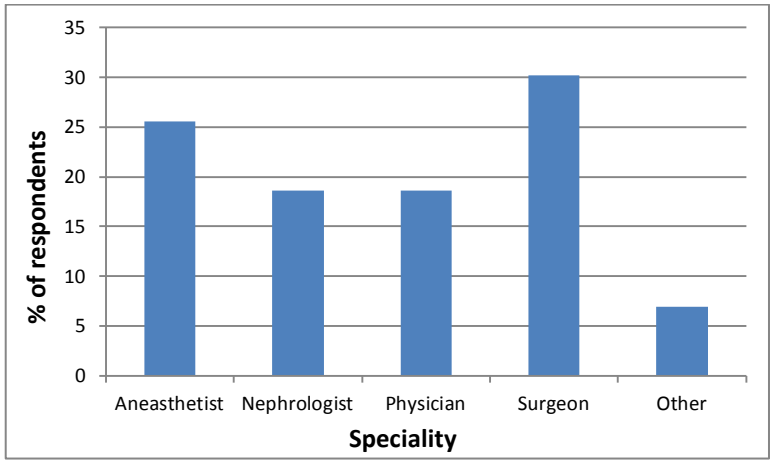


Figure 4.7: Participant Physician Speciality Distribution

4.4.3 Comparison of Demographic Variables between Nurses and Physicians

Between group comparisons were carried out where the same data was collected for both the nurses and the physicians. The t-test yielded that there was no significant difference found between the mean ages of the nurses and the physicians ($p=0.16$). The Wilcoxon rank sum test showed that the physicians had a significantly higher mean in the years of experience in critical care units as compared to the nurses

(p=0.010). The t-test could not be used since the data was positively skewed and thus would not meet the assumptions for the t-test. In addition, there were significantly more females in the nursing sample then in the physician sample (Fisher's exact test: $p<0.0001$). A concise summary of all the demographic information collected during the study can be seen in Table 4.1.

Table 4.1: Summary of Nurses and Physicians Demographic Data.

	Nurses (n=58; 57%)			**Physicians** (n=44; 43%)			p-value for H_0: no significant difference between N and P
	Category	n	%	Category	n	%	
Age in years (mean ± 95% confidence interval); median (interquartile range)	37.5 ± 8.4y 38 (30 - 42)			40.0 ± 7.6y 38.5 (34.5 - 45)			0.16 (t-test)
Age category	23-30y	15	27.3	28-34y	11	25.0	
	31-40y	25	45.5	35-44y	21	47.7	
	41y+	15	27.3	45y+	12	27.3	
Years in ICU (mean ± 95% confidence interval); median (interquartile range)	6.3 ± 5.6y 5 (2 - 10)			10.9 ± 9.1y 8 (4 - 15)			0.010 (Wilcoxon rank sum test)
Years in ICU category	1-2y	17	30.4	1-5y	14	32.6	
	3-5y	16	28.6	6-10y	13	30.2	
	6y+	23	41.1	11y+	16	37.2	
Gender	Female	50	86.2	Female	10	22.7	<0.0001 (Fisher's exact test)
	Male	8	13.8	Male	34	77.3	
Nurse category	EN	18	31.0				
	PN Exp	24	41.4				
	PN Train	16	27.6				
Level of training	Certificate	17	29.3				
	Diploma	29	50.0				
	Degree	12	20.7				
Specialty				Anesthetist	11	25.6	
				Nephrologist	8	18.6	
				Physician	8	18.6	
				Surgeon	13	30.2	
				Other	3	7.0	

4.5 DATA ANALYSIS OF ATTITUDES TOWARDS COLLABORATION

The researcher looked at the attitudes toward collaboration of the nurses, followed by the physicians and finally looked at a comparison between the two groups. For the purposes of the text and simplicity, only the areas depicting a significant difference have been unpacked and graphically represented. The various characteristics of the overall scale and the four subscales (factors) are represented in tables.

4.5.1 Nurses' Attitude Toward Collaboration

The total score for the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration as well as the four subscales, namely shares education and collaboration, caring vs. curing, nurse's autonomy, and physician's dominance have all been compared with independent variables. These variables are age, years of experience in critical care, gender, category of nurse and highest level of education. Only significant differences between the variables are graphically represented and discussed below. Between-group differences were tested by Analysis of Variance (ANOVA) where the distribution of the data met the assumptions of the ANOVA, otherwise by the non-parametric Kruskal-Wallis test. Summarized statistical results on nurses' attitude toward collaboration are reported in Table 4.2. Included in the Table are the p values for between group differences.

Table 4.2: Statistical Results for Nurses Jefferson Scale of Attitudes Towards Physician-Nurse Collaboration

Outcome variable	Independent variable	Category	N	Mean	Std Dev	Lower 95%CL for Mean	Upper 95%CL for Mean	Minimum	Maximum	Median	25th Pctl	75th Pctl	p-value for H_0: no significant difference between groups	Effect size (Cohen's d)	Effect size interpretation
Total Score	Age	23-30y	15	52.7	3.6	50.7	54.7	42.0	58.0	54.0	51.3	54.5	0.097 (ANOVA)		
		31-40y	25	54.0	3.0	52.7	55.2	46.0	59.6	54.0	53.0	56.0			
		41y+	15	51.7	2.9	50.1	53.4	47.0	57.0	52.0	49.0	54.0			
	Years of Experience in Critical Care	1-2y	17	52.0	3.9	50.0	54.0	42.0	56.5	53.7	51.0	54.5	0.24 (ANOVA)		
		3-5y	16	52.7	2.6	51.3	54.1	47.6	58.0	53.0	51.3	54.0			
		6y+	23	53.8	3.1	52.4	55.1	47.0	59.6	54.0	52.0	56.0			
	Gender	Female	50	52.5	3.6	51.5	53.5	42.0	59.6	53.4	51.0	54.5	0.13 (t-test)		
		Male	8	54.5	1.9	53.0	56.0	52.0	57.0	54.5	53.0	56.0			
	Category of Nurse	EN	18	51.2	3.5	49.4	52.9	42.0	54.0	52.1	51.0	54.0	0.041 (ANOVA)	-0.90	LARGE -ve effect
		PN Exp	24	53.2	3.4	51.7	54.6	46.0	59.6	53.9	51.3	55.0			(between EN and Pt groups)
		PN Train	16	54.0	2.8	52.5	55.5	47.0	57.0	54.0	52.5	56.5			
	Highest Level of Education	Cert	17	51.1	3.6	49.3	53.0	42.0	54.0	52.2	51.0	54.0	0.023 (ANOVA)	-0.97	LARGE -ve effect
		Degree	12	54.6	3.8	52.2	57.0	47.0	58.0	56.0	54.0	57.0			(between C and Dg groups)
		Diploma	29	53.0	2.8	52.0	54.1	46.0	59.6	53.0	52.0	55.0			
Shares Education & Collaboration	Age	23-30y	15	26.2	1.8	25.2	27.2	21.0	28.0	27.0	26.0	27.0	0.023 (Kruskal-Wallis test)		
		31-40y	25	26.5	2.2	25.5	27.4	19.0	28.0	27.0	25.6	28.0		0.38	SMALL +ve effect
		41y+	15	25.1	1.5	24.3	26.0	23.0	28.0	25.0	24.0	26.0			
	Years of Experience in Critical Care	1-2y	17	25.5	2.5	24.3	26.8	19.0	28.0	26.0	25.0	27.0	0.54 (Kruskal-Wallis test)		
		3-5y	16	26.6	1.2	26.0	27.2	24.0	28.0	27.0	26.0	27.5			
		6y+	23	26.0	2.0	25.2	26.8	23.0	28.0	26.0	24.0	28.0			
	Gender	Female	50	25.9	2.1	25.3	26.5	19.0	28.0	26.3	25.0	28.0	0.75 (Wilcoxon rank sum test)		
		Male	8	26.3	1.8	24.8	27.7	24.0	28.0	26.5	24.5	28.0			
	Category of Nurse	EN	18	25.7	2.2	24.6	26.8	21.0	28.0	26.0	25.0	28.0	0.85 (Kruskal-Wallis test)		
		PN Exp	24	26.1	2.0	25.3	27.0	19.0	28.0	27.0	25.8	27.0			
		PN Train	16	26.1	1.9	25.1	27.1	23.0	28.0	26.5	24.0	28.0			
	Highest Level of Education	Cert	17	25.7	2.2	24.5	26.8	21.0	28.0	26.0	25.0	28.0	0.30 (Kruskal-Wallis test)		
		Degree	12	26.7	1.7	25.6	27.8	23.0	28.0	27.5	25.0	28.0			
		Diploma	29	25.9	2.0	25.1	26.6	19.0	28.0	26.0	24.0	27.0			
Care vs. Cure	Age	23-30y	15	11.1	1.0	10.5	11.6	9.0	12.0	11.0	10.0	12.0	0.36 (Kruskal-Wallis test)		
		31-40y	25	11.4	0.8	11.0	11.7	9.5	12.0	12.0	11.0	12.0			
		41y+	15	10.9	1.2	10.2	11.5	8.0	12.0	11.0	10.0	12.0			
	Years of Experience in Critical Care	1-2y	17	10.9	1.0	10.4	11.3	9.0	12.0	11.0	10.0	12.0	0.13 (Kruskal-Wallis test)		
		3-5y	16	11.0	1.1	10.4	11.6	8.6	12.0	11.0	10.5	12.0			
		6y+	23	11.4	1.0	10.9	11.8	8.0	12.0	12.0	11.0	12.0			
	Gender	Female	50	11.0	1.1	10.7	11.3	8.0	12.0	11.0	10.0	12.0	0.035 (Wilcoxon rank sum test)	-0.28	SMALL -ve effect
		Male	8	11.8	0.5	11.4	12.1	11.0	12.0	12.0	11.5	12.0			
	Category of Nurse	EN	18	11.0	1.0	10.5	11.4	9.0	12.0	11.0	10.0	12.0	0.35 (Kruskal-Wallis test)		
		PN Exp	24	11.0	1.1	10.5	11.4	8.6	12.0	11.0	10.0	12.0			
		PN Train	16	11.3	1.1	10.7	11.9	8.0	12.0	12.0	11.0	12.0			
	Highest Level of Education	Cert	17	10.9	1.0	10.4	11.4	9.0	12.0	11.0	10.0	12.0	0.40 (Kruskal-Wallis test)		
		Degree	12	11.3	1.2	10.5	12.0	8.0	12.0	12.0	11.0	12.0			
		Diploma	29	11.1	1.0	10.7	11.5	8.6	12.0	11.0	11.0	12.0			
Nurse's autonomy	Age	23-30y	15	11.3	0.9	10.8	11.8	9.0	12.0	11.3	11.0	12.0	0.28 (Kruskal-Wallis test)		
		31-40y	25	11.5	0.7	11.2	11.8	10.0	12.0	12.0	11.0	12.0			
		41y+	15	11.1	0.8	10.6	11.6	9.2	12.0	11.0	11.0	12.0			
	Years of Experience in Critical Care	1-2y	17	11.2	1.0	10.7	11.7	9.0	12.0	11.3	11.0	12.0	0.79 (Kruskal-Wallis test)		
		3-5y	16	11.3	0.8	10.8	11.7	9.2	12.0	11.0	11.0	12.0			
		6y+	23	11.4	0.7	11.1	11.7	10.0	12.0	12.0	11.0	12.0			
	Gender	Female	50	11.3	0.8	11.0	11.5	9.0	12.0	11.0	11.0	12.0	0.28 (Wilcoxon rank sum test)		
		Male	8	11.6	0.5	11.2	12.1	11.0	12.0	12.0	11.0	12.0			
	Category of Nurse	EN	18	11.1	1.0	10.6	11.6	9.0	12.0	11.1	11.0	12.0	0.81 (Kruskal-Wallis test)		
		PN Exp	24	11.3	0.8	11.0	11.7	10.0	12.0	11.5	11.0	12.0			
		PN Train	16	11.4	0.6	11.1	11.8	10.0	12.0	11.5	11.0	12.0			
	Highest Level of Education	Cert	17	11.1	1.0	10.6	11.7	9.0	12.0	11.3	11.0	12.0	0.54 (Kruskal-Wallis test)		
		Degree	12	11.5	0.8	11.0	12.0	10.0	12.0	12.0	11.0	12.0			
		Diploma	29	11.3	0.7	11.1	11.6	10.0	12.0	11.0	11.0	12.0			
Physician's authority	Age	23-30y	15	4.1	1.9	3.1	5.2	2.0	8.0	4.0	2.0	6.0	0.61 (ANOVA)		
		31-40y	25	4.7	1.7	4.0	5.4	2.0	8.0	5.0	3.0	6.0			
		41y+	15	4.7	1.8	3.7	5.7	2.0	7.0	5.0	3.0	6.0			
	Years of Experience in Critical Care	1-2y	17	4.4	1.8	3.5	5.4	2.0	7.0	4.0	3.0	6.0	0.18 (ANOVA)		
		3-5y	16	3.9	2.1	2.8	5.0	2.0	8.0	3.0	2.0	5.0			
		6y+	23	5.0	1.5	4.3	5.6	2.0	8.0	5.0	4.0	6.0			
	Gender	Female	50	4.4	1.8	3.9	4.9	2.0	8.0	4.0	3.0	6.0	0.47 (t-test)		
		Male	8	4.9	1.6	3.6	6.2	2.0	7.0	5.0	4.0	6.0			
	Category of Nurse	EN	18	3.4	1.6	2.6	4.2	2.0	7.0	3.0	2.0	4.0	0.0055 (ANOVA)		
		PN Exp	24	4.8	2.0	3.9	5.6	2.0	8.0	5.0	3.0	6.5		-0.77	MODERATE -ve effect (EN vs. Pe)
		PN Train	16	5.2	1.0	4.6	5.7	3.0	7.0	5.0	4.5	6.0		-1.37	LARGE -ve effect (EN vs. Pt)
	Highest Level of Education	Cert	17	3.4	1.6	2.6	4.2	2.0	7.0	3.0	2.0	4.0	0.011 (ANOVA)		
		Degree	12	5.2	1.5	4.2	6.1	2.0	8.0	5.0	4.5	6.0		-1.17	LARGE -ve effect (C vs. DG)
		Diploma	29	4.8	1.8	4.1	5.4	2.0	8.0	5.0	3.0	6.0		-0.80	LARGE -ve effect (C vs. Dp)

Overall Attitude Score for Nurses

There was a significant difference with respect to the category of nurse (ANOVA: p=0.041). Post-hoc tests using the Tukey-Kramer adjustment for unequal groups showed the score was higher for the professional nurse trained in critical care group (mean 54.0; 95% confidence interval for the mean 52.5-55.5) than for the enrolled nurse (mean 51.2; 95%confidence interval for the mean 49.4-52.9). The effect size was large with a Cohen's d = 0.09. From this the researcher concluded that the professional nurse trained in critical care nursing has a more positive attitude to collaboration. This is graphically represented in Figure 4.8.

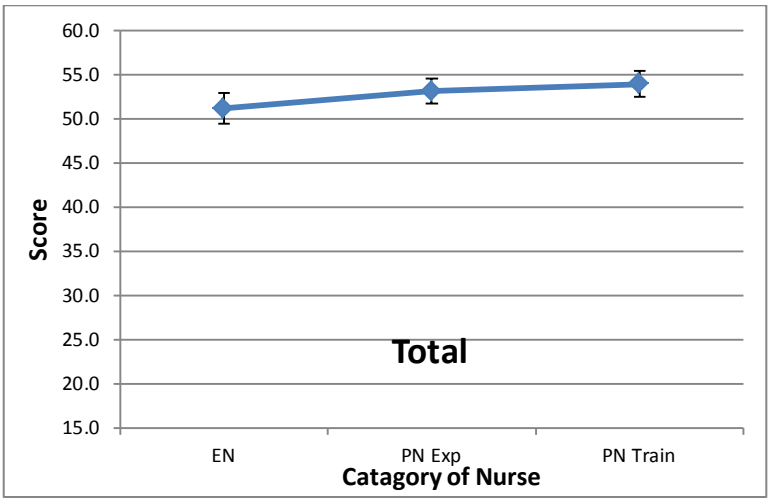


Figure 4.8: Total Score According to Category of Nurse

There was a significant difference with respect to level of education of nurses (ANOVA: p=0.023). The score was higher for the degree nursing group (mean 54.6; 95% confidence interval for the mean 52.2-57.0) than for the certificate nursing group (mean51.1; 95% confidence interval for the mean 49.3-53.0). The effect size was large with a Cohen's d = 0.97. From this the researcher concluded that degree trained nurses have a more positive attitude towards collaboration than certificate trained nurses. This is graphically represented in Figure 4.9. It can be noted that the overall attitude toward collaboration becomes more positive with increased level of education within the nursing group.

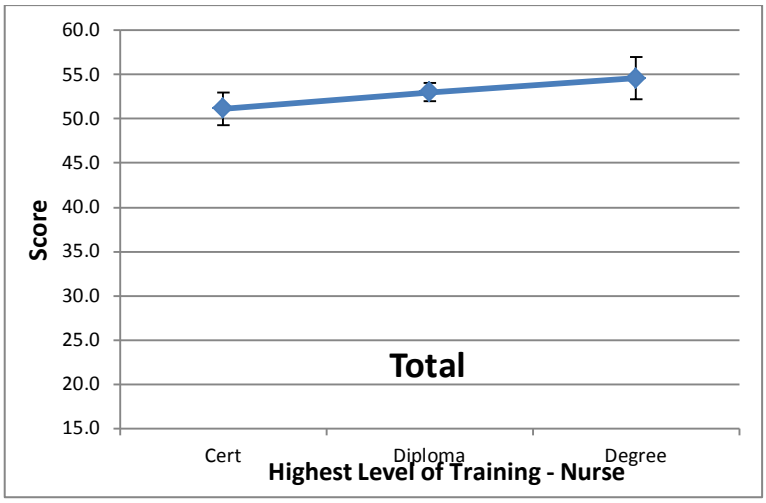


Figure 4.9: Total Scores According to Highest Level of Training

It is difficult to compare the attitudes of collaboration of the different category of nurses to other studies as the classification of nurses differs around the world. Scribante, Schmollgruber, & Nel (2004) estimated the shortage of critical care nurses in South Africa to be 26%. In this study it was found that approximately 27% of the nurses were trained in critical care nursing. With the trend showing an increased favour towards collaboration with an elevation on nursing category (figure 4.8), it is essential to bring more professional nurses into the critical care unit. An increased level of education leading to a more positive attitude toward collaboration is supported by Ward et al (2008) and is mirrored in this study, see figure 4.9. In this study however, only 20% of the nurses were degree trained.

Shares Education and Collaboration

There was a significant difference with respect to the age categories of nurses (Kruskal-Wallis test: p=0.023). The score was higher in the 31-40 year age group (median 27.0; mean 26.5; 95% confidence interval for the mean 25.5-27.4) than for the 41 year+ age group (median 25.0; mean 25.1; 95% confidence interval for the mean 24.3-26.0). The effect size was however small (r=0.38). Figure 4.10 graphically depicts this result. The researcher concluded that the 31-40 year age group has a greater orientation towards interdisciplinary education and inter-personal collaboration.

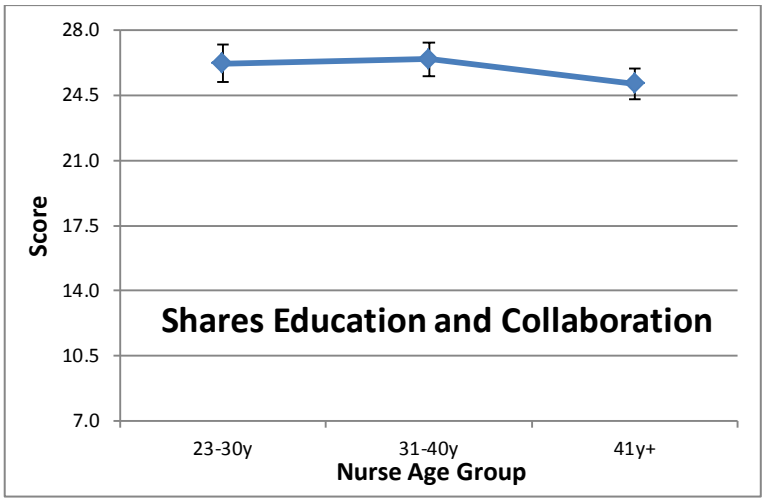


Figure 4.10: Attitude to Shared Collaboration & Education in Different Age Groups

The decline in attitudes toward collaboration in the age group 41 years+ is a concern. The researcher has attributed this to burnout, job dissatisfaction, impact of HIV/AIDS, and the intense moral strain under which the critical care nurse works. The older age group schooled and studied in the 'old' South Africa under the regime of apartheid, with a wanting education system. In this study 86% of the nursing participants were female and 27% were in the age group of 41 years+. Traditionally ethnic woman of this time were subservient and submissive to dominance of white and Asian men. Looking at the demographics of this study, 77% of the physicians are male. In addition, according to Pillay (2009) only 30% of professional nurses in South Africa planned to remain in nursing for the next five years. Career changes and migration are a large threat to the nursing profession in South Africa.

Caring vs. Curing

There was a significant difference with respect to gender (Wilcoxon rank sum test: p=0.035). The score was higher for the male nursing group (median 12.0; mean 11.8; 95% confidence interval for the mean 11.4-12.4) than for the female nursing group (median 11.0; mean 11.0; 95% confidence interval for the mean 10.7-11.3). The effect size was however small (r=0.28). Figure 4.11 graphically depicts these results. The researcher concluded that males have a more positive view of nurse's contributions to the psychosocial and educational aspects of patient care.

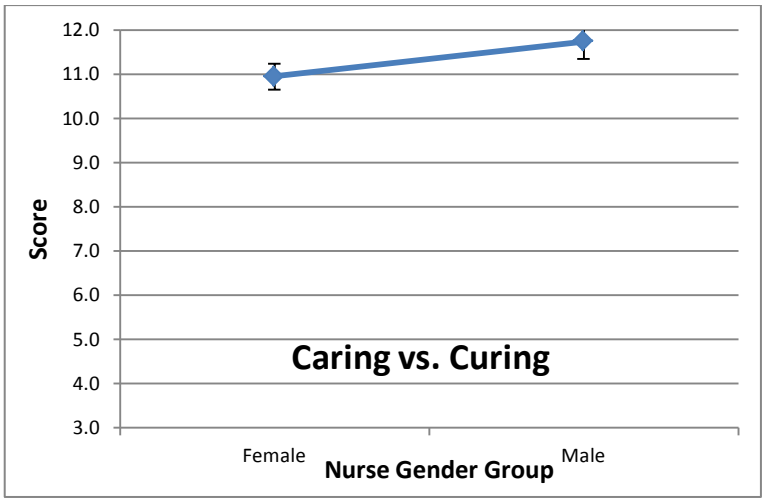


Figure 4.11: Attitudes to Caring vs. Curing in Different Gender Groups

International studies (Hojat et al, 2001 & 2003, Hughes & Fitzpatick 2010, Sayeed & Sleem 2011) found attitudes to collaboration to be independent of gender. Perhaps the difference in this study is due to a patriarchal type medical profession which is represented predominantly by men. In the study 77% of the physicians are male. Male nurses perhaps feel more comfortable, at ease and more equal or entitled than female nurses.

Physicians Dominance

There was a significant difference with respect to the category of nurse (ANOVA: p=0.0055). Post-hoc tests showed that the score was higher for both the professional nurse trained in critical care group (mean 5.2; 95% confidence interval for the mean 4.6-5.7) and the professional nurse experience in critical care group (mean 4.8; 95% confidence interval for the mean 3.9-5.6) compared to the enrolled nurse group (mean 3.4; 95% confidence interval for the mean 2.6-4.2). The effect size was moderate and large respectively (Cohen's d=0.77 and 1.4). Figure 4.12 represents this graphically.

There was also a significant difference with respect to the highest level of education in the nursing sample (ANOVA: p=0.011). Post-hoc tests showed that the score was higher for both the degree nurse group (mean 5.2; 95 % confidence interval for the mean 4.2-6.1) and the diploma nurse group (mean 4.8; 5% confidence interval for the mean 4.1-5.4) compared to the certificate nurse group (mean 3.4; 95%

confidence interval for the mean 2.6-4.2). The effect sizes were both large (Cohen's d =1.17 and 0.80 respectively). Figure 4.13 depicts this result graphically.

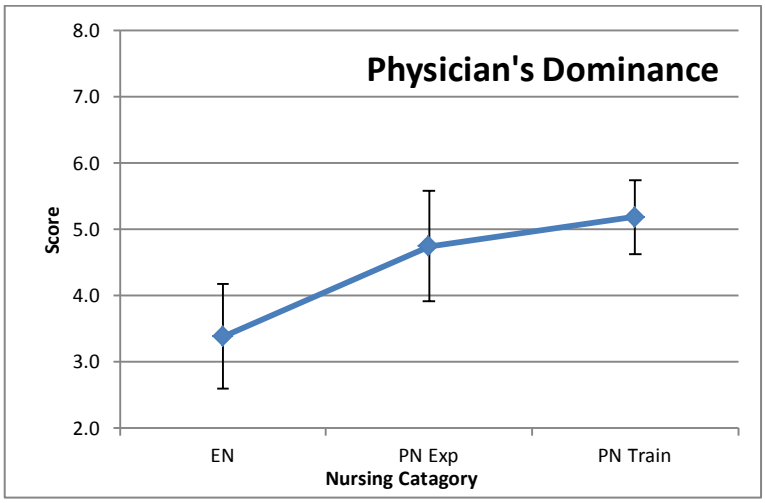


Figure 4.12: Attitudes to Physician Dominance in Different Nursing Categories

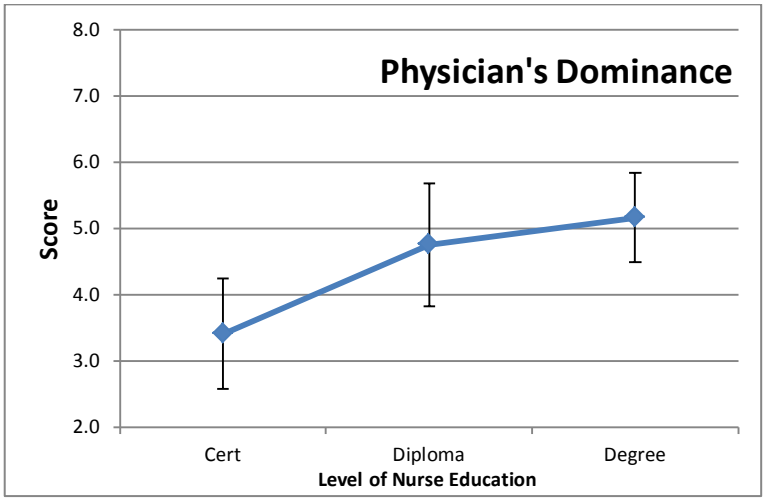


Figure 4.13: Attitudes to Physician Dominance in Different Levels of Nurse Education

A higher score indicates a rejection of a totally dominant role by the physician in aspects of patient care. Figure 4.12 and figure 4.13 follow an identical projection. The researcher concluded that with a more senior status as a nurse, and a higher level of education comes an improved sense of collaboration or ability to collaborate. This is supported by Strechi (2007). The South African medical model is still very much a patriarchal society built on a hierarchical structure. There are marked social and educational divides amongst many groups. As younger nurses enter the profession they would have moved though a

progressive education system with different social norms, leaving behind the social hierarchical system and embracing collegial behaviours. Looking at the age distribution of nurses in this study, the majority of professional nurses are post-apartheid trained and perhaps realising the necessity to reclaim nursing as a profession.

4.5.2 Physicians Attitude Toward Collaboration.

The total score for the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration as well as the four subscales, namely shares education and collaboration, caring vs. curing, nurse's autonomy, and physician's dominance have all been compared with independent variables. These variables are age, years of experience in critical care, gender, and speciality. Only significant differences between the variables are graphically represented and discussed below. Between-group differences were tested by Analysis of Variance (ANOVA) where the distribution of the data met the assumptions of the ANOVA, otherwise by the non-parametric Kruskal-Wallis test. Summarized statistical results on physicians' attitude toward collaboration are reported in Table 4.3. Included in the Table are the p values for between group differences.

Physician Dominance

The only significant difference found across all the subscales (factors) and across all the independent variables was the scoring for physician dominance. There was a significant difference with respect to the age of the physicians (ANOVA: $p=0.032$). Post-hoc tests using the Tukey-Kramer adjustment for unequal groups showed that the score was higher for the 35-44 year group (mean 5.9; 95% confidence interval for the mean 5.4-6.4) than for the 28-34 year group (mean 4.7; 95% confidence interval for the mean 3.7-5.7). The effect was large with a Cohen's $d=0.96$. A higher score indicates a rejection of a totally dominant role by the physician in aspects of patient care. The researched concluded that the middle age group of physicians were more dismissive of a dominant physician role in patient care and more in favour of collegial partnerships. Figure 4.14 graphically represents the attitude of physician dominance in each of the three age groups.

Table 4.3: Statistical Results for Physicians Jefferson Scale of Attitudes Towards Physician-Nurse Collaboration

Outcome variable	Independent variable	Category	N	Mean	Std Dev	Lower 95% CL for Mean	Upper 95% CL for Mean	Minimum	Maximum	Median	25th Pctl	75th Pctl	p-value for H_0: no significant difference between groups	Effect size (Cohen's d)	Effect size interpretation
Total Score	Age	28-34y	11	50.8	5.1	47.4	54.2	43.0	57.0	52.0	46.0	55.0	0.76 (ANOVA)		
		35-44y	21	51.4	4.0	49.6	53.2	46.0	60.0	51.0	48.0	54.0			
		45y+	12	52.1	3.2	50.1	54.1	48.0	57.0	51.0	49.5	55.0			
	Years in ICU	1-5y	14	51.2	4.7	48.5	53.9	43.0	58.0	52.5	48.0	55.0	0.43 (ANOVA)		
		6-10y	13	50.3	3.6	48.1	52.5	46.0	57.0	49.0	48.0	53.0			
		11y+	16	52.3	3.6	50.3	54.2	48.0	60.0	51.5	49.5	55.0			
	Gender	Female	10	52.2	4.7	48.8	55.6	43.0	58.0	52.0	49.0	57.0	0.51 (t-test)		
		Male	34	51.2	3.8	49.9	52.6	44.0	60.0	51.0	48.0	54.0			
	Speciality	Anaes	11	50.9	4.5	47.9	53.9	43.0	57.0	51.0	48.0	55.0	0.84 (ANOVA)		
		Nephr	8	51.0	4.8	47.0	55.0	44.0	57.0	51.5	47.0	55.0			
		Phys	8	52.5	3.6	49.5	55.5	48.0	58.0	52.0	49.5	55.5			
		Surg	13	51.8	3.8	49.5	54.1	47.0	60.0	51.0	49.0	54.0			
Shares Education & Collaboration	Age	28-34y	11	24.5	3.1	22.3	26.6	20.0	28.0	25.0	22.0	27.0	0.61 (ANOVA)		
		35-44y	21	24.5	2.5	23.4	25.7	20.0	28.0	25.0	23.0	27.0			
		45y+	12	25.3	1.4	24.5	26.2	23.0	27.0	25.5	24.0	26.5			
	Years in ICU	1-5y	14	24.5	2.7	22.9	26.1	20.0	28.0	25.0	22.0	27.0	0.14 (ANOVA)		
		6-10y	13	23.8	2.7	22.1	25.4	20.0	28.0	23.0	21.0	26.0			
		11y+	16	25.6	1.6	24.7	26.4	23.0	28.0	26.0	24.0	27.0			
	Gender	F	10	24.9	2.7	23.0	26.8	20.0	28.0	25.0	23.0	27.0	0.80 (t-test)		
		M	34	24.7	2.4	23.8	25.5	20.0	28.0	25.5	23.0	27.0			
	Speciality	Anaes	11	24.6	2.5	23.0	26.3	20.0	27.0	24.0	23.0	27.0	0.90 (ANOVA)		
		Nephr	8	24.6	2.9	22.2	27.1	20.0	28.0	26.0	22.0	26.5			
		Phys	8	25.4	2.0	23.7	27.0	22.0	28.0	25.5	24.0	27.0			
		Surg	13	24.6	2.5	23.1	26.1	20.0	28.0	25.0	23.0	26.0			
Care vs. Cure	Age	28-34y	11	10.5	1.1	9.8	11.3	9.0	12.0	10.0	10.0	12.0	0.67 (ANOVA)		
		35-44y	21	10.1	1.2	9.6	10.7	8.0	12.0	10.0	9.0	11.0			
		45y+	12	10.2	1.5	9.2	11.1	8.0	12.0	10.0	9.0	11.5			
	Years in ICU	1-5y	14	10.5	1.0	9.9	11.1	9.0	12.0	10.0	10.0	11.0	0.39 (ANOVA)		
		6-10y	13	9.8	1.2	9.1	10.6	8.0	12.0	10.0	9.0	11.0			
		11y+	16	10.3	1.4	9.5	11.0	8.0	12.0	10.0	9.0	11.5			
	Gender	Female	10	10.8	1.0	10.1	11.5	9.0	12.0	11.0	10.0	12.0	0.11 (t-test)		
		Male	34	10.1	1.3	9.6	10.5	8.0	12.0	10.0	9.0	11.0			
	Speciality	Anaes	11	10.1	1.1	9.3	10.9	9.0	12.0	10.0	9.0	11.0	0.61 (ANOVA)		
		Nephr	8	9.9	1.5	8.7	11.1	8.0	12.0	10.0	8.5	11.0			
		Phys	8	10.6	1.4	9.4	11.8	8.0	12.0	10.5	10.0	12.0			
		Surg	13	10.5	1.3	9.7	11.2	8.0	12.0	11.0	10.0	11.0			
Nurse's Autonomy	Age	28-34y	11	11.1	0.7	10.6	11.6	10.0	12.0	11.0	11.0	12.0	0.69 (ANOVA)		
		35-44y	21	10.9	0.7	10.5	11.2	9.0	12.0	11.0	11.0	11.0			
		45y+	12	11.0	0.9	10.5	11.5	10.0	12.0	11.0	10.0	12.0			
	Years in ICU	1-5y	14	11.0	0.7	10.6	11.4	10.0	12.0	11.0	11.0	11.0	0.96 (ANOVA)		
		6-10y	13	10.9	0.8	10.5	11.4	9.0	12.0	11.0	11.0	11.0			
		11y+	16	10.9	0.9	10.5	11.4	10.0	12.0	11.0	10.0	12.0			
	Gender	Female	10	11.2	0.8	10.6	11.8	10.0	12.0	11.0	11.0	12.0	0.24 (t-test)		
		Male	34	10.9	0.7	10.6	11.1	9.0	12.0	11.0	10.0	11.0			
	Speciality	Anaes	11	10.6	0.8	10.1	11.2	9.0	12.0	11.0	10.0	11.0	0.31+N71 (ANOVA)		
		Nephr	8	11.1	0.8	10.4	11.8	10.0	12.0	11.0	10.5	12.0			
		Phys	8	11.3	0.7	10.7	11.8	10.0	12.0	11.0	11.0	12.0			
		Surg	13	10.9	0.6	10.5	11.3	10.0	12.0	11.0	11.0	11.0			
Physician's Dominance	Age	28-34y	11	4.7	1.5	3.7	5.7	2.0	7.0	5.0	4.0	5.0	0.032 (ANOVA)	-0.96	LARGE -ve effect (between 28-34y and 35-44y groups)
		35-44y	21	5.9	1.1	5.4	6.4	3.0	8.0	6.0	5.0	6.0			
		45y+	12	5.6	0.8	5.1	6.1	4.0	7.0	6.0	5.0	6.0			
	Years in ICU	1-5y	14	5.2	1.6	4.3	6.1	2.0	7.0	5.0	4.0	7.0	0.51 (ANOVA)		
		6-10y	13	5.8	0.9	5.2	6.3	5.0	8.0	6.0	5.0	6.0			
		11y+	16	5.5	1.1	4.9	6.1	3.0	8.0	6.0	5.0	6.0			
	Gender	Female	10	5.3	1.3	4.4	6.2	3.0	7.0	5.0	5.0	6.0	0.52 (t-test)		
		Male	34	5.6	1.2	5.2	6.0	2.0	8.0	6.0	5.0	6.0			
	Speciality	Anaes	11	5.5	1.8	4.4	6.7	2.0	8.0	6.0	5.0	7.0	0.81 (ANOVA)		
		Nephr	8	5.4	0.9	4.6	6.1	4.0	6.0	6.0	4.5	6.0			
		Phys	8	5.3	0.7	4.7	5.8	5.0	7.0	5.0	5.0	5.0			
		Surg	13	5.8	1.2	5.0	6.5	3.0	8.0	6.0	5.0	6.0			

Literature has been endorsing the need to teach the skills required to ensure collaborative practices to medical students, and to emphasise the importance of each team members contribution to total patient care (Stein-Parbury & Liaschenko, 2007; Papathanassoglou, Karanilola, Kalafati, Giannakopoulou et al, 2012). Perhaps this could explain this finding in the study.

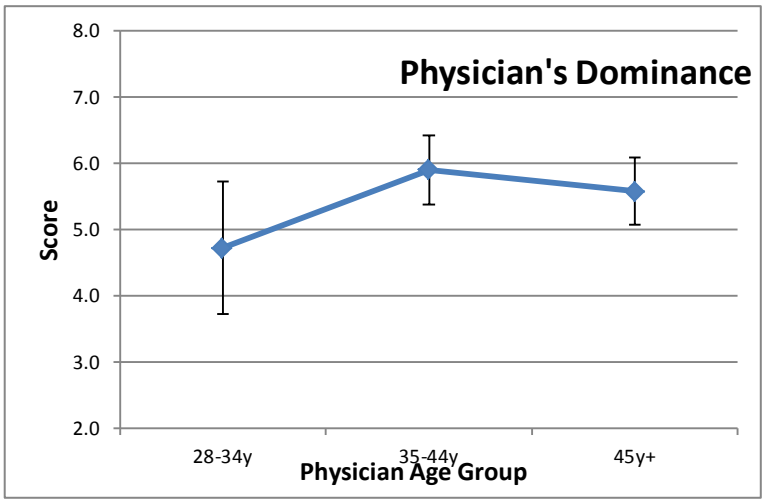


Figure 4.14: Attitude of Physician Dominance in Physician Age Groups

4.5.3 Comparison of Nurses' and Physicians Attitude Toward Collaboration

Differences between the nursing group and the physician group were tested by the t-test where the distribution of the data met the assumptions of the t-test; otherwise by the non-parametric Wilcoxon rank sum test. Only statistically significant differences have been graphically represented and explained below. Summarized statistical results on the comparison between the nurses and physicians attitude toward collaboration are reported in Table 4.4. Included in the Table are the p values for between group differences.

Table 4.4: Statistical results for Combined Total Scoring of Nurses and Physicians

Variable	Respondent Type	N	Mean	Std Dev	Lower 95% CL for Mean	Upper 95% CL for Mean	Minimum	Maximum	Median	25th Pctl	75th Pctl	p-value for H_0: no significant difference between N and P	Effect size (Cohen's d)	Effect size interpretation
Total Score	Overall	102	52.2	3.7	51.5	52.9	42.0	60.0	53.0	50.0	55.0			
	Nurse	58	52.8	3.4	51.9	53.7	42.0	59.6	53.7	51.3	55.0	0.073 (t-test)		
	Physician	44	51.5	4.0	50.2	52.7	43.0	60.0	51.5	48.0	54.5			
Shares Education & Collaboration	Overall	102	25.4	2.3	25.0	25.9	19.0	28.0	26.0	24.0	27.0			
	Nurse	58	26.0	2.0	25.4	26.5	19.0	28.0	26.3	25.0	28.0	0.0091 (Wilcoxon rank sum test)	0.57	MODERATE +ve effect
	Physician	44	24.7	2.4	24.0	25.5	20.0	28.0	25.0	23.0	27.0			
Care vs Cure	Overall	102	10.7	1.2	10.5	10.9	8.0	12.0	11.0	10.0	12.0			
	Nurse	58	11.1	1.0	10.8	11.3	8.0	12.0	11.0	11.0	12.0	0.0010 (Wilcoxon rank sum test)	0.73	MODERATE +ve effect
	Physician	44	10.3	1.2	9.9	10.6	8.0	12.0	10.0	9.0	11.0			
Nurse Autonomy	Overall	102	11.2	0.8	11.0	11.3	9.0	12.0	11.0	11.0	12.0			
	Nurse	58	11.3	0.8	11.1	11.5	9.0	12.0	11.1	11.0	12.0	0.015 (Wilcoxon rank sum test)	0.45	SMALL +ve effect
	Physician	44	11.0	0.7	10.7	11.2	9.0	12.0	11.0	10.5	11.0			
Physician Dominanace	Overall	102	4.9	1.6	4.6	5.2	2.0	8.0	5.0	4.0	6.0			
	Nurse	58	4.4	1.8	4.0	4.9	2.0	8.0	4.0	3.0	6.0	0.0024 (Wilcoxon rank sum test)	-0.69	MODERATE -ve effect
	Physician	44	5.5	1.2	5.1	5.9	2.0	8.0	6.0	5.0	6.0			

Overall Attitude Score

There was no significant difference in the mean overall attitude score between the nurses and the physicians (t-test p=0.073). The nurses scored 52.8 and the physicians scored 51.5. The mean attitude score was 52.2 (95% confidence interval for the mean: 51.2-52.9). Even though the nurses scored slightly higher than the physicians, it should be noted that both scores were relatively close to the maximum score of 60. The researcher concluded from this that both nurses and physicians have a largely positive attitude toward collaboration in the critical care unit. The nurses in this study did score slightly higher than the physicians. This is a similar finding to other studies (Rosenstein, 2002: Yildirim et al, 2005; Hojat, 2005; & Sterchi, 2007). In 2003 Thomas, Sexton & Helmreich disagreed with this finding. They found that nurses had a lower attitude to collaboration then physicians in a critical care environment.

Comparison of the Four Subscales (Factors)

- The mean 'shares education and collaboration' score was higher for the nurses (mean 26.0; 95% confidence interval for the mean 25.4-26.5) than for the physicians (mean 24.7; 95% confidence interval for the mean 24.0-25.5), Wilcoxon rank sum test: p=0.0091. The effect size was moderate with a Cohen's d=0.57. Both the nurse group and the physician group scored this

aspect highly with scores of 26 and 24 respectively out of a possible 28. See Figure 4.15. This implies that the nurses have a greater orientation towards interdisciplinary education and inter-personal collaboration.

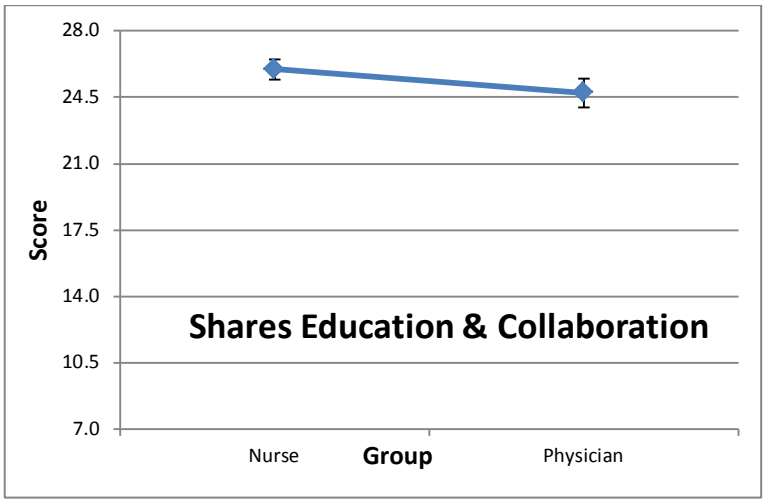


Figure 4.15: Comparison of Attitudes to Shared Education & Collaboration

- The mean 'caring vs. curing' score was higher for the nurse group (mean 11.1; 95% confidence interval for the mean 10.8-11.3) than for the physician group (mean 10.3; 95% confidence interval for the mean 9.9-10.6), Wilcoxon Rank sum test: p=0.0010. The effect size was moderate with a Cohen's d=0.73. Again both groups scored this aspect highly but the effect size was somewhat larger. See Figure 4.16. This implies that nurses have a more positive view of their own contributions to the psychosocial and educational aspects of patient care.

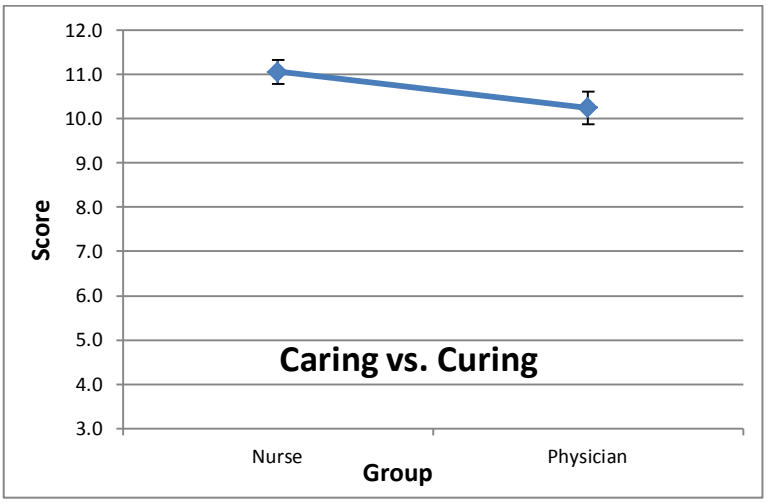


Figure 4.16: Comparison of Attitudes to Caring vs. Curing

- The mean ‘nurses autonomy’ score was higher for the nurse group (mean 11.3; 95% confidence interval for the mean 1.1-11.2) than for the physician group (mean 11.0; 95% confidence interval for the mean 10.7-11.2), Wilcoxon rank sum test: p=0.015. The effect size was small with a Cohen’s d=0.45. Both groups scored this aspect highly. See Figure 4.17. The higher mean score in the nursing group indicates that nurses have a higher level of agreement with their own involvement in decisions pertaining to patient care and policy.

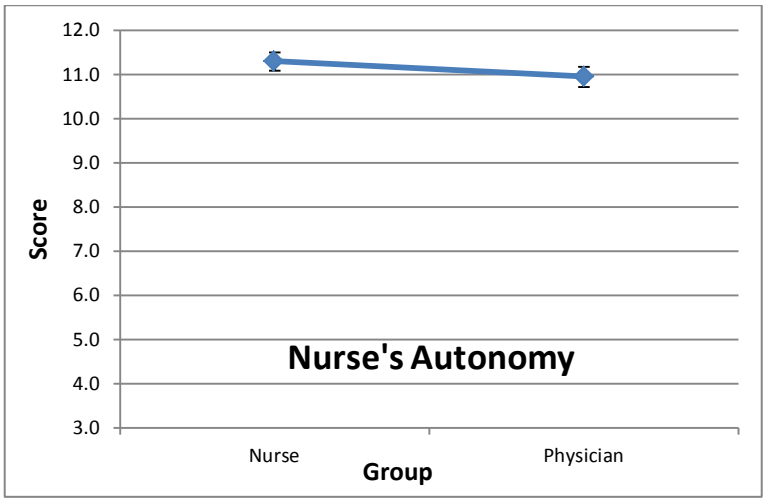


Figure 4.17: Comparison of Attitudes to Nurse Autonomy

- The mean ‘physicians dominance’ score was higher for the physician group (mean 5.5; 95% confidence interval for the mean 5.1-5.9) than for the nursing group (mean4.4; 95% confidence interval for the mean 4.0-4.9), Wilcoxon rank sum test: p=0.0024. The effect size was moderate with a Cohen’s d=0.69. See Figure 4.18. This implies that physicians have a more positive view of nurse’s contributions to the psychosocial and educational aspects of patient care. Here attitudes appear to be mixed with no strongly positive or negative opinions displayed.

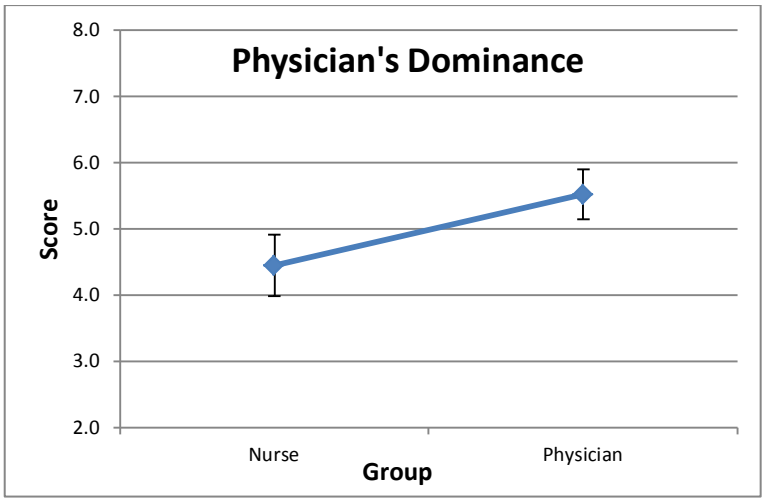


Figure 4.18: Comparison of Attitudes to Physician Dominance

Analysis of the subscales (factors) shows us why there was no significant difference in the overall score. Three of the subscales had effects where the nursing group scored higher than the physician group, while in the last subscale, the physician group scored higher than the nursing group. These factors cancel each other out, at least to some extent, when considering the total score.

4.6 DATA ANALYSIS OF PERCEIVED CONSTRAINTS, FACILITATORS AND RECOMMENDATIONS TO ENHANCE COLLABORATION

The Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration was used to determine the attitudes of both nurses and physicians toward collaboration in five critical care units with in a private hospital group in Johannesburg, South Africa. The scale consists of 15 statements which are scored on a Likert scale ranging from strongly agree to strongly disagree. The higher the total score, the more positive the attitude toward collaboration. In order to fully meet the stipulated research objectives, three open ended questions were added at the end of the questionnaire. These questions were identical in both the nurse and the physician group. The questions allowed comment on the perceived constraints of

collaboration, the perceived facilitators of collaboration and recommendations to enhance collaboration with in the critical care unit.

Although this is not a qualitative research report, the researcher felt that to omit important issues facing nurses and physicians in the critical care unit would be negligent. The valued personal opinions of nurses and physicians working in the critical care unit give meaning to this research. When analysing the data, the nurse group were separated into three different categories: enrolled nurse, professional nurse with critical care experience, and professional nurse with critical care training. The physicians were grouped according to their area of speciality: anaesthetics, nephrology, physicians, surgeons and other. The responses were analysed using content analysis and categorised into relevant themes.

4.6.1 Nurse Respondents Perceptions

4.6.1.1 Nurse Respondents Perceptions on Constraints to Collaboration

Lack of Mutual Respect

A lack of respect was overwhelmingly and widely represented. The word "respect" was written by a large portion of the respondents on their questionnaires. The lack of respect was far more frequently mentioned in the enrolled nurse group and less so in the professional nurse group. Nurses mentioned feeling disrespected by physicians, each other and by patients. In addition some nurses wrote that the physicians are themselves disrespected by the nurses due to their behaviour towards colleagues and patients. Evidence of superior-subordinate relationships came through from the respondents, typical of a hierarchal medical model. Nurses seemed to feel undervalued, disregarded, not taken seriously, unheard and undermined. According to the nurses, this perceived level of disrespect is a major obstacle to communication and a hindrance to collaboration.

Below are some extracts taken from the nurse data collection instruments:

"We don't need to like each other, but we do need to respect each other for the benefit of the patient"

"Doctors believe they are better than nurses, and as a result nurses do not respect doctors"

"Physicians don't take suggestion nurses give seriously or into consideration. They see nurses as their assistants, people who just carry out orders. It does not show us respect, we spent time learning how to be a nurse"

"When doctors look upon nurses as a lower class group and not as colleagues of the same patient"

"Physicians who make nurses feel inferior"

"Degrading others because they did not study the same amount of time"

"Doctors who think down on nurses and undermine them"

"Nurses opinions are disregarded"

"Respect should be maintained regardless of qualifications"

"Doctors do not respect us because we are not as qualified as them and as a result they undermine us"

Communication and Knowledge

All three nursing categories documented a lack of communication as being a concern to them in the pursuit of collaboration. Communication was described in the responses as being nonverbal (body language and gestures), verbal and written. The lack of communication seemed to occupy many dimensions. It presented as being problematic between nurses and physicians, nurses and nurses, physicians and patients, and nurses and patients. Nursing staff did not feel listened to and the presence of a superior-subordinate type relationship was again highlighted. A lack of knowledge was a particular concern more noticeable within the professional nurses who were trained in critical care. A perceived lack of clinical knowledge regarding the nurses by the physicians was apparent. Nursing personnel felt that the physicians should have a better knowledge and understanding of unit policies and protocols. What did surprise the researcher was that the nurse group did not seem to take responsibility for their lack

in clinical skill and knowledge, and seemed to blame the physicians for not taking an interest in teaching the nursing staff. Even though teaching is an important aspect of collaboration, there appeared to be a lack of ownership and a somewhat apathetic attitude from the nurse respondents with respect to their role in advancing their own clinical skill and knowledge.

Below are some extracts taken from the nurse data collection instruments:

"All orders should be clearly stated or written on the ICU chart to minimise orders not being carried out"

"Some of the doctors don't want to hear your own opinions and even if you tell them they do not listen"

"There is no communication – when doctors come and write on the ICU chart without saying a word to the nurse looking after the patient. Sometimes we are busy with our other patient and don't see them writing, then later it is realised that the instruction has been missed and we look foolish"

"Lack of communication between physician and nurse eg. not letting the nurse know when medication has been added"

"Communication difficulties based on historical patterns of hierarchy"

"Sometimes it is difficult to communicate with the physician 'cause it appears as you are trying to be more clever or make them feel incompetent"

"Doctors don't always expect nurses to know much"

"Doctors believe that nurses are not clever enough to make decisions"

"Level of experience and training of both nurse and physician"

"Doctors ignore unit protocols and then blame the nurse when things go wrong"

"Level of understanding of how things are done in a particular unit should be adhered to"

"Some of the doctors that admit patients are un co-operative to the system which usually operates very smoothly."

Attitudes and Behaviour

The nursing opinions on attitudes and behaviour were extremely negative. Attitudes of both nursing and physicians were highlighted by the nurse group. Nurses described their nurse colleagues as being "lazy" and "not paying attention to detail". Abusive and disparaging behaviour from physicians was noted. Feelings of implied physician superiority came through in the writings as did a lack of confidence and poor assertiveness on behalf of the nurses. Collaboration will not be possible in an environment where there is an abuse of power or where it is permissible for behaviour to transgress the right to basic human dignity. Adjectives such as "fear", "shameful" and "abuse" were used by the nurse respondents. It appears that some respondents in the nurse group have a good insight into their fellow nurses.

Below are some extracts taken from the nurse data collection instruments:

"Attitudes of both nurses and doctors goes a long way in determining the level of collaboration"

"When nurses fail to carry out orders it is embarrassing. Sometimes we are lazy or don't care because tea is more important to some nurses. The lack of attention to detail is sad"

"Nurses fear doctors, when your opinions are constantly rejected you step back"

"Lack of assertiveness on the part of the nurses and lack of confidence"

"Rude physicians who always shout when they want things to be done, even when the nurse is not in the wrong"

"Physicians come from a time where they think they are omnipotent"

"When doctors threaten to 'clap' you because something has not been done and is expecting you to perform tasks which are out of your scope of practice it is abuse. When you confront these doctors they threaten to have you fired because they are more important to the hospital that you"

Teamwork and Workload

A lack of teamwork and work volume overload was prevalent in the responses from the professional nurses trained in critical care. This factor was not identified by the enrolled nurse group as being a constraint to collaboration. In general, the professional nurse felt that they were not appreciated by the physicians, and that they were treated as an unskilled assistants rather than a valued team member with pertinent opinions that could contribute to patient treatment and care. The volume of administrative work was a concern for the nurses as it kept nurses away from actually nursing the patient. The concept of team work extended beyond the critical care units to involve other areas in the hospital such as emergency departments, theatres and wards. The transition of patients into and out of the critical care unit is a co-ordinated affair requiring teamwork from all participants.

Below are some extracts taken from the nurse data collection instruments:

"The nurse is constantly in the unit which contributes to pressure of decision making while the physician is not around at that moment"

"Physicians not treating nurses as team player"

"Physicians taking nurses as people to take orders and do them, not as a team working together"

"Doctors are mainly the sole decision makers and a nurse opinion is almost never considered"

"Poor inter-professional relationship between physicians and nurses. Doctors give orders and nurses just have to do the work"

"Doctor is unwilling to step out of his scope or field and assist with a nursing task, even when he has the time to help"

"Doctors cannot clean up after themselves. The nurse will spend a long time assisting the doctor with a procedure and then he will walk away and expect her to clean up, this is not how a team should work together"

"Nurses opinion is not a part of daily patient progress discussion. Nursing issues such as pressure care, oral care and family dynamics are not considered"

"Teamwork happens when you are looking after a very ill patient, but otherwise not. Only then are you considered good enough to contribute"

"Education of doctors to do things for themselves and not send nurses around. At times nurses have to stop what they are doing to run around for the doctor"

4.6.1.2 Nurse Respondents Perceptions on Facilitators to Collaboration.

Knowledge and Clinical Skill

There was a definite trend amongst the nurse group with regards to sound clinical skill and knowledge being a major influential factor in facilitating collaboration in the critical care units. Although this theme ran through all three nurse groups it was markedly relevant in the enrolled nurse group indicating a level of self-realisation. The enrolled nurse group has the lowest level of training and therefore the least clinical knowledge and skill in the critical care environment. The nurse respondents wrote about needing the appropriate knowledge to understand a diagnosis. Mention was made of academic rounds which should include nursing staff and the maximising to teaching moments by both physicians and nurses. There is a clear understanding that increased knowledge will bring and increased trust relationship between the physician and the nurse, which will in turn develop collaborative practices. Emphasis was not only placed on clinical knowledge but focus was also directed to the need of having a broader understanding on how to build collegial relationships. In addition the nurse respondents felt that physicians did not understand their scope of practice and felt that this knowledge deficit needed to be addressed.

Below are some extracts taken from the nurse data collection instruments:

"If nurses had a better knowledge of clinical aspects of the disease processes they deal with we could work better with the physician and decrease the time a patient is in ICU"

"Learning opportunities should be encouraged – teaching moments from physicians and other nurses"

"Doctors should establish what nurses are able to do first. Objective assessment of the nurses capabilities, not assume they know less than they do, and to take it upon themselves to teach nurses"

"Education of doctors on issues related to nurse-doctor relationships"

"Clinical facilitator should be more hands on in the critical care unit to ensure correct methods and procedures done correctly at all times"

"Education"

"We must attend courses that will teach us about the unity and working together"

"Education of doctors re doctor-nurse collaboration"

Interpersonal Relationships and Communication Skills

The need for good interpersonal relationships as a characteristic of sound collaboration was identified in the responses from all three nurse groups. The development of worthy interpersonal relationships would not be possible in the absence of entrenched and successful communication. For this reason the researcher has grouped these two themes together. Repetitive statements such as mutual respect, understanding, value and recognition were identified as traits to building interpersonal relationships. Trust was an important value that spilled over into the theme of knowledge and skill development. Effective communication skills and common goals were mentioned by several of the nurse respondents. In South Africa, where most nurses are black females and most physicians are Asian or white males, it is extremely difficult for nursing staff to begin to form good collegial interpersonal relationships.

Below are some extracts taken from the nurse data collection instruments:

"Good communication between a physician and a nurse"

"Good communication channel, doctors and nurses should have good attitudes toward each other

"Trust each other and never undermine one another"

"How can a doctor trust a nurse that does not know what she is talking about"

"Understanding each other, physicians orders to be carried out timeously to create good working relationship and physician learns to trust the nurse"

"History with physician and how long they (nurse and physician) *have worked together. Physicians comfort or trust in the nurse"*

"A competent, confident nurse gains trust and respect from the doctor and thus improves nurse-doctor collaboration"

"*Understanding and respecting each other's roles"*

"Respect both ways. Physicians to be able to acknowledge nurses when they have good suggestions"

"Mutual respect – putting patients' needs first"

"A good attitude"

Teamwork

The theme of teamwork as a facilitator to collaboration was most prominently addressed by the professional nurse who is trained in critical care nursing, and less so by the professional nurse who has experience in critical care but is not trained in such. This theme was not explored at all by the enrolled nurse group. From the respondent's comments, the researcher has concluded that teamwork does not only apply to the physicality of assisting each other, but to the need for acceptance into a team through acknowledgement, praise, involvement, validation and acceptance. The sense of working jointly towards a common goal or purpose, with that purpose being understood by every individual involved, was considered to be important to some of the nurse respondents.

Below are some extracts taken from the nurse data collection instruments:

"Physicians to recognise the importance role nurses play in patients' recovery"

"Acknowledge nurses information and suggestions regarding patient care"

"Doctors and nurses to respect each other's knowledge and use it to benefit the patient to ensure a good healing process"

"Involving nursing staff during unit rounds and nursing care should be discussed"

"Allow nurses to use their initiative"

"I disagree that doctors should be the dominant authority in health care maters, this causes animosity between doctors and nurses"

"Nurses are valuable assets in the management of patient care and an integral part of the health care team"

"Nurses want to be a participative decision maker on patient care and treatment"

"Tolerance and teamwork should be primal"

"The common objective is to quicken the recovery of the patient. If we all move towards the same end point we have a higher chance of achieving it"

"Active involvement of nurse in ward round"

Organisational Structure

A few members of the nursing group identified the need for a particular person to be the co-ordinator of collaboration in the critical care unit. This co-ordinator should be able to foster and develop more collegial relationships between members of the team including the allied health professionals. The nursing group appear to feel that a defined systematic approach to the daily activities and grounded policies which will govern the unit will encourage collaborative practices.

Below are some extracts taken from the nurse data collection instruments:

"Unit managers to facilitate the good healthy relationships with doctors"

"The director of the unit is responsible for creating collegial relationships"

"Respecting protocols and following policies"

"Each unit should have a standardised system according to which doctors who admit in that unit should function. This would facilitate collaboration"

"Some doctors see patients very late in the day and nurse continues without even a prescription on the ICU chart. Doctors are not available telephonically, if you leave a message they do not get back to you. You go through the day with no direction in relation to the patients treatment plan"

4.6.1.3 Nurse Respondents Recommendations to Enhance Collaboration

The nurse respondents seemed to be in favour of good nurse-physician collaboration and there appears to be a definite level of understanding within the group on what is required for the development of this collaboration. From what the researcher has understood from the respondents comments, there is a clear attitude problem from both the nurse and the physician. Perhaps this is due to a breakdown in communication, a need for role clarification, or a lack of discipline within the units. As one of the nurse respondents wrote, *"We are all human beings"*.

Having a good attitude was a main recommendation from the nurse respondents. They felt that a good attitude was essential in fostering a collaborative relationship and a good attitude encompassed respect. Respect for each other as a professional person with different but valuable knowledge and respect for the patient. The umbrella of attitude covered appreciation, compassion, dedication, tolerance and trust.

Good communication and team work were identified by the nurse respondents as being factors that will enhance collaboration in the critical care unit. Open channels of communication which included both verbal and written forms of communication. The building of a reliable team that supported each other

was emphasised. Some respondents recommended regular gatherings of all team members in a social setting. According to the nurse respondents a strong team will lead to good decision making and well defined patient target goals.

Education was an overwhelmingly large contributor to the enhancement of collaboration. This involved education on what collaboration was and how to begin achieving it in their units. The improvement of nursing skills and knowledge is essential. Suggestions came through for a dedicated clinical facilitator in each critical care unit to improve the clinical skill and knowledge of the staff. Education to the physicians regarding unit specific polices and the scope of practice of nurses was recommended. One respondent recommended that in the basic training at medical school, doctors should function as a nurse for a period of time.

Changes to current organisational processes within the critical care units were recommended. This included all doctors to be available if needed. The setting of clear guidelines outlining expectations for the unit which included behavioural and practice related expectations. Nurse respondents suggested debriefing sessions to be available from hospital for the team. Moral distress (Papathanassoglou, Karanikole, et al, 2012) is a common phenomenon in critical care environments and the institution should take responsibility for addressing this dilemma.

4.6.2 Physician Respondents Perceptions

4.6.2.1 Physician Respondents Perceptions on Constraints to Collaboration

Relationships and Attitudes

The physician group frequently emphasised the turnover of nursing staff and the use of occasional agency staff as being a constraint to collaboration. They substantiated this with the following. Firstly, physicians felt they were unable to form a relationship with agency nursing personnel, and secondly the physicians felt that they were unable to judge the level of expertise of the occasional nursing staff. Traditional roles of both nurses and physicians, patriarchal attitudes of male physicians and the existing hierarchy of the

professions were documented. The existence of a superior-subordinate relationship was mentioned by many of the physicians who expressed their fellow colleagues as having a superior ego, being arrogant, displaying a superior attitude, and intimidating nursing staff. The physician group described nurses as feeling judged, persecuted, undermined, and inferior when asked directly about patient concerns. The lack of motivation and confidence displayed by nursing personnel was a concern for the physician group.

Below are some extracts from the physician data collection instruments:

"Lack of confidence from nursing staff, sense of being threatened"

"Ego – primarily superior attitude of doctors"

"Arrogance of doctors and disinterested or lazy nurses"

"Distrust"

"Subservient attitude of nurses and dominant paternalistic attitude of the physician"

"Unfamiliarity with nursing staff – agency staff"

"Physician – surgeon ego"

"The nature of our society places the usual social constraints on people making integration and trust difficult to develop"

"Hierarchy of the professions and intimidation of nurses by physicians"

"Traditional perception of doctor-nurse relationship"

"Patriarchal attitudes especially from male doctors"

"Non-permanent staff that have no relationship with the rest of the staff"

"Nurses feel inferior or undermined when asked about matters concerning the patient. At times I feel they feel they are being judged/persecuted and yet the goal is to get the patient well and offer best care"

"Disempowered nursing staff"

Level of Education

A perceived lack of education of nursing personnel was expressed by many of the respondents from the physician group. This extended from a perception of inadequate basic knowledge and training to the lack of a university based education programme for nurses at hospital level. The physician group highlighted clinical skills as being a constraint to collaboration as well as different levels of technical skills that were not uniform within a critical care unit was seen problematic. Also documented was that all critical care nursing staff were not trained in critical care nursing and that they were seen by physicians as being unwilling to improve themselves clinically.

Below are some extracts from the physician data collection instruments:

"Lack of doctor to nurse education"

"Clinicians should be more approachable and prepared to teach"

"Poorly trained staff"

"Lack of certain clinical skills"

"Lack of clinical knowledge and lack of knowledge of patient's conditions by the nurse involved"

"If the nurse appears to be poorly trained then collaboration is difficult"

"Basic level of knowledge"

"Technical expertise"

"Level of training of nursing staff, competence of nursing staff is very variable. Many ICU sisters are not properly qualifies in ICU care"

"Lower grade nursing staff managing cases"

"The highly variable skills within the nurses, ranging from excellent to almost non-existent at times."

"Perceived level of education"

"All nursing staff not having an adequate educational level for assessment or management of patients"

"Many of the nursing staff are not ICU qualified or trained. The level of knowledge amongst the nurses with respect to understanding the patients problem is poor but they are not prepared to improve their knowledge."

"In South Africa the education levels of nursing staff are not uniform"

Communication and Accountability

The feeling as understood by the researcher from the respondents was that communication was generally poor. Mention was made of the communication between shifts involving both nursing personnel and physicians. The physician group reported that more communication from nursing staff regarding patient progress was needed. The inability to identify nursing staff by name was an area of concern for one physician and another made mention of the language choice used in the critical care unit as being a problem. Distraction of both nursing personnel and physicians while on ward rounds was an indication of not listening attentively to the current discussion. Several physicians felt that nursing personnel should be forced to take ownership and accountability for the work they do. Due to reporting structures namely bedside nurse to shift leader, and then shift leader to unit manager, and unit manager to the matron, the nurse did not find themselves accountable to the attending physician and the attending physician felt that they should be.

Below are some extracts from the physician data collection instruments:

"Language – everyone should speak English when discussing patient care"

"Failure to allocate appropriate levels of responsibility to nurses"

"Lack of communication from both sides and discussion of patient pathology"

"Level of accountability"

"Unclear orders"

"Hesitancy of the nurse to communicate with the doctor"

"Lack of name tags"

"Nurses are often not asked their opinion on patient care"

"Poor communication"

"Ward rounds are including doctors and shift leader with not enough input from the attending nurse"

"Communication gap when night shift nurses have left before doctors do rounds"

"Doctors and nurses not paying attention on morning rounds"

"ICU nurses need to 'speak' to their patients more"

"Nurses have responsibilities and usually hide behind shift issues as a reason not to know their patients. They need to take ownership"

"Nurses are an integral part of the ICU team and must be given more responsibility"

"Nurses need to take a wider role/responsibility in the management of their patients"

"NURSING NEEDS TO TAKE BACK OWERSHIP OF THEIR SUBLIME PROFESSION!"

Institutional Paradigm

Here the researcher has grouped some themes which are under the direct control of the hospital. These include workload, financial constraints, policies and staff turnover within the critical care unit.

Below are some extracts from the physician data collection instruments:

"Inadequate collaborative time involving doctors and nurses together"

"Time Constraints and pressures"

"Time that the physician spend in ICU"

"Employment of all nursing personnel. Not employed as nurse practitioners who are able to think for themselves"

"We need to get rid of salary collecting job mentality"

"I would suggest that the nurse who is salaried versus the doctor who bills leads to a certain complacency in terms of taking responsibility leading to poor collaboration"

"Rigid inflexible policies that limit innovation"

"Constantly changing personnel within the unit makes it difficult to get to know each individuals level of expertise, relative strengths and weaknesses and thus it is difficult to build mutual trust and understanding"

"High staff turnover"

"Use of agency staffing"

4.6.2.2 Physician Respondents Perceptions on Facilitators to Collaboration

Nursing Leadership

A couple of the respondents commented that a strong nurse leader within the critical care unit could set the climate for a collaborative environment. With all the issues highlighted such as poor levels of clinical knowledge and skill it seems that there are many challenges facing the development of true collegial relationships. A strong leader will be able to take the first step towards collaboration with the hope that strong staff will begin to follow.

Below are some extracts from the physician data collection instruments:

"Introduction of the use of nurse practitioners"

"Nursing staff to play a greater role in leadership"

"Unit managers should be on major ward rounds"

"Active participation of senior nursing staff on ward rounds"

"Shift leaders are influential in establishing the tone for the day"

"Unit manager who is strong and the shift leader"

"In the critical care unit the type of leadership influences the perception of collaboration"

Increased Nurse Involvement

A great number of the physician respondents urged the nursing personnel to be more participative during ward rounds and more involved in the treatment plans of their patients. Unfortunately, without a dramatic improvement in the communication skills of both nurses and physicians, as well as an increase in the clinical competencies of nursing staff, this will not be possible. The physician respondents hope for active participation of nursing personnel on ward rounds, nurse presentation of patients, nurse involvement in decision making and goal setting, and to be present at the patients' bedside during ward rounds. An elevation in clinical competencies will need to be addressed. An elevation of the image of nursing seems to be of concern for the physician group.

Below are some extracts from the physician data collection instruments:

"*Performing rounds together with feedback from the sister as to how the patient is doing"*

"Ward rounds inclusive of shift leader and nurse responsible for the patient"

"Involvement in decision making, and multidisciplinary team meetings"

"Team work and approach"

"Good morale, praise people for doing good work"

"During ward round give nurse opportunity to comment on treatment and condition of patient"

"Empower the nurse in every sense to be equal players in patient care"

"More active contributions and discussions on rounds. Mutual respect for decisions made"

"Nurses asking for explanation on (patient) *management decisions. High standard of nursing care with a zero tolerance to errors or omissions"*

"To enhance nursing standard and improve nursing image"

"A combined ward round where input from both nursing staff and attending doctor leads to decision making"

"Attending nurse to be at the bedside during morning rounds"

"Joint ward rounds with joint decision making"

"The doctor takes final responsibility for whatever happens but nurses need to be made to feel that their thoughts are important"

"90% of the time I feel I have an excellent relationship with the sisters with whom I am working"

Clinical Competencies and Knowledge

The physician respondents noted their willingness to be involved in teaching and up skilling of nursing personnel in the critical care units. There is a good understanding around the importance of team work and the appreciation of all members of the care team. Their own deficit in the understanding of the individual responsibilities of each team member was apparent. Role clarification and an increased knowledge in effective communication was found to be necessary.

Below are some extracts from the physician data collection instruments:

"Better training of nursing staff"

"Better education of both doctors and nurses and an understanding of roles and responsibilities"

"Training of nurses by doctors"

"Doctors teach the patient and make them understand why the patient needs the care offered"

"Re-education of both doctors and nurses"

"Combined ward rounds and teaching sessions"

"Well trained nursing staff that engage with physicians with respect to management of their patients"

"Having a nurse with a lot of experience and confidence can teach the doctor a lot"

"Good communication and well trained staff"

"Better communication between the nurse and physician including legibility of written orders"

"Closed loop communication between physician and nurse ie, instruction given and instruction understood"

4.6.2.3 Physician Respondents Recommendations to Enhance Collaboration

The most prevalent recommendation from the physician respondents on enhancement of collaboration is autonomy of the nursing personnel. Practical approaches to this included clear set guidelines on roles and scopes of team members, protocols allowing nursing personnel to act without direct instruction from a physician, setting aside time at each patient to allow the nursing personnel to ask questions and voice opinions regarding their patient's care plan.

An improvement in the level of skill, training and knowledge was felt to be a major hindrance in the strive toward collaboration. An increase in knowledge would give nursing personnel the confidence to speak up and contribute their opinions on patient care, thus bringing them a step closer to an autonomous

practice model. Recommendations from the physician group on how to improve the level of knowledge and skill included a clinical facilitator for each ICU, an increase in the physician to nurse teaching moments, joint attendance at academic meetings, attendance of nursing personnel at morbidity and mortality rounds, and encouraging nursing personnel to go to theatre and witness some procedures to facilitate a better understanding of the nursing role in the patients post-operative recovery. One of the physicians felt that a better understanding of cultures needed to be emphasised as the medical profession is a melting pot of different cultures and tolerance of these differences was essential.

The familiarity of nursing staff to physicians appeared to be an important consideration in the development of collaboration from the physician respondents. Several physicians mentioned the development of trust between themselves and nursing personnel as being important and stressed that knowing the capabilities of individual nurses was essential in the development of a trust relationship. Trust is developed over time and staff retention is therefore vital to the process.

An increase in "shared time" was proposed as a facilitator to collaboration. This included shared break rooms in the critical care unit, planned social events outside of the unit, and occasional nurse presentation of patients in the critical care unit. One of the physicians suggested an appraisal system between the physician and the nurse where each profession appraises the other.

4.7 SUMMARY

In this chapter the researcher has looked at the data collected and analysed the data. The approach to the data analysis was explained and the data was unpacked. Demographic data on the nurse and physician groups was detailed and where the same variable were used the data was compared. The attitudes of both the nurse group and the physician group were scored according to the Jefferson Scale of Attitudes Toward Collaboration. The two groups were compared and significant differences were demonstrated graphically. Tables were included detailing the statistical analysis of all the variables. Personal opinions on the constraints and facilitators to collaboration of the two groups were comprehensively noted, as well as recommendations from the groups on enhancement of collaboration within the critical care unit. In the following chapter, a summary of the research will be presented as will limitations of the study and recommendations from the study.

CHAPTER 5

SUMMARY, MAIN FINDINGS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This is the final and concluding chapter of this research report. In this chapter the researcher will recap the purpose of the study, the objectives of the study, the methodology followed during the execution of the study and give a summary of the study findings. Any limitations pertaining to the study will be put forward as will potential recommendations to the nursing profession in relation to collaboration in critical care units.

5.2 SUMMARY OF THE STUDY

As discussed in the literature review, collaboration has a tremendous effect on the morbidity and mortality of patients. It has been demonstrated that in the presence of collaboration between physicians and nurses, there is a decrease in patient length of stay, an improvement in patient outcomes, an increase in patient satisfaction, and an increase in the prevention of complications. Also discussed in the review of the literature was the link between healthy work environments, or positive practice environments, and the retention of highly qualified nursing staff. Collaboration is sited as being a vital contributor to the development of a positive practice environment and thus a major role player in the attraction and retention of qualified nursing staff. In South Africa, as with the rest of the world, there is a shortage of qualified nursing staff, particularly in specialized areas such as the critical care units where the nurse to bed ration is thought to be 1.1 nurse to every critically ill patient. The scarcity of critical care nurses has been attributed to international migration, attrition due to HIV/AIDS, a decrease in the number of suitable qualified nurse educators and the poor image of nursing displayed by the media within South Africa.

The purpose of the study was to elicit nurses' and physicians' attitudes toward collaboration in the critical care unit. In addition to this, the study wanted to describe the constraints and facilitators of collaboration as perceived by the nurses and physicians working in the critical care environment, as well as identify any possible recommendations the nurses and physicians may have for enhancing collaboration with in their units. This was done in an attempt to understand the dynamics relating to collaboration with in a critical care unit in South Africa, in the hope of bringing a better knowledge of how to encourage collaboration as a tool to retain and attract quality nursing staff.

The set research objectives were as follows:

- To elicit nurses' and physicians' attitudes toward physician nurse collaboration in the critical care unit.
- To identify factors which facilitate or constrain effective collaboration in the critical care unit.
- To elicit recommendations for enhancing physician nurse collaboration in the critical care unit.

5.3 METHODOLOGY

Prior to commencement of the study permission was sought and granted from the following university entities: the Department of Nursing Education at the University of the Witwatersrand, the Faculty of Health Sciences Post Graduate Committee at the University of the Witwatersrand, and the Human Ethics Research Committee (Medical) of the University of the Witwatersrand. A clearance certificate numbered **M120624**, was awarded.

Permission to conduct the study at three private hospitals in Johannesburg was sought and obtained from each of the hospital managers. At the request of the Human Ethics Research Committee the support of a

research assistant was acquired. To ensure accurate interpretation on the data, a qualified statistician from Data Management & Statistical Analysis was enlisted.

A quantitative, prospective, non-experimental, descriptive design was used in the execution of the study. The setting for the research was five critical care units in three private hospitals in Johannesburg, South Africa. The disciplines of care within the critical care units were varied and covered a range of surgical and medical components. The study population consisted of enrolled nurses, professional nurses, and physicians working in the critical care units of the three private hospitals. A total of 103 participants took part in the study which yielded a response rate of 62%. The data collection procedure was undertaken by the research assistant who visited the critical care units and ensured that all potential participants were invited to be involved. Anonymity of the participant and the facility was assured. The Jefferson Scale of Attitudes Toward Physician-Nurse collaboration was used to collect the data. This instrument was used with permission of the co-developer Mohammedreza Hojat. Validity and reliability of the instrument had been demonstrated in previous studies. The instrument consists of 15 statements which are scored on a Likert scale from strongly agree to strongly disagree. Additional demographic information was requested for the purpose of this study, as were three additional questions at the end of the instrument to cover the set research objectives. All data collected was collated onto an excel spread sheet for further analysis.

5.4 PILOT STUDY

A pilot study consisting of five nurses and five physicians was carried out in February 2013, prior to commencing the main study. The participants of the pilot study met the inclusion criteria for the study and worked in similar environments as the potential study participants. No amendments were necessary to the data collection tool prior to use in the main study. The five nurses and five physicians who participated in the pilot study were excluded from the main study, as was any information captured in relation to the pilot study.

5.5 DATA ANALYSIS

Data was collected from the five critical care units of three private hospitals in Johannesburg, South Africa, between the months of April 2013 and June 2013. The assistance of a qualified statistician was enlisted to ensure accurate analysis of the data. Demographic information of the respondents and their attitude toward collaboration, as assessed by the data collection instrument, were analyzed. Data analysis was carried out using SAS Software version 9.3 for Windows. Tables depicting all statistically analyzed information were included in the body of the research. Only data depicting a statistically significant effect were represented in graphs and further discussed.

The perceptions of nurses and physicians to the constraints of collaboration, facilitators of collaboration and to recommendations on the enhancement of collaboration were examined. Both the nurse respondent group and the physician respondent group were analyzed separately and categorized into meaningful themes. Quotations of the respondents were included in the body of the research.

5.6 MAIN FINDINGS

5.6.1 Demographic Information

The mean age of the nurse respondents was 37.5years with a mean of 6.3years experience working in a critical care unit. A large percentage of the nurses were female, 86%. Only 41% of the respondents had more than 6 years' experience working in a critical care unit with 30% of the respondents having less than 2 years' experience working in a critical care unit. Of the nurse respondents, 31% were enrolled nurses, 41% were professional nurses not trained in critical care nursing, and 27% were professional nurses trained in critical care nursing. Only 20% of the nurse respondents were degree trained, 50% diploma trained and 30% were certificate trained.

The mean age of the physician respondents was 40years with a mean of 10.9years experience working in a critical care unit. A large percentage of the physicians were male, 77%. Over 37% of the respondents had more than 11years experience working in a critical care unit with only 32% having less that 5years experience working in a critical care unit. The physician respondents were comprised of the following medical specialties: Surgeons, 30%; anesthetists, 26%; nephrologists, 18%; and physicians 18%. The remaining 8% was microbiology, paediatrics and neurology.

The nurse group was mostly female, with relatively little critical care experience. Two thirds were professional nurses of which only one fifth were degree trained. The physician group was mostly males of a slightly older age, with much more experience in critical care than the nurses. The majority of the physicians were surgeons followed by anesthetists, nephrologists and physicians. Two statistically significant findings were found and they were: significantly more females in the nursing group than the physician group (Fisher's exact test: $p<0.0001$), and that the physicians had a significantly higher mean in the years of experience in critical care units as compared to the nurses (Wilcoxon rank sum test: $p=0.010$).

5.6.2 Attitudes Toward Physician-Nurse Collaboration

5.6.2.1 Nurse Respondents

The overall score for the nurse group showed a significant difference with respect to the category of nurse and the highest level of education of the nurse. The score for the professional nurse trained in critical care was significantly higher than the score for the enrolled nurse, and the score for the degree trained nurse was significantly higher than the score for the certificate trained nurse. This demonstrated an increase in the attitudes toward physician-nurse collaboration with an increase in education and an elevation of the category of nurse.

Looking at the four subcategories of the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration, the age group 31-40years scored significantly higher than the 41year+ age group with respect to 'Shares Education and Collaboration', indicating a greater orientation to interdisciplinary education and interpersonal collaboration. In the 'Caring vs. Curing' subcategory, the male nursing group scored significantly higher indicating that the male nurses have a more positive view of the nurse's contribution to the psychosocial and educational aspects of patient care. In the 'Physician Dominance' subcategory both the professional nurse trained in critical care nursing and the degree trained nurse scored significantly higher than the other nursing groups. This indicated the rejection of a totally dominant role by the physician in aspects of patient care and an increased sense of collaboration.

5.6.2.2 Physician Respondents

With in the physician group there was little significant differences across the subcategories of the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration and the variables. The only significant difference found was the scoring of the subcategory 'Physician Dominance' with respect to age. The 35-44year age group scored significantly higher than the 28-34year age group. This indicated a rejection of a totally dominant role by the physician in aspects of patient care.

5.6.2.3 Comparison of Nurses' and Physicians' Attitude Toward Collaboration

The overall mean score for the nursing group was higher than the physician group demonstrating that the nurse respondents had a more positive attitude toward physician-nurse collaboration. The mean scores were however not found to be significantly different and it should be noted that both group mean scores were relatively close to the maximum score. The mean nurse group scores for the subcategories 'Shares Education and Collaboration', Caring vs. Curing', and 'Nurse Autonomy', were all significantly higher than the mean scores for the physician group with respect to these subcategories. The mean physician group score for the subcategory 'Physician Dominance' was significantly higher than the mean score for

the nursing group. This implied that the physicians had a positive view of the nurse's contributions to the psychosocial and educational aspects of patient care.

5.6.3 Perceived Constraints, Facilitators to Collaboration and Recommendations to Enhance Collaboration

5.6.3.1 Constraints to Collaboration

The nurse respondents categorized four main themes with regard to constraints to collaboration. They perceived a lack of mutual respect, a lack of appropriate communication and knowledge, certain attitudes and behavior of both the nurse and the physician, and a lack of teamwork combined with a high work load to be the main constraints to collaboration in the critical care unit. There were recurrent indications of a superior-subordinate relationship between the nurses and physicians where power and control were prevalent, typical of a hierarchical medical model.

The physician respondents categorized four main themes with regard to constraints to collaboration. They perceived the development of relationships and attitudes between themselves and the nurses, differing levels of nurse education, a lack of communication and accountability from the nurses, and an institutional paradigm as being constraints to collaboration in the critical care unit. Reference was made to the existence of a superior-subordinate relationship, entrenched in tradition roles of the hierarchy of the professions.

5.6.3.2 Facilitators to Collaboration

The nurse respondent perceptions on the facilitators of collaboration were as follows. An increase in knowledge and clinical skill was thought to be a priority. This included an increased knowledge from the physicians on the role and scope of the nurse in a critical care unit, and an increased clinical knowledge and skill of the nurses themselves. The development of sound interpersonal relationships and good communication between the physician and the nurse was important to the nurse respondents. With the

existence of a superior-subordinate relationship between nurses and physicians and the cultural differences between the groups, particularly in South Africa, this was considered to be vital in the pursuit of collaboration. The concept of teamwork between the nurses and between the two groups was seen as a facilitator by the nurse respondents, as was adequate organizational structure. This included a coordinator of collaborative elements within the unit and well-grounded policies which were adhered to.

The physician respondent perceptions on the facilitators of collaboration were as follows. A strong nursing leadership in the critical care unit, an increase nurse involvement and participation in patient treatment planning and rounds, and clinical competencies and knowledge of the multidisciplinary team.

5.6.3.3 Recommendations to Enhance Collaboration

Focus on the development of interpersonal relationships and attitudes toward each other were a recommendation common to both the nurse groups and the physician group. A greater emphasis on effective communication and the understanding of each other's cultural differences was advocated. A huge importance was placed on having personnel with appropriate skill and ability to function in the critical care unit as well as the retention of such personnel. Good role clarification with an understanding of each individuals contribution toward patient care was suggested. The most prominent recommendation from the physician group was a desire for an increase in the autonomy of nurses and an increase in interaction from nursing personnel with respect to their patients.

5.7 LIMITATIONS OF THE STUDY

The following were found to be limitations to this study:

- Physicians, professional nurses and enrolled nurses formed the population for this study. Enrolled nursing assistants and care workers are part of the nursing team in the critical care unit but their attitudes and perceptions were not examined.

- There were a small number of male nurses in the sample.
- There were a small number of female physicians in the sample.
- The exclusion of paediatric and neonatal intensive care units at the research site hospitals.
- The use of only one private hospital group as research sites without sampling any hospitals from the other two predominant private hospital groups in Johannesburg, South Africa.

Taking these limitations into consideration, the findings of the study cannot be generalized unless the study is replicated in the intensive care units of other hospital groups in the private sector.

5.8 RECOMMENDATIONS OF THE STUDY

Based on the findings of this study the researcher has put the following recommendations forward:

5.8.1 Recommendation for Nursing Practice

- Every category of nurse needs to reclaim their profession. Stand up and be proud of what you do, and own what you do. Nurses are an integral part of the medical management team and your opinions need to be heard, so speak.
- Take responsibility for your limitations and be prepared to initiate action to remedy your inadequacies. Constantly improve your communication skills and your clinical competencies. Use every moment in the critical care unit to learn and to develop your professional integrity.
- Be aware of the relationships you have with your colleagues. Teamwork is essential for the development of collegial relationships. With teamwork comes respect, integrity, pride, and a sense of belonging.
- Dictate a high level of nursing care.

5.8.2 Recommendations for Nurse Leaders

- Assess workload and allocate tasks to the appropriate level of staff.
- Allow adequate budget for the up skilling of nursing staff. This should include clinical competencies and skills, training in communication and cultural awareness, assertiveness training and debriefing programs.
- Ensure clinical governance with in the critical care unit to govern behavior and expectations of both nursing personnel and physicians.
- Take the lead and coordinate collaborative strategies in the critical care unit. Recognize nursing staff, acknowledge nursing staff, and organize common events between the nurses and the physicians.
- Ensure there is clear role clarification with in the multidisciplinary team.
- Be visible, reliable and credible.

5.8.3 Recommendations for Nurse Educators

- From the beginning of nursing school, nurse educators must stress the importance of nursing autonomy in order to avoid the continuation of the hierarchical medical model where nursing is seen as inferior.
- Nurse educators need to stress the role that team work plays in the holistic approach to patient care. In order to function as a team adequate communication must be in place, as does a sound clinical knowledge, good attitudes to others and your work, a sense of shared responsibility and joint accountability.
- At hospital level, clinical facilitators must to be part of the critical care unit to ensure that nursing personnel are practicing sound clinical skills and have the knowledge to contribute to patient care programs, as well as initiate discussion on patients care between the physician and the nurse.

5.8.4 Recommendations for Nurse Research

- Conduct research on collaboration in the critical care units and include all members of the multidisciplinary team.
- Extend the research setting to involve paediatric and neonatal critical care units.
- The perceptions of patients and families regarding collaboration in the critical care unit could be examined and compared to the perceptions of the nurses and physicians.

5.9 CONCLUSION

The researcher began this report with the hopes to better understand collaboration in the critical care unit, particularly collaboration between nursing personnel and physicians. Collaboration is viewed as a vital component in the creation of positive practice environments, and a positive practice environment is recognized for attracting and retaining quality nursing staff. With the current scarcity of skilled nursing staff in South Africa, collaboration should be used as a tool to retain quality nursing staff.

It was discovered that the nurses in the study had a more positive attitude to collaboration than the physicians. In addition, their perceptions on constraints to collaboration, facilitators to collaboration, and recommendations to enhance collaboration had some very similar themes.

What became apparent to the researcher was that the critical care unit is a microcosm of the South African society. Despite the abolishment of apartheid almost two decades ago, society is still racially and ethnically divided with vast social and educational shares between various groups. Traditional, patriarchal roles where black woman are socialized to be submissive to their dominant male counterparts is a reality. These divisions in society are mirrored and perhaps exacerbated in the critical care unit. Most nurses in South Africa are black females and the majority of physicians are male. Language and cultural variances have been identified by both nurses and physicians as being evident in the critical care environment, as have large educational breaches. The hierarchical nature of the superior-subordinate

relationship between nurses and physicians has been highlighted as a detrimental element in the struggle for nursing autonomy and accountability.

The desire to develop a more collegial relationship between the professions has been identified and measures to improve collaborative practices have been sought with the hope to attract and retain quality skilled nursing staff in the critical care unit.

APPENDICES Appendix A

A: Potential Participant Letter of Information

Dear Colleague,

My name is Lynn Palmer. I am a registered student at the University of the Witwatersrand in the Department of Nursing Education, currently completing a Master of Science in Nursing. I would greatly appreciate your participating in my study entitled "Nurses and Physicians' Attitudes toward Physician-Nurse Collaboration in Private Critical Care Units"

Physician-Nurse collaboration in the complex and multidisciplinary setting of the Critical Care Unit is vital. Literature has shown that effective Physician-Nurse collaboration improves patient outcomes, decreases hospital expenditure and is a major aspect of a healthy work environment. Despite this, collaboration in Critical Care Units is not a common practice. With the current shortage of skilled nursing staff, establishing a healthy work environment through true collaboration could be a means of attracting and retaining scarce skilled nursing personnel.

This study seeks to elicit both nurse and physician attitudes towards collaboration, identify the constraints that effect collaboration and make recommendations on improving collaboration within the Critical Care Unit.

Should you agree to participate in the study, kindly complete the attached questionnaire, I anticipate it should not take more than 15 minutes of your time. The questions asked are related to Physician-Nurse Collaboration in the Critical Care Unit. Your participation is entirely voluntary. Should you decide to withdraw from the study the services you receive or provide to the institution and its health care workers will not be affected. Anonymity of yourself and the institution is assured.

The appropriate approval and clearance to conduct this study has been granted from the relevant departments with in the University of the Witwatersrand and the selected research sites.

I appreciate that you will derive no direct benefit from participating in the study. Thank you for taking the time to read this information letter and for taking the time to complete the questionnaire. Should you require any further information regarding the study or your rights as a study participant I can be contacted on the telephone number listed below. A copy of the research report will be made available to you on completion if you so wish.

Yours sincerely,

_____

Lynn Palmer
083 651 6840

Appendix B

B: Letter of Permission From Mohammadreza Hojat

----- Original Message -----
From: "Mohammadreza Hojat" <Mohammadreza.Hojat@jefferson.edu>
To: <rickyl@telkomsa.net>
Sent: Monday, June 04, 2012 2:44 PM
Subject: RE: Request for Jefferson Scale of Attitudes towards Physician-Nurse Collaboration

Dear Lynn:
In response to your request, I am sending you a copy of the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration, its scoring instructions, and a few relevant articles that might be of your interest. You have my permission to use the scale in your not-for-profit research, given that the Jefferson copyright sign printed at the bottom of the scale will appear in any copy you will be using in your research, and a proper credit (full
citation) is given to the original source(s) in any report of your study.
I wish you good luck with your project and please inform me of your progress.
(-:
Hojat
****
* Mohammadreza Hojat, Ph.D.
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* Website: www.tju.edu/jmc/crmehc
* Webpage: http://www.tju.edu/jmc/crmehc/faculty_profile.cfm?key=mxh146

To be understood is a basic human need that can be fulfilled when an empathic relationship is formed. Information about the book "Empathy in Patient Care" and experts' comments are posted at : www.springer.com/0-387-33607-9 (publisher) and www.tju.edu/jmc/crmehc/medu/patientempathy.cfm (Jefferson Medical College).

Appendix C

C: Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration, Nurses Questionnaire

Instructions: Please complete the demographic information below and then proceed to the 15 statements that follow. Indicate your level of agreement or disagreement with each statement by circling the number which best represents your opinion. Then please answer the long questions at the end of the statements.

Definitions: Physician: A doctor that has admitting and treating privileges in the Critical Care Unit.

Nurse: A Registered Enrolled Nurse or a Registered Professional Nurse that is permanently employed in the Critical Care Unit.

Demographic Information: Please tick applicable block

Age in years: ☐

Years of working in ICU: ☐

Sex: ☐ Male ☐ Female

Category of Nurse: ☐ EN ☐ PN Exp ☐ PN ICU Tr

Highest Level of Training: ☐ Certificate ☐ Diploma ☐ Degree ☐ Masters ☐ PhD

Statements:	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
A Nurse should be viewed as a collaborator and colleague with a physician rather than his/her assistant	4	3	2	1
Nurses are qualified to assess and respond to psychological aspects of patients	4	3	2	1
During their education, medical and nursing students should be involved in teamwork in order to under-stand their respective roles	4	3	2	1
Nurses should be involved in making policy decisions affecting their working conditions	4	3	2	1
Nurses should be accountable to patients for the nursing care they provide	4	3	2	1
There are many overlapping areas of responsibility between nurses and physicians	4	3	2	1
Nurses have special expertise in patient education and psychological counseling	4	3	2	1
Physicians should be the dominant authority in all health care matters	4	3	2	1
Nurses and physicians should contribute to decisions regarding patient discharge from ICU	4	3	2	1

	Strongly Agree	Agree	Disagree	Strongly Disagree
The primary function of the nurse is to carry out the physicians orders	4	3	2	1
Nurses should be involved in making policy decisions on hospital support services on which their work depends	4	3	2	1
Nurses should also have responsibility for monitoring the effects of medical treatment	4	3	2	1
Nurses should clarify a physicians order when they feel it might have the potential or detrimental effects on the patient	4	3	2	1
Physicians should be educated to establish collaborative relationships with nurses	4	3	2	1
Inter-professional relationships between nurses and physicians should be included in their educational programs	4	3	2	1

Long Questions:

What do you perceive as a constraint to Physician-Nurse Collaboration in the Critical Care Unit?

What do you perceive as a facilitator to Physician-Nurse Collaboration in the Critical Care Unit?

What measures, if any can you recommend to enhance Physician-Nurse Collaboration in the Critical Care Unit?

Additional comments

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Appendix D

D: Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration, Physician Questionnaire

Instructions: Please complete the demographic information below and then proceed to the 15 statements that follow. Indicate your level of agreement or disagreement with each statement by circling the number which best represents your opinion. Then please answer the long questions at the end of the statements.

Definitions: Physician: A doctor that has admitting and treating privileges in the Critical Care Unit.

Nurse: A Registered Enrolled Nurse or a Registered Professional Nurse that is permanently employed in the Critical Care Unit.

Demographic Information: Please tick applicable block

Age: ☐ Years working in ICU: ☐

Gender: ☐ Male ☐ Female Specialty: _____

Statements:	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
A Nurse should be viewed as a collaborator and colleague with a physician rather than his/her assistant	4	3	2	1
Nurses are qualified to assess and respond to psychological aspects of patients	4	3	2	1
During their education, medical and nursing students should be involved in teamwork in order to under-stand their respective roles	4	3	2	1
Nurses should be involved in making policy decisions affecting their working conditions	4	3	2	1
Nurses should be accountable to patients for the nursing care they provide	4	3	2	1
There are many overlapping areas of responsibility between nurses and physicians	4	3	2	1
Nurses have special expertise in patient education and psychological counseling	4	3	2	1
Physicians should be the dominant authority in all health care matters	4	3	2	1
Nurses and physicians should contribute to decisions regarding patient discharge from ICU	4	3	2	1

	Strongly Agree	Agree	Disagree	Strongly Disagree
The primary function of the nurse is to carry out the physicians orders	4	3	2	1
Nurses should be involved in making policy decisions on hospital support services on which their work depends	4	3	2	1
Nurses should also have responsibility for monitoring the effects of medical treatment	4	3	2	1
Nurses should clarify a physicians order when they feel it might have the potential or detrimental effects on the patient	4	3	2	1
Physicians should be educated to establish collaborative relationships with nurses	4	3	2	1
Inter-professional relationships between nurses and physicians should be included in their educational programs	4	3	2	1

Long Questions:

What do you perceive as a constraint to Physician-Nurse Collaboration in the Critical Care Unit?

What do you perceive as a facilitator to Physician-Nurse Collaboration in the Critical Care Unit?

What measures, if any can you recommend to enhance Physician-Nurse Collaboration in the Critical Care Unit?

Additional comments

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Appendix E

E: Post Graduate Committee, Faculty of Health Sciences Approval Letter

Faculty of Health Sciences
Medical School, 7 York Road, Parktown, 2193
Fax: (011) 717-2119
Tel: (011)717-2075/6

Reference: Ms Salamina Segole
E-mail: Salamina.segole@wits.ac.za
30 October 2012
Person No: 9501480R
PAG

Miss L Palmer
2 Turner Road
Cresslawn
Kempton Park
1619

South Africa

Dear Miss Palmer

Master of Science in Nursing: Approval of Title

We have pleasure in advising that your proposal entitled "*Nurses and physicians' attitudes toward physician-nurse collaboration in private hospital critical care units"* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

Appendix F

F: Human Research Ethics Committee (Medical) – Clearance Certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Ms Lynn Palmer-Le Roux

CLEARANCE CERTIFICATE	M120624
PROJECT	Nurses and Physicians' Attitudes towards Physician-Nurse Collaboration in Private Hospital Critial Care Units
INVESTIGATORS	Ms Lynn Palmer-Le Roux.
DEPARTMENT	Department of Nursing Education
DATE CONSIDERED	29/06/2012
DECISION OF THE COMMITTEE*	Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 29/06/2012 CHAIRPERSON .....
(Professor PE Cleaton-Jones)

*Guidelines for written 'informed consent' attached where applicable
cc: Supervisor : Dr Gayle Langley

DECLARATION OF INVESTIGATOR(S)
To be completed in duplicate and ONE COPY returned to the Secretary at Room 10004, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. I agree to a completion of a yearly progress report.

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

Appendix G

G: Letter of Request to Mediclinic Morningside

University of the Witwatersrand
Faculty of Health Sciences
Department of Nursing
7 York Road
Parktown
2193

Hospital Manager
Medi-Clinic Morningside
Crn Hill Road and Rivonia Road
Sandton
2057

Dear Mr Jaco Erasmus

RE: <u>REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT MEDICLINIC MORNINGSIDE</u>

I am a registered student at the University of the Witwatersrand in the Department of Nursing Education, currently completing a Master of Science in Nursing (Management). I hereby request permission to undertake research at Mediclinic Morningside. The title of my research is "Nurses and Physicians' Attitudes toward Physician-Nurses Collaboration in Private Hospital Critical Care Units".

Physician-Nurse collaboration in the complex and multidisciplinary setting of the Critical Care Unit is vital. Literature has shown that effective Physician-Nurse collaboration improves patient outcomes, decreases hospital expenditure and is a major aspect of a healthy work environment. Despite this, collaboration in Critical Care Units is not a common practice. With the current nursing crisis, establishing a healthy work environment through true collaboration could be a tool used to attract and retain scarce skilled nursing personnel.

This study seeks to elicit both nurse and physician attitudes towards collaboration, identify the constraints that effect collaboration and make recommendations on improving collaboration. Should you grant my request to base my study at the Mediclinic Morningside, I give my assurance that neither the name of the institution nor personnel will be divulged in the report.

My proposal has been granted necessary approval from the University of the Witwatersrand. I hope to conduct my research in the Critical Care Unit of your facility, and in the Adult Critical Care Units of two of your sister hospitals namely Mediclinic Sandton and Wits Donald Gordon Medical Centre.

A copy of the research report will be made available to you on completion if you so wish.
If you have any queries or wish to contact me I can be reached at the number below.

Yours sincerely,

_____

Lynn Palmer
083 651 6840

Appendix H

H: Letter of Request to Mediclininc Sandton

University of the Witwatersrand
Faculty of Health Sciences
Department of Nursing
7 York Road
Parktown
2193

Hospital Manager
Medi-Clinic Sandton
Crn Peter Placeand Main Road
Bryanston
2021

Dear Mrs Louise Sole

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT MEDICLINIC SANDTON

I am a registered student at the University of the Witwatersrand in the Department of Nursing Education, currently completing a Master of Science in Nursing (Management). I hereby request permission to undertake research at Mediclinic Sandton. The title of my research is "Nurses and Physicians' Attitudes toward Physician-Nurse Collaboration in Private Hospital Critical Care Units".

Physician-Nurse collaboration in the complex and multidisciplinary setting of the Critical Care Unit is vital. Literature has shown that effective Physician-Nurse collaboration improves patient outcomes, decreases hospital expenditure and is a major aspect of a healthy work environment. Despite this, collaboration in Critical Care Units is not a common practice. With the current nursing crisis, establishing a healthy work environment through true collaboration could be a tool used to attract and retain scarce skilled nursing personnel.

This study seeks to elicit both nurse and physician attitudes towards collaboration, identify the constraints that effect collaboration and make recommendations on improving collaboration. Should you grant my request to base my study at the Mediclinic Sandton, I give my assurance that neither the name of the institution nor personnel will be divulged in the report.

My proposal has been granted the necessary approval from the University of the Witwatersrand, I hope to conduct my research in the Critical Care Unit of your facility, and in the Adult Critical Care Units of two of your sister hospitals namely Mediclinic Morningside and Wits Donald Gordon Medical Centre.

A copy of the research report will be made available to you on completion if you so wish.

If you have any queries or wish to contact me I can be reached at the number below.

Yours sincerely,

_____

Lynn Palmer
083 651 6840

Appendix I

I: Letter of Request to Wits Donald Gordon Medical Centre

University of the Witwatersrand
Faculty of Health Sciences
Department of Nursing
Parktown
2193

Hospital Manager
Wits Donald Gordon Medical Centre
27 Eton Road
Parktown
2193

Dear Dr Sue Tager

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT WITS DONALD GORDON MEDICAL CENTRE

I am a registered student at the University of the Witwatersrand in the Department of Nursing Education, currently completing a Master of Science in Nursing (Management). I hereby request permission to undertake research at Wits Donald Gordon Medical Centre. The title of my research is "Nurses and Physicians' Attitudes toward Physician-Nurse Collaboration in Private Critical Care Units".

Physician-Nurse collaboration in the complex and multidisciplinary setting of the Critical Care Unit is vital. Literature has shown that effective Physician-Nurse collaboration improves patient outcomes, decreases hospital expenditure and is a major aspect of a healthy work environment. Despite this, collaboration in Critical Care Units is not a common practice. With the current nursing crisis, establishing a healthy work environment through true collaboration could be a tool used to attract and retain scarce skilled nursing personnel.

This study seeks to elicit both nurse and physician attitudes towards collaboration, identify the constraints that effect collaboration and make recommendations on improving collaboration. Should you grant my request to base my study at Wits Donald Gordon Medical Centre, I give my assurance that neither the name of the institution nor personnel will be divulged in the report.

My proposal has been granted the necessary approval from the University of the Witwatersrand, I hope to conduct my research in the Critical Care Unit of your facility, and in the Adult Critical Care Units of two of your sister hospitals namely Mediclinic Morningside and Mediclinic Sandton.

A copy of the research report will be made available to you on completion if you so wish.
If you have any queries or wish to contact me I can be reached at the number below.

Yours sincerely,

_____

Lynn Palmer
083 651 6840

Appendix J

J: Letter of Permission from Mediclinic Morningside

MEDICLINIC
MORNINGSIDE

CNR RIVONIA ROAD & HILL ROAD
MORNINGSIDE
2057

PRIVATE BAG X6
BRYANSTON
2021

T +27 11 282 5000
F +27 11 283 9100
ETHICS LINE 0800 005 316

www.mediclinic.co.za

26 February 2013

Lynn Palmer

Wits Donald Gordon Medical Centre

Intensive Care Unit

Dear Ms Palmer

Re: Permission to Conduct Research at Mediclinic Morningside

This letter serves as confirmation that permission has been granted for you to conduct your research at Mediclinic Morningside.

Research entitled: NURSES' AND PHYSICIANS' ATTITUDES TOWARD PHYSICIAN-NURSE COLLABORATION IN PRIVATE HOSPITAL CRITICAL CARE UNITS

Yours Faithfully

pp. Jaco Erasmus

Hospital Manager

Appendix K

K: Letter of Permission from Mediclinic Sandton

MEDICLINIC
SANDTON

CNR MAIN ROAD & PETER PLACE
BRYANSTON
2021

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BRYANSTON
2021

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F +27 11 706 5991
ETH CS LINE 0800 005 316

www.mediclinic.co.za

18 January 2013

Lynn Palmer
Unit Manager ICU
WITS DONALD GORDON MEDICAL CENTRE
21 Eton Road, Parktown, 2193
P.O.Box 2072, Houghton, 2041
T +27 011 356 6022
F +27 011 356 6165

Dear Lynn

Re: Research Project: Nurse's and Physician's attitudes towards Physician – Nurse Collaboration in private hospital Critical Care Units.

This letter is confirmation for your research to be conducted at Mediclinic Sandton

Please let me know if we can assist you further

Yours truly

Louise Sole
Hospital Manager

MEDICLINIC LTD
REG. NO. 1969/009218/06

Appendix L

L: Letter of Permission from Wits Donald Gordon Medical Centre

Wits University
Donald Gordon
Medical Centre

MEDICLINIC

02 January 2013

To whom it may concern

RE: Research Project: **NURSES' AND PHYSICIANS' ATTITUDES TOWARD PHYSICIAN-NURSE COLLABORATION IN PRIVATE HOSPITAL CRITICAL CARE UNITS**

Permission is hereby granted to Lynn Palmer to collect data for the above study from Wits Donald Gordon Medical Centre.
Lynn Palmer has provided me with her research protocol, as well as a copy of the letter of approval from the Ethics Committee (Wits University)

Yours Faithfully

Sue Tager
CEO
Wits Donald Gordon Medical Centre
Tel: 011-3566302
Fax:086 675 8772
email sue.tager@mediclinic.co.za
Cell 082 4577134

Wits University Donald Gordon Medical Centre (Proprietary) Limited
Upper Level, St Joseph Wing, 21 Eton Road, Parktown, Johannesburg, 2193, South Africa
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