

# **CHAPTER 1**

## **OVERVIEW OF THE STUDY**

### **1.1 INTRODUCTION**

Registered Theatre Nurses are trained to be nurse specialists in the area of peri operative nursing, meaning that they should be experts in this specialty area. They should function as independent practitioners, because they make decisions and solve problems independently. The South African Nursing Council's scope of practice requires them to demonstrate accountability (Pieterse, 2000: 6; Geoghegan 2000: 17-18).

However, sometimes operating theatre nurses still perceive their scope of functioning as narrow. In the experience of the researcher, they still perceive their role as being a so-called scrub nurse and circulating nurse only.

### **1.2 BACKGROUND TO THE RESEARCH PROBLEM**

Experience gained by the researcher over the years, while doing clinical accompaniment of post basic theatre students, evidences that the theatre nurses are underutilized as specialists in their field. Preddy (2001: 52) support this view. This author states that the peri operative nursing practice is clinically driven by the surgical needs of the patient, which is directed by the surgeons and anesthesiologists. This situation created a perceived gap between what the theatre nurses do and what they say they ought to do (Preddy, 2001: 52). Yet, the theatre nurses are expected to give emergency treatment to surgical patients in the absence of doctors (Olivier, 2000: 38).

It is not uncommon for theatre nurses to have encounters, such as cardiopulmonary arrest, as an emergency, while the doctors are absent (King 2001: 45).

The training of post basic theatre students was reviewed, in 1993, in South Africa. The regulation that was utilized for the training of the post basic theatre students, before 1993, together with its directive, regulation number R47 of 22 January 1982, were repealed by the South African Nursing Council (Regulation R47, 1982, Paragraph 5; SANC 1982: 3-5). Regulation number R212 of 19 February 1993, together with its guidelines, were introduced for the training of all post basic clinical courses, theatre nursing included (Regulation R212, 1993, Paragraph 2.2, 3.1, 3.2).

According to this regulation there is a common curriculum for all the post basic clinical courses. This arrangement has enabled all the students of the post basic clinical courses, including theatre nursing, to access uniform training (Regulation R212, 1993, Paragraph (2) (9)).

In South Africa there is a universal scope of practice that governs the functioning of all registered nurses.

According to the scope of practice, the registered nurse is an independent practitioner in his/her own right. The registered nurse is not subservient to any other professional. He/she will not be allowed to use the instructions of the doctor as an excuse for his/her conduct, to be condoned (Monama, 2001: 41). Monama (2001: 41) further emphasizes the fact that registered nurses will be sanctioned in accordance with the regulation that deals with acts and omissions, when they overstep the parameters of functioning, as determined by the scope of practice.

Wicker (1999: 20) states that peri operative nursing is influenced by a medical model. This is evidenced by the fact that registered theatre nurses have to take instructions from the surgeons and anesthesiologists, as to what has to be done for surgical patients, at a given moment. This arrangement portrays theatre nurses as dependent practitioners (King, 2001: 42).

It is viewed as necessary to determine the impact of reviewed training of theatre nurses. This is necessary to determine whether it is required of them to act as specialists in peri operative nursing.

### **1.3 SIGNIFICANCE OF THE PROBLEM**

Eight years have lapsed following the institution of the new format of training for theatre nurses. It is therefore necessary to evaluate the impact of regulation number R212, on the functioning of registered theatre nurses. It will then be possible to make recommendations regarding the utilization and functioning of these nurses, regarding their area of specialization.

### **1.4 AIM AND OBJECTIVES OF THE STUDY**

The aim of the study is to determine the impact of the reviewed training of theatre nurses, in accordance with regulation number R212 on utilization in the operating theatre of public hospitals, in the Northern area of the Eastern Cape Province.

Objectives of the study are to:

- Do a literature review, in order to give an overview of the tasks that theatre nurses perform, as well as curricula for theatre nurses nationally and internationally.
- Implement a questionnaire in order to determine the routine tasks the theatre nurses perform on a daily basis and to establish if there are specific tasks that they think they should perform, given the opportunity. The impact of the reviewed training will be determined in this way (refer to assumptions).
- Make recommendations on how the registered theatre nurses could best be utilized.

## **1.5    DEFINITIONS OF KEY CONCEPTS**

Key concepts that are considered as important and that give direction to this study are defined.

### **1.5.1    THEATRE NURSE**

This is a broad concept that encompasses all nurses registered with the SANC who are working in operating theatre, be they theatre trained or not, and thus they can be classified into two categories of registered nurses, experienced theatre nurses and registered theatre nurses. This category of nurse is also referred to as *operating theatre nurse* and *operating room nurse*. For the purpose of this study the term *theatre nurse* will be used, as it is probably the term mostly used in South Africa.

### **1.5.2    EXPERIENCED THEATRE NURSE**

An experienced theatre nurse is a registered nurse who has become competent in peri operative nursing by the experience gained during the period of exposure to the operating theatre. Nursing students that are currently operating theatre nursing students fall in this category.

### **1.5.3    REGISTERED THEATRE NURSE**

This is the registered nurse who has completed the Diploma in Operating Theatre Nursing and is thus registered with the SANC, as theatre nurse.

### **1.5.4    UTILIZATION**

The concept utilization can be defined as, to use effectively (Reader's Digest Illustrated Oxford Dictionary, 1998: 918).

### 1.5.5 PERI OPERATIVE NURSING

Peri operative refers to a total surgical experience that encompasses pre operative, intra operative and post operative phases (Fortunato, 2000: 4).

Peri operative nursing is therefore a combination of individualized and standardized patient care, that is not purely technical, but scientific (Fortunato, 2000:19) and that takes place during these phases.

### 1.5.6 REGULATION NO R47 OF 22 JANUARY 1982

This is the regulation for a post basic course, Diploma in Operating Theatre Nursing Science, as determined by section 45(1) of the Nursing Act 50 of 1978 (Regulation R47, 1982: 1). This regulation was repealed in 1993.

### 1.5.7 REGULATION NO R212 OF 19 FEBRUARY 1993

This regulation relates to the course in clinical nursing science, leading to registration of an additional qualification, in any one of the post basic clinical nursing science courses (Regulation R212, 1993, paragraph 1 (d)). This regulation replaces the regulation mentioned under point 1.5.6.

### 1.5.8 THE SCOPE OF PRACTICE

In this study reference is made to the scope of practice of registered nurses. According to regulation R2598 of 30 November 1984, the scope of practice of registered nurses, is defined as the application of scientifically based, physical, chemical, psychological, social, educational and technological means to health practice (Regulation R2598, 1984, paragraph 2(2)). These are applied by diagnosing a health need, prescribing, provision and execution of a nursing regimen (Regulation R2598, 1984, paragraph 2(9)).

### 1.5.9 ACTS AND OMISSIONS

According to regulation number R387 of 15 February 1985 the South African Nursing Council defines the Acts and omissions as the rules, setting out the acts or omissions in respect of which the Council may take disciplinary steps (Regulation R387, 1985 paragraph 2). Pertaining to practice, the registered nurse can be disciplined for negligent omission to carry out such acts in respect of the diagnosing, treatment, care, prescribing, collaborating, referral, coordinating, and patient advocacy, as the scope of his/her profession permits (Regulation R387, 1985, paragraph 2(3)).

### 1.6 ASSUMPTIONS

Two assumptions underlying this study are:

- How theatre nurses are utilized, could be a reflection of the training that they underwent, because Lathlean and Vaughan (1994: 4) state the following: "Practice and (nursing) education should be viewed in such a way that theoretical propositions arise from practice itself and that practice is informed by, and tests theory".
- As the new course was offered for more than the past ten years, it can be assumed that it impacted on the entire theatre nursing environment. Whether an individual was educated in theatre nursing during the time of the old or new course is thus not important any more. Searle (1987: 185) states: "Nursing education is part of human resource development. It determines the extent and quality of nursing service and the nature of the profession. It enables the practitioner to demonstrate her personal professionhood, *for it is a socialization process* aimed at independent, adult, motivated, competent, responsible professional performance. It is an enculturation process, as well as a developmental process".

## **1.7**     **RESEARCH DESIGN**

A quantitative, descriptive design will be utilized to seek and explore the phenomenon under investigation (Burns & Grove 2001: 249). A survey will be done. The research procedure, as well as measures taken to ensure validity and reliability of the study will be described in detail in chapter three.

### **1.7.1**     **POPULATION AND SAMPLE**

The population will be comprised of registered theatre nurses as well as registered nurses doing the theatre nursing course, who work in operating theatres in the public sector, in the Eastern Cape Province. (Burns & Grove, 2001: 47). Convenience sampling will be done.

### **1.7.2**     **INSTRUMENT**

The research instrument will be a questionnaire, designed by the researcher.

## **1.8**     **ETHICAL CONSIDERATIONS**

A letter of request to conduct the study was sent to the office of the nursing directorate, Eastern Cape Department of Health, together with a copy of the proposal. The other letters of request were sent to all the institutions included in the study. Approval was received.

It will be explained to the respondents that they are participating voluntarily. The respondents will not be coerced if they do not show interest. Anonymity of respondents will be ensured by utilizing codes instead of names, on questionnaires (Polit & Hungler, 1995: 12, 126).

## **1.9 DATA ANALYSIS**

Descriptive statistics was used to analyze the data, and the researcher did the calculations. The results of the data analysis are illustrated by means of tables and graphs.

## **1.10 SCOPE AND LIMITATIONS OF THE STUDY**

The research can be considered as contextual, as it was conducted in a confined area: the theatres in public hospitals, in the Northern part of the Eastern Cape Province. Thus, the findings of the study cannot be generalized. Conclusions are valid for this specific context only.

## **1.11 OUTLINE OF THE STUDY**

*This dissertation consists of the following chapters:*

- Chapter one introduces and outlines the study.
- Chapter two provides a thorough review of the relevant literature.
- Chapter three describes the research design and methodology in detail.
- Chapter four presents the data analysis and findings of the study.
- Chapter five describes the conclusions, recommendations and limitations of the study.

## **1.12 CONCLUSION**

Chapter one gave an introduction to the research study. The researcher wished to determine the impact of the training, according to the SANC regulation no R212 of 1993, of theatre nurses in public hospitals, in the Northern part of the Eastern Cape Province. The ultimate goal is to make recommendations on how the theatre nurses could best be utilized. A literature review will follow in chapter two.



# **CHAPTER 2**

## **LITERATURE REVIEW**

### **2.1 INTRODUCTION**

In chapter one a framework of the planned study has been presented and the rationale for the study was explained. In this chapter a review of the literature, that serves as the guidelines to this study, is done.

The study focuses on the impact that the (new) training has on theatre nurses. This focus, however, also determines the functioning of the registered nurse who is allocated to the operating theatre, both experienced theatre nurses, and registered theatre nurses (see assumptions).

This literature study will thus focus on legislation that determines the training of theatre nurses, legislative control of operating theatre nursing, and contemporary changes, as they influence theatre nursing and changes in education and training of theatre nurses.

The researcher found, when doing the literature review, that there is limited published research on peri operative nursing in Southern Africa. No evidence of research on this problem, i.e. the status of the nurse in the operating theatre in South Africa today, could be found. Acheson (1994: 7) states that clinical research in peri operative nursing only recently started in Southern Africa. The author mentions that, from the database of completed research studies at the University of Botswana since 1981, only four studies addressing peri operative issues specifically were found (Acheson, 1994: 7).

## **2.2 THE NATURE OF ACTIVITIES ENTAILED IN OPERATING THEATRE NURSING**

### **2.2.1 INTRODUCTION**

The title “theatre nurse” is used to refer to the registered nurse who is allocated to the operating theatre. The theatre nurse can either be an experienced theatre nurse or a registered theatre nurse (refer to chapter one for definitions of key concepts).

### **2.2.2 COURSES FOR EDUCATION AND TRAINING OF THEATRE NURSES IN SOUTH AFRICA**

It is necessary to distinguish between training that has previously been in place and the new training model. The traditional qualification (old course) is called the *Diploma in Operating Theatre Nursing* and the revised qualification is called the *Diploma in Medical and Surgical Nursing Science: Operating Theatre Nursing*. The training according to the two categories can be described as follows:

#### **2.2.2.1 Training according to Regulation no. R47 of 22 January 1982**

The detail of this regulation is specified in a directive. The directive determines the course content. According to this directive education and training of theatre nurses is directed at their personal and professional development.

The qualifier is expected to have developed analytical, critical and creative thinking. She/he must be able to exercise independent judgment in solving problems experienced during the period. Cognitive, affective and psychomotor aspects are addressed (SANC, 1982: par 3).

#### 2.2.2.2 Training according to Regulation no. R212 of 19 February 1993

It is specified that this regulation replace regulation no. R47 of 19 January 1982. This regulation is the product of a restructuring process to incorporate education and training of all Post Basic Clinical Nursing Science courses. The course is named *Diploma in Medical and Surgical Nursing Science: Operating Theatre Nursing*. The detail of the course is specified in its teaching guide. The title of the teaching guide is: "Teaching Guide for a course in Clinical Nursing Science leading to registration of an Additional Qualification."

The following specialties are mentioned:

- General
- Operating Theatre Nursing
- Orthopedic Nursing
- Ophthalmological Nursing
- Oncological Nursing
- Critical Care Nursing with the following options:
  - General
  - Cardiothoracic
  - Neurosurgical
  - Trauma
  - Nephrology

The qualifier is expected to:

- Contribute to policy formulation
- Contribute to development of medical and surgical nursing science
- Analyze and interpret population and health profiles.
- Evaluate curative and rehabilitative services at national level.
- Identify factors promoting and threatening the health of people.
- Analyze different viewpoints and justify own viewpoint.
- Practice medical and surgical nursing in a curative setting according to a scientific approach within the scope of professional ethical norms and legal provision.

- Develop and implement standards for quality assurance (SANC, 1993: par 1.2)

It is clear that curricula planners had a broad scope of functioning in mind, for candidates completing this course.

### 2.2.3 SCOPE OF PRACTICE

Regulation No. R2598 of 30 November 1984 outlines the scope of practice for registered nurses in South Africa. This implies that this document also serves as scope of practice guideline for nurses working in the operating theatre. The responsibilities of the registered nurse are detailed in this regulation.

Some of these responsibilities are inter alia:

- Diagnosing a health need and executing a treatment regimen.
- Executing a program of treatment prescribed by a registered person
- Supervision over and maintenance of fluid, electrolyte and acid base balance.
- The facilitation of healing of wounds and fractures, protection of the skin and maintenance of the sensory functioning in a patient.
- The facilitation of body mechanics and the prevention of bodily deformities.
- Preparation for and assistance with operative, diagnostic and therapeutic acts for the patient.
- Provision of effective patient advocacy, to enable the patient to obtain the health he/she needs.
- Care of the dying patient (Regulation R2598, 1984, Paragraph 2(2) a-t).

### 2.2.4 ROLE IDENTIFICATION

The role of the theatre nurse, according to Fortunato (2000: 20) is to implement peri operative nursing care. The following phases can be distinguished:

#### 2.2.4.1 Pre Operative phase

The surgical patient is received into the holding area of the operating theatre. The theatre nurse is responsible for the following pre-operative activities:

- Assessment of the surgical patient to identify actual or potential physiologic, psychosocial and spiritual needs.
- Determination of the nursing diagnosis, in collaboration with the patient.
- Identification of the expected outcomes of the peri operative experience.
- Planning, prioritizing and implementing care.
- Checking of informed consent, thus legal/ethical duties.

#### 2.2.4.2 Intra Operative phase

The theatre nurse plans, implements and evaluates continuously during surgery. This begins with placement of the surgical patient onto the theatre bed and ends with transfer of the surgical patient into the recovery room.

#### 2.2.4.3 Post Operative phase

The patient is cared for in the recovery room until she/he recovers from anesthesia. She/he is then declared ready to be transferred to the ward by the anesthesiologist or surgeon. A critically ill patient and a patient with a complex problem, is transferred to the Intensive Care Unit, directly from the operating theatre bed (Fortunato 2000: 20).

#### 2.2.4.4 Competencies needed in all three peri operative phases

The theatre nurse, who is rendering a peri operative service to the surgical patient, is expected to evidence the following competencies:

- Assess the physiologic and psychosocial status of the surgical patient and family.
- Formulate nursing diagnoses based on the patient's health status data.

- Establish the patient's expected outcomes, based on nursing diagnoses.
- Develop a plan of care that identifies patient care interventions, to achieve expected outcomes.
- Implement patient care interventions, according to the plan of care.
- Evaluate the attainment of expected outcomes and effectiveness of patient care.
- Participate in family and patient teaching.
- Create and maintain a sterile field.
- Provide equipment and supplies, based on patient's needs.
- Perform swab, instrument and sharps count.
- Administer drugs and solutions as prescribed.
- Monitor the physiological status of the surgical patient during the surgical procedure and throughout the peri operative experience.
- Monitor and control the environment
- Respect the patient's rights.
- Demonstrate accountability (Fortunato 2000: 24).

## **2.2.5 MONITORING AND EVALUATION OF PERI OPERATIVE NURSING**

In order to ensure quality of care, peri operative nursing is continuously monitored and evaluated, both internally in the hospital or facility and externally, by other bodies or institutions.

### **2.2.5.1 Internal monitoring and evaluation**

Aspects of pre operative preparation are monitored by means of completion of special documents and it includes inter alia:

- Patient's reports on investigations and X-rays.
- Patient's notes.
- Valid consent form.
- Checklists of every aspect of perioperative care.

Records of the following intra operative activities also need to be written:

- Site of intravenous infusion.
- Site of diathermy plate/pad.
- Site of plugging/drains, together with the number of swabs and sutures used during the surgical procedure.
- Specimens obtained from the patient: pathologic, forensic and foreign bodies that have been removed.
- Suturing material used for skin closure.

Process standards need to be monitored and it is done by the following personnel:

- Infection control officer.
- Safety officer.
- Skills development officer.

Programs that need to be developed include the following:

- Infection control program.
- Risk management program that focus on fire drills and disasters.
- Skills development program.

Documentation regarding the following should be available:

- Patient's discharge comments.
- Sepsis rates.
- Injuries on duty (including needle prick).
- Occupational diseases (Fortunato 2000: 184-200; Strydom 2000: 34-43)

#### 2.2.5.2 External monitoring and evaluation

The National and Provincial Department of Health, South African Nursing Council, Non Governmental Organizations (NGO's) and private quality assurance bodies are responsible for external monitoring and evaluation of quality of care in South Africa. This includes the following strategies:

- The launch of Batho Pele principles to be implemented by the health facilities in all provinces.

- Auditing of negative incidences, as evidenced by:
  - Sepsis rates
  - Needle prick injuries
  - Diathermy burns
  - Occupational injuries
  - Occupational diseases
  - Deaths on the theatre bed
- Completion of documents that detail the questions to be answered regarding service delivery, to be rated against a score that qualifies a health facility for a Good Governance Award (Department of Health 2002: 1-23, COHSASA 1996: 1-10).

The South African Nursing Council utilizes accreditation visits, to monitor the standards of health services on a regular basis. During such a visit, documents are checked, including policy manuals, procedure manuals, skills plans and many more (SANC 1996: 1-2).

The National Occupational Safety Association monitors compliance of the health facilities with the legislation, government policies and protocols. The standards of health facilities are monitored according to the health and safety needs of the wards/departments.

Private quality assurance bodies are hired by the government, to monitor the standards of health service in the public sector. This is done according to pre-determined criteria. The aspects of the operating theatre that are evaluated are: the building, the air conditioning system, electricity, power, engineering services, infrastructure, equipment, policies and protocols, environmental hygiene, and safety- and risk management programs and processes.

Whilst the employer is responsible for the external environment these nurses work in, monitoring and evaluation of the total environment is in the domain of the theatre nurse. It is aimed at monitoring and evaluating the quality of the peri operative service as a whole.



## **2.3 DEVELOPMENTS IN EDUCATION AND TRAINING OF THEATRE**

### **NURSES**

In the early 1990's curricula for all the post basic clinical courses were reviewed. The purpose of this curriculum review was to develop a uniform foundation for post-basic clinical nursing specialization. A common regulation was introduced, regulation No. R212 of 19 February 1993. Amongst other categories of clinical nursing specialization, this regulation guided the training of operating theatre nurses (Roets, 2001: 38).

A review of education and training was done on national level in the year 2000. The South African Qualifications Authority (SAQA) sought to transform education in South Africa. A National Qualifications framework was developed. According to this framework, outcomes based education is advocated. The qualifiers acquire the competencies necessary to render a specific service of high quality (Nkomo, 2000: 4-10).

Education and training of theatre nurses was also reviewed in the process. The purpose of this revision was to expose nurses to a curriculum in the outcomes based format. This review aimed to provide the qualifiers with knowledge and skills, necessary for the peri operative management of a surgical patient (Mahlambi, 2001: 34-38).

Development also took place in peri operative nursing in other countries. According to Gillette (1996: 263) theatre nurses in America became the first group of clinical nurse specialists to be trained, in the nineteenth century. The author mentions that theatre nurses were trained together with physicians, at John Hopkins University in Baltimore. According to the author, the theatre nurses were orientated to technical work, for so many years that they were confined to the role of scrub nurse, which is an intra-operative, technical duty. The author states that the American Operating Room Nurses had to redefine the role of the theatre nurse in 1978, and introduced the term peri operative nursing (Gillette, 1996: 263).

The United Kingdom experienced the problem of having to adjust the scope of theatre nurses to reduce the hours worked by junior doctors. This resulted in nurses in the United Kingdom becoming concerned about the need to be appropriately trained, before this could be done. Their concern led to the development of training programs, focused on increasing the scope of functioning of theatre nurses, so that junior doctors' hours could be reduced. These training programs were accredited by the United Kingdom Central Council (Higgins, 1997: 41).

## **2.4 CONTROVERSY IN THE SOUTH AFRICAN NURSING COUNCIL'S LEGISLATION REGARDING THE SCOPE OF PRACTICE OF THEATRE NURSES**

### **2.4.1 LEGISLATIVE CONTROL OF THEATRE NURSES IN SOUTH AFRICA**

Two regulations, the regulation that deals with the scope of practice (refer to point 2.2.3) and the regulation that deals with acts or omissions (refer to point 1.5.9), guide the functioning of theatre nurses, (Regulation R2598, 1984: paragraph 2(2) (q-r); Regulation R387, 1990: paragraph 2(3)).

According to the first regulation, the South African Nursing Council grants registered nurses, including the theatre nurses, the latitude to practise as independent practitioners. Monama (2001: 41) echoes the fact that theatre nurses are independent practitioners in their own right, are not subservient to any other profession, and that the nurse is accountable to his/her Professional Council.

It is stated that a person who does not comply with the South African Nursing Council's prescripts, in terms of the scope of practice, will be sanctioned. The author mentions that the nurse, as an independent practitioner, will not be condoned on the basis of having acted on the orders of a doctor. A penalty will be imposed, in accordance with the prescripts of the regulation that deals with acts or omissions (Monama, 2001: 41).

In chapter one of the Nursing Act, the South African Nursing Council mentions its objectives, including to assist in the promotion of the health standards of the inhabitants of the Republic (South Africa, 1978: 5).

#### 2.4.2 THE INTERNATIONAL VIEW ON LEGISLATIVE CONTROL

McInerney (1993: 873) states that nursing practice in developing countries is different. The author views this as being shaped by tradition. The author mentions the results of a literature review, which evidenced that operating room practice was unmonitored. The author asserts that there is a need to redefine the standards of practice in developing countries.

In a study done in the United Kingdom, by Webb (1995: 38) the study subjects (nurses) expressed awareness of the contents of the United Kingdom Central Council's legislation that guides the practice of nurses, and reads as follows: "nurses are responsible for their actions". The nurses expressed fear of litigations, which could arise from unsafe practices, by unskilled professionals. The study subjects also expressed feelings of vulnerability, having to perform medical tasks in the absence of guidelines from the regulatory body (Edwards, 1995: 38).

According to a study done by McGee (1994: 10) it is reported that in the United Kingdom, the respondents view scrubbing as a technical task, that does not necessitate a trained nurse. But theatre nursing is viewed as a three dimensional role that is underpinned by the concepts of responsibility and accountability. It is also believed that theatre nurses are the only category of nurses who are held accountable for patient care in theatre (McGee, 1994: 9). It is felt that theatre nurses are required to monitor the situations holistically, to be able to anticipate and take appropriate actions, in the event of an emergency (McGee, 1994: 10).

Another study from the United Kingdom emphasized the importance of accountability, for theatre nurses. This is said to be achieved through continuing

education. According to Hunter (1994: 5-8), the patient's rights are protected by the United Kingdom Central Council's Code of Conduct.

Willis (1995: 68) cites theatre nursing as being influenced by a medical model. In the author's view, the doctors are the persons who determine what theatre nurses must do at a given moment. This is seen as having influenced inevitable changes in the roles of theatre nurses.

Another author raises the issue of the legal implications of taking over the role of a surgeon's first assistant being the theatre nurse. The author views the actions of this theatre nurse as neglecting his/her traditional nursing role, and adopting a more technical, medical one. The author makes an example of the theatre nurse who neglected her role and removed the patient's appendix. The author quotes the theatre nurse as having received criticism of acting unprofessionally, neglecting her role as patient advocate and putting the patient at risk. The author mentions that the notion of the theatre nurse having to function as a surgeon's assistant is posing a dilemma. The author reminds the theatre nurses of the fact that they are registered practitioners, and as such, have to abide by the United Kingdom Central Council's code of Conduct and the Scope of Practice. The theatre nurses are made aware of it that the scope of practice holds them accountable for the decisions they take. It is also mentioned that they are expected to safeguard the interests of the surgical patients (Beesley, 1998: 42-43).

Ackerman (1997: 85) argues for uniqueness of each category of American registered nurses. The author illustrates this viewpoint by making distinctions between an acute care nurse practitioner and the clinical nurse practitioner. The theatre nurse is categorized as an acute care nurse practitioner. The author defines the roles of the categories of registered nurses mentioned, as outcomes management and case management respectively. The registered theatre nurse is viewed as being charged with management of the outcomes of peri operative nursing.

Patient needs are viewed as being at the centre of functioning of nurse practitioners. The author proposes elimination of traditional boundaries to enable nurses to function in all practice settings (Ackerman, 1997: 85).

Hravnak and Baldisseri (1997: 109) mention that there is one Universal scope of practice, for all categories of nurses in the U.S.A. The authors are concerned about the scope of practice of various categories of advanced practice nurses, guided by a universal document. The authors classify the categories of advanced practice nurses and mention the clinical nurse specialists in the list.

Hravnak and Baldisseri (1997: 109) also advocate credentialing and privileging as the strategies to address the problem of absence of specialty specific guidelines, due to utilization of a universal of scope of practice. The theatre nurses, as clinical nurse specialists, are included in this regard.

The American Association of the operating room nurses makes statements, in its pre-amble about competency, recommended practices and standards of practice. The model for peri operative nursing practice is described as being dynamic, and reflecting the changing nature of societal needs. Peri operative nursing is seen as having flexible boundaries, that are responsive to the needs of the patients, the environment where care is delivered, and an expanding knowledge base (Business proceedings, 1997: 48).

### 2.4.3 ROLE IDENTIFICATION

Cahill (1996: 1382) argues for the importance of the specific role of the theatre nurse. The author is against the view that the nursing routine in theatre is technical and that there is therefore no need for a theatre nurse.

The role of the nurse surgical assistant is viewed as not being suitable, if holistic peri operative care has to be rendered. The author emphasizes the development of the skills of the theatre nurses, to achieve evidence based

nursing. The author condemns the extension of the role of the theatre nurse by doing technical work (Cahill, 1996: 1385).

Parker, Minick and Kee (1999: 45) conducted a study to determine the manner in which peri operative nurses make clinical decisions. The authors were prompted by the fact that, peri operative nurses have to make decisions that are crucial to save the lives of patients, in life threatening situations. According to the authors, little research has been done in the U.S.A., to establish the clinical decision making processes of peri operative nurses. Peri operative practices are also not well documented.

Moore (1996:8-9) advocates a holistic approach to theatre nursing. The author asserts that the theatre nurse does not treat a condition, but looks after a surgical patient who is made vulnerable by the potential and actual problems that he/she experiences, during the peri operative period. Moore believes that the peri operative role addresses the needs of the surgical patient in totality, and during all phases of the perioperative period.

The author asserts that there is a need to examine the ways in which holistic, patient focused care, can be delivered by theatre nurses. The belief is that it is inappropriate to have only one nurse, as a member of the surgical team. One nurse is charged with the responsibility of being a scrub nurse and other members of the multidisciplinary team, who are not nurses, are made responsible for management of the rest of the care of the surgical patient (Moore, 1996:8-9).

There are three categories of theatre nurses in the U.S.A. The first category is the peri operative clinician. This specialist is charged with three roles; scrubbing, circulating and supervising. It is during the performance of these three roles that the peri operative clinician concerns him/herself with the reaction of the surgical patient to his/her environment. The care given to him/her during the three phases of peri operative nursing are viewed as assessment, diagnosing,

outcomes identification, planning, implementation and evaluation of peri operative nursing care (Business proceedings, 1997: 48).

The second category of theatre nurse is the interventional care coordinator. This is a certified peri operative room nurse, functioning in an expanded role. This peri operative nurse is accountable for optimizing available resources, apart from the activities attached to the peri operative role.

The last one of the categories of peri operative nurses is referred to as advanced practice nurse. The practitioner is competent in managing health/illness status, disease prevention and health promotion. The practitioner conducts comprehensive health assessments and has a collegial relationship with other nurses, physicians and other providers, who influence the health environment. The peri operative advanced practice nurse formulates clinical decisions on the basis of assessments, and nursing diagnoses and prescribes treatment modalities, including pharmacologic agents. The practitioner integrates clinical practice, education, research, management, leadership and consultation, into a single role (Business proceedings, 1997: 49).

Hind (1997(a): 1298) examines role expansion on the part of operating theatre nurses. According to the author, two important policy documents, that deal with operating theatre nursing, are: "The New Deal" and "United Kingdom Central Council's Scope of Professional Practice." The Scope of Professional Practice is viewed as having liberated the peri operative nurses from the constraints of the Department of Health and Social Security rules in terms of extending roles for theatre nurses. These rules are based on the principle of the certificate of competence for extended roles.

The United Kingdom's Scope of Professional Practice is looking at the functioning of all registered practitioners. The same asserts that registered practitioners should be responsive to the patient's needs.

Hind (1997(a): 1298) states that it is imperative that the development of the roles of theatre nurses demonstrate improvement in the quality of care given to surgical patients. The same author mentions Moores as stating that the theatre nurse is indispensable, both in the operating theatre and outside the operating theatre, because of the peri operative role she/he plays (Hind, 1997(a): 1299). She further examines the relevance of the extension of the theatre nurses' roles, to be nurse anesthiologists. The author cites the shortage of anesthiologists to have resulted in the training of operating theatre nurses, to be nurse anesthiologists (Hind, 1997: 10).

Roux (1997: 22) views the role of the theatre nurse as switching over to more highly skilled theatre technology. The author suggests that the nurses be exposed to the Intensive Care Unit for four months, during the course of their post basic training. The author views this as a way of preventing non-nursing personnel from taking over the role of the theatre nurse in the operating theatre.

According to Read (1998: 90) a study was conducted in the United Kingdom, to explore the new nursing roles in the acute sector. Variables to be studied were listed as: clinical effectiveness, legal, professional, economic, managerial, and educational issues, and their acceptability to the patients. All areas of specialization were listed, including theatre nursing. Innovative roles were identified.

According to Willis (1999: 73) the theatre nurses stopped being the doctors' handmaidens because of advances in theatre nursing. The author mentions that the theatre nurses prefer to be called peri operative nurses. This is seen as denoting that their roles extend beyond the operative procedure, for example, to perform pre-operative investigations, prior to emergency surgery. This strategy was viewed as enabling the theatre nurse to be more effective as a specialist in peri operative care.



The role of the theatre nurse is viewed as complex and needs to be nurtured and developed (Wicker, 1999: 487). It is viewed as involving evidence based care and accountability for practice, amongst other responsibilities.

Pieterse (2000: 6) advocates creative thinking on the part of theatre nurses. The author views theatre nursing as being influenced by habit. The author asserts that theatre nurses have to transform and become operating room specialists. The author mentions that theatre nurses should evidence the fact that they are invaluable members of the surgical team, that cannot be replaced by technicians or robots.

Mahlambi (2001: 38) views the theatre nurse as the coordinator of all activities that are necessary for peri operative nursing. She/he should function as a coordinator, educator, manager and consultant, to facilitate the delivery of a quality peri operative service, to the surgical patient (Mahlambi, 2001: 42).

## **2.5 CONTEMPORARY CHANGES**

Brown (1994: 36) is concerned about the need for survival of peri operative nurses, as clinical nurse specialists. The author argues that the presence of registered theatre nurses in the operating theatre can make a difference, by preventing post-operative complications.

Another author is concerned about the future of theatre nursing. The author cites, lack of exposure of student nurses to theatre, as a factor in dwindling numbers of registered nurse recruits for theatre. The fact that theatre is viewed as one of the stressful areas of functioning for a nurse, also contributes to fewer nurses turning to the operating theatre (Rooney 1994: 26).

According to Hilbig (1996: 189), in Australia, non-nursing personnel are pursuing peri operative activities. This is attributed to dwindling numbers of registered nurses working in the operating theatres. Also, shrinking budgets, due to financial constraints, compel the employers to replace theatre nurses with

non-nursing personnel. She encourages theatre nurses to demonstrate that their presence in the operating theatre makes a difference to the total care of the surgical patients (Hilbig, 1996: 193).

The hospitals in Kenya are experiencing a shortage of anesthesiologists. The author views this shortage as affecting the remote areas of the country. The author also mentions the strategy that was adopted by the Minister of Health, to curb this shortage. The Minister recommended a course in anesthesia for nurses (Makumi, 1996: 232).

Canada also experienced a reduction of medical practitioners. There was a rapid emergence of non-nursing categories, engaged in technical work. These categories were viewed as unsafe. They lacked an understanding of the fundamentals of caring. The Canadian Nursing Association took a stand to cope with the new health demands by means of role expansion, rather than creating non-nursing categories (Rushforth & Glasper, 1999: 1509).

Rushforth and Glasper (1999: 1507) insist that nurses should be proactive in implementing the necessary changes that will meet future demands. Nurses are reminded that if they do not become the architects of their own, developmental change will be imposed, to the detriment of the profession and clients.

Preddy (2001: 64) examines the situation in Africa, regarding health issues. The author cites the need to empower theatre nurses with knowledge, to be able to improve theatre practices. It is mentioned that there is no association for theatre nurses in Africa, or networking facilities, which makes it impossible to disseminate information in Africa (Preddy, 2001:58). The author suggests that the first world theatre nurses should network with the theatre nurses in Africa, empowering these nurses so that they can become safe operating room practitioners.

## **2.6 AN OVERVIEW OF THE OPERATING ROOM NURSING COURSES IN SOUTH AFRICA, AUSTRALIA AND KENYA**

The old and new South African curricula courses were briefly mentioned in 2.2.2. Course content is also mentioned in this section.

### **2.6.1 THE TRADITIONAL SOUTH AFRICAN CURRICULUM FOR DIPLOMA IN OPERATING THEATRE NURSING (OLD COURSE)**

The directive for the Diploma in Operating Theatre Nursing specifies objectives of this course inter alia:

- Implement nursing in all relevant situations, including emergency situations.
- Have insight into the medical legal risks that may occur in theatre, and implications thereof. The objectives further address the physiological and psychosocial needs of the individual patient, implementation of an individualized plan of nursing, multi-disciplinary involvement, pathology and physiology of the patient, acquiring skills and techniques of operating theatre nursing, application of the technical knowledge of the principles of asepsis, to ensure safe procedures, and a safe environment for the patient. Other skills such as research, are also required.

The course content is specified as:

- *Basic Sciences*; including physics, chemistry, anatomy, physiology, pharmacology and psychosocial aspects of operating theatre nursing
- *Operating theatre nursing*, including: history of surgery and anesthetics, principles of anesthetics, resuscitation, surgery and surgical procedures, operating theatre nursing skills, medical legal aspects, and departmental management and teaching.

Research methodology and interpretation of data is also included.

A few teaching strategies are recommended: formal lectures, clinical discussions, demonstrations, seminars, symposiums, group discussions, panel projects, tutorials, auto-tutorial techniques and group project work (SANC, 1982: 1-6).

#### 2.6.2 THE REVISED SOUTH AFRICAN CURRICULUM FOR A DIPLOMA IN MEDICAL AND SURGICAL NURSING SCIENCE: OPERATING THEATRE NURSING (NEW COURSE)

The new course is structured into three main sections as follows:

- *Nursing Dynamics*; including aspects such as Ethos and Professionalism, communication and teaching, interpersonal skills and methods, management and research.
- *Medical and surgical nursing science*; including aspects such as legal provision for professional practice, the assessment of the health status of man, other clinical aspects such as resuscitation and ventilation, referral, and quality assurance.
- The specific field of study refers to the *elective content*, in this case operating room nursing. It is specified to be the same content that is detailed in the directive for operating theatre nursing, the traditional curriculum, in accordance with Regulation number R47 of 22 January 1982 as amended.

#### 2.6.3 AUSTRALIA: NEW SOUTH WALES DEPARTMENT OF HEALTH

Rodgers (1994:21) presented a paper on a post basic course that is offered by New South Wales College of Nursing, on peri operative nursing. The course commenced in 1991, is offered in the distant mode, and is completed over eleven months. The author cites the course as stimulating, creative and promoting critical thinking (Rodgers, 1994: 23).

The course content includes the following:

- Module 1: Legal / ethical professional aspects.
- Module 2: The operating room suite, asepsis and management.
- Module 3: Care of the peri operative patient.

The course also specifies that the technical skills that need to be acquired, are as follows:

- The skills are adapted to the operating room setting at the student's workplace.
- The learner nominates a person who will be his/her preceptor at the workplace.
- Skills that are assessed includes:
  - Scrubbing, gowning and gloving
  - Checking an anesthetic machine

Another course that is offered in Australia is the Graduate Diploma in Operating Suite, in association with a University, taking this type of education to tertiary level (Caradus, 1994: 24).

#### 2.6.4 KENYA: THE COURSE IN ANESTHESIA FOR NURSES

A course in anesthesia is offered to nurses in Kenya. It is offered on the job, for the duration of six to nine months. The aspects that are covered are as follows:

- Principles of anesthesia
- Maintenance of a patent's airway.
- Prevention and treatment of inhaled vomit.
- Basic anesthetic technique.
- Open ether administration.
- Pentothal induction.
- Use of Epstein Mackintosh Oxford apparatus.
- Intravenous anesthesia (Makumi, 1996: 232-233).

## **2.7 CONCLUSION**

The literature review reveals that:

- Theatre nurses, world wide, have a similar scope of functioning, that includes being scrub nurses, but also much more.
- Theatre nurses function as dependent practitioners in some cases.
- The international trend is for the nursing councils to utilize one scope of practice for all nurses in that country.
- There are new avenues for theatre nurses to expand their roles, these are sometimes medically orientated.
- The health departments at international level are experiencing new health demands, financial constraints and shortage of nursing- and other personnel.
- There is international consensus about the need to re-define the role of the theatre nurse and do further research in theatre nursing.

# **CHAPTER 3**

## **RESEARCH METHODOLOGY**

### **3.1 INTRODUCTION**

In this chapter a thorough review of the methodology used in the study, is discussed. The aim of the study is to determine the impact of the reviewed training of theatre nurses, in accordance with regulation number R212, on utilization of these nurses in the operating theatres of public hospitals, in the northern area of the Eastern Cape Province.

Objectives of the study are to:

- Do a literature review in order to give an overview of the tasks that theatre nurses perform as well as curricula used for theatre nurses nationally and internationally.
- Implement a questionnaire to determine the routine tasks the theatre nurses perform on a daily basis, and to establish if there are specific tasks that they think they should perform, given the opportunity.
- Make recommendations on how the registered theatre nurses could best be utilized.

### **3.2 RESEARCH DESIGN**

The nature of this study was quantitative, descriptive, and contextual. Quantitative research refers to the investigation of phenomena that lend themselves to precise measurement and quantification, and often involves a rigorous and controlled design (Babbie & Mouton, 2001: 49).

A descriptive design is about observing, describing and classifying the dimensions of a phenomenon (Babbie & Mouton, 2001: 80). Descriptive research provides an accurate portrayal of the characteristics of a particular individual, event, or group, in actual situations. The purposes of descriptive research are; to discover new meaning, describe what exist, determine the frequency with which something occurs, and to categorize information (Burns & Grove, 1993:766).

In this study the impact of the reviewed training of theatre nurses, according to regulation number R212, on utilization of these nurses in the operating theatre in the northern area of the Eastern Cape Province, is investigated. This will be described using a questionnaire as data collection instrument. Data is thus collected in quantified format, and the data will be used to describe the phenomenon that is researched.

In a contextual study, phenomena are studied because of their intrinsic and immediate contextual significance (Babbie & Mouton, 2001:133). The study is therefore not representative of a larger population or similar phenomenon. The particular study was confined to the northern part of the Eastern Cape. At present two colleges of nursing that belong to the public service offer the training of theatre nurses, in this province because this province covers a large land area. The training of theatre nurses has to take place in big institutions where there are operating theatres that are functional, and where a wide range of surgical interventions is performed. This study is therefore a contextual study.

In the previous chapter, the literature review, the regulation R212 curriculum was discussed, and tasks registered theatre nurses are prepared for, were mentioned.

### **3.3 RESEARCH METHOD**

As research method, a survey was conducted, using a questionnaire as research instrument. A survey is described as a data collection method, where data is



collected through questionnaires or personal interviews (Burns & Grove, 1993: 781). A survey was appropriate for this study because it was the most convenient way to collect data on the topic of the research. Babbie and Mouton (2001: 230) state that survey research is probably the best method available to the social scientist interested in collecting original data.

### **3.4 POPULATION AND SAMPLE**

#### **3.4.1 POPULATION**

The population comprised of registered theatre nurses, as well as post basic students doing the theatre course, working in the operating theatres, in the public sector, in the context described in 3.2. These nurses had to be allocated to the operating theatres at the time of the study.

#### **3.4.2 SAMPLING**

Convenience or accidental sampling was used to select the required sample. Convenience sampling is a form of non-probability sampling and it "involves choosing readily available people or objects for the study" (Brink, 1996: 140).

Convenience sampling was appropriate for this study, because the researcher had to request theatre nurses that were available and on duty to take part in the study.

### **3.5 DATA COLLECTION**

#### **3.5.1 CHOICE OF DATA COLLECTION INSTRUMENT**

A questionnaire was selected as the most suitable method of data collection for this study. The questionnaire method was selected because of the following advantages:

- Less costly
- Time saving if well structured
- Allow the respondent the privacy and anonymity required in research
- The ideal method of data collection for an initial study (Brink, 1996: 153).

### 3.5.2 DESIGN OF QUESTIONNAIRE

An extensive literature review was done. The questionnaire was formulated according to the objectives of the study, (discussed in chapter one) and organized according to the data obtained from the literature review. The covering letter gave the reason for the survey and explained how the questionnaire should be completed.

The questionnaire comprised of closed ended and open-ended questions. The purpose of open-ended questions was to give respondents opportunity to express themselves as they wish. Closed ended questions provided a choice between different options. A copy of the questionnaire is attached as addendum A.

### 3.5.3 LAYOUT OF THE QUESTIONNAIRE

The format of the questionnaire is discussed in this sub-section and presented in table 3.1. The questionnaire was divided into three sections. Each section is discussed in terms of the type of information covered and the motivation for its content.

**TABLE 3.1: LAYOUT OF QUESTIONNAIRE**

<b>SECTION</b>	<b>DESCRIPTION</b>
<p><b>Section A</b></p> <p>Biographical and other relevant data</p>	<p><i>Questions 1-6:</i></p> <p>Information was requested about the respondent's qualifications, years of experience and appointment level, as well as information on CPR courses that was completed.</p> <p>This data was used to describe the group of respondents, and to indicate the level of their professional development.</p>
<p><b>Section B</b></p> <p>Activities in the theatre</p>	<p><i>Question 7:</i></p> <p>Questions pertaining to the frequency of performance of certain nursing tasks were asked:</p> <ul style="list-style-type: none"> <li>• Pre-operative activities: questions 7.1-7.3.</li> <li>• Intra-operative activities: questions 7.4-7.7.</li> <li>• Post-operative activities: questions 7.8-7.9.</li> </ul> <p><i>Question 8:</i></p> <p>An opportunity is given to the respondent to identify other tasks, not mentioned in (7), because the researcher realized that there would be more tasks.</p> <p><i>Question 9:</i></p> <p>The respondent is asked specifically about functioning as anesthesia nurse, because the researcher realized theatre nurses may increasingly be used as anesthetic nurses.</p> <p><i>Question 10:</i></p> <p>Specific nursing actions, possibly more relevant to the critical care environment, but important for theatre as well were listed, and the respondent had to indicate if she ever had to perform any of these actions.</p> <p><i>Question 11:</i></p> <p>The actions listed in question 10 were again listed (plus two extra) and the respondent had to indicate her competency in it.</p>

<p><b>Section C</b></p> <p>Curriculum aspects (Emphasis on specifically, the curriculum aspects dealing with exposure, a uniform foundation)</p>	<p><i>Questions 12-13:</i></p> <p>The first question determined if the respondent is of the opinion that theatre nurses are benefiting by attaining a uniform foundation with critical care nurses, during their course. The second question provided for a motivation on the answer to the previous question.</p> <p><i>Questions 14-15:</i></p> <p>The first question requested the respondent to indicate if he/she thinks it is appropriate to be allocated to the ICU while doing the theatre course and the second answer provided for a motivation to this answer.</p> <p><i>Questions 16-18:</i></p> <p>These questions determined the opinion of the respondents, regarding their scope of functioning, compared to the scope of the registered critical care nurse.</p>
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#### 3.5.4 PRE-TESTING OF THE INSTRUMENT

A pretest is the initial testing of an instrument, which has been designed to a small sample of respondents prior to the actual study. The trial sample has to evidence similar characteristics to the study sample. The purpose of this exercise is to identify flaws and assess the amount of time needed to complete the questionnaire (Brink, 1996: 174).

The purpose of pre-testing the questionnaire is to obtain validity and reliability. These are achieved by ensuring that the questionnaire is clearly worded, free from subjectivity and solicits relevant information (Brink, 1996: 60).

The respondents who participated in the pretest were students, four experienced theatre nurses who were not going to participate in the study.

- Clarity of the language used.
- Relevance of the questions asked to the particular study.
- Adequacy of time allocated to complete the questionnaire.

Suggestions were made and minor alterations were made to the questionnaire.

## **3.6 DATA ANALYSIS**

Planning of a data analysis involves the selection of appropriate statistical techniques to analyze the study data. Quantitative analysis is defined as the manipulation of numerical data through statistical procedures, for the purpose of describing phenomena, or assessing the magnitude and reliability of relationships among phenomena (Brink, 1996: 179).

Descriptive statistics was used to process and analyze the data. Descriptive statistics allows the researcher to organize the data in ways that give meaning, and facilitate insight. The use of descriptive statistics was sufficient for the purpose of this study. The questions were marked, and the scores obtained by the respondents were grouped, according to individual questions or themes.

## **3.7 VALIDITY AND RELIABILITY**

### **3.7.1 VALIDITY**

The term "validity" describes a measure that accurately reflects the concept it is intended to measure (Babbie & Mouton, 2001: 648).

Validity of the research instrument is also the determination of the extent to which the research instrument reflects the construct being examined. (Brink, 1996: 215).

### 3.7.1.1 Content validity of the instrument

Content validity of the instrument examines the extent to which the method of measurement includes the elements relevant to the construct being measured. This was achieved by doing a literature review and consulting the content expert, i.e. the study supervisor (Brink, 1996: 170).

### 3.7.1.2 Construct validity of the instrument

Construct validity of the instrument was tested by presenting it to four experienced theatre nurses. These nurses were not part of the study sample. The questionnaire was distributed and collected personally. The expertise evidenced by those who participated in this phase confirmed the content validity of the instrument (Brink, 1996: 170).

### 3.7.1.3 Face validity

Face validity is defined as the extent to which a measuring instrument appears to be measuring what it is supposed to measure (Brink, 1996: 168). The experts mentioned in 3.7.1.2 also confirmed face validity of the instrument.

## 3.7.2 RELIABILITY OF THE INSTRUMENT

Reliability of a measure denotes the consistency of measures obtained, when a particular instrument is utilized (Burns & Grove, 1993: 778). Therefore reliability refers to stability and homogeneity of an instrument. Both face validity and content validity contributed to the reliability of the research instrument. (These concepts are addressed in subsection 3.7.1.1 and 3.7.1.3). Reliability of the questionnaire was evidenced by the fact that the respondents, who participated in the pretest, interpreted the questionnaire in the same way as those who participated in the actual study.

The following reliability measures for a questionnaire could not be implemented in this study:

- *Split-half reliability*: This measure is used to determine the homogeneity of an instrument's items. This can be done only after completion of a study, otherwise the subjects would become familiar with the test items and the results of the study would not be valid.
- *Test-retest reliability*: This method determines the stability or consistency of a measurement technique by correlating the scores obtained from repeated measures. When retesting takes place too soon, sensitization could become a problem (Burns & Grove, 1993: 780).

### 3.7.3 RELIABILITY OF THE DATA COLLECTION PROCESS

The reliability of the data collection process was enhanced by ensuring that the survey environment was more or less the same for each participant in this research. A non-threatening environment was ensured. The respondents' names and the names of the participating institutions were not identified by coding, numbering or any other means. All these actions protected the anonymity of the participants and also enhanced the reliability of the data collection process.

## **3.8 ETHICAL CONSIDERATIONS**

It was stated, in the letter accompanying the questionnaire, that the respondents had no obligation to complete the questionnaire, but were asked to do it voluntarily. Questionnaires were numbered instead of asking the names of respondents, to maintain anonymity.

The researcher distributed the questionnaires to the respondents and received answers in envelopes, to promote privacy. Some questionnaires were posted directly to the home addresses of respondents.

Permission was obtained from the medical superintendent and the chief matron of the hospitals where questionnaires had to be distributed (See Addendum B).

### **3.9 SCOPE AND LIMITATIONS OF THE STUDY**

This study can be described as contextual. It was conducted in the northern area of the Eastern Cape Province. The population was small, therefore research findings cannot be generalized. Conclusions were valid for the specific context only, i.e. the hospitals involved in this study.

### **3.10 CONCLUSION**

This chapter gave an overview of the research design and methodology. This can be described as quantitative, descriptive, and contextual. The population and sample, the data collection process, the research instrument, and relevant aspects such as validity, reliability, confidentiality and anonymity were discussed in detail. The layout of the questionnaire was given in table format, and introductory remarks were made about the data analysis. The data analysis was done by the researcher, and will be presented in chapter four.



# **CHAPTER 4**

## **DATA ANALYSIS**

### **4.1 INTRODUCTION**

In this chapter, the research findings will be discussed. Descriptive statistics was used to determine the results of the questionnaire. The researcher calculated the statistics by hand. Forty-one (41) respondents completed and returned questionnaires.

*Note:*

- All percentage values are rounded off to the nearest full percentage or one place after the comma percentage. This may influence the total e.g. 32.5% becomes 33% and 67,5 becomes 68%, and the total therefore seems to be 101%.
- N=41 throughout the data analysis, unless indicated differently.

### **4.2 SECTION A: BIOGRAPHICAL AND OTHER RELEVANT DATA**

#### **4.2.1 QUESTION 1: APPOINTMENT STATUS WITHIN THE OPERATING THEATRE**

Out of a total of 41 respondents, four (10%) of the respondents are supervisors, 38 (80%) are scrub nurses, two (5%) are anesthetic nurses, and two (5%) are recovery room nurses.

Appointment status is illustrated in figure 4.1

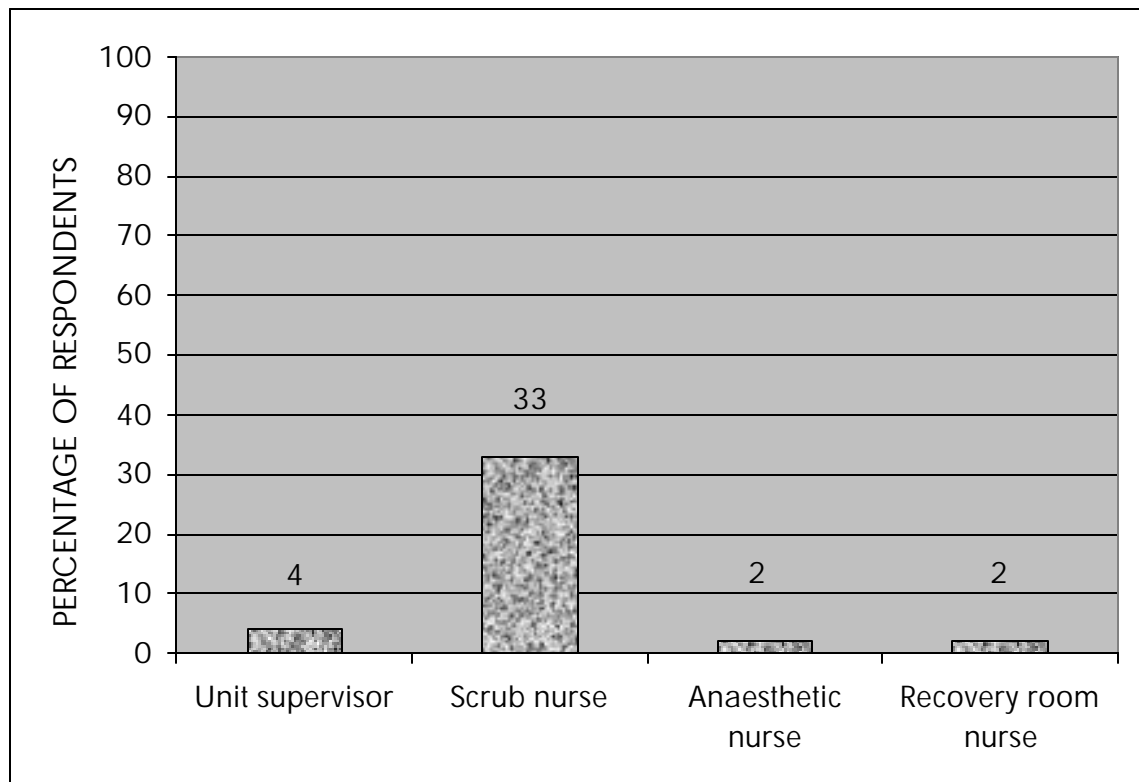


FIGURE 4.1: APPOINTMENT STATUS WITHIN THE OPERATING THEATRE

#### 4.2.2 QUESTION 2: REGISTRATION WITH THE SOUTH AFRICAN NURSING COUNCIL AS A THEATRE NURSE

Out of a total of 41 respondents (N=41), 27 (66%) of the respondents are registered with the South African Nursing Council, as theatre nurses. Fourteen (34%) of the respondents are not yet registered with the South African Nursing Council as theatre nurses, because they were registered nurses, doing the theatre course at the time of the study.

Registration with the SANC is illustrated in figure 4.2

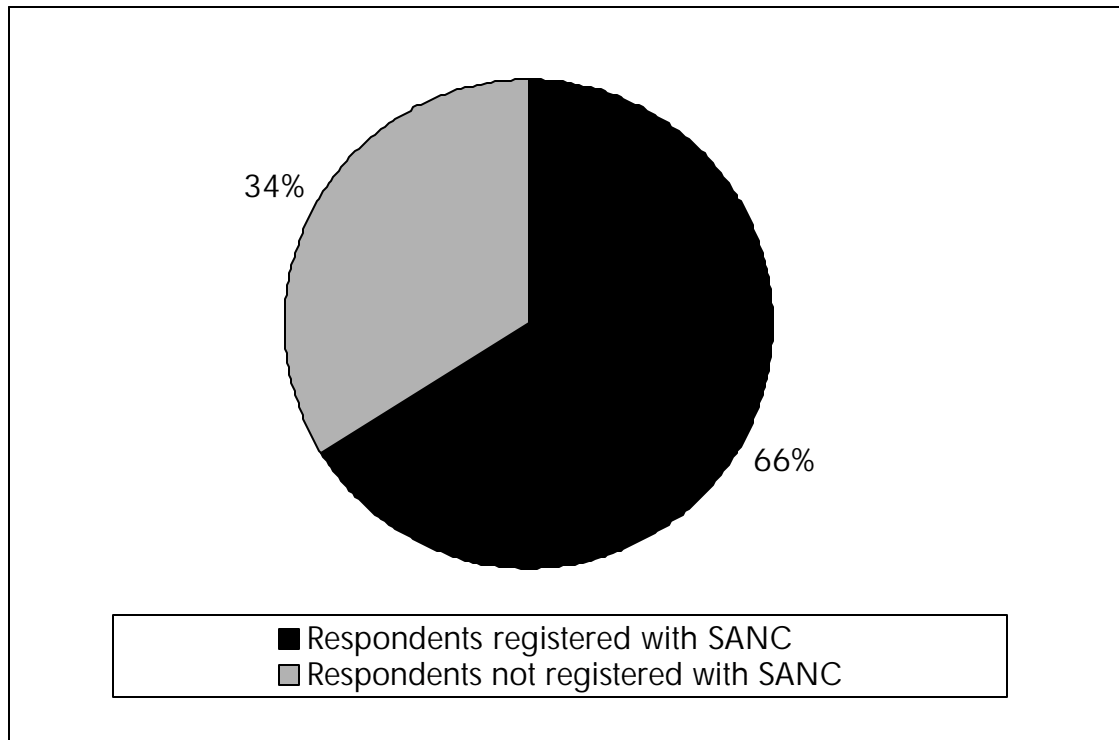


FIGURE 4.2: REGISTRATION OF RESPONDENTS WITH SANC

#### 4.2.3 QUESTION 3.1: YEARS OF EXPERIENCE AS A REGISTERED THEATRE NURSE

Out of a total of 27 respondents (N=27), four (14,8%) of the respondents have experience of one year and less as registered theatre nurses, 13 (48,1%) has experience of two to five years, five (18,5%) has experience of six to nine years and five (18,5%) has experience of more than ten years.

Years of experience as registered theatre nurse is reflected in table 4.1

TABLE 4.1: YEARS OF EXPERIENCE AS REGISTERED THEATRE NURSE

<b>YEARS OF EXPERIENCE</b>	<b>FREQUENCY (f)</b>	<b>PERCENTAGE %</b>
1 years or less	4	14,8%
2-5 years	13	48,1%
6-9 years	5	18,5%
10 years and more	5	18,5%
<b>TOTAL</b>	<b>N=27</b>	<b>100%</b>

#### 4.2.4 QUESTION 3.2: YEARS OF EXPERIENCE BEFORE REGISTERING AS A THEATRE NURSE

Out of a total of 27 respondents (N=27), 12 respondents (44,4%) have experience of two to five years before registering as theatre nurses 12, (44,4%) have accumulated between six and ten years, two (7,4%) have eleven to fifteen years and one (3,7%) have accumulated between sixteen and twenty years. It is thus clear that the group of respondents that are registered theatre nurses has substantially more years of theatre exposure than just the years after doing the theatre course.

Years of experience, working in the theatre before registering as theatre nurses is reflected in table 4.2.

TABLE 4.2: YEARS OF EXPERIENCE IN THEATRE BEFORE REGISTERING AS THEATRE NURSES

<b>YEARS OF EXPERIENCE</b>	<b>FREQUENCY (f)</b>	<b>PERCENTAGE %</b>
2-5 years	12	44,4%
6-10 years	12	44,4%
11-15 years	2	7,4%
16-20 years	1	3,7%
<b>TOTAL</b>	<b>N=27</b>	<b>100%</b>

#### 4.2.5 QUESTION 4: YEARS OF EXPERIENCE AS AN EXPERIENCED THEATRE NURSE

This question is not reported on, because, when doing the analysis, the researcher realised that this question was not interpreted correctly by the respondents. The question was meant to be answered by those not yet registered as theatre nurses (students), but the number of responses indicates that registered theatre nurses also answered this question. This question will have to be reformulated, should this questionnaire be used in further studies.

4.2.6 QUESTION 5: OPPORTUNITY TO DO CARDIOPULMONARY LIFE SUPPORT / TRAUMA COURSE

Six (14,6%) of the respondents have had the opportunity to do a basic or advanced cardio-pulmonary / trauma life support course and 35 (85,4%) of the respondents have never had the opportunity to do the course that have been mentioned. These nurses are thus not well trained to handle emergency situations in the theatre.

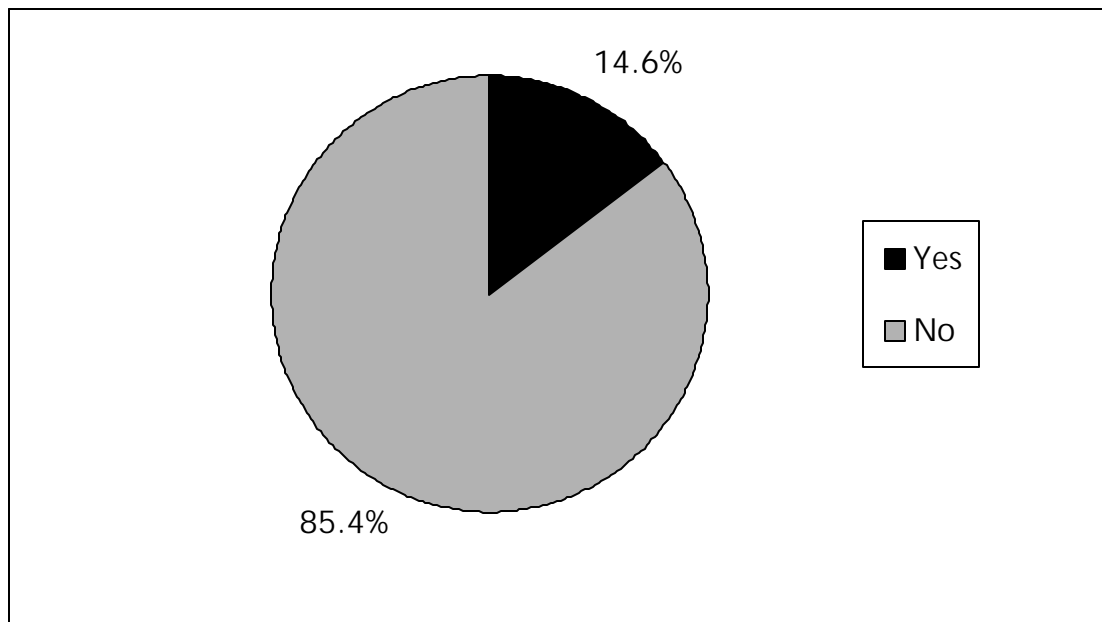


FIGURE 4.3: PERCENTAGE OF RESPONDENTS THAT DID A CARDIO-PULMONARY LIFE SUPPORT OR TRAUMA COURSE

4.2.7 QUESTION 6: ACCESSING A DEVELOPMENT PROGRAMME WHICH IMPROVED THE SKILLS AS PROFESSIONAL NURSE IN THE OPERATING THEATRE

A variety of responses were given to this question. Analysis of the results showed that 21 (51,2%) of the respondents reported having accessed some development programmes whilst 20 (48,8%) of the respondents reported not having accessed development programmes. No programme was done by more than 3 respondents.

Seventeen programmes were listed, 70,5% of the programmes that have been listed are routine theatre tasks, 5,9% deal with management of change, 5,9% deal with national health priorities and 17,6% equip the theatre nurses with the skills necessary to handle emergencies. The programmes as well as the amount of respondents that did the courses are depicted in figure 4.4.

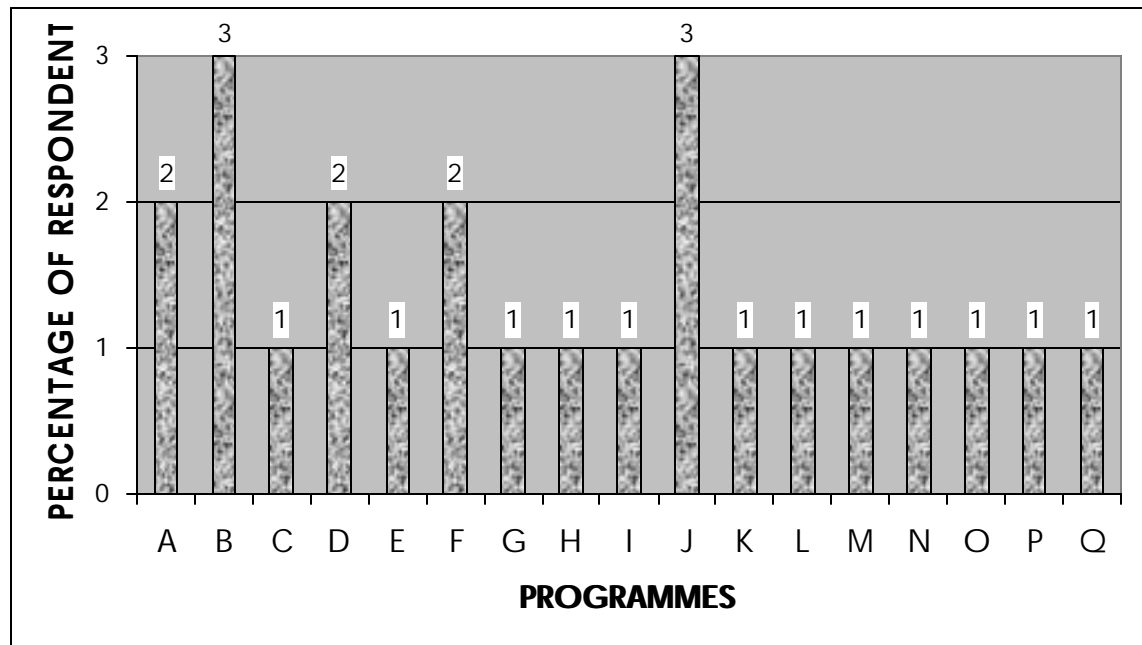


FIGURE 4.4: GRAPH DEPICTING DEVELOPMENT PROGRAMMES THAT WERE ACCESSED BY THEATRE NURSES

- A - South African Theatre Sisters study days
- B - Course on HIV / Aids
- C - Diversity management
- D - Course in anesthesia
- E - Study day on cardiopulmonary resuscitation
- F - Infection control seminar
- G - Study day on draping methods
- H - Study day on pediatric surgery
- I - Management of malignant hyperthermia
- J - Seminar on orthopedic instrumentation
- K - Seminar on protocols for disposal of body parts
- L - Study day on methods of sterilization
- M - Environmental health and safety
- N - Research projects
- O - Principles of sterile technique
- P - Study day on gastro enterology
- Q - Wound care

## **4.3 SECTION B: ACTIVITIES IN THE THEATRE**

### **4.3.1 PRE-OPERATIVE ACTIVITIES**

#### **4.3.1.1 QUESTION 7: RECEIVING SURGICAL PATIENTS IN THE THEATRE**

Results of this question are reflected in table 4.3

TABLE 4.3: RESPONSES REGARDING RECEIVING OF SURGICAL PATIENTS IN THE THEATRE

<b>RESPONSE</b>	<b>FREQUENCY (f)</b>	<b>PERCENTAGE (5) %</b>
Never	7	17,1%
Once a month	4	9,7%
Once a week	4	9,7%
Once a day	1	2,4%
Several times a day	25	60,4%
<b>TOTAL</b>	<b>N=41</b>	<b>100%</b>

From this table it is clear that the majority of respondents (60,4%) are receiving patients several times a day.

#### **4.3.1.2 QUESTION 7.2: ATTENDING TO THE BASIC NEEDS OF THE PATIENT**

Results of this question are reflected in table 4.4.

TABLE 4.4: RESPONSES REGARDING ATTENDANCE TO BASIC NEEDS OF THE PATIENT

<b>RESPONSE</b>	<b>FREQUENCY (f)</b>	<b>PERCENTAGE %</b>
Never	2	4,9%
Once a month	2	4,9%
Once a week	2	4,9%
Once a day	4	9,7%
Several times a day	31	75,6%
<b>TOTAL</b>	<b>N=41</b>	<b>100%</b>

From this table it is clear that the majority of respondents (75,6%) is attending to the basic needs of the patient several times a day.

#### 4.3.1.3 QUESTION 7.3: STABILISING SHOCKED PATIENTS

Results of this question are reflected in table 4.5

TABLE 4.5: RESPONSES REGARDING STABILISATION OF SHOCKED PATIENTS

<b>RESPONSE</b>	<b>FREQUENCY (f)</b>	<b>PERCENTAGE (5) %</b>
Never	12	29,3%
Once a month	11	26,8%
Once a week	5	12,9%
Once a day	2	4,9%
Several times a day	11	26,8%
<b>TOTAL</b>	<b>N=41</b>	<b>100%</b>

From this table it is clear that there is not a specific trend, because some of the respondents (29,3%) never have to deal with the stabilisation of shocked patients, whereas some of the respondents (26,8%) deal with it on a daily basis.



#### 4.3.2 INTRA-OPERATIVE ACTIVITIES

##### 4.3.2.1 QUESTION 7.4: ASSISTING WITH POSITIONING OF SURGICAL PATIENTS

Results of this question are reflected in table 4.6.

TABLE 4.6: RESPONSES REGARDING POSITIONING OF SURGICAL PATIENTS

<b>RESPONSE</b>	<b>FREQUENCY (f)</b>	<b>PERCENTAGE (5) %</b>
Never	2	4,9%
Once a month	2	4,9%
Once a week	0	0%
Once a day	2	4,9%
Several times a day	35	85,3%
<b>TOTAL</b>	<b>N=41</b>	<b>100%</b>

From this table it is clear that the majority of respondents (85,3%) has to assist with positioning of surgical patients several times a day.

##### 4.3.2.3 QUESTION 7.6: FUNCTIONING AS A CIRCULATORY NURSE

Results of this question are reflected in table 4.8.

TABLE 4.7: RESPONSES REGARDING FUNCTIONING AS CIRCULATORY NURSE

<b>RESPONSE</b>	<b>FREQUENCY (f)</b>	<b>PERCENTAGE (5) %</b>
Never	1	2,4%
Once a month	5	12,9%
Once a week	3	7,3%
Once a day	4	9,7%
Several times a day	28	68,3%
<b>TOTAL</b>	<b>N=41</b>	<b>100%</b>

From this table it is clear that the majority of respondents have to perform other duties than assisting the surgeon during surgery (circulatory nurse) several times a day.

#### 4.3.2.4 QUESTION 7.7: FUNCTIONING AS A SCRUB NURSE

Results of this question are reflected in table 4.9

TABLE 4.8: RESPONSES REGARDING FUNCTIONING AS A SCRUB NURSE

<b>RESPONSE</b>	<b>FREQUENCY (f)</b>	<b>PERCENTAGE (5) %</b>
Never	0	0%
Once a month	1	2,4%
Once a week	0	0%
Once a day	1	2,4%
Several times a day	39	95,1%
<b>TOTAL</b>	<b>N=41</b>	<b>100%</b>

From this table it is clear that the vast majority of the respondents (95,1%) have to function as a scrub nurse several times a day.

#### 4.3.3 POST-OPERATIVE ACTIVITIES

##### 4.3.3.1 QUESTION 7.8: MONITORING REVIVAL OF THE SURGICAL PATIENT

Results of this question are reflected in table 4.10.

TABLE 4.9: RESPONSES REGARDING MONITORING REVIVAL OF SURGICAL PATIENTS

<b>RESPONSE</b>	<b>FREQUENCY (f)</b>	<b>PERCENTAGE (5) %</b>
Never	3	7,3%
Once a month	0	0%
Once a week	2	4,9%
Once a day	2	4,9%
Several times a day	34	82,9%
<b>TOTAL</b>	<b>N=41</b>	<b>100%</b>

From this table it is clear that the majority of respondents (82,9%) have to monitor revival of surgical patients several times a day.

#### 4.3.3.2 QUESTION 7.9: TRANSFERRING THE SURGICAL PATIENT BACK TO THE UNIT

Results of this question are reflected in table 4.11

TABLE 4.10: RESPONSES REGARDING TRANSFER OF SURGICAL PATIENT BACK TO UNIT (WARD)

<b>RESPONSE</b>	<b>FREQUENCY (f)</b>	<b>PERCENTAGE (5) %</b>
Never	1	2,4%
Once a month	3	7,3%
Once a week	2	4,9%
Once a day	3	7,3%
Several times a day	32	78%
<b>TOTAL</b>	<b>N=41</b>	<b>100%</b>

From this table it is clear that the majority of respondents (78%) has to transfer surgical patients back to the unit (ward) several times a day.

#### 4.3.4 QUESTION 8: IDENTIFICATION OF OTHER TASKS THAT ARE ACTUALLY PERFORMED BY THEATRE NURSES

Thirty-seven (90,2%) of the respondents identified a list of other tasks that are performed by theatre nurses and four (9,8%) of the respondents did not identify any other tasks that are performed by theatre nurses. As one respondent could have identified more than one task, therefore a list of tasks, classified into categories, are given, without percentages. These tasks are shown in table 4.12.

TABLE 4.11: LIST OF TASKS NOT MENTIONED IN QUESTIONNAIRE PERFORMED BY THEATRE NURSES

<b>CLASSIFICATION</b>	<b>TASKS</b>
Clinical tasks	<ul style="list-style-type: none"> <li>• Handling of schedule 5, 6 and 7 drugs</li> <li>• Giving emotional support to patients and families</li> <li>• Health education of patients</li> </ul>
Educational tasks	<ul style="list-style-type: none"> <li>• In-service education of personnel</li> <li>• Orientation of basic students</li> </ul>
Administrative tasks	<ul style="list-style-type: none"> <li>• Quality assurance</li> <li>• Administrative work</li> <li>• Disaster planning</li> <li>• Supervision of personnel</li> <li>• Budgeting</li> </ul>
Non-nursing tasks	<ul style="list-style-type: none"> <li>• Inventory</li> <li>• Testing of anaesthetic equipment</li> <li>• Fetching patients from the wards for elective surgery</li> <li>• Calculating statistics of surgical patients</li> <li>• Sterilization of equipment</li> <li>• Preparation of lists of patients booked for theatre</li> <li>• Cleaning of the theatres</li> <li>• Ordering of sterile items from central steam sterilization department</li> </ul>

#### 4.3.5 QUESTION 9: FUNCTIONING AS AN ANAESTHETIC NURSE

In this question the respondents had to indicate if they ever assisted the anaetherist with administration of anaesthesia. Thirty-two (78%) of the theatre nurses did function as anaesthetic nurse whilst nine (22%) never functioned as anaesthetic nurses. The results are depicted in figure 4.5.

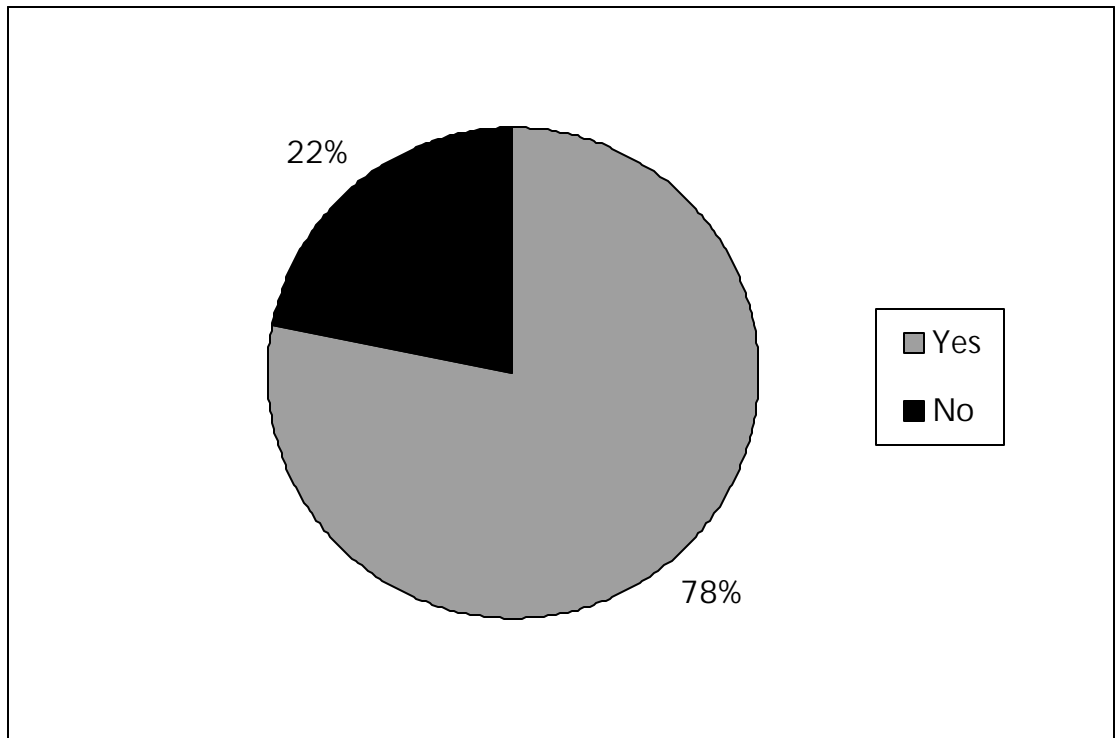


FIGURE 4.5: THEATRE NURSES FUNCTIONING AS ANAESTHETIC NURSE

#### 4.3.6 QUESTION 10: PERFORMANCE OF SPECIFIC LISTED ACTIONS BY THEATRE NURSES

In this question (10.1 - 10.6) the researcher requested the respondents to indicate if they ever had to be able to do certain (nursing) actions. *These are the actions* that were previously, *before implementation of the new curriculum,* *regarded as actions* that *only critical care nurses have* to know how to perform.

Responses were as follows:

Nineteen (46,4%) of the respondents had to identify cardiac arrhythmias on a cardiac monitor. More respondents 29 (71,9%), had to perform endotracheal intubations and 28 (68,3%) of the respondents reported having to perform cardiopulmonary resuscitation.

Only 10 (24,4%) of the respondents had to obtain arterial blood for blood gas analysis, 12 (29,3%) had to interpret arterial blood gas results and 8 (19,5%) had to treat cardiac arrhythmias.

The results are depicted in figure 4.6

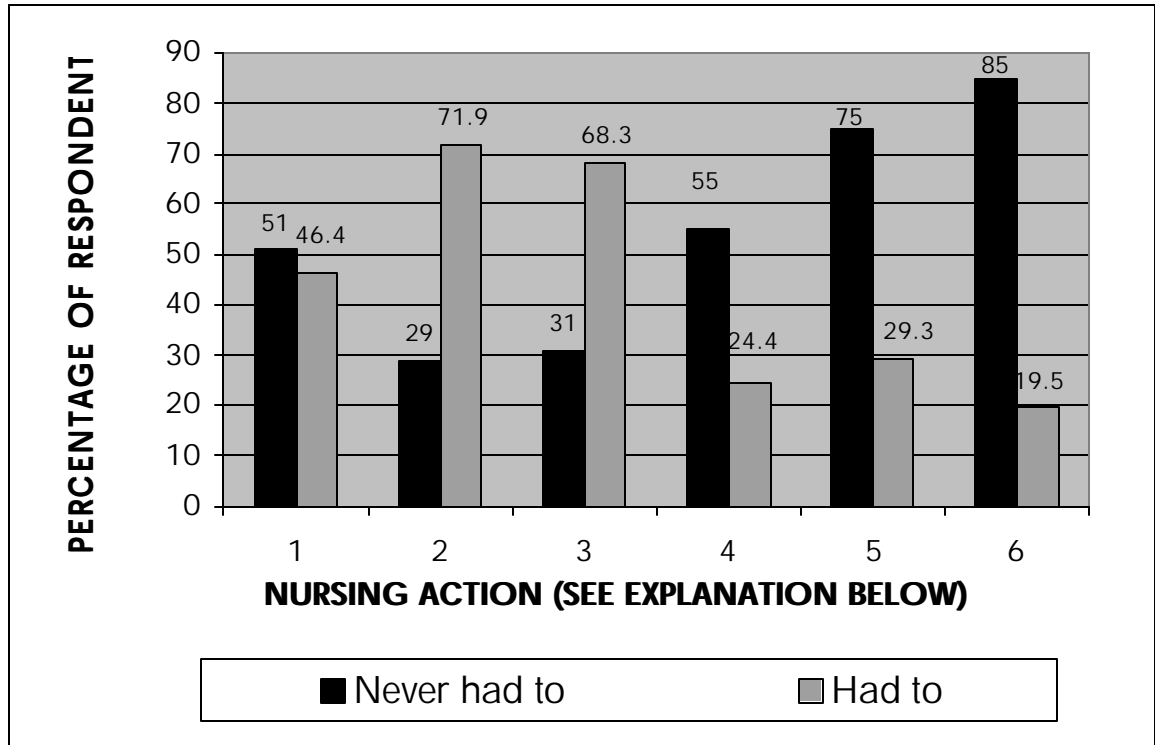


FIGURE 4.6: PERFORMANCE OF NURSING ACTIONS BY RESPONDENTS

1. Identification of cardiac arrhythmias on a cardiac monitor
2. Performing endo-tracheal intubations
3. Performing cardiopulmonary resuscitation
4. Obtaining arterial blood for blood gas analysis
5. Interpretation of arterial blood gas results
6. Treatment of cardiac arrhythmias

#### 4.3.7 QUESTION 11: LEVEL OF COMPETENCE AS INDICATED BY RESPONDENTS IN THE SPECIFIED TASKS

In this question the respondents had to indicate how they rate themselves in the tasks or nursing actions as was specified in question 10. Results of this section is reflected in table 4.12.

TABLE 4.12: INDICATORS OF LEVEL OF COMPETENCE OF RESPONDENTS IN PERFORMANCE OF SPECIFIED TASKS

TASK	RESPONSE							
	Competent		Not competent		Not sure		N	
	No	%	No	%	No	%	No	%
Identification of cardiac arrhythmias	20	48,8	11	26,8	10	24,9	41	100
Performing endo-tracheal intubations	9	21,9	12	29,3	20	48,8	41	100
Performing cardiopulmonary resuscitation	21	51,2	14	34,1	6	14,6	41	100
Obtaining arterial blood for blood gas analysis	7	17,1	16	39	18	43,9	41	100
Interpretation of arterial blood gas results	6	14,7	14	34,1	21	51,2	41	100
Treatment of cardiac arrhythmias	5	12,2	16	39	20	48,8	41	100
Interpretation of blood electrolyte levels	13	31,7	14	34,1	14	34,1	41	100
Interpretation of blood urea and electrolyte levels	13	31,7	13	31,7	15	36,6	41	100

From the table above it is evident that the action that most participants regard themselves as competent in, is the performance of cardiopulmonary resuscitation (51,2%), followed by identification of arrhythmias (48,8%). However, the percentages for these two actions are relatively low (just above or below 50%).

Regarding the rest of the actions, the respondents regarded themselves as not competent or they were not sure how competent they are.

## 4.4 SECTION C: CURRICULUM ASPECTS

### 4.4.1 QUESTION 12: OPINION OF RESPONDENTS ABOUT THE BENEFITS OF THE R212 CURRICULUM FOR THE POST BASIC THEATRE AND CRITICAL CARE STUDENTS

Thirty-eight (92,7%) of the respondents felt that the post basic theatre students should benefit from the revised R212 training. Only three, (7,32%) of the respondents felt that it is not necessary to revise the training of theatre students. The results are depicted in figure 4.7.

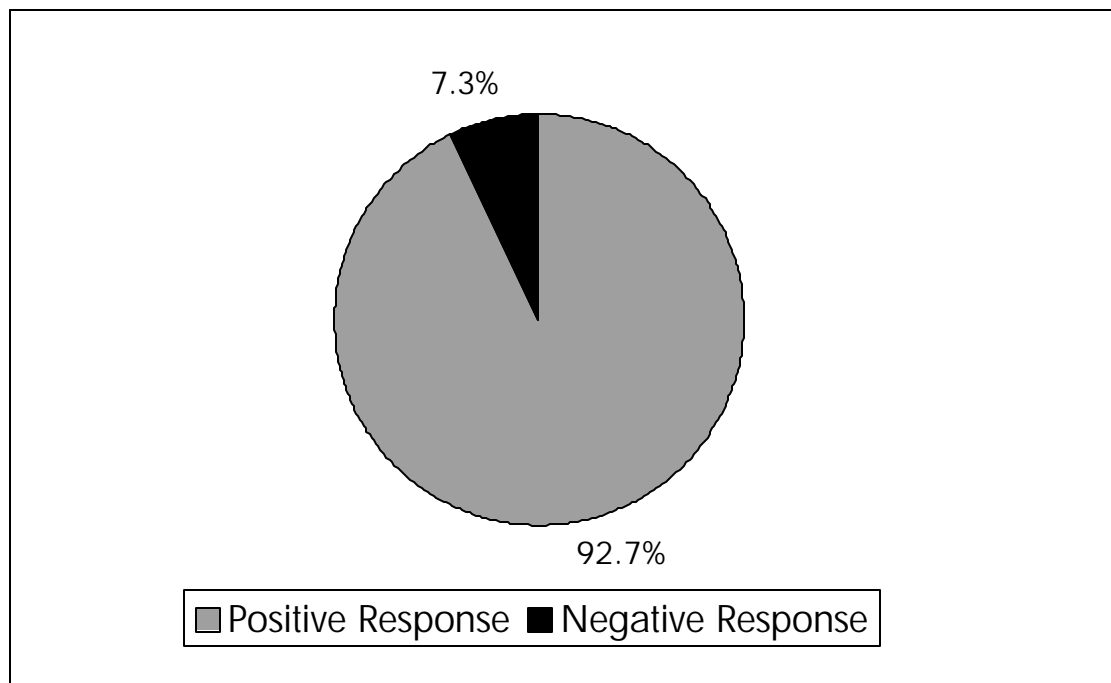


FIGURE 4.7: OPINIONS OF RESPONDENTS REGARDING BENEFITS BASIC THEATRE STUDENTS SHOULD DERIVE FROM A UNIFORM FOUNDATION FOR ALL POST BASIC CLINICAL COURSES



#### 4.4.2 QUESTION 13: MOTIVATION FOR THE RESPONSES CHOSEN IN PREVIOUS QUESTION

None of the respondents choosing the negative option motivated it. A variety of motivations were given for the positive responses chosen in the previous question (12). These responses were analysed and formulated as listed below. For convenience the responses are labeled A to H, because in figure 4.8 the amount of respondents stating each of these responses are reflected in the graph accordingly:

- A - • Medicine and surgery enables the theatre nurses to understand the basis of the problems of surgical patients.
- B - • Knowledge that will bring about the required competencies is gained.
- C - • Understanding of the interdependence of operating theatre and intensive care unit.
- D - • Management of the surgical patient in totality is addressed.
- E - • Ability to manage change is addressed.
- F - • Ability to identify potential emergencies and manage them, e.g. hypo/hyperventilation, cardiac arrhythmias and cardiopulmonary arrest.
- G - • Gaining administrative skills for example leadership, communication, financial management and management of the operating theatre.
- H - • Understanding of contemporary issues.

(Note: percentages are not calculated, as one respondent might have stated more than one response.)

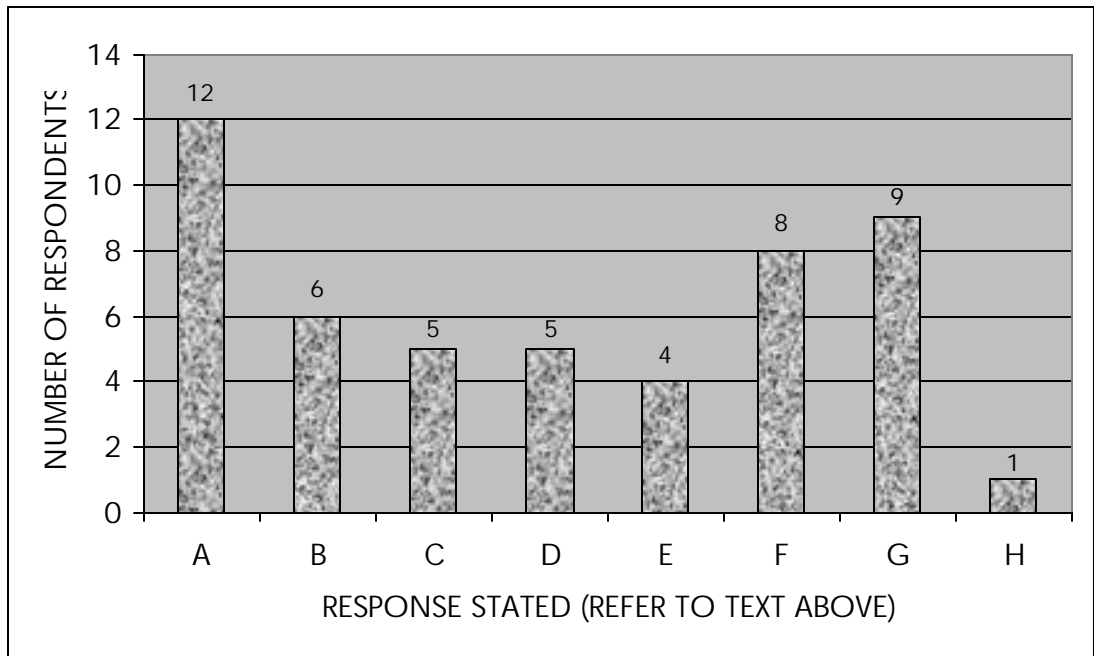


FIGURE 4.8: NUMBER OF RESPONDENTS STATING EACH OF THE RESPONSES

4.4.3 QUESTION 14: ALLOCATION OF POST BASIC THEATRE STUDENTS TO THE INTENSIVE CARE UNIT TO BE EXPOSED TO NURSING CARE OF THE CRITICALLY ILL PATIENT WHO IS ON MECHANICAL VENTILATION

Thirty-eight (92,7%) of the respondents felt that exposure to nursing of a ventilated patient is appropriate and three (7,3%) felt that it was not appropriate. The results are depicted in figure 4.9.

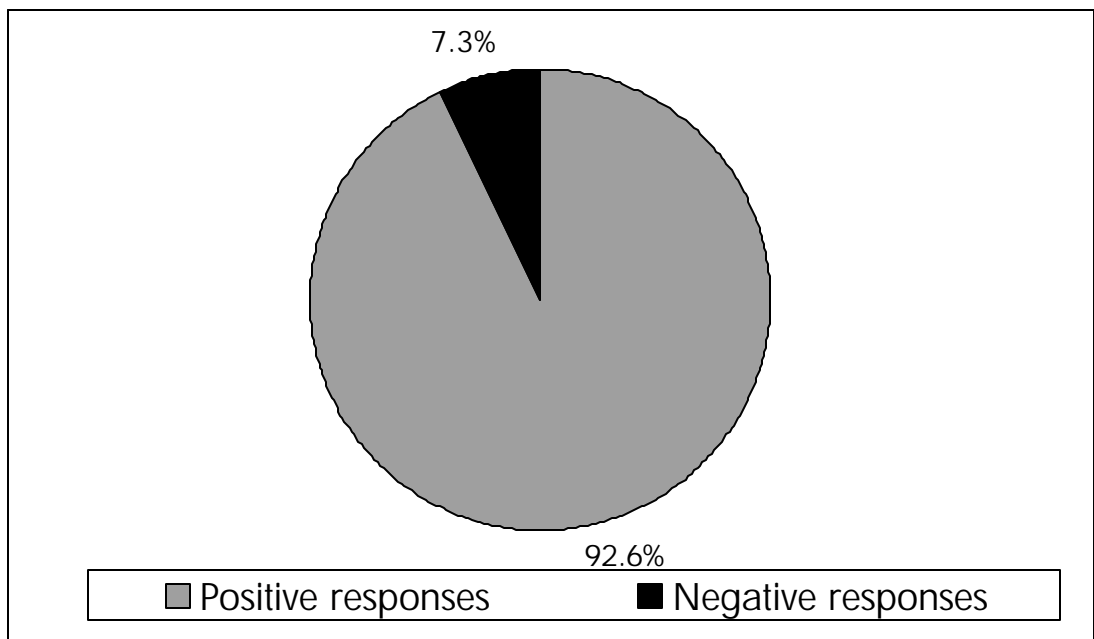


FIGURE 4.9: OPINION OF RESPONDENTS REGARDING THEATRE STUDENTS NURSING VENTILATED CRITICALLY ILL PATIENTS

#### 4.4.4 QUESTION 15: MOTIVATION FOR THE RESPONSE CHOSEN IN THE PREVIOUS QUESTION

A variety of motivations was given for the positive responses chosen in the previous question (14). These responses were analysed and formulated as listed below. For convenience the responses are labelled A to H, because in figure 4.10 the number of respondents stating each of these responses are reflected in the graph:

- A - • Information gained can be utilized in monitoring of a patient who is under the influence of general anaesthesia.
- B - • The theatre nurses will gain competencies in management of emergencies in the absence of doctors in the operating theatre.
- C - • The theatre nurses will gain understanding of the pre- and post-operative management of the critically ill patient in the intensive care unit.
- D - • The theatre nurses gain the ability to nurse the surgical patient in totality.
- E - • Knowledge is gained regarding monitoring and screening of the critically ill patient in the intensive care unit.
- F - • The nursing skills of the theatre nurses as clinical nurse specialists are improved.
- G - • The theatre nurses gain ability to identify cardiac arrhythmias, hypo- and hyperventilation in the acutely ill patient.
- H - • The theatre nurses develop the skill of draining arterial blood and interpreting arterial blood gases, which is necessary in screening of the surgical patient in the operating theatre.

(Note: percentages are not calculated, as one respondent might have stated more than one response).

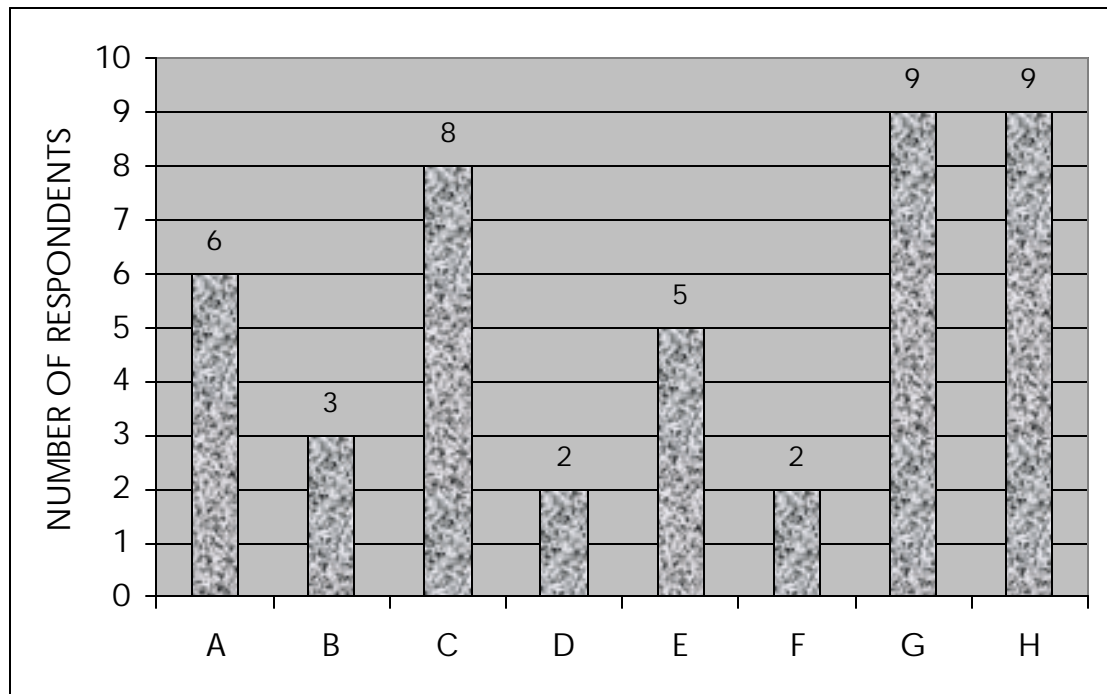


FIGURE 4.10: NUMBER OF RESPONDENTS STATING EACH OF THE RESPONSES

Two respondents motivated negative options. One respondent felt that it is not appropriate for the post basic theatre students to be allocated to the intensive care unit because mechanical ventilation is viewed as being in the domain of the anaesthetist. The other respondent felt that the focus should be on the functioning of the electrocardiograph monitor.

#### 4.4.5 QUESTION 16: LEVEL OF FUNCTIONING OF THEATRE NURSES ON PAR WITH THAT OF CRITICAL CARE NURSES

Ten (24,4%) of the respondents felt that they are functioning at the same level as critical care nurses, where as 31 (75,6%) felt that they are not functioning at the same level as critical care nurses. The responses are reflected in figure 4.11.

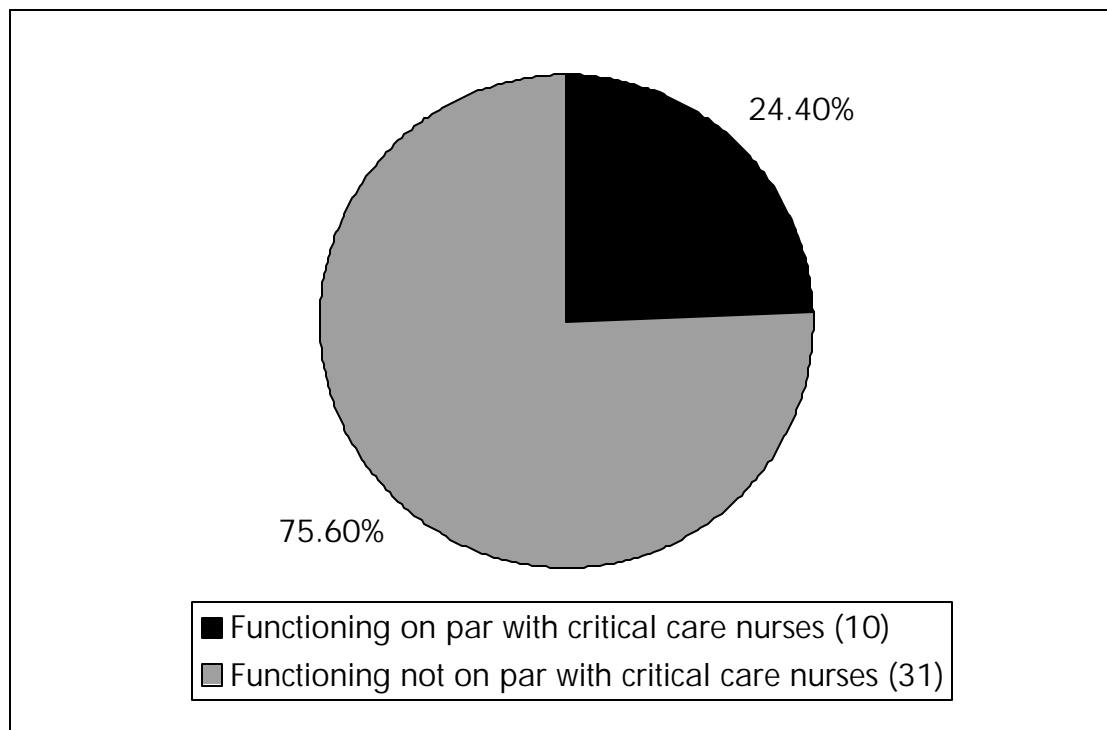


FIGURE 4.11: RESPONDENTS' OPINION REGARDING THEIR FUNCTIONING BEING ON PAR WITH THAT OF CRITICAL CARE NURSES

4.4.6 QUESTIONS 17 AND 18 IDENTIFICATION OF GAPS (BY THOSE ANSWERING NEGATIVE IN PREVIOUS QUESTION) REGARDING OPERATING THEATRE NURSING

Twenty-four (77,4%) of the 31 respondents answering negative in the previous question reported having identified some gaps and seven (22,6%) answered negatively to question 17.

An opportunity was given to these respondents in question 18 to list the gaps that had been identified.

Several items were identified and were grouped together as follows, labelling each A, B, C and so on for the convenience of figure 4.12 that illustrate this data:

Gaps identified in operating theatre nursing:

- A - • Theatre nurses get limited exposure to intensive care unit during the course of training.
- B - • Theatre nursing does not include the cardiopulmonary /trauma/life support entity as part of the theatre nurse
- C - • Theatre nurses do not get the chance to practise endotracheal intubations as this procedure is in the domain of the anaesthetists.
- D - • Theatre nurses function as dependant practitioners whilst critical care nurses' function as independent practitioners with an interdependant role.
- E - • It is the duty of the anaesthetist to manage a patient who is on mechanical ventilation in the operating theatre as part of general anaesthesia.
- F - • Theatre nurses are orientated to technical activities.
- G - • Theatre nurses are confined to the scrub nurses' work.
- H - • The scope of functioning of theatre nurses is completely different from that of critical care nurses whilst they are both clinical nurse specialist.
- I - • It is not easy to detect cardiac arrhythmias on a cardiac monitor during surgical intervention without the assistance of an anaesthetist.
- J - • Theatre nurses do not get the opportunity to take bloods from patients and analyse blood results.
- K - • Theatre nurses lack knowledge of budgetary issues, anatomy, microbiology and pharmacology.

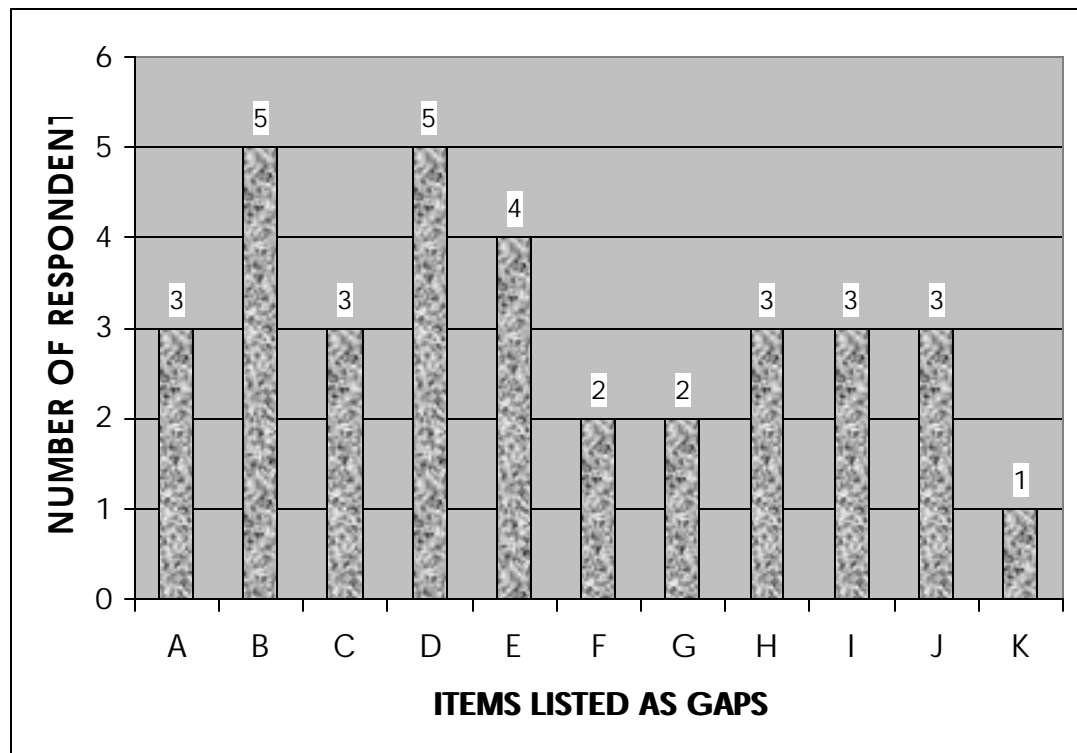


FIGURE 4.12: GAPS IDENTIFIED BY THEATRE NURSES FOR THEIR FUNCTIONING NOT BEING ON PAR WITH THAT OF CRITICAL CARE NURSES

#### 4.5 CONCLUSION

Data obtained from the questionnaire were presented in chapter four in table as well as graph form. It seems as if the focus is mainly on using theatre nurses on what is termed "scrub nurses". Many of the respondents are not competent in other areas where theatre nurses should be able to function and are, in fact, prepared for in the new course, like ventilating patients. Findings of the study, limitations, conclusions and recommendations are presented in chapter five.

## CHAPTER 5

# CONCLUSIONS, RECOMMENDATIONS, AND LIMITATIONS OF THE STUDY

### **5.1 INTRODUCTION**

The final chapter of this study summarises findings of the study. Recommendations are also made and limitations of the study are discussed.

The objectives of the study were:

- To do a literature review in order to give an overview of the tasks that theatre nurses perform as well as curricula used for theatre nurses nationally and internationally.
- To implement a questionnaire to determine the routine tasks the registered theatre nurses perform on a daily basis, and to establish if there are specific tasks that they think they should perform, given the opportunity.
- To make recommendations on how the registered theatre nurses could best be utilized.

The researcher, on completion of this study, reached the above objectives. In reaching the first objective, a literature review was presented in Chapter 2. The old as well as the new curricula for the training of theatre nurses in South Africa were discussed. An overview of theatre nursing courses in other countries was also presented. In obtaining the second objective, a questionnaire was implemented to determine the routine tasks performed on a daily basis.



Findings were presented in Chapter 4 and will be summarised in this chapter. The last objective is also reached, because recommendations are made in this final chapter.

Sixty (60) questionnaires were distributed and forty-one (41) questionnaires were received back. Self-distribution and mailing methods of distributing questionnaires were utilized. The response rate thus was 68,3%, which is fairly high. According to Polit and Hungler (1993: 205), the questionnaire method can have a poor response rate.

The sample was fairly small because these personnel are rendering a specialised service. Work opportunities abroad contribute to a high attrition rate in South Africa.

## **5.2 SUMMARY OF THE FINDINGS OF THE STUDY**

- The majority of theatre nurses identified themselves as scrub nurses. Very few theatre nurses mentioned other responsibilities like being supervisors, anaesthetic nurses, or recovery room nurses (refer to point 4.2.1). It appears that the core business of theatre nurses is to scrub for surgical interventions. This implies that they are charged with what can be regarded as mainly a technical task.
- The majority of participants in the study, 66%, were registered theatre nurses. Twenty-three of these participants had more than two years experience as registered theatre nurses. It is also clear that, in most cases, these participants had substantially more years of theatre exposure (refer to point 4.2.4). The fact is that the operating theatre is a specialised department that needs nurses who are trained as specialists. In the experience of the researcher, they work in the operating theatre for the rest of their lives.

- The majority of theatre nurses have never had the opportunity to be developed so that they can be able to manage emergencies (refer to point 4.2.6). As such, they cannot be regarded as true specialists in their field. Oosthuizen (2002: 35) states that: "The diagnosis of cardiac arrest has to be made immediately and acted upon in an efficient way in order to improve the ultimate outcome".
- More than half the respondents had the opportunity to access development programmes. However, the majority of these programmes were emphasizing routine tasks. Fewer programmes dealt with management of change and national health priorities. Very few respondents reported being able to access a programme that was aimed at addressing the knowledge gap regarding management of emergencies.
- With regard to activities that are performed in the theatre, the respondents reported the task of being a scrub nurse as the task that is most frequently performed by theatre nurses (see point 4). The other two tasks that are performed very often are positioning of the surgical patient and monitoring revival of the surgical patient in the recovery room. Oosthuizen (2002:35-36) reports on an Australian study determining the incidence of perioperative complications (in the theatre complex) in which it was found that cardiac arrest in the recovery room accounts for 6% of arrests documented. It was also found that morbidity and mortality were higher in these cases.
- The majority of tasks often performed by theatre nurses – that were identified by the respondents and that were not specifically mentioned in the questionnaire – can be classified as non-nursing tasks (see 4.3.4).
- The majority of respondents reported having functioned as anaesthetic nurses (see 4.3.5).
- Large percentages of the respondents previously had to perform endotracheal intubations (71,9%) and cardiopulmonary resuscitation

(68,3%). Nearly half of the respondents had to identify cardiac arrhythmias. Traditionally these topics were dealt with in the critical care nursing course (see 4.3.6).

- According to their own rating less than half of the respondents are competent in identifying cardiac arrhythmias and just above half of the respondents are competent in performing cardiopulmonary resuscitation. For the rest of the specified tasks, very few respondents regard themselves as competent (see 4.3.7).
- It was revealed that the majority of respondents felt that the revised training of theatre nurses in accordance with regulation number R212 of 19 February 1993 is beneficial to theatre nurses. Summarised, the motivations by respondents indicated that the revised curriculum enables the theatre nurses to provide quality, holistic care, understand contemporary issues and manage emergencies (see 4.4.1 and 4.4.2).
- In this study it was found that the respondents indicated it is appropriate for the post basic theatre students to be exposed to the nursing care of a critically ill patient who is on mechanical ventilation in the intensive care unit. In order to substantiate this view, participants' responses can be summarised as stating that they will gain improvement in the competencies required for managing the patients who are under general anaesthesia and handling potential emergencies thereof (see 4.4.3 and 4.4.4).
- The majority of participants in this study felt that they are not functioning on the same level as critical care nurses. They cited that the scope of functioning of operating theatre nurses is narrow and that theatre nurses are viewed as being technicians and dependent practitioners. They perceive themselves as lacking the skill of handling emergencies (see 4.4.5 and 4.4.6).

- It can thus be stated that the impact that the new R212 training had on participants in this study is:
  - That they felt positive about curriculum aspects of the new course and the implications it had for the training of theatre nurses in general.
  - That they did not feel positive about the utilization of theatre nurses, as the technical aspects in this area of nursing specialization is over emphasized. They indicate that despite exposure to the critical care environment, theatre nurses remain to an extent technical nurses who find it difficult to make decisions based on independent judgement about peri operative management of the surgical patients.

## **5.3 RECOMMENDATIONS**

### **5.3.1 RECOMMENDATIONS REGARDING THE SCOPE OF FUNCTIONING OF THEATRE NURSES**

It is recommended that the scope of functioning of registered theatre nurses should be investigated. According to the findings of this study theatre nurses are underutilized as specialists in their field. Their primary role is scrubbing for surgical interventions. This role necessitates them to work under the direction of doctors namely surgeons and anaesthetists. According to Willis (1995: 68) operating theatre nursing is influenced by a medical model. In this author's view doctors are the professionals who determine what must be done by theatre nurses in the operating theatre at a given moment.

### **5.3.2 RECOMMENDATIONS FOR THEATRE NURSING PRACTICE**

- There is a need to equate the functioning of the theatre nurses with the knowledge they have gained from their training. Non-nursing tasks like the ones identified in this study should be minimalised namely:

- Testing of anaesthetic equipment.
  - Care of instruments.
  - Fetching patients from the wards.
  - Calculating statistics of surgical patients.
  - Sterilization of equipment.
  - Preparation of theatre lists.
  - Cleaning of the theatres.
  - Ordering of equipment from central steam sterilization department.
- The peri operative nursing environment, in other words theatre nursing practice, should be transformed into a nursing specialization area that will attract many professional nurses in terms of challenges as well as remuneration. According to Geyer (2000: 1) health services in South Africa are experiencing a crisis of shortage of nurses. Theatre nurses are also included. Attrition associated with opportunities for nursing abroad is cited as the cause of this crisis.

### 5.3.3 RECOMMENDATIONS FOR NURSING EDUCATION

- The nurse educators involved in the training of theatre nurses could empower these practitioners to become independent practitioners in every aspect of theatre nursing practice. It is the view of different authors that theatre nurses have to be able to make skilled decisions based on independent judgement (Czokazy, 1997: 401; Ulmer, 2000: 9). They are charged with the responsibility to monitor the physiological status of the surgical patient during the surgical procedure and throughout the peri operative experience (Fortunato, 2000: 24).
- In-service education and other development opportunities should be created for theatre nurses to update themselves in areas other than technical aspects. Oosthuizen (2002: 35) states that: "Cardio-pulmonary resuscitation is a practical skill that has to be mastered through vigorous

hands-on training. The constant updating of practical and theoretical skills and knowledge is essential”.

#### 5.3.4 RECOMMENDATIONS FOR FURTHER RESEARCH

- This study could be replicated in other contexts, for example the private hospital environment or other provinces or could be done nationally.
- A qualitative study on how theatre nurses perceive their role and functions could be done. Data from such a study could contribute to the formulation of a unique scope of practice for peri operative nurses in South Africa.
- The utilization of theatre nurses in South Africa could be studied in order to make recommendations as to how they can best be utilized.

#### **5.4 LIMITATIONS OF THE STUDY**

- As this was a contextual study, findings of the study is relevant for the specific context only. Generalisations cannot be made.
- Due to the fact that not many nurses belong to the group researched in this study, a small sample was obtained.
- The questionnaire used in this study did not provide for all possible aspects that could indicate what the impact of the training is, as this research was done for a dissertation of limited scope.

## **5.4 CONCLUSION**

It is clear that the reviewed training (R212) theatre nurses could have an impact on the utilization of these nursing professionals. Preddy (2001: 52) asserts that there are differences between what the theatre nurses do and what they are supposed to be doing. The author also mentions that the theatre nurses need to be empowered so as to be able to improve their practice. The reviewed training of theatre nurses is aimed at developing their *knowledge*, *skills* and *attitudes* so that they can be able to be effective practitioners.

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