

**MINIMUM COMPETENCIES FOR THE DIPLOMA  
IN NON-NURSING OPERATING DEPARTMENT  
ASSISTANCE IN SOUTH AFRICA**

**by**

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respect of the Magister Societatis (Nursing) degree  
qualification in the School of Nursing, Faculty of  
Health Sciences, University of the Free State**

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**Margaretha Jansje Botha**



Date 12/07/2015

**STUDENT**

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# SUMMARY

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A new era in the operating room science saw the light with the implementation of the diploma in non-nursing Operating Department Assistance in South Africa. This diploma is currently presented in a private hospital group in South Africa. The training was necessitated by the shortage of operating room nurses in South Africa. The Operating Department Assistants (ODAs) undergo a three year diploma course that is accredited by the South African Qualifications Authority (SAQA) on a National Qualifications Framework (NQF) level 6. The ODAs are not registered with any statutory body and the minimum competencies have not been set for this Allied Health category.

In this research the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa was agreed upon, by making use of the Delphi Technique to gain consensus on the competencies. A quantitative research design was used for this research.

The study was conducted in three phases. In phase one, respondents were asked to list the competencies they expected from the ODAs after completion of their diploma in the clinical setting. At the same time competencies listed in literature were identified via a literature search. These two lists of competencies were combined into a data sheet compiled from those competencies that were agreed upon. A second data sheet was then compiled, with the agreed competencies listed in alphabetical order which the respondents had to rank according to importance. In the third and last data sheet, all competencies that were agreed upon that attained an average aggregate of 70% and higher, were listed alphabetically and respondents had to indicate their agreement of the competencies.

Results were listed according to knowledge in the pre-, intra, and post-operative phases. These included knowledge regarding the preparation of the operating room, correct handling of instruments, and the correct handover of the patient to the post-

anaesthesia care personnel. Some of the skills that were listed in the pre-, intra-, and post-operative phases include the checking for correct functioning of equipment used during surgery, application of aseptic and sterile technique, and the management of specimens. The peri-operative attitudes that were listed included honesty, respectfulness, positivity, professionalism, respect for patients and colleagues, and surgical conscience.

The results of the study were finally compiled and recommendations were made to facilities responsible for the training of the Operating Department Assistants.

**Key words:** Operating Department Assistants, Operating Room, Competencies, Knowledge, Skills, Attitude, Pre-operative, Intra-operative, Post-operative, Peri-operative, Delphi technique, Quantitative method.

# OPSOMMING

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Met inisiëring van die diploma in nie-verpleging Operasie Departement Assistering het Suid-Afrika 'n nuwe era in die operasiekamer wetenskap betree. Opleiding vir hierdie diploma word huidig deur 'n enkele privaat hospitaalgroep in Suid-Afrika aangebied. Die opleiding is genoodsaak deur die tekort in operasiekamer verpleegkundiges in Suid-Afrika. Die Operasie Departement Assistent (ODA) ondergaan 'n drie jaar diploma kursus wat deur die Suid-Afrikaanse Kwalifikasie Otoriteit (SAQA) op vlak ses van die Nasionale Kwalifikasie Raamwerk (NQF) erken word. Die ODA word tans nie deur enige statutêre liggaam geregistreer nie, en die minimum vaardighede van hierdie aanvullende gesondheidskategorie is nog nooit vasgestel nie.

In hierdie navorsing word 'n konsensus-opinie oor die minimum vaardighede vir die diploma in nie-verpleging Operasie Departement Assistering vir Suid-Afrika met die hulp van die Delphi Tegniek bespreek. 'n Kwantitatiewe navorsingsontwerp is vir die navorsing aangewend.

Die studie is in drie fases onderneem. In fase een is die deelnemers gevra om die vaardighede te lys wat hulle van die ODA na voltooiing van die diploma in die kliniese plasing sou verwag. Terselfdertyd is vaardighede wat in die literatuur uitgewys word identifiseer. Die twee lysse van vaardighede is in 'n enkele datalys saamgevat. 'n Tweede datalys met die vaardighede in alfabetiese volgorde is daarna saamgestel. Hieruit moes die deelnemers die saamgevoegde vaardighede volgens belang rangskik. In die derde en laaste datalys is vaardighede met 'n gemiddelde konsensus van 70% en hoër alfabeties gerangskik, en moes die deelnemers hul instemming met die belang van die individuele vaardighede aandui.

Die resultate hiervan is volgens kennis van die pre-, intra- en post-operatiewe fases van operasiekamersorg gelys, en sluit in kennis aangaande voorbereiding van die operasie kamer, korrekte hantering van instrumente en die korrekte oorhandiging van die pasiënt aan die post-narkose sorg personeel. Sommige van die vaardighede

van die pre-, intra- en post-operatiewe fases sluit ook in die kontrolering van die korrekte funksionering van toerusting tydens chirurgie, toepassing van aseptiese en steriele tegniek, en die hantering van monsters. Die peri-operatiewe houdings wat gelys is omvat aspekte soos eerlikheid, respek, positiwiteit, professionalisme, respek vir pasiënte en kollegas, asook chirurgiese integriteit.

Ten laaste is die resultate van die navorsing saamgevat om aanbevelings daaroor aan enige betrokke ODA-opleidingsfasiliteite te mag maak.

**Sleutelwoorde:** Operasie Department Assistente, Operasiekamer, Bekwaamhede, Kennis, Vaardighede, Houding, Pre-operatiewe, Intra-operatiewe, Post-operatiewe, Peri-operatiewe, Delphi Tegniek, Kwantitatiewe metode.

# LANGUAGE EDITING

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I, Laura Ester Ziady (ID nr: 560726 0131088) hereby declare that I assisted with the language editing for the dissertation by Margaretha Jansje Botha (ID nr: 6503080028084), titled: **“Minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa”**.

**Qualification:** M Soc Sc (Nursing)

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**Date:** 2015 May 29

**Place:** Bloemfontein



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# CHAPTER ONE

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## INTRODUCTION AND PROBLEM STATEMENT

### 1.1 INTRODUCTION

In 1991 it was predicted that the non-nurse<sup>1</sup> surgical technologist would be one of the fastest growing occupations in the Healthcare industry in the United States (Nursing Economics, 1991:415). In South Africa, Operating Department Assistants have been trained in the private hospital industry as well as in public hospitals. In different countries terms such as surgical technologist or operating room technician were given to these healthcare workers. For the purpose of this study the term non-nurse Operating Department Assistants (ODAs)<sup>1</sup> has been used. The qualification is registered with the South African Qualifications Authority (SAQA) as a two year diploma, but since January 2013 it has been a three year diploma (South African Qualification Authority, [s.a.]: Online). The diploma is only offered for non-nursing personnel.

A qualitative study using the Delphi Technique was selected to obtain consensus on the minimum competencies for the Diploma in non-nursing Operating Department Assistance in South Africa.

### 1.2 PROBLEM STATEMENT

Of a total of 103165 additional qualifications registered with the South African Nursing Council (SANC), only 2931 are registered as operating room nurses (South African Nursing Council, 2014: Online). The problem is that this number does not indicate the total number of qualified operating room nurses who are working in operating rooms in hospitals at present.

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<sup>1</sup> In the rest of the document non-nurse Operating Department Assistant will be referred to as Operating Department Assistant (ODA)

In a 2004 study conducted by Solidarity, it was stated that up to 18% of nurses that are registered with the South African Nursing Council (SANC) no longer practice clinical nursing (Solidarity Research Institute, 2009:5). As a result of the grave shortage of registered operating room nurses in South Africa, a private hospital group in the country implemented training of Operating Department Assistants (ODAs) in 2008. Furthermore the South African Nursing Council states in an document concerned with the age of Registered Nurses and Midwives that 3% of Nurses and midwives registered are above the age of 69 years of age, 15% are between the ages of 60-69 years, and 31% are between the ages of 50-59 years of age (South African Nursing Council, 2014: Online). This indicates a declining number of Registered Nurse and Midwives due to age. The qualifications of both Registered Nurses with a bachelor's degree in nursing, and registered nurses with a diploma in Operating Theatre Nursing lies on level seven of the National Qualifications Framework (NQF) (South African Qualification Authority, [s.a.]: Online).

As from January 2013, the course for Operating Department Assistants (ODA) has been registered as a three year diploma in Operating Department Assistance by the South African Qualifications Authority (SAQA) - a level six qualification on the National Qualifications Framework (NQF) (South African Qualification Authority, [s. a.]: Online). The ODAs involved in this course are still not registered with any statutory body, and no minimum competencies have been agreed upon in South Africa. Each facility training ODAs has had separate curricula approved by the Council on Higher Education (CHE). The Council on Higher Education is responsible for administering the standards set for qualifications, and to ensure the quality of programmes that lead to a formal qualification (Council on Higher Education, 2013:5).

Skills, knowledge and attitude comprise the CHE's requirements for competencies to perform a specific task. The competencies and specific tasks undertaken by the ODAs are measurable and determine the role they fulfil in the healthcare setting (Steffl, 2008:360-362; Walsh, George, Priest, Deakin, Vanterpool, Karet & Simmons, 2011:1501-1502). The competencies set for the ODAs would therefore determine the boundaries within which they may function in the operating room. In a sense, this is

the legal framework for the functions they perform in the sterile and non-sterile setting (Jackson, 2007:87). There is a need to determine the minimum competencies that are expected from the ODAs, to ensure that these practitioners can perform their role with the necessary knowledge, skills and attitude that is expected from this category of Allied healthcare worker (Council on Higher Education, 2013:6). Therefore it has become necessary to make recommendations to selected training institutions in this field of specialisation,

### **1.3 AIM**

The aim of this study is to obtain consensus on the minimum competencies for the diploma in non-nursing Operating Department Assistants (ODAs) in South Africa.

### **1.4 RESEARCH QUESTION**

What are the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa?

### **1.5 OPERATIONALISING AND DEFINING OF TERMS**

- **Competencies and minimum competencies**

Competency is to have the necessary knowledge, skills, appropriate attitude and experience to perform tasks at a specific educational level (Mellish, Brink & Paton, 2008:72; Quinn, 2000:231). In this study, the minimum competencies after completion of the three year non-nursing diploma course in Operating Department Assistance include the knowledge, skills and attitude that will ensure a safe practitioner in the operating department. Competence could be obtained in various work settings. The ODAs require competency in regard to the pre-operative, intra-operative and post-operative setting. These minimum competencies that are

required to perform the duties of an ODA were identified by making use of the Delphi Technique in this study<sup>2</sup>.

- **Operating Department Assistant**

In regard to this study, the Operating Department Assistant is viewed as a non-nursing member of the sterile team, who handles sterile supplies, instruments and equipment during operative procedures (Fuller, 2010:2). The ODA performs these functions during surgical procedures in the operating room.

## **1.6 RELATIONSHIP BETWEEN CONCEPTS USED IN THE STUDY**

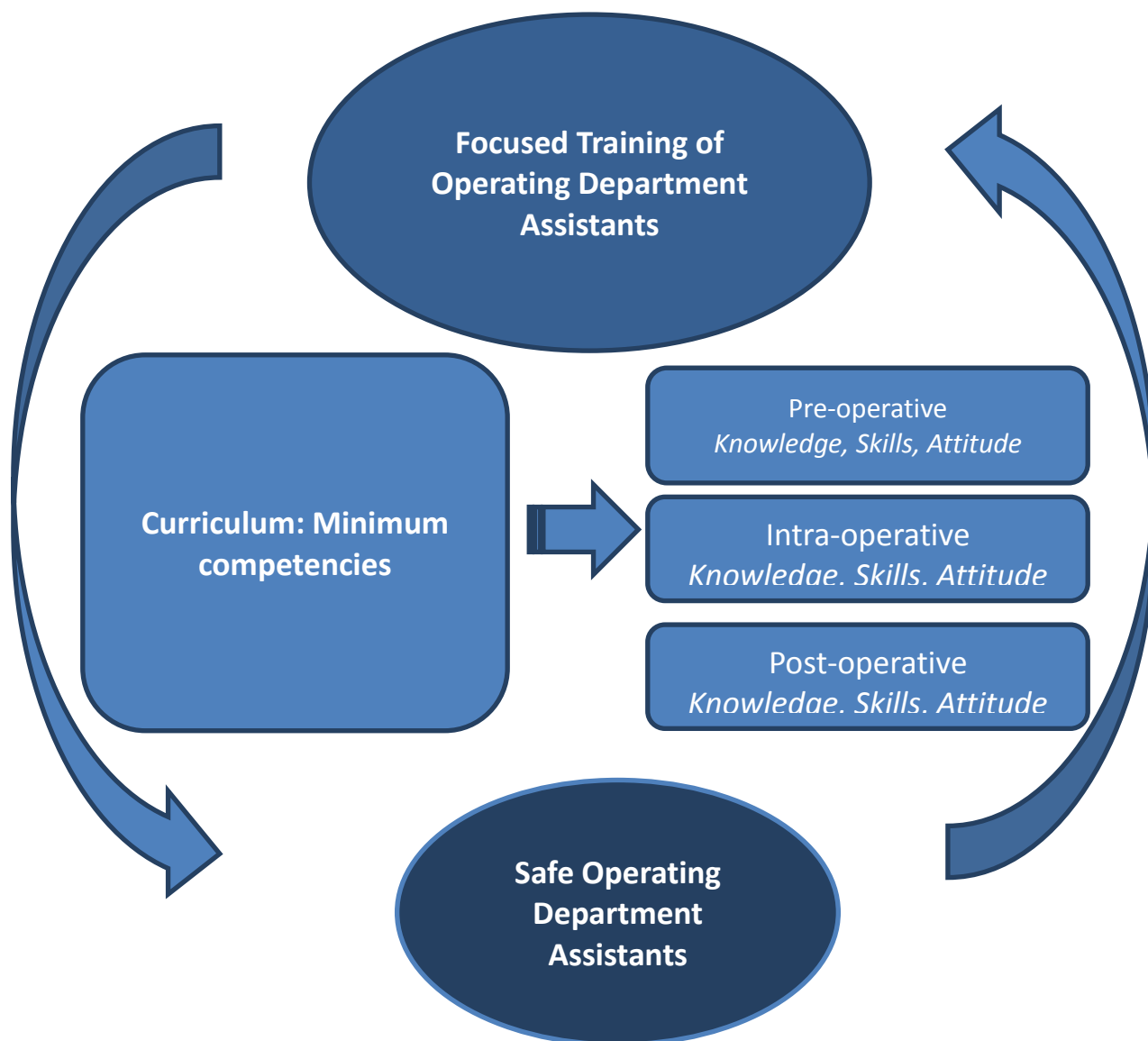
In Figure 1.1 below the relationship between six concepts, namely the curriculum, pre-, intra-, and post-operative knowledge, skills and attitudes, the training of the Operating Department Assistants and their ability to practice safely are indicated. The minimum competencies are embedded in the curriculum for the Operating Department Assistance. Furthermore, knowledge, skills and attitude that Operating Department Assistants (ODAs) must display in the pre-operative, intra-operative, and post-operative settings are stipulated. A focussed approach to the education and training of this category of non-nurses might enhance the possibility that they will be able to render safe patient care in the Operating Departments' clinical settings.

## **1.7 RESEARCH METHOD**

A quantitative, descriptive research method was employed to fulfil the aim of this study, namely to obtain consensus on the minimum competencies for the diploma in non-nursing Operating Department Assistance (ODAs) in South Africa (Grove, Burns & Gray, 2013:25, 26). Quantitative research is a method in which data are analysed numerically (Brink, Van Der Walt & Van Rensburg 2010:11).

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<sup>2</sup> In this document the Delphi Technique will sometimes only be referred to as Delphi



**FIGURE 1.1:** The schematic relationship between concepts used in the study

## 1.8 RESEARCH TECHNIQUE

Research technique is the method used to gather data during research (Polit & Beck, 2012:257). A quantitative research technique was used to answer the research question (Brink *et al.*, 2010:92). In the proposed study the Delphi Technique that is described as a consensus method where consensus is quantified, was considered a suitable technique to obtain data (Bowling, 2009:437). The Delphi Technique makes



use of questionnaires, and open ended questions that could be posed to gather information from the sample selected for the study.

To address the aim of the study, the research question was: *“According to you, what are the minimum competencies, knowledge, skills and appropriate attitudes that an Operating Department Assistant should have to be a safe practitioner in the pre-operative, intra-operative and post operatives phases?”*

A Likert scale was used to obtain the minimum competencies, and eventually consensus regarding the minimum competencies from the respondents (Addendum 1). The process followed to ensure consensus among respondents is described under the data collection section.

## **1.9 STUDY POPULATION**

Because of their potential valuable contribution towards the competencies expected from Operating Department Assistants (ODAs), Nurse Educators in the field of Operating Theatre Science, together with clinical Deputy Nursing Managers, Unit Managers, and Clinical Facilitators from the operating theatre were enlisted as part of the population (Vincent-Lambert, 2011:17-18). A detailed description of the population for this study is described in Chapter 3.

## **1.10 DATA COLLECTION**

The data collection process was preceded by the obtaining of an Ethics number from the Ethics Committee, Faculty of Health Sciences, of the University of the Free State (Addendum 6), the Nursing Manager of each hospital that took part in the study consented to the research being undertaken in the specific hospital. Each respondent received an electronic consent form to complete in Phase 1(b) of the research (Addendum 5).

The researcher made use of the Delphi technique to collect data for this research study (as described in Chapter 3). Several Delphi rounds were conducted to reach consensus amongst the respondents on the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa, regarding the data collected (see Figure 1.2). The Delphi technique was applied by means of the electronic media using the EvaSys<sup>3</sup>. As the data was collected from the respondents, it was analysed and feedback was given to the respondents directly.



**FIGURE 1.2: Overview of the phases conducted in data collection during this study**

<sup>3</sup> EvaSys is an electronic survey software of the Directorate for Institutional Research and Academic Planning's (DIRAP) of the University of the Free State

## **1.11 METHODOLOGICAL RIGOR**

Methodological rigor is the adherence to guidelines. According to Grove *et al.* (2013:36) this is the adherence to strict guidelines set out for the collection of data. The data for this study was collected electronically, using a data base and online driven application. The response rate was calculated as the respondents submitted their responses. The researcher strictly adhered to the process which had been planned for data collection. It was important that the research question was posed clearly, in a language (semantics) understood by the respondents, in order to prevent misconceptions about their response (Sofaer, 2002:330). In phase 1(c) of the data collection process, the respondent's feedback and the information from the literature review were grouped and described in preparation for the next phase of data collection, as will be described later.

## **1.12 VALIDITY AND RELIABILITY**

Validity refers to the principle that the research questionnaire will measure what it is supposed to measure (Botma, Greeff, Mulaudzi & Wright, 2010:174; De Vos, Strydom, Fouche & Delport, 2002:166; Grove *et al.*, 2013:393).

Reliability refers to the extent to which the questionnaire used for data collection would consistently produce the same information, if the same instrument was used for the same respondents at two different occasions (Botma *et al.*, 2010:177; Brink *et al.*, 2010:163; De Vos *et al.*, 2002; 168; Grove *et al.*, 2013:389).

Validity and reliability is closely related and both were considered when a questionnaire was selected for data collection during this quantitative research process. The questionnaire that is used for data collection has to produce reliable results in order to be valid (Brink *et al.*, 2010:165).

## **1.13 ETHICAL ISSUES**

Several precautions were taken to ensure that respondents would not be harmed by taking part in the research. Approval of the research proposal was sought from the Evaluation Committee of the School of Nursing and the Ethics Committee, Faculty of Health Sciences, of the University of the Free State (Addendum 6); the Research / Ethics Council Committee and Medical Advisory Committee of Mediclinic (Pty.) Ltd (Addendum 2).; and the Nursing Managers of the reference hospitals where the research respondents were located. Finally, the Training Manager of Mediclinic Southern Africa, Mediclinic (Pty.) Ltd (Addendum 3) approved the research, and the respondents agreed to participate.

The respondent's anonymity could not be guaranteed since the researcher knew which feedback had been supplied by the different respondents. However, no personal information of respondents will be made available on any documents or in any report. The respondents themselves had no knowledge of other respondents participating in the study. The confidentiality of the respondents' feedback was maintained by numbering their responses for identification (e.g. Respondent 1). The respondents themselves logged onto the Data Sheets by making use of an internet link that was provided by the EvaSys Administrator, and distributed to the respondents by the researcher via electronic mail.

Part of the consent document signed by all the participating respondents indicated that participation in the research was voluntary and that the respondents could withdraw at any time, without sanction.

The study was conducted in English, as this is the language of business communication within the involved private hospital group.

## **1.14 DATA ANALYSIS**

Data analysis is the systematic adaptation of data, to answer the research question. For the purpose of this study a descriptive summation was compiled with the aid of tables and graphs for a visual presentation of the data collected (Botma *et al.*, 2010:146, 148; Brink *et al.*, 2010:55). The data was collected electronically, and immediately analysed as received from the respondents.

## **1.15 VALUE OF THE STUDY**

The results of the study will be used to compile a set of minimum competencies much needed for Operating Department Assistant's (ODAs) in the private hospital group, and perhaps even nationally. Existing training programmes presented by different learning centres could then be revised to include the minimum acceptable general competencies for ODAs. Inclusion of these competencies in the education and training of ODAs could, if carefully applied, be monitored well and assessed critically, result in ODAs who are competent, safe practitioners. The operational risk that service providers run in employing trained ODAs would subsequently be reduced if education and training focussed on specific competencies.

## **1.16 CONCLUSION**

Chapter 1 gives an outline of the research process that was followed to determine the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa. Precautions to ensure achievement of the aim of the study remained an important consideration throughout the study. Eventually it is foreseen that any recommendations that are to be made could improve the curricula of the ODAs by ensuring that the competencies, identified from the literature, and those obtained through the research itself are suitable for the practice of an ODA in the present healthcare setting.

In Chapter 2, the literature review will address several issues regarding the ODA's minimum competencies.

## 1.17 CHAPTER LAYOUT

<b>Chapter 1:</b>	Introduction and problem statement
<b>Chapter 2:</b>	<b>An overview of the literature related to the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa.</b>
<b>Chapter 3:</b>	A description of the methodology selected for the study.
<b>Chapter 4:</b>	An analysis and description of the results obtained through the Delphi technique.
<b>Chapter 5:</b>	Conclusions, recommendations, limitations of the study and suggestions for possible future research.

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# CHAPTER TWO

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## LITERATURE REVIEW

### 2.1 INTRODUCTION

As described in Chapter 1, it was aimed that minimum competencies for the diploma in non-nursing Operating Department Assistance (ODAs) be explored by this research study. To better understand the functions of the ODA, it was necessary to study the international history of the ODAs and their competencies, as described in international literature.

In this chapter of the study, the curriculum and the competencies found in literature of the ODAs will subsequently be discussed. Again, it is important to note that ODAs are not part of any category of nurses as stipulated by the South African Nursing Council (SANC). The categories of nurses presently accredited by the South African Nursing Council include those of registered nurse, registered midwife, registered staff nurse, enrolled nurse, enrolled auxiliary nurse, and enrolled auxiliary midwife (McQuoid-Mason & Dada, 2011:299).

Very limited literature has been published regarding the Operating Department Assistants (ODAS) to date. One table in a book published in 2008, and a page in book published in 2010 (Frey, 2008:5; Fuller, 2010:2).

### 2.2 HISTORICAL BACKGROUND

Operating Department Assistants (ODAs) are allied healthcare professionals, expertly trained in tasks and technical aspects of specific healthcare delivery and well-being services (Fuller, 2010:2).

Frey (2008:5) stated that it is difficult to trace the exact history of the ODA, although this category of healthcare practitioner has been utilised since the beginning of surgical history. ODAs were used as non-nursing, non-physician assistants in a number of roles, mainly because women traditionally were not allowed on battlefields (Frey, 2008:5). In modern history, the role of the scrub person began to develop distinctively after the Second World War (Frey, 2008:5).

### **2.2.1 United Kingdom (UK)**

The first mention of an ODA was made in the United Kingdom of the 19<sup>th</sup> century, when a certain Mister Rampley was employed as a surgical beadle by a London Hospital (Frey, 2008:6). Bedal (*bi:dl*) is French word for *messenger*, with the word beadle being derived from the French. The accepted duties of a beadle had been to act as a surgical assistant during the performance of procedures, as well as to fulfil duties as a security officer and ambulance man (History of Surgery and Anaesthesia, [s.a.] Online).

According to the History of Surgical Technicians (2010: Online), the role of the ODA further developed during World War I, World War II, the Korean War and the Vietnam War, where military corpsmen instead of female nurses provided emergency patient care (History of Surgical Technicians, 2010: Online).

During the First World War army corpsmen saw to the comfort of the fellow wounded soldiers. During World War II (1939-1945) the advances in anaesthetic techniques and the use of antibiotics increased the survival rate of the wounded soldiers dramatically. Higher survival rates of wounded soldiers intensified the need for nurses to care for those returning home to recuperate. There was similarly an increasing need for trained personnel to assist military surgeons during the performance of surgical procedures on the battle field, a role fulfilled by nurses in civil life. Since women were not allowed to serve on a battlefield, this prompted the army to train corpsmen to serve in Pacific and European theatres to assist surgeons in the performance of surgical procedures. This category of healthcare worker fell

under the direct supervision of the surgeon, and was known as “*operating room technicians*” (Fuller, 2010:2-3).

During 1948 the “*Operating Theatre Technicians*” were formally seen as a category in health care (Frey, 2008:6). By 1950 at least five hundred men were already employed as technicians in civilian hospital theatres (Frey, 2008:6). By 1952 the problem that there was no single system of training for the ODAs had been identified for the first time (Frey, 2008:6). During the Korean War (1950 - 1953) the shortage of battle field nurses was still evident. At that time, it was questioned whether nurses should either fulfil duties in the operating room, or whether they would better serve in caring for the patients (Fuller, 2010:3).

With nurses always in short supply, the supervisors of civilian operating rooms subsequently also began recruiting corpsmen. These corpsmen (ODAs) initially performed circulating floor duties, while registered nurses fulfilled scrub duties. This changed in 1965, when the roles were reversed, and the registered nurse was employed to perform circulating duties and the ODA became focussed on performing the scrub duties (Frey, 2008:5-6; Fuller, 2010:3). During this time, the civilian training of operating room technicians (the ODAs in this study) was initiated (Fuller, 2010:3).

Since no formal standards and guidelines for training existed for ODAs, the need was realised in 1967. Standards and guidelines were set in the 1968 book “*Teaching the Operating Room Technician*”, published by the Association of Operating Room Nurses (AORN) (Fuller, 2010:3). The training was formalised by the Liaison Council on Certification for Surgical Technologists (LCC-ST) and the Joined Review Committee on Education. In 1970 the first certified examination for surgical technologists was conducted. A person passing this examination was given the title of Certified Operating Technician (CORT). In 1973 the Association of Operating Room Technicians (AORT), became independent from the Association of Operating Room Nurses (AORN). The Association of Operating Room Technicians changed its title to Association of Surgical Technologists (AST), and a certified technician became known as a certified surgical technologist (Dillon, 2008:32; Fuller, 2010:2-3).

### 2.2.2 United States of America (USA)

The development of the ODA as a category of allied health worker in the USA runs parallel to that of the United Kingdom (Frey, 2008:6).

Civilian training (training outside the military setting) was initiated in the USA from 1965 (Fuller, 2010:3). Frey (2008:6) recounts that training in the 1950s was mainly done by the military, with civilian training mainly taking the form of on the job training, with no set curriculum. In 1954 the book *“Surgical Technical Aide – Instructors Manual”* on ODA was published, (Frey, 2008:6). Five years later, in 1959, a survey group was formed by the AORN Board of Directors to expressly study the needs of the ODAs. The publication of *“Teaching the Operating Room Technician”* was introduced by the AORN Manual Committee in 1967 (Frey, 2008:6).

The education of the Operating Department Assistants (ODAs) varies in format, length of the course and institution where the training is presented (Frey, 2008: xxiii). The length of programs varies from nine months to 24 months; with certificates, diplomas or degrees being awarded to successful students after completion of their studies. However, a basic core curriculum, with common accreditation standards in terms of the outcomes exists in the USA (Frey, 2008: xxiii–xxiv). Furthermore, Phillips (2007:33) states that training usually varies from nine to 24 months, and that the basic course includes anatomy and physiology, with pathology and microbiology as prerequisites, as well as theory and practice in surgical technology. The curriculum also contains modules in pharmacology, psychology, ethics and communication.

Operating Department Assistants (ODAS’) educational programs are accredited through the Commission on Accreditation of Allied Health Education Programs (CAAHEP), the recognised accreditation agency for the Council for Higher Education (CHEA), in collaboration with the association of Surgical Technologists (AST) and the American College of Surgeons (ACS) (Wikipedia: Online). The above mentioned accrediting bodies prescribe a minimum of 400 to 500 hours of

didactic instruction, with 500 hours clinical practice to complete the nine months' certificate and two years' college degree programs. Those institutions offering training to ODAs are all accredited with the United States (US) Department of Education (USDE) (Wikipedia: Online).

It is stated by the U.S. Department of Labour that a growth of 21-35% is expected in job opportunities for an ODA (Jackson, 2007:140). Presently, approximately 60% of the Operating Department Assistants in the USA already work in operating theatres and delivery rooms (History of Surgical Technicians, 2010: Online; Wikipedia, [s.a.]; Online). The ODAs work as allied health professionals, with a scope of practice that varies between the different states, and practitioners are seen as "*unlicensed assistive personnel*" (Wikipedia: Online). The expected growth in this category of healthcare worker is expected to be 39% between 2006 and 2016. The increased growth is due to the increasing number of surgical procedures being performed as the aging baby boom generation needs more and more surgical procedures done (Wikipedia, [s.a.]: Online).

### **2.2.3 Republic of South Africa (RSA)**

In 1967 a system of compulsory military service for white young men between the ages of 17 years and 65 years was instituted in the Defence Amendment Bill. The training was initially only for a service period of nine months, but by 1977 it had been increased to a period of two years (Military Service Becomes Compulsory for White South African Men. Online). During this time young men doing their compulsory military training were selected from all three the spheres of the South African National Defence force, namely the South African Army, South African Air Force, and South African Navy, to be trained as medical ordonnances for the South African Medical Services. These aspiring medical ordonnances subsequently underwent training in basic emergency care, and they were taught to establish intravenous access and to suture wounds. Ordonnances who wanted to do their compulsory military service in an operating room went through a rigorous selection process. The successful service men were then trained in basic patient

care, ethics, confidentiality, principles of sterility, basic medication and the use of anaesthetic drugs.

After this initial training they were placed in post anaesthesia care units and in the Central Sterilising Supply Department (CSSD), and later also in general surgery and orthopaedic operating rooms as circulating personnel. During this time they had to assist with the induction of anaesthesia and act as a circulating person (floor staff). At this time, they were additionally trained in anatomy, and to scrub for surgical procedures.

During the Angolan Bush War these trained service men were placed in the operational areas on the borders of South Africa, where they had to perform the duties of scrub person in the absence of operating room nurses. They were not registered with the South African Nursing Council, but functioned under Military Law (Bouwman, 2015: Personal communication). Unlike in the USA and UK, the South African medical ordonnances did not find their way into civilian operating rooms.

In South Africa a private hospital group initiated the training of ODAs in 2008 as a category of healthcare practitioner that had not previously existed in the country. To date this innovative company has, and still is, training ODAs. Initially a two year in-house training was instigated to train the ODAs. However, the program was not accredited by any educational authority such as the South African Qualifications Authority (SAQA). From January 2013, the three year diploma in operating department assistance has been approved, and is registered with the South African Qualifications Authority (SAQA) as a level 6 qualification on the National Qualifications Framework (NQF). This is in accord with the new qualifications in South Africa (South African Qualifications Authority: Online). The qualification is classified in the field of health and social sciences. The field of Health Sciences and Social services is described as NSB 09, within the 12 NQF fields of learning specified (Meyer & van Niekerk, 2008:11). The qualification met the minimum requirement of 360 credits (one credit equals 10 hours of notional learning, implying that 1200 hours of learning is expected to take place in a single academic

year) (South African Qualifications Authority: Online; Meyer & van Niekerk, 2008:18).

In the next part of this chapter a short overview of the role of the Department of Higher Education and Training (DoHET), and the National Qualification Framework (NQF) in the registration of qualification will be given. Thereafter the current curriculum for the Diploma in non-nursing Operating Department Assistance will be discussed

## **2.3 DEPARTMENT OF HIGHER EDUCATION AND TRAINING (DoHET)**

The Department of Higher Education and Training (DoHET) is governed by the Higher Education Act, Act 101 of 1997, and the Higher Education Amendment Act, Act 39 of 2008. The Council on Higher Education (CHE) is responsible for the registration of qualification, and quality assurance of qualification (Council on Higher Education, 2013:5). As referred to previously, all qualifications has to be accredited by the Council on Higher Education (CHE).

## **2.4 THE NATIONAL QUALIFICATIONS FRAMEWORK (NQF)**

The National Qualifications Framework (NQF) is governed by The National Qualifications Framework Act, Act 67 of 2008 as amended by the Higher Education Law's Amendment Act, Act 26 of 2010. This act entitled the South African Minister of Higher Education to establish Quality Councils, and provide for transitional arrangements during the repeal of the South African Qualification Authority (SAQA) Act in 1995 (South Africa. National Qualifications Framework Act, 2008:1).

A qualification is the recognition that the basic unit standards for a specific level of qualification have been met (Meyer & Van Niekerk, 2008:18). The National Qualification Framework (NQF) stipulates that all qualification must be registered in terms of the act (South Africa National Qualifications Framework Act, 2008:6). The NQF is a classification system that provides a single framework for all learning

achievements in South Africa (South Africa. National Qualifications Framework Act 2008:6). The NQF is organised into 10 levels, ascending from one (1) to ten (10), each described in favour of a point of achievement called a level descriptor (South Africa. National Qualifications Framework Act, 2008:7).

The NQF describes three sub-frameworks, namely: (1) General and Further Education and Training (described under the General and Further Education and Training Quality Assurance Act, Act 58 of 2001); (2) Higher Education (described under the Higher Education Act, Act 101 of 1997), and the Higher Education Amendment Act, Act 39 of 2008; and (3) Trades and Occupations described in the Skills Development Act, Act 97 of 1998 (South Africa. National Qualifications Framework Act, 2008:8).

The purpose of the South African Qualifications Authority (SAQA) is to advance the objectives of the NQF; to further develop and implement the NQF; and to co-ordinate the existing sub-frameworks (SAQA, [s.a.]: Online; South Africa. National Qualifications Framework Act, 2008:10).

The Council on Higher Education is the Quality Council (QC) for Higher Education (Council on Higher Education, [s.a.]:1). The aim of the Quality Council is to ensure that the objectives of the NQF are reached through accreditation of programs and institutions; performing audits to ensure quality; and building capacity for further development (South Africa. National Qualifications Framework Act, 2008:19-21). The Council on Higher Education must maintain a data base of the results of all South African learners and regularly submit these results to SAQA (South Africa. National Qualifications Framework Act, 2008:21).

To summarise, the NQF ensures that a record of the learner's achievements is registered. This ensures recognition of the subsequent qualification, and the specific skills and knowledge that has been acquired (SAQA, [s.a.]: Online). SAQA is further also responsible for the development of the content in each level descriptor. In the case of the ODAs, situated on level 6, this means that the knowledge that the ODAs must display at the end of their diploma training, as well as the procedures the ODA must be competent in, are specified. A description of



the methods that are used to evaluate an ODA's competence, and the ethical framework within which the ODA functions are pre-designed. Additionally the specifications also contain is the ODA's required management competence component, as well as the legal accountability reference of the ODA (South African Qualifications Authority, Level descriptors: 5). The NQF levels consists of ten (10) levels, described in the NQF Act, Act 67 of 2008. A level 6 qualification thus resides under the higher certificate NQF level (South Africa. South African Qualifications Authority, 2012:2). In order to register the Diploma in non-nursing Operating Department Assistance in South Africa, the following process was followed:

## **2.5 REGISTRATION OF THE DIPLOMA IN NON-NURSING OPERATING DEPARTMENT ASSISTANCE IN SOUTH AFRICA**

The Diploma in Operating Department Assistance is registered in accordance with the South African National Qualifications Framework Act of 2008 (South Africa. National Qualifications Framework Act, 2008:6). The Council on Higher Education is the quality control body for the ODA Diploma in Operating Department Assistance (Council on Higher Education, [s.a.]:1).

The diploma (non-nursing) in Operating Department Assistance is an accredited SAQA diploma. The qualification is not registered with the South African Nursing Council as the Council is only responsible for the registration of [all] nursing qualifications.

The accreditation of a qualification is a cumbersome process, which can take between six months and one year. All programs that are offered by a public or Higher Education Institution (HEI) have to be accredited by the Higher Education Quality Committee (HEQC). The programme that needs to be accredited has to be submitted electronically to the Council for Higher Education, according to specific guidelines for the level (NQF) of the programme. Simultaneously a submission of the programme has to be made to the Department of Higher Education and Training (DHET), and the relevant professional body, the South African Nursing Council

(SANC) in the case of a nursing qualification, also with specific guidelines. As soon as the Higher Education Quality Committee (HEQC) of the CHE accredits the programme, the DHET and SAQA are informed. The DHET then registers the programme as soon as the programme is registered by SAQA on the NQF levels (Council on Higher Education [s.a.]:2).

## **2.6 CURRICULUM FOR THE DIPLOMA IN NON-NURSING OPERATING DEPARTMENT ASSISTANCE IN SOUTH AFRICA**

A curriculum is a plan that outlines the objectives to be met by the learner; other related outcomes in the subject matter; the teaching methods employed to meet the outcomes; and in which manner the learner will be assessed to determine whether outcomes have been met (Quinn, 2000:131,135-136). A curriculum specifies the target group (in other words, who the learner will be); what must be achieved via the curriculum; the requirements for inclusion in the course; the location of the facility; the academic block programme and allocation in the clinical practice (Quinn, 200:133).

A scope of practice, outcomes, content and competencies that influenced the above mentioned diploma will be discussed below:

### **2.6.1 Scope of Practice**

The term scope of practice identifies the minimum knowledge and skills a person has to have to ensure safe, effective and reliable service to a client (Frey, 2008:38). The term also refers to the provider's accountability when services are rendered. Every individual healthcare worker remains accountable for the service they deliver, depending on their specific training (Frey, 2008:38).

The ethical codes governing healthcare practitioners' clinical practice are drawn up by national and international regulating bodies. Regulating bodies set standards for the professions, which are incorporated into the regulations and statutes of the profession. These regulations then govern the manner in which professionals from

different categories may carry out their duties. This formalised specification of how professionals should carry out their duties is seen as their *scope of practice*. In South Africa, the clinical duties of medical doctors are governed by the Health Professionals' Council of South Africa (HPCSA), while those of the nursing profession are governed by regulations formalised by the South African Nursing Council (SANC) (McQuoid-Mason & Dada, 2011:77).

Operating Department Assistants are not registered with any professional body, thus no formalised *scope of practice* exists for this category of healthcare workers. The framework within which they are allowed to function is singly governed by their work profile, as set out by the different individual hospitals / groups within which they function or where they are employed.

## **2.6.2 Outcomes and content**

According to the approved curriculum for the Diploma in Operating Department Assistance, submitted by the private hospital group and approved by the Council on Higher Education the following Exit Level Outcomes would be achieved after completion of the three (3) year diploma:

*“Assisting in the provision of an optimum environment for care and treatment of the peri-operative patient; preparing and assisting in the operating department for anaesthetic, diagnostic and surgical interventions; applying knowledge of fundamental biomedical, biotechnological and psychosocial sciences within the operating department context; functioning as part of the multidisciplinary team and maintaining effective relationships with patients and members of the healthcare team; applying ethical and legal principles throughout; implementing and maintaining an effective document management system within the operating department”* (SAQA Qualification ID: 80446).

Content such as professional practice, integrated science, anatomy, physiology and operating department sciences are included in the curriculum to ensure that the Exit Level Outcomes could be obtained (Mediclinic, 2011:15-16).

### **2.6.3 Competencies (refer to Table 2.1)**

Competencies are defined as the development of adequate skills, knowledge, and attitude to fulfil the role in a chosen career (Frey, 2008:12; Oxford Dictionary, 2010:293; Quinn, 2000:231). Dhali and McQuoid-Mason (2011:72) state that competency is the capacity to use information. A person who is competent has the knowledge, and is able to use that knowledge in given situations (Coon & Mitterer, 2011:551).

The minimum competency is the least knowledge, skills and attitude that an ODA would need to be a safe practitioner in the pre-operative, intra-operative and post-operative phases of care in the operating room. This entails that the Operating Department Assistant must be able to utilise all knowledge gained from studying anatomy, physiology, integrated science, professional practice, and operating department science to ensure the safety of the patient during performance of procedures in the operating room. These competencies are listed in Table 2.1.

#### **2.6.3.1 Knowledge**

Knowledge is a body of information that is acquired in a specific discipline (Grove *et al.*, 2013:698), as well as everything that a person should know currently, and in future to perform tasks specific to employment (Meyer & Van Niekerk, 2008:9). This includes explicit facts (Quinn, 200:141) and knowledge gained by experience (Oxford Dictionary, 2010:827).

The ODA's knowledge in this instance would be gathered from the theoretical part of the diploma during academic block periods at a Learning Centre. As previously stated, knowledge can also be acquired from experience gained during rotation in specific disciplines in the operating suite. This knowledge can be drawn from

surgeons performing procedures, as well as from mentors and colleagues in the workplace.

A theory such as constructivism can be applied to increase the knowledge of the ODA. Constructivism focuses on the building of new knowledge through experience. The focus is more on understanding the knowledge as it is applied in the practice, and views the gaining of knowledge as an active process (Wang, Rush, Wilkerson, Herman, Miesner, Renter & Gehring, 2013:264). It is important to remember that learning must not simply be a process where an educator transmits knowledge to the learner, but that the learner must use technology to aid them in the gaining of knowledge (Wang *et al.*, 2013:264).

### **2.6.3.2 Skills**

Skills are specific attributes essential to the employment industry itself (Meyer & Van Niekerk, 2008:7). Coon and Mitterer (2011:273) state that skills are acquired responses. In the clinical setting of an ODA, skills can be in the form of the handling of instruments; the aseptic setting of trolleys for a procedure; the performance of skin preparation and draping before surgery; anticipating the needs of the surgeon; the correct management of used swabs, instruments and sharps, to name only a few examples.

### **2.6.3.3 Attitude**

Attitude is the way a person reacts in a specific situation and is linked to the person's value system. The value system is developed by interaction within the family, religion, social background and the culture of the person, and determines the way in which a person responds to situations or persons, whether positive or negative (Coon & Mitterer, 2011:568; Steinberg, 2011:151). Louw and Edwards (1998:748) describes attitude as the emotion a person has towards people (for example, persons you work with or patients), objects and events. There is various ways in which attitude can be formed; by direct contact, chance conditioning, interaction with others, child rearing, and mean world view (Coon & Mitterer, 2011:569). In direct

contact attitude is acquired by objects that a person comes into contact with; where in chance conditioning it takes place by chance and is not planned like negative association with something that the persons has come into contact with. In interaction with others, the attitude is acquired by discussions with persons that hold a specific attitude. In child rearing the attitude is acquired by the attitude our parents transferred to in the beliefs and values they see as important. In mean world view the attitudes are manipulated by the media, in other words what we see and read daily (Coon & Mitterer, 2011:568).

Operating Department Assistants (ODAs) are given the opportunity to apply their knowledge, skills and attitude in the Operating Room, clinical environment. Therefore, experience is knowledge, skills and attitude gained through doing the task for an extended period of time (Oxford Dictionary, 2010:514). In the context of this study, it means that the Operating Department Assistants will become more competent in specific areas, in this case the peri-, pre-, intra-, and post-operative environments.

Mellish, Brink & Paton. (2008: 65-66) and Quinn. (2000: 33, 33-36) describes the different learning styles researched by Kolb, and he came to the conclusion that as a result of different experiences, in different environments persons develop different learning styles which combines at least two dimensions like “*abstract-concrete*” and “*active-reflective*”. Honey and Mumford used the basis of Kolb learning styles to develop four learning styles, which are identified by making use of a questionnaire. These learning styles do not remain the same, but can change according to training, because of motivation and circumstances (Mellish, Brink & Paton, 2008:65-66; Quinn, 2000:33, 35-36). Experience plays a large role in adult learning. Adults build new knowledge on the experience they bring from their background or experience in the specific field (Mellish *et al.*, 2008:67).

- **Peri-operative phase**

The peri-operative phase of patient care includes the phases from admission of the patient to the hospital, up to the time of discharge of the patient from the hospital (Phillips, 2007:28).

- **Pre-operative phase**

The pre-operative phase starts when the decision is made in the treating surgeon's consulting rooms that a surgical intervention has to be performed as a method of medical care. This phase ends when the patient is transferred onto the operating bed in the surgical suite (Phillips, 2007:28). During this phase continuous assessment of the patient is done. As alternative, as stated by Frey (2008:8), this phase starts before the incision for the procedure is made. In the pre-operative phase the operating room is prepared for the scheduled procedures, the scrub person surgically scrub her hands, dons sterile gown and gloves, and set her aseptically sets her trolleys according to the surgical procedures that will be performed, and a baseline swab, instrument and sharps count is performed. The patient is identified in the operating room, positioning of the patient for surgery takes place, patient is induced with anaesthesia. All of these functions can be performed by either the scrub nurse or the ODA (Fuller, 2010:156-161, 174,182-185).

- **Intra-operative phase**

The intra-operative phase starts when the patient is transferred onto the operating bed and ends when the patient is transferred to the recovery room, or the post-anaesthesia care unit; in other words while the surgical procedure is being performed (Frey, 2008:8; Phillips, 2007:28). In this operative phase the surgical procedure is performed, after the skin is prepared with antiseptic solution to prevent wound infection, and the patient is draped with sterile drapes to serve as a barrier between the sterile field and unsterile field (in this case the patient). The ODA or scrub nurse assist the surgeon in performing the surgical procedure, by the passing of instrumentation needed during each step of the procedure, managing the swabs,

instruments and sharps in the correct way as per policy and procedure of the institutions, to ensure that no objects are retained within the patient. Policies and procedures are strictly adhered with regard to specimen care to ensure that medical risks are prevented. In this phase the sterile field must be maintained by practicing the principles of aseptic and sterile technique. Patient safety must be ensured in every stage of the procedure. This is ensured by the scrub nurse and is also a duty of the ODA (Fuller, 2010:165-170, 210-213, 219-223).

- **Post-operative phase**

The post-operative phase begins with the transfer of the patient from the operating suite to the recovery room or post-anaesthesia care unit, and ends when the surgeon confirms that the patient is suitably recovered to return to work, or when the procedure is completed and the dressing is applied to the wound (Frey, 2008:8; Phillips, 2007:28-29). The post-anaesthesia care unit is an area in or near the Operating Room, where patients that have undergone surgical procedures recover from the effects of anaesthesia, and are physiologically stable and conscious before being transferred to a nursing unit (Fuller, 2010:241; Phillips, 2007:200).

In this phase the scrub nurse and ODA takes responsibility for the safe transfer of the patients to their beds, and transfer to the post anaesthesia care unit. Documentation pertaining to the surgical procedure and the patient is completed according to policy and procedure of the institution. The patient is handed over to the care of the post anaesthesia care unit personnel. The operating room is cleaned and prepared for the next surgical procedure. In the post anaesthesia care unit the patient is recovered from the anaesthesia by a registered nurse, whereas the ODA has no duties pertaining to the recovery of the patient (Fuller, 2010:174, 255)



## **2.7 COMPETENCIES LISTED IN LITERATURE**

The competencies of the ODAs were identified from the literature by making use of the textbooks that are presently in use for the training of the ODAs, as well as the document of the Association for Surgical Technologist. As is fact with the history of the ODA, there is very little information available. Each textbook spends only a portion of a chapter on listing or discussing the ODA's competencies. In the United States, the competencies for an ODA are determined by each individual state in which the ODA practices. In Table 2.1 the competencies identified in literature are listed.

## **2.8 PROFESSIONAL REGISTRATION**

Ethical codes determine the interaction of healthcare professionals and practitioners with regard to their practice. These ethical codes provide the framework within which the healthcare professional performs their functions. The healthcare profession are often self-regulating, with the ethical codes and regulations set out by the different professional bodies serving as the guidelines within which the profession functions (Dhai & McQuoid-Mason, 2011:16).

In South Africa, medical professionals are registered with the Health Professionals Council of South Africa (HPCSA), while the nursing component of the health industry is registered with the South African Nursing Council (SANC).

At present, Operating Department Assistants are not registered with any council. According to the Health Professionals Act, Act 29 of 2007, any person must be registered if they perform an assessment of a person's physical and mental health; make a diagnosis; treat a person, or prevent any physical or mental illness through prescribing of medication, or giving advice on illness.

**TABLE 2.1: Competencies of Operating Department Assistants, as listed in the literature (to be continued)**

The underlying table reflects the competencies required from the Operating Department during the intra-operative phase with regard to the knowledge, skills, and attitudes that are listed in the literature.			
	KNOWLEDGE	SKILLS	ATTITUDE
PRE-OPERATIVE	<ul style="list-style-type: none"> <li>• Knowledge of basic patient care concepts (Phillips, 2007:34)</li> <li>• Knowledge of procedures, equipment and any essential emergency measures (Phillips, 2007:34)</li> <li>• Staying abreast of new technology and developments in the field of surgery (Phillips, 2007:34).</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation for a surgical procedure, including the gathering and checking of necessary instrumentation, equipment and supplies in order to perform the surgical procedure (Jackson, 2007:89; Phillips, 2007:34)</li> <li>• Surgical scrub, don gown and gloves, and other personal protective attire (Jackson, 2007:89; Phillips, 2007:34).</li> <li>• Developing an individualised care plan for each patient, to meet the patient's needs, as well as the specific requirements of the surgeon for each specific procedure. This plan is developed under supervision of the registered nurse (Phillips, 2007:33-34).</li> <li>• Setting the sterile field (Jackson, 2007:89)</li> <li>• Performing surgical counts of all instruments, swabs and sharps that enter the sterile field with the circulating person (Jackson, 2007:89)</li> <li>• Performing skin preparation and draping of the surgical site (Jackson, 2007:89; Phillips, 2007:33-34)</li> <li>• Assisting a team member during entry of the sterile field (Jackson, 2007:89).</li> </ul>	<ul style="list-style-type: none"> <li>• Professional attitude</li> <li>• Leadership abilities (Frey, 2008:12; Phillips, 2007:34)</li> <li>• Ensuring the privacy, dignity, safety and comfort of each patient.</li> <li>• A positive approach in order to render safe quality patient care, ensure teamwork and communication is of utmost importance to reach the outcomes set for the ODAs. The personal integrity and surgical conscience is intertwined into all aspects of communication and teamwork (Phillips, 2007:33-34)</li> <li>• Developing a surgical conscience: <i>"A surgical technologist must have the personal and moral authority to accept responsibility for his or her own actions and be willing to be held liable for one's actions, and to provide the information needed for an accurate evaluation of those actions. The surgical technologist must be committed to maintaining the confidentiality of information associated with patient care"</i> (Frey, 2008:18).</li> </ul>

**TABLE 2.1: Competencies of Operating Department Assistants, as listed in the literature (to be continued)**

The underlying table reflects the competencies required from the Operating Department during the intra-operative phase with regard to the knowledge, skills, and attitudes that are listed in the literature.			
	KNOWLEDGE	SKILLS	ATTITUDE
INTRA-OPERATIVE	<ul style="list-style-type: none"> <li>• Knowledge regarding the application of aseptic technique</li> <li>• Knowledge of the role of a circulating person</li> <li>• Emergency procedures in the operating room</li> <li>• Superior knowledge in one or two speciality areas</li> <li>• The ability to maintain the sterile field (Phillips, 2007:33-34)</li> <li>• Assessing and predicting (anticipating) the individual needs of a patient and the surgeon to provide the necessary surgical items in order of need</li> <li>• Perform the role of a scrub practitioner for surgical cases (Jackson, 2007:89; Phillips, 2007:33-34)</li> </ul>	<ul style="list-style-type: none"> <li>• Application of aseptic principles (Jackson, 2007:89)</li> <li>• Maintenance of the highest standard of sterile technique during the procedure (Jackson, 2007:89; Phillips, 2007:33-34)</li> <li>• Performing the role of a scrub practitioner for surgical cases</li> <li>• Performing surgical counts of all the instruments, swabs and sharps that enter the sterile field with the circulating person (Jackson, 2007:89)</li> <li>• Skills as a circulating person</li> <li>• Advanced organisational skills</li> <li>• Continuous application of the principles of aseptic and sterile technique (Phillips, 2007:33-34)</li> <li>• Non-technical skills, which include: <ul style="list-style-type: none"> <li>○ Communication</li> <li>○ Teamwork</li> <li>○ Situation awareness</li> <li>○ Leadership</li> <li>○ Decision-making (Mitchell &amp; Flin, 2008:17)</li> </ul> </li> <li>• Arranging the sterile field for use (Phillips, 2007:33-34)</li> <li>• Creating and maintaining a sterile field (Phillips, 2007:34).</li> <li>• Passing instrumentation, equipment and supplies to the surgeon and surgical assistant, as needed (Jackson, 2007:89; Phillips, 2007:33-34)</li> </ul>	<ul style="list-style-type: none"> <li>• Similar attitudes apply as during the pre-operative phase.</li> </ul>

**TABLE 2.1: Competencies of Operating Department Assistants, as listed in the literature**

The underlying table reflects the competencies required from the Operating Department during the intra-operative phase with regard to the knowledge, skills, and attitudes that are listed in the literature.			
	KNOWLEDGE	SKILLS	ATTITUDE
POST-OPERATIVE		<ul style="list-style-type: none"> <li>Medication preparation and handling (Jackson, 2007:89; Phillips, 2007:33-34)</li> <li>Specimen care (Jackson, 2007:89; Phillips, 2007:33-34)</li> <li>Assisting with other intra-operative tasks (Phillips, 2007:33-34), e.g. recordkeeping</li> <li>Preparing and applying sterile dressings after completion of the surgery</li> <li>Advanced organisational skills (Jackson, 2007:89; Phillips, 2007:33-34).</li> </ul>	•
	<ul style="list-style-type: none"> <li>Assisting the surgical team with patient care as needed (Jackson, 2007:89; Phillips, 2007:33-34)</li> <li>Preparing instruments for terminal sterilization (Jackson, 2007:89; Phillips, 2007:33-34)</li> <li>Assisting other members of the surgical team during terminal cleaning of the surgical suite for the next patient (Jackson, 2007:89; Phillips, 2007:33-34).</li> </ul>	<ul style="list-style-type: none"> <li>Medication preparation and handling (Phillips, 2007:33-34)</li> <li>Counting necessary clean and used items, e.g. swabs and instruments (Phillips, 2007:33-34)</li> <li>Specimen care (Phillips, 2007:33-34)</li> <li>Assisting with other intra-operative tasks (Phillips, 2007:33-34)</li> <li>Preparing and applying sterile dressings (Phillips, 2007:33-34).</li> </ul>	<ul style="list-style-type: none"> <li>Similar attitudes apply as during the pre-operative and post-operative phases.</li> </ul>

Since the Operating Department Assistant would only assess a patient to ensure all possible safe patient care during the peri-operative patient care phase, and would give no information or prescription regarding the condition to the patient, it is thus not necessary to be registered with the Health Professionals Council of South Africa.

Most companies training this category of allied healthcare worker have taken out additional insurance in case of claims of malpractice or any suits being filed against them due to the actions of these health workers. Each company has set out the individual duties and the role(s) that they require from these staff members. In cases of malpractice, these persons reside under the disciplinary code of the company. The ODAs in the United States of America are unlicensed personnel that work under the direct supervision of the surgeon, registered nurse or other trained ODAs. The ODAs function under a variety of “*scopes of practice*” that differ from state to state, and in the different counties they are employed in (Surgical Technologist: 1).

## **2.9 CONCLUSION**

Chapter 2 gives an account of the historical background regarding the ODAs. The history that has been described has mainly been gathered from the United States of America, as well as some information from the United Kingdom. The very limited historical account that is available internationally has mainly been taken from training textbooks that were prescribed for the ODA courses in the past. To a great extent the history lacks detail since it is only partially covered by one chapter from the prescribed textbook presently available. Since any training of ODAs in South Africa has only been presented since 2008 by the private hospital group referred to in this study, there are no historical references from South Africa, except for the medical ordonnances that served in military hospital and the operational areas on the borders of South Africa.

Clinical competencies that have been described in literature were summarised and included in this chapter. In Chapter 3 the methodology used to conduct the research will be described.

<b>Chapter 1:</b>	Introduction and problem statement
<b>Chapter 2:</b>	An overview of the literature related to the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa.
<b>Chapter 3:</b>	<b>A description of the methodology selected for the study.</b>
<b>Chapter 4:</b>	An analysis and description of the results obtained through the Delphi technique.
<b>Chapter 5:</b>	Conclusions, recommendations, limitations of the study and suggestions for possible future research.

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# CHAPTER THREE

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## METHODOLOGY

### 3.1 INTRODUCTION

In Chapter 1, the research problem – that no competencies were described for the Operating Department Assistants (ODAs) in South Africa. Chapter 2 was devoted to a literature review which included a historical account of the training and utilisation of ODAs globally. The competencies that have been described in literature have also been included in Chapter 2.

In Chapter 3 an in-depth discussion of the methodology including the various processes that could be followed to gather data for a study will be described. A detailed explanation of the quantitative method that was finally chosen will be presented. Furthermore, detail regarding the Delphi technique that was used for data collection and consensus amongst respondents is provided (refer Figure 3.1).

### 3.2 RESEARCH METHODS

Some research designs according to Brink *et al.* (2010:92) but referred to as methods in Grove *et al.* (2013:26) that are described in literature include quantitative, qualitative, outcomes and intervention methods (Grove *et al.*, 2013:26). For the purpose of this study the researcher will make use of the term methods. In quantitative methods, different methods such as descriptive research, correlation research, quasi-experimental research or experimental research could be used (Grove *et al.*, 2013:26). The qualitative method includes phenomenological research, grounded theory research, ethnographic research, exploratory-descriptive qualitative research and historical research (Grove *et al.*, 2013:26, 27). In an outcomes method the care changes that are seen in a patient's health are measured (Grove *et al.*,

2013:27), while intervention research is focussed on the assessing of effectiveness of interventions (Grove *et al.*, 2013:28).

In the field of qualitative design, phenomenological research focuses on the experiences of participants, as interpreted by the researcher. Grounded theory research can be used to identify problems in the social setting and evaluate how they are handled. Ethnographic research tells a story about people in their daily life and their culture. Exploratory-descriptive designs focus on solutions for problems, while historical designs analyses events that have occurred in the past (Grove *et al.*, 2013:27).

Lastly correlation research is an exploration of the correlation between two or more variables, while quasi-experimental research is focussed on the identification of relationships and the significance thereof and thus can be used to measure the effectiveness of specific interventions regarding improvement of outcomes. Experimental research is most often only conducted in highly controlled environments and produces high quality evidence (Grove *et al.*, 2013; 27).

For the purpose of this study, a quantitative descriptive method in the form of descriptive research was employed. The quantitative descriptive method proved to be most suitable to identify the minimum competencies for ODAs in the South African context (Grove *et al.*, 2013:26).

Considering all research, the objectivity of the researcher is very important, and the personal values, feelings and perceptions of the researcher may not play a role in process (Grove *et al.*, 2013:24). In this descriptive study, the feedback of the respondents were described in terms of the minimum competencies required for the education and training of ODAs (Grove *et al.*, 2013:49). Furthermore, data from a specific clinical field, namely the operating room, was gathered, and described in terms of percentages of consensus reached by respondents on each competency (Bowling, 2009:215; Brink *et al.*, 2010:102,170).

### 3.3 RESEARCH TECHNIQUE

Various research techniques, in which knowledge can be reflected numerically when the data analysis is done, can be employed in quantitative research (Grove *et al.*, 2013:25-26). Techniques such as, clinical trials, where the result of interventions are measured; evaluation research if research was performed to determine whether processes are effective (Polit & Beck, 2012:257, 260) health services and outcomes research, as well as survey research are described as quantitative research designs (Polit & Beck, 2012:262, 264). Furthermore, secondary analysis needs assessment, replication studies, methodological studies, and Delphi surveys are also considered to be quantitative in nature (Polit & Beck, 2012:266-269).

The Delphi Technique has its origin in the business setting, where it was developed by Olaf Helmar and Norman Dalkey at the Rand Corporation in the 1950's to explore technology and science trends. It is now widely used in a variety of critical settings, including healthcare (Custer, Scarcella & Steward, 1999:1; Nworie, 2011:24-25) and to forecast events (Custer *et al.*, 1999:1).

Dalkey described the Delphi Technique as having three main characteristics, namely anonymity, controlled feedback and formal group judgement (Dalkey, 2003:1). Clibbens (*et al.*, 2012:38) particularly noted that the method is characterised by a specific sequence, namely *“the selection of the expert panel, formulation of question, generation of statements, reduction and categorisation, rating, analysis and iteration”*.

Anonymity is seen as every respondent giving their own individual judgement regarding a research question. Anonymity is maintained to avoid bias through group pressure. It also ensures that all questions can offer a personal opinion. In controlled feedback and iteration, the responses of the respondents from the previous assessment round are summarised and then sent back to the respondents for fresh feedback. Iteration ensures that respondents can interact with other respondents' views, under controlled conditions.

Data collection using the Delphi Technique has the most benefits when deficient knowledge about a theme is gathered (Sinha *et al.*, 2011:1; Vincent-Lambert, 2011:17; Vernon, 2009:69, 71). Powell (2003:376) describes the Delphi Technique as a series of questionnaires with feedback from respondents, in order to gain consensus regarding a question from a group of experts (Clibbens, Walters, Baird, 2012:37; Nworie, 2011:24). In this case, the technique was most beneficial since it is used to determine individual experts' opinions regarding projected clinical competencies (Powell, 2003:376).

Variation of the Delphi Technique do exist, but the following commonalities are found in all versions: Experts are chosen, iteration with controlled feedback is done, statistical group responses are collected and anonymity is ensured, without the respondents necessarily being gathered in one location (De Villiers, De Villiers & Kent, 2005:639; Nworie, 2011:25; Ospina *et al.*, 2007:340; Vernon, 2009:71).

The Delphi Technique was chosen because it was suitable to generate knowledge on a specific topic where little information is available (Nworie, 2011:24). The aim of the study was to describe the minimum competencies for the Diploma in non-nursing Operating Department Assistance in South Africa, since no competencies for the ODA course has been proposed in South Africa.

### **3.3.1 Steps in the Delphi Technique**

The Delphi Technique requires the selection of a panel of experts who could provide the necessary data to address the aim of the study. The size of the panel, the methods available to select experts, and a well-structured process that could include several rounds of data gathering, and refining of data should also be considered. Furthermore, attention should be paid to set a level at which consensus will be achieved, the factors that could influence consensus, and the advantages and disadvantages of the Delphi Technique.

It is important to consider the qualifications of the expert panel when they are considered to be selected for the Delphi (Powell, 2003:378). The view exists that the expert individual opinions of a group on a given question will increase the quality of the feedback (Nworie, 2011:25). Therefore, the selection of the respondents is important, and they must be willing to make a valuable contribution to the research question (Powell, 2003:379). The more diverse the respondents are, the more valuable the input from them will be, while a decrease in bias would be experienced, increasing the credibility of the study itself (Nworie, 2011:25; Powell, 2003; 379).

The panel size can vary extensively (Powell, 2003:378), and should be determined by the research question and the resources available to the researcher. It is stated that the reliability will accumulate with an increasing number of respondents, but no measurable evidence to proof this is available (Nworie, 2011:25; Powell, 2003:378).

Methods employed to select respondents can also vary, but listing from professional organisations is often the simplest (Nworie, 2011:25). It seemed not necessary for the sample of respondents in a study to be representative of the population (Nworie, 2011:25). The fact that results might be biased if all geographical areas and subspecialties of the population are not represented should be considered (Hardy, O'Brien, Morison-Nqatai, Skews, Ryan & McNulty, 2003:97).

The Delphi Technique may typically require that at least three rounds of questionnaires are sent in an effort to gain consensus amongst respondents (Nworie, 2011:25). Round one usually takes the form of answering an unstructured questionnaire, to seek unrestricted responses. An open-ended question usually ensures the best response and quality of data collected. An open-ended question gives the respondents the freedom to express their opinions (Custer *et al.*, 1999:1; Hardy *et al.*, 2003:98). On completion of round one the returned responses are analysed and the percentage set for consensus is calculated. The process is then repeated until the researcher is satisfied that the aim of the research was reached.

The level of consensus determined by the researcher may vary between 100% and 55% (Powell, 2003:379). A priori (deductive) mean of 5.5, or in the presence of skewed data a group median of 6 in the Likert scale, would also be acceptable (Ospina *et al.*, 2007:341). However, to reach true consensus the study results must be replicated (Halcomb, Davidson & Hardaker, 2008:56-57).

The following factors were identified that could have an influence on consensus (Halcomb *et al.*, 2008:60-65):

- The approach to the given task (specific focus of the study and the comprehensiveness of the information given to the respondents);
- Skewed participant selection (the selected respondents may influence the outcome of the research if they are selected for specific views on a subject);
- Presentation of scientific data (the presentation must be evidence-based and not rely on the researchers' experience);
- Structure of interaction (respondents must be informed of the format of the research, whether face-to-face interaction will take place or by use of electronic media, face-to-face may have constraints when the research is performed over large geographical area);
- Method of synthesising data (decision must be taken before research is undertaken in the various levels of agreement).

For the purpose of this research, a professional panel was selected on the basis of the respondents' expertise and technical skills in the operating room; on being a manager, unit manager or clinical facilitator in this specialised field; or by being involved in training of the Operating Department Assistants and other operating theatre personnel (Nworie, 2011:25; Powell, 2003:378).

The respondents were considered to be experts on the basis of their knowledge of the Operating Room Science (Clibbens *et al.*, 2012:38). The nurse educators that participated in the study hold diplomas in Nursing Education and Operating Room Science. The deputy nursing managers, unit managers and clinical facilitators that have been included are all qualified in Operating Room Science.

The first phase of data collection was followed by a second and third structured phase. The purpose was, for example, to have the experts rate competencies obtained in phase one, to seek feedback on the competencies found in literature, and to gain group consensus on the weight (1-5 on Likert scale) that was allocated by individuals to each competency (Custer *et al.*, 1999:1-2; Nworie, 2011:25; Powell, 2003:378).

### **3.3.2 Advantages of Delphi Technique**

There are several advantages related to the use of the Delphi Technique as a consensus method. These advantages include that:

- The Delphi technique has advantages over less structures consensus methods with regard to validity and final level of consensus (Iqbal & Pippon-Young, 2009:600; Sinha *et al.*, 2011:1);
- There is no interaction between respondents, thus meaning that one respondent cannot dominate or influence another (Iqbal & Pippon-Young, 2009:600);
- It can be utilised in large geographical areas due to the use of the Internet, and larger numbers of participants can be utilised as respondents (Iqbal & Pippon-Young, 2009:600; Nworie, 2011:25);
- The anonymity of the consensus gained using the Delphi Technique is democratic, ensuring that creativity and honesty is increased (Iqbal & Pippon-Young, 2009:600; Powell, 2003:377);



- The Delphi Technique is systematic, which lends objectivity to the process (Powell, 2003:377);
- Agreement is reached regarding subjects where there is limited information available (Powell, 2003:377);
- New information can be generated between consensus rounds (Powell, 2003:377);
- This technique has economic benefits as it is described as a less costly method of gaining information from respondents (Iqbal & Pippon-Young, 2009:600; Powell, 2003:377);
- Expert opinions could be gained from a large number of persons (Nworie, 2011:24). Interaction with respondents is not limited by time and geographical location (Nworie, 2011:24);
- Anonymity of the study cannot be influenced by authoritarian role players, as the respondents do not know one another and have no interaction with each other (Hartman, 1981:497);
- All respondents must make decisions on the research question, as opposed to meetings where respondents may choose to share their opinions or not (Hartman, 1981:497);
- Existing knowledge is consolidated, and areas of agreement and disagreement are highlighted (Iqbal & Pippon-Young, 2009:600).

### 3.3.3 Disadvantages of Delphi Technique

The limitations / disadvantages of the Delphi Technique include the following factors:

- The process can be described as not being totally scientific. The Delphi Technique makes use of experts as respondents, and it can be said that these experts do not necessarily have the knowledge and skills in the field of research to give valuable information;
- The aim of the research may not be well defined;
- The Delphi Technique is very flexible, and this can lead to poor execution of the research;
- Bias and anonymity may be a problem during selection of panel members as the researcher purposefully selects;
- The positive aspect of debate is lost, as there is no one-on-one communication between respondents and the researcher;
- The Delphi Technique can be a very long, drawn out process, which could lead to the withdrawal of respondents (Polit & Beck, 2012:268; Hardy *et al.*, 2003:98; Nworie, 2011:25, 28; Vernon, 2009:74-75;). For the purpose of the research, three rounds of the Delphi was be run;
- Increased attrition from the study in respondents with minority views is possible (Sinha *et al.*, 2011:3);
- Validity of the study can be questioned due to the fact that respondents are not accountable for their responses due to the anonymity of the study (Iqbal & Pippon-Young, 2009:600; Powell, 2003:378; Sinha *et al.*, 2011:3);
- Attrition from the study may lead to conclusions that are not a true reflection of the results. Commitment of respondents must remain high to prevent attrition from the study (Iqbal & Pippon-Young, 2009:600; Sinha *et al.*, 2011:3);

- Group discussions provide better results than their best member, but are limited by issues like seniority, personal traits, and the fact that only one person may respond at a given time, but it can place a limit on the creativity of the group (Iqbal & Pippon-Young, 2009:600; Powell, 2003:377);
- It may be considered that consensus can be reached by just conforming to the norm, rather than by giving their true judgement about posed questions (Powell, 2003:377);
- If the Delphi process is too complex, the competencies identified may seem to be of low quality (Powell, 2003:377);
- Lack of standards regarding analysis of information gathered and criteria for consensus (Iqbal & Pippon-Young, 2009:600);
- Respondents might not be computer literate (Polit & Beck, 2012:268);
- Efficiency is decreased for generation of new knowledge and theories (Iqbal & Pippon-Young, 2009:600). Another panel may not arrive at the same outcome (Iqbal & Pippon-Young, 2009:600).

The researcher addressed some of the disadvantages that are listed above in the following manner:

- All respondents had computer access and password protected e-mail addresses. To minimise the possibility that respondents might withdraw from the research process, the time frames within which responses had to be returned were clearly stipulated. Respondents were reminded via an e-mail, on the day before the responses were due, and on the day that feedback was due.

### 3.4 STUDY POPULATION

The population comprised of all respondents that were of interest in the study. The criteria and the boundaries for inclusion, as well as the size of the population that was needed were considered (Botma *et al.*, 2010:200; Brink *et al.*, 2010:53, 123; De Vos *et al.*, 2002:198; Grove *et al.*, 2013:44).

Firstly, training for ODAs in the private hospital group in South Africa is presently being offered at five Learning Centres, namely the Western Cape, Free State (offers training for learners in Kimberley, Welkom, and Bethlehem), Gauteng (for learners from Pretoria, Johannesburg, Vereeniging, Potchefstroom and Secunda) and Mpumalanga, as well as in 21 different hospitals in the private healthcare group (refer Table 3.1 and 3.2).

Secondly, as indicated previously the population included respondents that are experts in the field of operating room procedures. Because the Delphi technique requires the respondents to be computer literate, and have access to computers, the researcher ensured that this was the case (Hardy *et al.*, 2002:95; Nworie, 2011:25; Ospina *et al.*, 2007:340). The distribution of the final selection of a total of 51 respondents were as follows (refer Table 3.1 and 3.2).

All deputy nursing managers (operating room), unit managers, clinical preceptors (facilitators) responsible for accompaniment of learners in the different hospitals, as well as nurse educators who are experts in the field of the Operating Room procedures, had been requested to participate in the study.

Nineteen Nursing Managers in 19 different hospitals were contacted by e-mail for consent to participate in the research. Of the 19 hospitals Nursing Managers, **16** consented to the research being performed in their hospital.

- After consent was granted by the Nursing Managers, the Deputy Nursing Managers, Unit Managers, and clinical facilitators that were experts in the field were contacted by email for consent to participate in the research. A total of 39 e-mails were sent to the above mentioned persons.
- The five Head Nurse Educators in the learning centres, presenting training to the ODAs all consented to the participation of the Operating Room Educators.
- The Training Managers (both operating room trained), consented to participate in the research. After repeated requests for the completion of the template for the collection of data in Phase 1(b) (Addendum 1), a total of **nine** responses were received.
- These responses were included in Phase 1(c) in Data Sheet 1 (Addendum 9) and mailed to the respondents.
- In Phase 1(c) only **seven** responses were received from the respondents.
- In Phase 2, Data Sheet 2 (Addendum 10) was sent to the nine respondents since the researcher did not have access to those who completed the Data Sheet 1. In Phase 2 and 3, **eight** responses were received from the respondents.
- Since this variation in the number of respondents would not have a detrimental effect on the study, the results were accepted.

**TABLE 3.1: Distribution of private hospitals for inclusion in the study and nursing rank of respondents**

LOCATION OF HOSPITALS	Number of Hospitals	Deputy Nursing Managers	Unit Managers	Preceptors
Western Cape private hospitals	5	5	9	1
Mpumalanga private hospitals	2	2		
Gauteng private hospitals	10	9	6	2
North West private hospitals	1		1	1
Northern Cape private hospitals	1	1	1	1
-Total	19	17	17	5
Total respondents in private hospitals		39		

As indicated in Table 3.1, 16 deputy nursing managers were invited to be respondents in this study. These deputy nursing managers are in charge of those operating room complexes that have a minimum of seven operating room each. Depending on the number of operating rooms, the deputy nursing manager could either have one or two unit managers. The deputy nursing managers all hold an additional qualification in Operating Room Nursing Science.

In hospitals with less than seven operating rooms, a unit manager is in charge of the operating room complex. Seventeen unit managers were included in the study. At present only five selected hospitals have theatre preceptors, and they were all requested to participate.

The number of nurse educators and training managers included in the study is described in Table 3.2.

Ten nurse educators are responsible for the training of all ODAs in the five different learning centres in the private hospital group. All the nurse educators retain a diploma in Operating Nursing Science and a diploma in Nursing Education.

**TABLE 3.2: Nurse Educators and Training Managers responsible for ODA training in the private hospital group included in the study**

LEARNING CENTRES	Nurse Educators	Training Managers
Western Cape	3	
Mpumalanga	1	
Free State	1	
Gauteng (one in Johannesburg and one in Pretoria)	5	
Stellenbosch Head Office		2
Total	10	2

The training managers from the private hospital group are involved in the setting of the curriculum, and the process of registering the qualification with the South African Qualifications Authority and the Council for Higher Education. The managers themselves are registered operating room nurses (ORN).

The researcher, an operating room trained nurse educator herself, is the only member of the operating room education staff of the private hospital group that was not included in the study.

### 3.5 DATA COLLECTION

Data collection is the various processes that are used to collect data needed for the research (Brink *et al.*, 2010:53; Grove *et al.*, 2013:45). The data collected for this study had to correlate with the aim of the study (Brink *et al.*, 2010:55), and it was planned to address the aim of the study as guided by the research question posed to the respondents (Botma *et al.*, 2010:131).

Before the process of data collection could be started, the researcher had to obtain consent to perform the research from the Ethics Committee, Faculty of Health Sciences, of the University of the Free State (Addendum 6); the Research / Ethics Council Committee and Medical Advisory Committee of Mediclinic (Pty.) Ltd (Addendum 2); and the Nursing Managers of the reference hospitals where the research respondents were located, and then each respondent. Finally, the Training

Manager of Mediclinic Southern Africa, Mediclinic (Pty.) Ltd (Addendum 3), approved the research, and the respondents agreed to participate. The consent was obtained electronically from the different role players.

As indicated, the Delphi technique was used to collect data. As result of advances in technology, e-mail and online possibilities, the Delphi technique could be considered highly effective when respondents are distributed over large geographical areas, and larger groups of respondents can be included in the research studies (Boulkedid, Abdoul, Loustau, Sibony & Alberti, 2011:1; Polit & Beck, 2012:267; Sinha *et al.*, 2011:1).

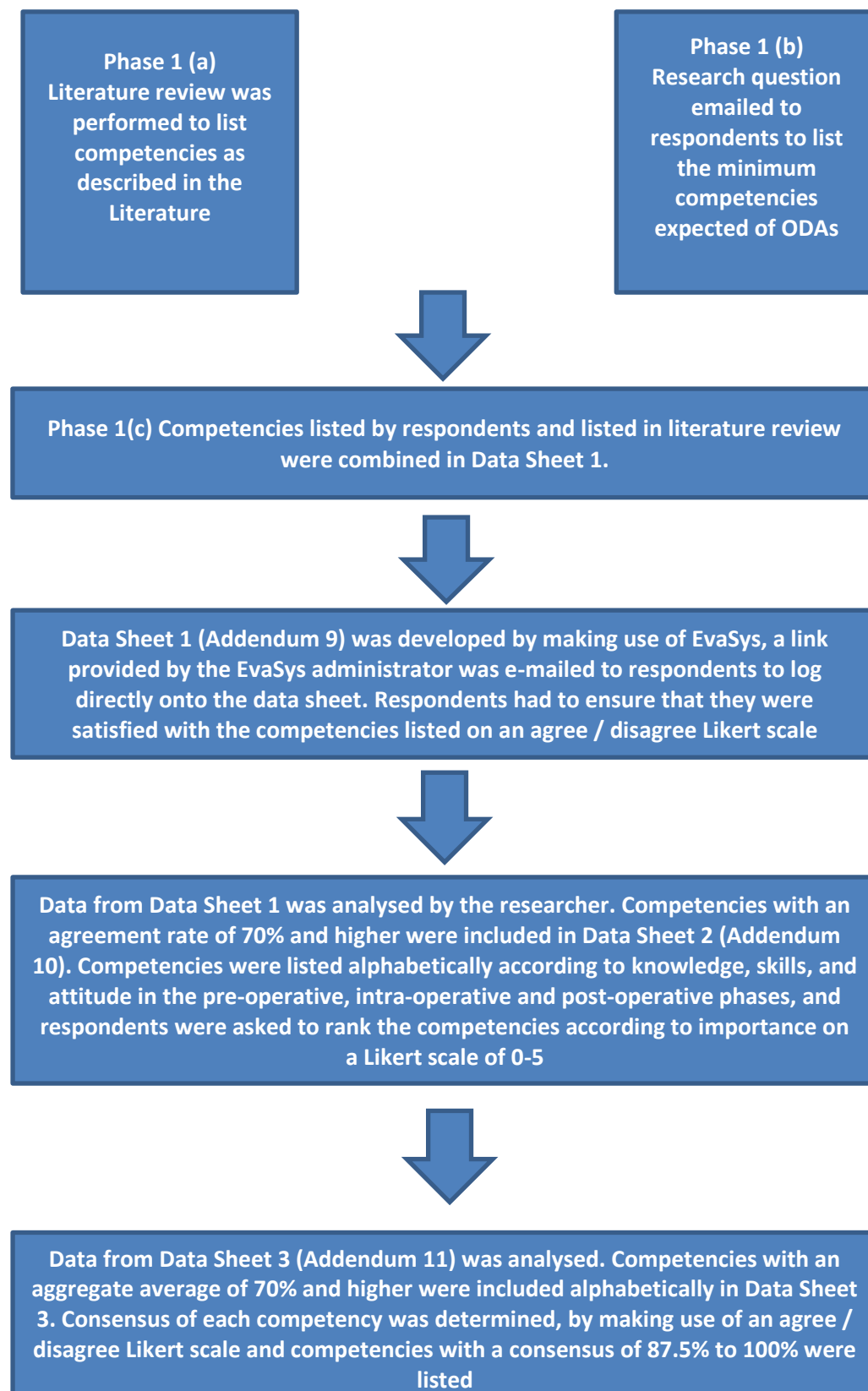
EvaSys survey software was used for data collection in this study. EvaSys is a Web-based program with which surveys can be created and distributed. The EvaSys survey has been used in numerous departments of the University of the Free State since 2013. Responses are processed online, and there is no need for the researcher to capture data received from respondents. The results of the survey were available immediately, and exported to a Portable Document Format (PDF), Microsoft Word Excel and the Statistical Package for the Social Sciences (SPSS) format (University of the Free State, 2014:1).

The respondents in the study had access to the Internet, with individual password protected e-mail addresses. Three rounds of questionnaires were sent to respondents to ensure consensus (Boulkedid *et al.*, 2011:1; Nworie, 2011:25; Polit & Beck, 2012:267).

Respondents had to use an electronic link which was specifically created by the administrator of the EvaSys program (University of the Free State, 2014:1). The researcher sent the link electronically to the respondents so that they could log directly onto the Data Sheet to complete it. As soon as the respondents submitted their responses, the data became available to the researcher and the link closed automatically so that the respondents could not return to the data sheet. EvaSys shut down on specific dates set according to the study timelines that were created by the researcher and the EvaSys Administrator (University of the Free State, 2014:2).



Figure 3.1 below indicates the process that was followed to gather data for this study.



**FIGURE 3.1:** Process followed during the Delphi data collection process

### **3.5.1 Phase 1(a): Literature review**

In Phase 1(a) a literature review was performed to determine the minimum competencies listed in literature as seen in Chapter 2. These competencies were listed in Table 2.1.

### **3.5.2 Phase 1(b): Research question and responses**

The aim of Phase 1 was to determine a list of minimum competencies for the diploma in non-nursing Operating Department Assistants. The research question that was posed to the respondents was formulated to obtain feedback from them on the subject of which minimum competencies they thought were essential for the ODA.

- The respondents were contacted via e-mails and requested to list the minimum competencies that they as training managers, nurse educators, and deputy nursing managers, unit managers and preceptors of operating rooms expected from the Operating Department Assistants (ODA's) after three years of training.
- A template for feedback and an explanation of how the feedback must be structured was (refer Addendum 1).
- The email included the necessary information, the problem statement, the agreement form to consent to being a respondent in the study, and a due date for return of the responses (Addendum 12).

### **3.5.3 Phase 1(c): Combined competencies (Data Sheet 1)**

- In Phase 1 (c) the feedback from respondents, as well as the minimum competencies listed by or described in the reviewed literature were combined and categorised under the headings Knowledge, Skills and Attitude, as

required in the pre-, intra- and post-operative (recovery room only) care on Data Sheet 1 (Addendum 9).

- The responsibility of the respondents was to ensure that Data Sheet 1 (Addendum 9) containing the minimum competencies, were complete as to their requirements and that they agreed with the descriptor given to each category. Consensus was obtained by means of an online agree / disagree rating Likert scale. The responses that rated agreement are reflected on Data sheet 2 (Addendum 10) in Phase 2.
- Data Sheet 1 was then posted online, by making use of a link to log onto the Data Sheet that was supplied by the EvaSys Administrator, and respondents had to indicate their agreement / or disagreement with the listed competencies.

### **3.5.4 Phase 2: Ranking of minimum competencies according to importance**

- A new Data Sheet 2 (Addendum 10), containing the alphabetised descriptors of the minimum competencies placed alphabetically under each category was posted online in Phase 2. This data sheet was developed in a similar manner as Data Sheet 1 and was also addressed to the respondents via a link to gain access to the data sheet.
- The respondents was requested to rank the importance of each minimum competency on a Likert scale of 0-5, with 0 being the least important and 5 being very important (Botma *et al.*, 2010:138; Polit & Beck, 2012:301). This 0-5 option scale was used to avoid central tendency (equivocation) (Polit & Beck, 2012:355).
- Each competency's aggregate average and standard deviations was calculated by the EvaSys software as soon as responses were received. This meant that the researcher had insight in the ranking of the minimum competencies as soon as a respondents' feedback was submitted.

### **3.5.5 Phase 3: Obtaining consensus from respondents regarding the importance of the identified competencies**

- During Phase 3 Data Sheet 3 (Addendum 11) containing the ranking of minimum competencies were posted online.
- Respondents were again requested to agree / disagree on the ranking of minimum competencies according to importance.
- An agree/disagree Likert rating scale was used to obtain 70% consensus from respondents on the importance of minimum indicated competencies (Polit & Beck, 2012:267). The process to gain consensus regarding the most important minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa was not repeated as consensus of between 87.5% and 100% was reached in the first round (Polit & Beck, 2012; 267).
- Therefore, despite the fact that a decision was made that those competencies with an aggregate of 70% and higher was listed and considered the most important minimum competencies, the consensus was between 87.5% and 100%, and the competencies with a consensus of 87.5% to 100% were listed (Botma *et al*, 2010:138). These competencies are listed in the research report (Chapter 5).
- What is viewed / acceptable as consensus ranges widely in literature, with authors stating that the range can be between 51% and 100% of agreement that is obtained. Some even state that a majority consensus is acceptable (Hardy *et al.*, 2002:98; Hsu, 2007:3; Nworie, 2011:26; Powell, 2002:379; Vernon, 2009:69). For this study, the researcher set the lowest level of consensus that had to be reached at 70%.

### **3.6 METHODOLOGICAL RIGOR**

Rigor is seen as the control a researcher puts in place to increase the validity of the study (Polit & Beck, 2012:14). The following control measures were, for example, implemented to improve methodological rigor in the study:

- Attention was given to select the appropriate method, design and research technique for the study, the selection of the population, data collection and data analysis processes (Tobin & Begley, 2004:391; Sofaer, 2002:333). The level of consensus required for a Delphi technique, was stipulated before the study was conducted. Furthermore, a detailed description of the ethical issues related to the study were provided and adhered to throughout the study.
- Respondents that were selected had the necessary knowledge and skills in the speciality of operating room science, and were able to give functional feedback and information (Tobin & Begley, 2004:389; Sofaer, 2002:333). As technical terminology was used, and all the respondents were trained in Operating Room Nursing Science, the subject matter was familiar.
- The EvaSys software that was used to collect data is managed by staff at the university where the study was undertaken, and support was rendered throughout the data collection process. Data sheets that were needed for data collection were made available electronically to respondents. The data was analysed electronically immediately after it was submitted online by the respondents.

### **3.7 VALIDITY AND RELIABILITY**

Validity and reliability is closely related and both were investigated in this quantitative research study, as a questionnaire was selected as vehicle for the data collection. The questionnaire had to produce reliable results in order to be valid, in other words the posed question had to have been answered (Brink *et al.*, 2010:165).

Effective measures must be in place to reduce the possibility of a high attrition rate from the study and to increase the validity of the results (Hardy *et al.*, 2003:98). The use of open-ended question in round one, when responses are actively sought, and poor feedback could lead to a decrease in the reliability and validity (Hardy *et al.*, 2003:98), is therefore very important. This potential problem could possibly be overcome by combining the responses of the respondents with competencies described in literature during the literature review. Due to the use of a Delphi technique, where competencies listed in literature are incorporated into information gathered during the rounds of responses from experts, any possible bias in the study was reduced (Custer *et al.*, 1999:2). The validity and reliability was further enhanced by anonymity due to the fact that respondents were under no obligation to respond in a particular way, and the controlled feedback given to by the end of each round (Custer *et al.*, 1999:2).

### **3.7.1 Validity**

Validity refers to the concept that the questionnaire measures what it is supposed to measure (Botma *et al.*, 2010:174; de Vos *et al.*, 2002:1660; Grove *et al.*, 2013:393).

The Delphi technique was used to gather data. An electronic data sheet containing the research question was sent to respondents, in order that they list the minimum competencies they expect from a trained ODA. In this instance, the research question was: *“What, is according to you, the minimum competencies, knowledge, skills and attitudes that an Operating Department Assistant (ODA) should have in the pre-operative, intra-operative and post-operative phases, to be a safe practitioner?”* This specific type of open-ended question ensured that the researcher did not lead the respondents in a specific direction of thought, and guaranteed that the collected competencies were generated by the knowledge of persons working in various settings where Operating Department Assistant's (ODAs) are presently being trained (Nworie, 2011:26; Sinha *et al.*, 2011:3).

For the purpose of this study, face and content validity was tested. For face validity, the instrument used to gather the data must be perceived to gather the target data it was intended for (Grove *et al.*, 2013:394). For example: The respondents had to list the minimum competencies they expected of the ODAs. On face value it has measured exactly what it was intended to measure.

Content validity refers to evidence that will be gained from literature relating to the aim of the research and how this correlates with the data gathered from the respondents (Grove *et al.*, 2013:394). The content validity was measured as to how it corresponded to the competencies of the ODAs that were listed in the literature.

### **3.7.2 Reliability**

Reliability refers to the extent to which the questionnaire used for data collection would consistently produce the same data, if the same instrument was given to the same respondents at two different occasions (Botma *et al.*, 2010:177; Brink *et al.*, 2010:163; de Vos *et al.*, 2002; 168; Grove *et al.*, 2013:389).

By making use of the Delphi technique, feedback was obtained regarding the question posed on the data sheet. The competencies listed by the respondents, with competencies listed in the literature was summarised in the second phase of the research, when respondents again had to rate the competencies, using an agree / disagree Likert scale. Respondents had the opportunity to comment on the competencies listed in the data sheet. In this study reliability is not a problem, as all the respondents saw the results of their feedback, and the collected respondents' ranking of the identified competencies.

## **3.8 ETHICAL ISSUES**

In all research it is imperative that ethical issues be adhered to, to ensure that human respondents will not be harmed. This should be part of the research planning from the start. Ethical principles that were adhered to in this study included respect for people, beneficence and justice, and were expressed as human rights. These

rights are embedded in the South African Constitution in chapter two as the Bill of Rights, and must be protected by the researcher at all times (McQuoid-Mason & Dada, 2011: 44). The rights described is the right to self-determination, privacy, anonymity, confidentiality, and the right to be protected from harm and discomfort (Botma *et al.*, 2010:56, 277, 284; Brink *et al.*, 2010:31-35; Grove *et al.*, 2013:159; Morse & Field, 2002:145).

To ensure the ethicality of this study, the researcher:

- Obtained approval from the Evaluation Committee at the School of Nursing;
- Obtained approval from the Ethics Committee of the Faculty of Health Sciences of the University of the Free State (after specific amendments to the research proposal;
- Obtained approval from the Research / Ethics Council Committee and Medical Advisory Committee of Mediclinic (Pty.) Ltd. (Annexure 2, 3);
- Obtained informed consent from identified respondents (Annexure 5);
- Maintained confidentiality and privacy of respondents' information. All respondents logged onto Internet e-mails using a personal password. No personal information concerning the respondents was made available, and only the researcher knew which operating room personnel was included in the study (Annexure 4);
- Clearly indicated that respondents were free to withdraw from the study at any given time, for whatever reason, without any sanction;
- Ensured that respondents had access to the results of the research. The researcher undertook to send a copy of the research report to an identified contact person at each hospital;
- Will publish the outcomes of the research in an accredited journal, after peer review;



- Conducted the study in English, as this is the universal business language of the private hospital group. Subsequently, all communication and learning activities at the learning centres are presented in English;
- No remuneration for participation.

### **3.9 DATA ANALYSIS**

Data analysis was the systematic adaptation of data to answer the research question. The data analysis in quantitative studies can either be descriptive or inferential (Botma *et al.*, 2010:146; Brink *et al.*, 2010:55). In descriptive studies, a summation of the data was made using tables and graphs to give a visual representation of the results of the data (Botma *et al.*, 2010:148). In this instance an electronic data analysis was done automatically as feedback was received from respondents, as programmed by the EvaSys administrator. The ranking of the competencies was thereafter analysed by the researcher. Descriptive statistics were calculated, specifically frequencies and percentages for categorical data, means and standard deviation or medians and percentiles for continuous data. Data gathered from the respondents were expressed in terms of percentage of consensus, or opinions which could be ranked (Botma *et al.*, 2010:254).

### **3.10 VALUE OF THE STUDY**

This study will benefit the training of the ODAs in South Africa to ensure that the minimum competencies that are expected of the ODAs in the clinical setting in hospitals are identified and that these competencies are addressed in the training of the ODAs. This study will benefit the ODAs in that it will ensure that competencies expected from them in the clinical practice are addressed in theory. The health service will benefit, because the competencies will increase the delivering of safe patient care.

### 3.11 CONCLUSION

Throughout the study, the researcher adhered to the processes stated in the research methodology in order to obtain valid and reliable data related to the aim of the study. In Chapter 4 a detailed description of the results obtained through a Delphi consensus Technique will be provided.

<b>Chapter 1:</b>	Introduction and problem statement
<b>Chapter 2:</b>	An overview of the literature related to the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa.
<b>Chapter 3:</b>	A description of the methodology selected for the study.
<b>Chapter 4:</b>	<b>An analysis and description of the results obtained through the Delphi technique.</b>
<b>Chapter 5:</b>	Conclusions, recommendations, limitations of the study and suggestions for possible future research.

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# CHAPTER FOUR

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## RESULTS

### 4.1 INTRODUCTION

As summarised in Chapter 3, the research was conducted in three separate phases, using the Delphi Technique. In Chapter 4 the results of the research will be described.

A total of 19 Nursing Managers were contacted to obtain consent for taking part in the research, of which 16 consented to take part in the research. A total of 39 Deputy Nursing Managers, Unit Managers, Clinical facilitators and Nurse Educators were contacted by e-mail to take part in the research. The researcher only received feedback from nine respondents (Chapter three page 50).

The aim of the study was to obtain consensus on the minimum competencies required for the diploma in non-nursing Operating Department Assistance in South Africa and the following process was followed:

- In Phase 1(a) of the Delphi procedure, a literature review of the competencies listed was performed (see Table 2.1). In Phase 1(b) the research question was sent to the respondents via e-mail. The respondents were requested to list the minimum competencies regarding knowledge, skills and attitude in the pre-operative, intra-operative and post-operative phases for ODAs to be safe operating room practitioners. In Phase 1 (c) (Addendum 9) the competencies listed by the respondents were combined with the competencies expressed in internationally presented ODA courses, as described in literature. The list of these combined competencies were summarised on Data Sheet 1.

Respondents had to indicate their agreement on an agree / disagree Likert scale.

- In Phase 2 a second list of the competencies was compiled, alphabetised and the respondents had to rank the competencies according to importance on a Likert scale of 0-5, with 0 being the least important and 5 being most important. Data Sheet 2 (Addendum 10) was sent electronically to the respondents, with a link provided by the EvaSys Administrator to capture the data.
- In Phase 3 the competencies with an average aggregate of 70% or more were included in Data Sheet 3 (Addendum 11). The competencies were again listed in alphabetical order. Consensus again had to be obtained from the respondents regarding their opinions of the minimum competencies listed. As previously, the respondents were asked to indicate their agreement on an agree / disagree Likert scale. Competencies with a consensus of 70-100% were finally listed as the minimum competencies required for the ODAs after completion of their training.

During the first phase of the Delphi, **seven** responses were documented. However, in Phase 2 and 3, **eight** responses were documented. The researcher decided to accept the difference in the number of respondents as she was of the opinion that it would not influence the outcome of the research. Since the researcher did not have access as to which of the final number of respondents had completed all the Data Sheets, she could not exclude the single respondent that had not completed Data Sheet 1.

## **4.2 KEY TO ABBREVIATIONS USED IN THE RESULTS OF THE STUDY**

In Table 4.1 the abbreviations that are used in the results of this study are clarified:

**TABLE 4.1: Key to abbreviations used in the results of the study**

ABBREVIATIONS	
N	Total number of respondents
n	Total number of respondents that responded to specific question

### **4.3 BIOGRAPHICAL DATA**

An e-mail containing an electronic link to log onto Data Sheet 1 was sent to nine respondents. After the link the Data Sheet was closed, only seven responses had been received.

The biographical data was included in Data Sheet 1 for the respondents to complete.

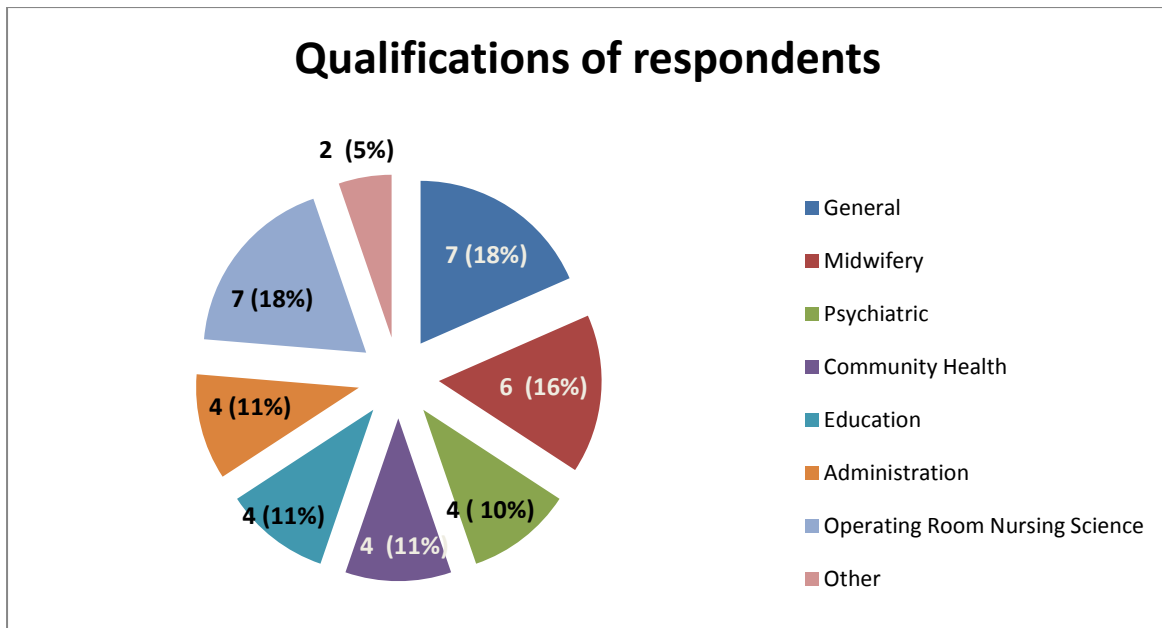
#### **4.3.1 Qualifications of the respondents (N=7)**

The results showed that respondents were professionally qualified as follows:

Seven (N=7) (100%) of the respondents hold a vocational (professional) qualification as a General Nurse (which can either be a diploma in Nursing Science or a Degree in Nursing Science), as well as a Diploma in Operating Nursing Science, and a Midwifery qualification (n=6:85%). Other professional qualifications include Psychiatric Nursing, Community Health Nursing (as part of diploma or degree, or as additional qualifications), Nursing Administration (diploma), and Nursing Education (diploma) (n=4:57%). Two (28.5%) of the respondents indicated that they hold other qualifications than those that are listed.

The qualifications are set out in Figure 4.1 below:





**FIGURE 4.1: Vocational qualifications of the respondents**

#### **4.3.2 Gender and race of the respondents (N=7)**

Data Sheet 1 indicates that all the respondents are female and white. The fact that the respondents are female is not surprising, since nursing is still a female-dominated career. The statistics from the South African Nursing Council reflects that of a total number of 2931 persons with a qualification in Operating Theatre Nursing, 2738 are females, while only 193 are male (South African Nursing Council, 2014: Online).

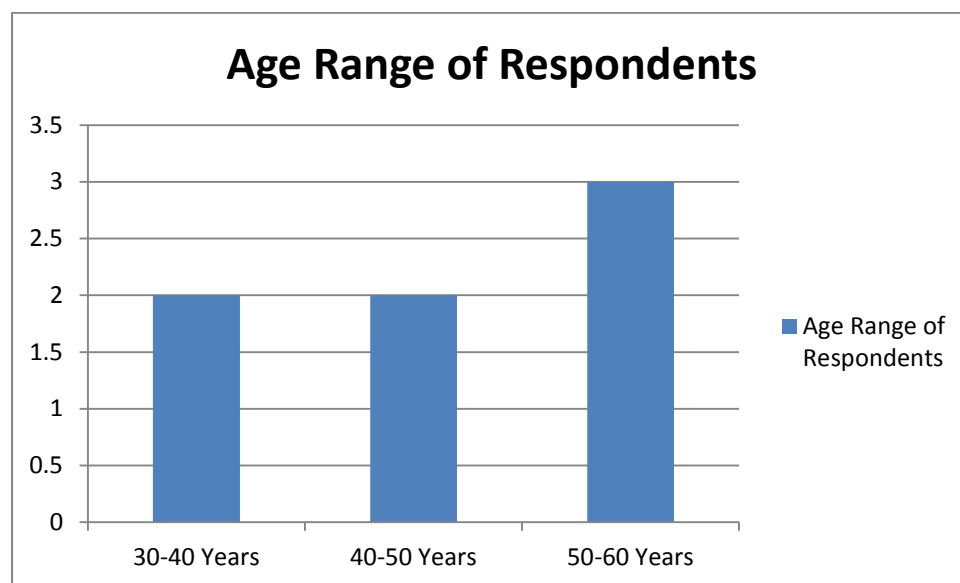
#### **4.3.3 Age range of the respondents (N=7)**

The responses from the respondents indicate an age range between 30 and 60 years of age. At the time of the research, two (28.5%) of the respondents were between 30-40 years, two (28.5%) between 40-50 years of age, and the remaining three (43%) respondents' ages were between 50-60 years. Figure 4.2 illustrates the age ranges of the respondents.

The age range of Registered Nurses and Midwives documented by the South African Nursing Council in 2014 indicates that 4% of Registered Nurses and Midwives are younger than 30 years of age; 19% are between the ages of 30-39 years; 28% are

between the ages of 40-49 year; 31% are between the ages of 50-59 years; 15% are between the ages of 60-69%; and 3% are older than 69 year of age (South African Nursing Council, 2014: Online).

No documentation on the average age ranges of nurses in the private sector could be found, and thus only the age ranges as documented by the South African Nursing Council could be included in the study.

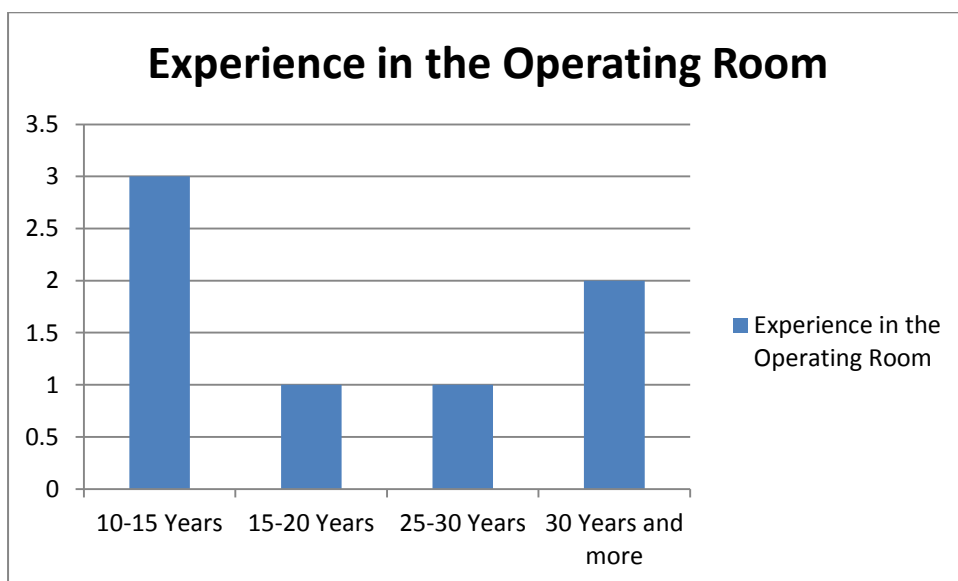


**FIGURE 4.2: Age ranges of respondents**

#### **4.3.4 Experience in the operating room (N=7)**

The respondents' experience in the operating room ranged from between ten (10) years to more than thirty (30) years. Three (43%) of the respondents had between 10-15 years of experience in the operating room, one (14%) between 15-20 years of experience, and another one (14%) between 25-30 years of experience. The remaining two respondents (29%) had more than 30 years' operating room experience. The range of years' experience could be interpreted as an indication that the respondents in this study had sufficient experience in the operating room, and could be regarded as experts in the field.

In Figure 4.3 a graphical representation indicates the experience of the respondents in years.

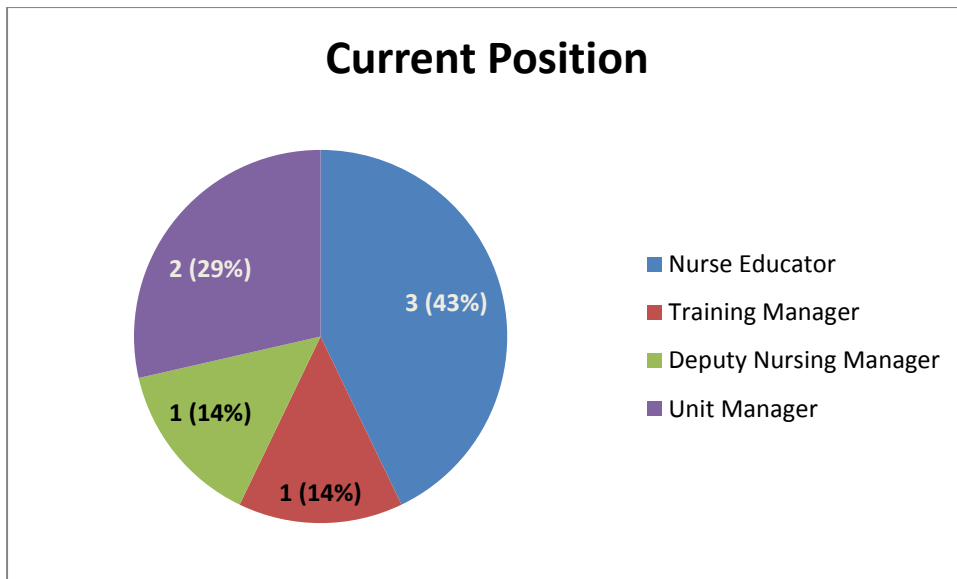


**FIGURE 4.3: Experience in the Operating Room**

#### **4.3.5 Current positions held by the respondents**

The feedback from the respondents indicated that none of them were either clinical facilitators (clinical trainers) or scrub nurses. Three (43%) of the respondents were nurse educators, while one (14%) respondent was a training manager. The rest of the respondents were all in management positions in the operating room: One (14%) was a deputy nursing manager, and two (29%) unit managers from operating room complexes. The fact that no facilitators were respondents in this study is a limitation in the researcher's opinion, as the facilitators in the Operating Rooms could have made valuable contributions to this study since they work with the ODAs in the practical setting.

In Figure 4.4 an illustration indicates the current positions held by the respondents.



**FIGURE 4.4:** Current positions held by respondents

A description of the results as obtained in the different phases of the Delphi Technique will be discussed next:

#### **4.4 PHASES IN WHICH THE DELPHI TECHNIQUE WAS APPLIED**

##### **4.4.1 Phase 1(a): Literature Review on Minimum Competencies for ODAs**

As described earlier, a literature review was performed and the competencies listed in Chapter 2, Table 2.1 of this study.

**TABLE 4.2: Feedback from respondents on minimum competencies for ODAs in Phase 1(b)**

RESPONDENT 1			
Operative phase	Knowledge	Skills	Attitude
Pre-operative phase	<ul style="list-style-type: none"> <li>Have the knowledge to receive a patient in theatre</li> <li>Perform an assessment on a patient to identify any abnormalities</li> <li>Knowledge of what pre-operative preparation is required for every procedure</li> <li>Assess the amount of care that is needed for specific patients in the reception area</li> </ul>	<ul style="list-style-type: none"> <li>Be able to receive, identify and assess a patient pre-operatively according to policy and procedure</li> </ul>	<ul style="list-style-type: none"> <li>Respect for the patient</li> <li>Professionalism</li> <li>Friendliness</li> <li>Responsibility</li> </ul>
Intra-operative phase	<ul style="list-style-type: none"> <li>Knowledge of procedures</li> <li>Knowledge of the anatomy involved with the procedure</li> <li>Knowledge of the necessary equipment required</li> <li>Knowledge regarding safe patient care</li> <li>Knowledge about sterility and aseptic technique</li> </ul>	<ul style="list-style-type: none"> <li>Ability to scrub independently for procedures so that the ODA is able to be placed on-call</li> <li>Skills to plan for the list</li> <li>Be alert and quick to respond</li> <li>Must observe meticulously</li> </ul>	<ul style="list-style-type: none"> <li>Positiveness</li> <li>Respectfulness</li> <li>Enthusiasm</li> <li>Honesty</li> <li>Emotional stability</li> <li>Adaptability</li> <li>Stamina and endurance</li> <li>Co-operation</li> <li>Willingness to learn</li> <li>Ability to remain calm during emergencies</li> </ul>
Post-operative phase	<ul style="list-style-type: none"> <li>Knowledge regarding how to do a complete handover in the ward</li> <li>Knowledge of the importance of complete / comprehensive handovers</li> </ul>	<ul style="list-style-type: none"> <li>Good communication skills</li> </ul>	<ul style="list-style-type: none"> <li>Positive attitude</li> </ul>

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<sup>4</sup> Respondent's feedback was edited in some cases in order to improve understanding.

**TABLE 4.2: Feedback from respondents on minimum competencies for ODAs in Phase 1(b) (continued)**

RESPONDENT 2			
	Knowledge	Skills	Attitude
Operative phase Pre-operative phase	<ul style="list-style-type: none"> <li>Theoretical knowledge of basic anatomy</li> <li>Knowledge of appropriate procedures and policies</li> </ul>	<ul style="list-style-type: none"> <li>Must have people skills for working with patients</li> <li>Must be diligent</li> <li>Reforms duties beyond work profile</li> <li>Assertiveness</li> </ul>	<ul style="list-style-type: none"> <li>Willingness to learn</li> <li>Respectfulness</li> </ul>
Intra-operative phase	<ul style="list-style-type: none"> <li>Theoretical knowledge of anatomy, the steps of a procedure and the associated instrumentation</li> <li>Knowledge of aseptic technique</li> <li>Knowledge of the complications that may occur</li> </ul>	<ul style="list-style-type: none"> <li>Handling stressful situations</li> <li>Must have technical fine-motor hand skills</li> <li>Must be able to apply aseptic technique in practice</li> <li>Knowledge of policies and procedures</li> </ul>	<ul style="list-style-type: none"> <li>Assertiveness</li> <li>Willingness to learn</li> <li>Respectfulness</li> </ul>
Post-operative phase	<ul style="list-style-type: none"> <li>Know of policies and procedures</li> <li>Handover of a patient in a safe manner</li> </ul>		
RESPONDENT 3			
	Knowledge	Skills	Attitude
Operative phase Pre-operative phase	Knowledge of <ul style="list-style-type: none"> <li>Sterilisation processes and methods to ensure safe patient care</li> <li>Different cases and procedures to prepare theatre accordingly</li> <li>What different theatre staff responsibilities are, the delegation and organisation of the theatre accordingly</li> <li>Starting procedure / case</li> </ul>	<ul style="list-style-type: none"> <li>Checking, packing of sterile packs and sets</li> <li>Interpretation of Bowie-Dick and Attest tests</li> <li>Correct storage of sterile supplies</li> <li>Preparing a theatre correctly (diathermy, preparation of sterile packs and supplies, identification of the patient, patient transfer and positioning in theatre)</li> <li>Pre-anaesthetic preparation</li> <li>Scrubbing, gowning and gloving, setting of trolleys, counting of swabs, needles and instruments, skin preparation and draping</li> </ul>	<ul style="list-style-type: none"> <li>Pro-activeness in identifying possible medico-legal risks (e.g. unsterile packs / supplies, patient safety issues)</li> <li>Proper delegation skills to manage other staff in theatre</li> <li>Good team work and communication skills</li> <li>Self-management and control to effectively manage the pre-operative phase</li> </ul>

**TABLE 4.2: Feedback from respondents on minimum competencies for ODAs in Phase 1(b) (continued)**

RESPONDENT 3			
Operative phase	Knowledge	Skills	Attitude
Intra-operative phase	<ul style="list-style-type: none"> <li>Knowledge about possible medico-legal risks related to this phase</li> <li>Knowledge of the anatomy and physiology associated with the procedure, in order to anticipate possible problems</li> </ul>	<ul style="list-style-type: none"> <li>Manage swabs, instruments and sharps during the case</li> <li>Manage and delegate tasks pertaining to the completion of the case</li> <li>Manage specimens correctly</li> <li>Handle and care for flexible and rigid scopes / microscopes, as well as micro-instruments</li> </ul>	<ul style="list-style-type: none"> <li>Positively and properly manage team members and staff in the theatre</li> <li>Good communication skills</li> </ul>
Post-operative phase	<ul style="list-style-type: none"> <li>Knowledge of the actions required after the patient leaves the theatre</li> <li>Knowledge of the roles and responsibilities of different team members regarding post-operative duties</li> <li>Knowledge and identification of possible medico-legal risks</li> </ul>	<ul style="list-style-type: none"> <li>Safe transfer of the patient to his bed</li> <li>Connecting the recovery room monitors to the patient</li> <li>Proper identification and handover of patient in the recovery area</li> <li>Knowledge of the roles and responsibilities of recovery room staff, floor staff, and anaesthetic staff (e.g. the cleaning of intubation equipment, management of scheduled drugs, etc.)</li> <li>Management of collected laboratory specimens</li> <li>Skills in the theatre decontamination procedure after a list</li> </ul>	<ul style="list-style-type: none"> <li>Good communication skills and team work</li> <li>Proper delegation techniques</li> </ul>

**TABLE 4.2: Feedback from respondents on minimum competencies for ODAs in Phase 1(b) (continued)**

RESPONDENT 4			
Operative phase	Knowledge	Skills	Attitude
Pre-operative phase	<ul style="list-style-type: none"> <li>• Anatomy and physiology of the cases listed for the day</li> <li>• Aseptic technique</li> <li>• Emergency and disaster management</li> </ul>	<ul style="list-style-type: none"> <li>• Preparing the theatre for a list (surgery and anaesthetic)</li> <li>• Checking all the equipment</li> <li>• Checking the environment re infection prevention</li> <li>• Receiving the patient and checking documentation</li> <li>• Transferring the patient to the operating room</li> <li>• Assisting in transferring the patient to the operating bed</li> <li>• Identifying medico-legal risks</li> </ul>	<ul style="list-style-type: none"> <li>• Respect for colleagues and patients</li> <li>• Approachability</li> <li>• Friendliness</li> <li>• Professionalism</li> </ul>
Intra-operative phase	<ul style="list-style-type: none"> <li>• Patho-physiology of conditions</li> <li>• Sterile technique / procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Opening sterile packs</li> <li>• Scrubbing, gowning and gloving</li> <li>• Setting sterile trolleys</li> <li>• Prepping and draping the surgical patient</li> <li>• Performing surgical instrument counts</li> <li>• Attending to the needs of the surgeon</li> <li>• Assisting with the surgical positioning of the patient</li> </ul>	<ul style="list-style-type: none"> <li>• Showing respect for team members</li> <li>• Enthusiasm</li> <li>• Honesty</li> <li>• Stamina</li> <li>• Cooperativeness</li> </ul>
Post-operative phase	<ul style="list-style-type: none"> <li>• Reactions to medications</li> <li>• Waste management procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Decontamination of the operating room</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Positiveness</li> </ul>



**TABLE 4.2: Feedback from respondents on minimum competencies for ODAs in Phase 1(b) (continued)**

RESPONDENT 5			
Operative phase	Knowledge	Skills	Attitude
Pre-operative phase	<ul style="list-style-type: none"> <li>• Knowledge of the procedure to be performed</li> <li>• Ability to complete documentation accurately, therefore knowing the policies and procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Be able to perform BLS should the need arise</li> <li>• Be able to take vital signs and interpret the results</li> <li>• Be able to complete documentation</li> <li>• Be able to communicate clearly</li> </ul>	<ul style="list-style-type: none"> <li>• Friendliness</li> <li>• Empathy towards patients</li> <li>• Acceptance of delegated tasks</li> <li>• Courteousness</li> </ul>
Intra-operative phase	<ul style="list-style-type: none"> <li>• Competent as an ODA in the execution of procedure (knowledge of the procedure that will be performed)</li> <li>• Knowledge of the aseptic principles</li> </ul>	<ul style="list-style-type: none"> <li>• BLS</li> <li>• Be well prepared daily</li> <li>• Be able to work under pressure / anticipate needs</li> <li>• Be able to work as part of a team</li> <li>• Have management skills</li> </ul>	<ul style="list-style-type: none"> <li>• Being calm and unrushed</li> <li>• Respect for self and others</li> <li>• Be in control</li> <li>• Honesty</li> </ul>
Post-operative phase	<ul style="list-style-type: none"> <li>• Have knowledge about the procedure(s) that were performed on the patient in order to know what to look out for when handing the patient over to recovery room staff</li> </ul>	<ul style="list-style-type: none"> <li>• Be able to perform BLS</li> <li>• Be alert at all times</li> <li>• Be able to interpret data in order to recognize if a patient is in any danger</li> </ul>	<ul style="list-style-type: none"> <li>• Being calm and unrushed</li> <li>• Having respect for self and others</li> <li>• Being in control</li> <li>• Honesty</li> <li>• Accepting accountability for all delegated tasks</li> </ul>

**TABLE 4.2: Feedback from respondents on minimum competencies for ODAs in Phase 1(b) (continued)**

RESPONDENT 6			
Operative phase	Knowledge	Skills	Attitude
Pre-operative phase	<ul style="list-style-type: none"> <li>• Anatomy</li> <li>• Physiology</li> <li>• Social sciences</li> <li>• Microbiology and Infection control</li> <li>• Theatre technique and surgical procedures</li> <li>• Types of anaesthesia</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-operative assessment visiting</li> <li>• Preparation of theatre</li> <li>• Preparation of surgical supplies</li> <li>• Record keeping</li> </ul>	<ul style="list-style-type: none"> <li>• Focusing on the patient</li> <li>• Focusing on the client</li> <li>• Focusing on the team</li> <li>• Showing mutual trust and respect</li> <li>• Being performance driven</li> </ul>
Intra-operative phase	<ul style="list-style-type: none"> <li>• Anatomy</li> <li>• Physiology</li> <li>• Microbiology and Infection control</li> <li>• Theatre technique and surgical procedures (all disciplines)</li> </ul>	<ul style="list-style-type: none"> <li>• Sterile preparation</li> <li>• Assistance during procedures</li> <li>• Supervision of the floor team members</li> <li>• Record keeping</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on the patient</li> <li>• Focus on the client</li> <li>• Focus on the team</li> <li>• Showing mutual trust and respect</li> <li>• Being performance driven</li> </ul>
Post-operative phase	<ul style="list-style-type: none"> <li>• Complications related to surgery and anaesthesia</li> </ul>	<ul style="list-style-type: none"> <li>• Cleaning and disinfecting the theatre</li> <li>• Handling cleaning and sterilisation equipment</li> <li>• Record keeping</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on the patient</li> <li>• Focus on the client</li> <li>• Focus on the team</li> <li>• Showing mutual trust and respect</li> <li>• Being performance driven</li> </ul>

**TABLE 4.2: Feedback from respondents on minimum competencies for ODAs in Phase 1(b) (continued)**

RESPONDENT 7			
Operative phase	Knowledge	Skills	Attitude
Pre-operative phase	<ul style="list-style-type: none"> <li>• CSSD (instrument setting, packing, processes in CSSD)</li> <li>• Knowledge of anatomy and physiology of the human body</li> <li>• Different types of operations / surgical disciplines known</li> <li>• Knowledge of structure of the operating room (air conditioners, etc.)</li> <li>• Knowledge of the equipment used in the operating room</li> <li>• Preparation of the theatre for a list</li> </ul>	<ul style="list-style-type: none"> <li>• Consideration</li> <li>• Friendly but exacting</li> <li>• Stickler to procedures / policy</li> <li>• Highly organised</li> <li>• Must be able to work in a team</li> <li>• Leadership qualities</li> <li>• Must be able to adapt to sudden changes</li> </ul>	<ul style="list-style-type: none"> <li>• Deferential towards senior personnel</li> <li>• Positivity</li> <li>• Influence</li> </ul>
Intra-operative phase	<ul style="list-style-type: none"> <li>• Knowing about the operation that is being done</li> <li>• Anticipation of patient and doctors' needs</li> <li>• Handling instruments, swabs, needles and equipment according to policy</li> <li>• Handling emergencies re patient</li> </ul>	<ul style="list-style-type: none"> <li>• Considerate</li> <li>• Friendly but exacting</li> <li>• Stickler to procedures / policy</li> <li>• Highly organised</li> <li>• Must be able to work in a team</li> <li>• Leadership qualities</li> <li>• Must be able to adapt to sudden changes</li> </ul>	<ul style="list-style-type: none"> <li>• Deferential towards senior personnel</li> <li>• Positivity</li> <li>• Influence</li> </ul>
Post-operative phase	<ul style="list-style-type: none"> <li>• Taking care of the patient</li> <li>• Effective handover to recovery room personnel</li> <li>• Tidying the theatre</li> <li>• Care of specialised instruments / equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Considerate</li> <li>• Friendly but exacting</li> <li>• Stickler for procedures / policy</li> <li>• Highly organised</li> <li>• Must be able to work in a team</li> <li>• Leadership qualities</li> <li>• Must be able to adapt to sudden changes</li> </ul>	<ul style="list-style-type: none"> <li>• Deferential towards senior personnel</li> <li>• Positivity</li> <li>• Influence</li> </ul>

**TABLE 4.2: Feedback from respondents on minimum competencies for ODAs in Phase 1(b) (continued)**

RESPONDENT 8			
Operative phase	Knowledge	Skills	Attitude
Pre-operative phase	<ul style="list-style-type: none"> <li>• CSSD (instrument setting, packing, all processes in the CSSD)</li> <li>• Knowledge of anatomy and physiology of the human body</li> <li>• Types of operations / surgical disciplines</li> <li>• Knowledge of the structure of the operating room (ventilation / air-conditioning systems, etc.)</li> <li>• Knowledge of the equipment used in the operating room</li> <li>• Preparation of the theatre for the list</li> </ul>	<ul style="list-style-type: none"> <li>• Considerate</li> <li>• Friendly but exacting</li> <li>• Stickler for procedures / policy</li> <li>• Highly organized</li> <li>• Must be able to work in a team</li> <li>• Leadership qualities</li> <li>• Must be able to adapt to sudden changes</li> </ul>	<ul style="list-style-type: none"> <li>• Deferential toward senior personnel</li> <li>• A positive influence</li> </ul>
Intra-operative phase	<ul style="list-style-type: none"> <li>• Knowing what operation is being done</li> <li>• Anticipating the patients' and doctors' needs</li> <li>• Handling instruments, swabs, needles and equipment according to policy</li> <li>• Handling emergencies re the patient</li> </ul>	<ul style="list-style-type: none"> <li>• As above</li> </ul>	<ul style="list-style-type: none"> <li>• As above</li> </ul>
Post- operative phase	<ul style="list-style-type: none"> <li>• Taking care of the patient</li> <li>• Handover to recovery room personnel</li> <li>• Tidying theatre</li> <li>• Care of specialised instruments / equipment</li> </ul>	<ul style="list-style-type: none"> <li>• As above</li> </ul>	<ul style="list-style-type: none"> <li>• As above</li> </ul>

**TABLE 4.2: Feedback from respondents on minimum competencies for ODAs in Phase 1(b) (continued)**

RESPONDENT 9			
Operative phase	Knowledge	Skills	Attitude
Pre-operative phase	<ul style="list-style-type: none"> <li>• Anatomy and physiology of all the human systems</li> <li>• Professional practice</li> <li>• Decontamination, disinfection / sterilisation of equipment</li> <li>• Pharmacology</li> <li>• Names / uses of instruments</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-operative reception / care of patient</li> <li>• Preparation of a theatre for the list</li> <li>• Preparation / checking of anaesthetic supplies for a list, as per preference of the anaesthetist</li> <li>• Preparation / checking of instruments / equipment for list as per preference list of the surgeon</li> <li>• Proper / complete documentation of patient care and observations</li> <li>• Peri-operative safety of patient in surgery</li> </ul>	<ul style="list-style-type: none"> <li>• Empathy towards patients / relatives</li> <li>• Respectfulness</li> <li>• Assertiveness</li> </ul>
Intra-operative phase	<ul style="list-style-type: none"> <li>• Anatomy / physiology of all the human systems</li> <li>• Names / uses of all instruments as per procedure</li> </ul>	<ul style="list-style-type: none"> <li>• Act as a circulator for all surgical disciplines</li> <li>• Act as scrub practitioner for all surgical disciplines</li> </ul>	
Post-operative phase	<ul style="list-style-type: none"> <li>• Cleaning / decontamination</li> </ul>	<ul style="list-style-type: none"> <li>• Cleaning / decontamination of theatre between / after cases</li> <li>• Cleaning / disinfection of anaesthetic equipment between / after cases</li> <li>• Complete / legal documentation</li> </ul>	

#### **4.4.2 Phase 1(b): Feedback on the Research Question as e-mailed to respondents (N=9)**

A template stating the research question was sent electronically to the selected respondents, and a time frame for their responses was set. The initial feedback was very poor, and the research question was sent for a second time, unfortunately with a similar result. A third data template was sent to the respondents, and this time a few responses were obtained.

An email with the research question and the template for information was sent out to 40 individuals. Only nine responses were received, even after repeated reminders. The response rate was 22.5%. The respondents were given 10 days to complete the minimum competencies regarding knowledge, skills and attitude in the pre-, intra-, and post-operative phases. The date for completion was extended in the hope that more responses would be generated.

A decision was then taken by the researcher and supervisor after consultation with an expert in the field of working with the Delphi Technique to proceed with the data gathering with those respondents who were willing and committed to take part in the research. In total, nine responses were received.

The nine responses received back during Delphi Phase 1(b) contained the included data as referred to in Table 4.1.

The respondent's feedback can be seen in Table 4.2. The feedback correspondence with the competencies listed in the literature can be seen in Table 2.1, Chapter 2.

#### **4.4.3 Phase 1(c): Feedback on Data Sheet 1 combined competencies (respondents and literature) (N=7)**

The responses received from the respondents during phase 1(b) and the competencies gathered from the literature have been summarised in Data Sheet 1. Data Sheet 1 also contains a short structured questionnaire to capture the biographical data of the respondents. The respondents were asked to mark the appropriate “boxes” with regard to their qualifications, gender, race, age range, experience in the operating room, and current position.

The researcher sent an electronic link by e-mail to the respondents to assist them to log onto Data Sheet 1 (Phase 1(b)). The link was provided by the EvaSys UFS administrator. Data Sheet 1, including a scheduled closing date was send to the nine participating respondents. The respondents were instructed to indicate that the combined competencies on Data Sheet 1 were complete. The link was sent to the nine respondents that completed the list of competencies they expected from the ODAs.

One day before the scheduled closing date, the respondents were reminded via e-mail by the researcher to please complete the data sheet. On the due date that feedback on Data Sheet 1 was required, the researcher contacted the EvaSys administrator to enquire about the responses that had been received. The researcher was informed that only seven (77.7%) responses had been received. Two of the approached respondents did not complete the Data 1. This represents 22.2% of respondents.

In an effort to ensure a higher response rate, the due date for Data Sheet 1 was extended by two days. The respondents were again reminded via e-mail to complete the data sheet with the new due date. After completion of the two days’ grace, access to Data Sheet 1 was closed and the data was retrieved from the EvaSys administrator.

In the following discussion the feedback from respondents on Data Sheet 1 with regard to pre-, intra-, and post-operative knowledge and skills, and peri-operative attitudes required from the ODAs will be addressed.

#### **4.4.3.1     *Minimum Competencies Regarding Pre-Operative Knowledge (N=7)***

In Table 4.3 the respondents' agreement or disagreement on the minimum ODA competencies with regard to knowledge in the pre-operative phase is indicated. Except for the specific competencies bulleted below, agreement for the rest of the minimum competencies listed was 100%:

- Patient care concepts (71%)
- Patient assessment to meet specific needs during surgery (85%)
- Theoretical content of microbiology (85%)
- Knowledge re the physical requirement of the operating room (regarding the lighting, the door, the walls, the floor, etc. (85%)
- Classification of surgical instrumentation (85%).



**TABLE 4.3: Agreement and disagreement on minimum competencies regarding pre-operative knowledge, Phase 1(c)**

PRE-OPERATIVE KNOWLEDGE	Agree	Disagree
Receiving the patient in the Operating Room	7	
Care concepts	5	2
Assessment, to meet specific needs of the patient in surgery	6	1
Theoretical content of surgical anatomy	7	
Theoretical content of physiology	7	
Theoretical contents of microbiology	6	1
Theoretical contents of infection prevention and control	7	
Theoretical contents of pharmacology	7	
Appropriate policies and procedures pertaining to preparation of the operating room	7	
Appropriate policies and procedures pertaining to accurate documentation	7	
Sterilisation processes for the safe reprocessing of instrumentation	7	
Preparation of the operating room, specific to procedures	7	
Diverse personnel members' responsibilities	7	
Different types of anaesthesia	7	
Requirement of the operating room	6	1
Names of surgical instrumentation	7	
Classification of surgical instrumentation	6	1
Use of surgical instrumentation	7	
Updating re new technology and developments in surgery	7	
Requirements of sterile storage of sterile equipment and instruments used in sterile procedures	7	

#### **4.4.3.2      *Minimum Competencies Regarding Pre-Operative Skills*** **(N=7)**

In Table 4.4, the level of agreement or disagreement with competencies in regard to pre-operative skills is indicated. Except for the specific minimum competencies bulleted below, agreement with all the competencies listed was 100%.

- Pre-operative responsibilities, including patient assessment within a set work profile (agreement at 85%)
- Packing sterile packs (85%)
- Correct preparation for performance of anaesthesia (85%)
- Create an individualised care plan for each patient's specific needs and the needs of the surgeon for each specific case rated agreement (71%).

**TABLE 4.4: Agreement and disagreement on minimum competencies regarding pre-operative skills, Phase 1(c)**

PRE-OPERATIVE SKILLSS	Agreement	Disagreement
Relating to preparation of the operating room	7	
Checking correct functioning of equipment to be used	7	
Preparation of sterile packs and supplies	7	
Safe transfer of the patient to the operating table	7	
Safe, correct positioning of the patient for surgery	7	
Relating to accurate documentation	7	
Pre-operative responsibilities, including receiving patients	7	
Pre-operative responsibilities, including patient identification	7	
Pre-operative responsibilities, including patient assessment within set work profile	6	1
People skills	7	
Diligence	7	
Assertiveness	7	
Organization	7	
Checking sterile packs	7	
Packing sterile packs	6	1
Interpretation of quality tests performed in Central Sterilising Department	7	
Correct preparation before anaesthesia	6	1
Basic Life Support , should the need arise	7	
Pre-operative assessment of the patient in preparation of the operating room specific to the needs of the patient	7	
Function as a team member	7	
Compiling an individualised care plan for each patient's specific needs, and the needs of the surgeon in each specific case	5	2

#### **4.4.3.3 Minimum Competencies regarding Intra-Operative Knowledge (N=7)**

In Table 4.5, the respondents' agreement or disagreement with the competencies regarding intra-operative knowledge is indicated. Except for the specific minimum competencies bulleted below, agreement with all the competencies listed was 100%.

- Relevant surgical anatomy (agreement at 85%)
- Relevant pathophysiology (71%)
- Relevant microbiology, and infection prevention and control (85%)

- Superior knowledge in one or more specialty areas (example: Neurosurgery, ophthalmic surgery, etc.) (71%).

**TABLE 4.5: Agreement and disagreement on minimum competencies regarding intra-operative knowledge, Phase 1(c)**

INTRA-OPERATIVE KNOWLEDGE	Agree	Disagree
Steps of surgical procedures	7	
Relevant surgical anatomy	6	
Relevant pathophysiology	5	2
Relevant physiology	7	
Relevant microbiology	6	1
Relevant infection prevention and control practices	7	
Equipment and instrumentation used in different procedures	7	
Safe patient care	7	
Sterility and aseptic technique (maintaining a sterile field)	7	
Complications of different surgical procedures	7	
Medico-legal risks of diverse surgical procedures	7	
Needs of the patient and surgeon	7	
Correct handling of instruments, swabs and sharps, according to training school / employer policy	7	
Function as a circulating person	7	
Emergency procedures in the operating room	7	
Superior knowledge of one or more specialty areas (Example: Neurosurgery, ophthalmic surgery, etc.)	5	2

#### **4.4.3.4 Minimum Competencies regarding Intra-Operative Skills (N=7)**

In Table 4.6, the respondents' agreement or disagreement on competencies regarding a trained ODA's intra-operative skills is indicated. Except for the specific minimum competencies bulleted below, the agreement with all the competencies listed was rated at 100%:

- Management skills (agreement at 71%)
- Medication preparation and handling (receiving of medication on the surgical field, pre-administration checking medication with the surgeon, and marking the medication) (85%)
- Assisting with other intra-operative (85%)
- Developing advanced organisational skills (71%).

**TABLE 4.6: Agreement and disagreement on minimum competencies regarding intra-operative skills, Phase 1(c)**

INTRA-OPERATIVE SKILLSs	Agree	Disagree
Ability to scrub independently for procedures	7	
Ability to do after-hours and weekend call-out	7	
Planning the theatre list booked by the surgeon	7	
Being alert, quick and responsive	7	
Developing good observational skills	7	
Ability to handle stressful situations	7	
Assertiveness	7	
Applying aseptic and sterile technique	7	
Managing swabs, instruments and sharps according to policy during surgical procedures	7	
Managing and delegating tasks in regard to completion of a surgical case	7	
Managing specimens correctly, according to policy	7	
Managing specialised equipment correctly (including flexible and rigid scopes, micro-instruments and microscopes)	7	
Scrubbing, gowning and gloving for surgical procedure	7	
Setting sterile trolleys	7	
Skin preparation for surgical procedures	7	
Draping the patient for surgery	7	
Attending to the needs of the surgeon	7	
Assisting with, and ensuring safe patient positioning	7	
Basic Life Support	7	
Management skills	5	2
Supervision skills, with regard to circulating and other team members	7	
Recordkeeping according to legal requirements	7	
Recordkeeping according to policies and procedures	7	
Acting as a circulator for all surgical disciplines	7	
Good communication skills	7	
Creating and maintaining a sterile field (applications of aseptic and sterile technique during surgical procedures)	7	
Skills as a circulating person	7	
Non-technical skills (such as communication; teamwork; situational awareness; leadership; decision making)	7	
Passing instrumentation, equipment and supplies to the surgeon and surgical assistant, as needed	7	
Medication preparation and handling (receiving medication on the surgical field, pre-administration checking of medication with the surgeon, and marking the medication)	6	1
Specimen care	7	
Assisting with other intra-operative tasks	6	1
Preparation and application of sterile wound dressings	7	
Advanced organisational skills	5	2

#### 4.4.3.5 *Minimum Competencies Regarding Post-Operative Knowledge (N=7)*

In Table 4.7 the respondents' agreement or disagreement with competencies in regard to post-operative knowledge is indicated. Except for the specific minimum competencies bulleted below, the agreement with all the competencies listed was 100%.

- The action and adverse effects of medications (85%)
- Correct waste management, according to policies and procedures (85%).

**TABLE 4.7: Agreement and disagreement on minimum competencies regarding post-operative knowledge, Phase 1(c)**

POST-OPERATIVE KNOWLEDGE	Agree	Disagree
Correct handover of the patient to the post-anaesthesia care personnel	7	
Policies and procedure in the post-operative phase	7	
Roles and responsibilities of different team members in the post-operative phase	7	
Possible medico-legal risks in the post-operative phase	7	
Action and adverse effects of medications	6	1
Correct healthcare risk waste management, according to the policies and procedures	6	
Complications of procedures that might occur in the post-operative phase	7	
Cleaning of the operating room after surgical procedures, and the daily list	7	
Disinfection of the operating room after surgical procedures, and the daily list	7	
Care of specialised instrumentation and equipment	7	
Preparation of instrumentation for terminal sterilisation	7	
Assisting other team members with the terminal cleaning of the surgical suite for the next patient	7	

#### 4.4.3.6 *Minimum Competencies Regarding Post-Operative Skills (N=7)*

- In Table 4.8 the respondents' agreement or disagreement with the ODA's competencies regarding post-operative skills is indicated. The agreement rate for all the competencies listed was 100%, except for the competencies about connecting the patient to monitoring equipment in the post-anaesthesia care unit (85%).

**TABLE 4.8: Agreement and disagreement on minimum competencies regarding post-operative skills, Phase 1(c)**

POST-OPERATIVE SKILLS	Agree	Disagree
Effective communication skills	7	
Safe transfer of the patient to his / her bed after completion of a surgical procedure	7	
Connecting the patient to monitoring equipment in the post-anaesthesia care unit	6	1
Correct identification and handover of the patient to the post-anaesthesia care unit personnel	7	
Roles and responsibilities of post-anaesthesia care unit personnel	7	
Management of specimens	7	
Decontamination of the operating room between cases and after a list	7	
Perform Basic Life Support	7	
Interpreting data to recognize risk to the patient	7	
Complete and accurate documentation of patient's condition in the post-operative period	7	

#### 4.4.3.7 Minimum Competencies Regarding Peri-Operative Attitude (N=7)

In Table 4.9 the respondents' agreement or disagreement with the ODA's minimum competencies regarding post-operative skills is indicated. Except for the specific minimum competencies bulleted below the agreement with all the competencies listed was 100%.

- Leadership abilities rated (85%)
- Stamina and endurance (85%).

**TABLE 4.9: Agreement and disagreement on competencies with regard to peri-operative attitude Phase 1(c)**

PERI-OPERATIVE ATTITUDE	Agree	Disagree
Positivity	7	
Good communication skills	7	
Calm and un-rushed in emergency situations	7	
Controlled	7	
Honesty	7	
Accepting responsibility for all delegated tasks	7	
Mutual trust and respect	7	
Performance-driven	7	
Influential	7	
Respectful	7	
Enthusiastic	7	
Emotionally stable	7	
Adaptable	7	
Approachable	7	
Professional	7	
Leadership ability	6	1
Personal integrity	7	
Surgical conscience	7	
Stamina and endurance	6	
Cooperativeness	7	
Willingness to learn	7	
Assertiveness	7	
Mutual trust	7	
Respect for the patient and colleagues	7	
Ensuring the safety, privacy, dignity and comfort of each patient	7	
Proactive in identifying possible medico-legal risks	7	
Performance driven	7	
Courteousness.	7	



#### **4.4.4 Phase 2 Ranking of minimum competencies (N=8)**

In phase 2 of the data collection process, the minimum competencies were listed in alphabetical order. The respondents were requested to rank the competencies by making use of a Likert scale of 0-5, with 0 being the least important and 5 being most important. An electronic link provided by the EvaSys administrator was sent to the respondents, and a scheduled closing date for Data Sheet 2 was provided. The respondents were reminded via email to complete the data sheet. The researcher received feedback from only eight (88.8%) respondents. The responses were analysed electronically and the EvaSys administrator provided the results to the researcher in PDF format.

The results are illustrated below.

##### ***4.4.4.1 Ranking of Minimum Competencies Regarding Pre-Operative Knowledge (N=8)***

In Phase 2 a new Data Sheet 2 was developed by listing the agreed upon competencies in alphabetical order. The respondents were asked to rank the competencies according to importance on a 0-5 Likert scale, with 0 being the least important and 5 being the most important. The results of this ranking were generated by the EvaSys system. An aggregate percentage for each competency was provided to the researcher. The results reflected an average and a standard deviation. An average of 6 implies that all the respondents ranked the particular competency as most important and ranked the competency as 5 on the Likert scale. In Table 4.10 it can be seen that the following competencies were regarded as very important, with an average of between 6 and 5.8:

- Appropriate policies and procedures pertaining to the preparation of the operating room
- Theoretical content of surgical anatomy
- Use of instrumentation
- Names of surgical instrumentation
- Appropriate policies and procedures pertaining to accurate documentation

- Preparation of the operating room specific to different procedures

**TABLE 4.10: Ranking of minimum competencies regarding knowledge in the pre-operative phase, Phase 2**

COMPETENCY	Average (Mean)	Standard deviation	Comments
Appropriate policies and procedures pertaining to accurate documentation	5.8	0.7	N= 8 Seven (87.5%) of respondents ranked this competency five on the Likert scale, while one (12.5%) ranked it as three
Appropriate policies and procedures pertaining to preparation of the operating room	6	0	100% ranked five on the Likert scale
Assessment of the patient to meet specific needs of the patient in surgery	5	0.9	Three (37.5%) ranked 5 on Likert scale, with two (25%) on 4, and three (37.5%) at 3
Care concepts	4.4	1.8	Two (25%) ranked 5, with four (50%) on 4, one (12.5%) on 1 and one (12.5%) at 0
Classification of surgical instruments	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Different personnel members' responsibilities	5.3	1.4	Five (62.5%) ranked 5 on Likert, with two (25%) on 4, and one (12.5%) on 1
Different types of Anaesthesia	5	0.9	Three (37.5%) ranked 5 on Likert scale, with two (25%) on 4 and three (37.5%) on 3
Layout of the operating room	5.3	0.7	Three (37.5%) ranked 5 on Likert scale, with four (50%) on 4, and one (12.5%) ranked on 3
Names of surgical instrumentation	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) ranked on 4
Preparation of the operating room specific to the different procedures	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Receiving the patient in the operating room	5.1	1.1	Four (50%) ranked 5 on Likert scale, with two (25%) on 4, one (12.5%) on 3, and one (12.5%) on 2
Requirement of the operating room	5.3	0.7	Three (37.5%) ranked 5 on Likert scale, with four (50%) on 4, and one (12.5%) on 3
Requirements of the sterile storage of sterile equipment and instruments used in sterile procedures	5.5	0.8	Five (62.5%) ranked 5 on Likert scale, with two (25%) on 4, and one (12.5%) on 3

**TABLE 4.10:        Ranking of minimum competencies regarding knowledge in the pre-operative phase, Phase 2(continue)**

COMPETENCY	Average (Mean)	Standard deviation	Comments
Sterilisation processes for safe reprocessing of instrumentation	5.3	0.9	Four (50%) ranked 5 on Likert scale, with two (25%) on 4, and two (25%) at 3
Theoretical content of infection control	5.3	0.9	Four (50%) ranked 5 on Likert scale, with two (25%) on 4, and two (25%) on 3
Theoretical content of microbiology	4.9	0.8	Two (25%) ranked 5 on Likert scale, with three (37.5%) on 4, and three (37.5%) on 3
Theoretical content of pharmacology	4.5	0.5	0% ranked 5 on Likert scale, with four (50%) on 4, and four (50%) on 3
Theoretical content of physiology	4.6	1.1	Two (25%) ranked 5 on Likert scale, with two (25%) on 4, three (37.5%) on 3, and one (12.5%) on 2
Theoretical content of surgical anatomy	6	0	100% ranked 5 on Likert scale
Updated re new technology and developments in the field of surgery	5	1.2	Four (50%) ranked 5 on Likert scale, with one (12.5%) ranked on 4, two (25%) on 3, and one (12.5%) on 2
Use of surgical instrumentation	6	0	100% ranked 5 on Likert scale

The competencies that were rated between 4.4 and 4.9 are as follows:

- Theoretical content of microbiology
- Theoretical content of physiology
- Theoretical content of pharmacology
- Care concepts.

The average for the 21 competencies listed above was 5.3 out of a possible 6.

#### **4.4.4.2      *Ranking of Minimum Competencies Regarding Pre-Operative Skills (N=8)***

In Table 4.11 it can be seen that the following minimum competencies were regarded as very important, with an average of 6:

- Checking correct functioning of equipment to be used
- Checking of sterile packs
- Functioning as a team member
- All aspects pertaining to accurate documentation
- All aspects pertaining to preparation of the operating room
- Pre-operative responsibilities, including patient identification
- Preparation of sterile packs and supplies.

The following competencies that were rated between 4.6- 4.9 include:

- Basic Life Support, should the need arise
- Creating an individualised care plan for each patient's surgical needs and the needs of the surgeon for each specific case
- Packing sterile packs.

**TABLE 4.11: Ranking of minimum competencies regarding pre-operative skills Phase 2**

COMPETENCIES REGARDING PRE-OPERATIVE SKILLS			Comments
Competency	Average (mean)	Standard deviation	
Assertiveness			N=8
	5.4	0.7	Four (50%) ranked 5 on Likert scale, with three (37.5%) ranked on 4 and one (12.5%) on 3
Basic Life Support, should the need arise	4.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Checking correct functioning of equipment to be used	6	0	100% ranked 5 on Likert scale
Checking of sterile packs	6	0	100% ranked 5 on Likert scale
Correct preparation for the performance of anaesthesia	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Create an individualised care plan for each patient's surgical needs and needs of the surgeon for each specific case	4.6	1.8	Four (50%) ranked 5 on Likert scale with one (12.5%) on 4, one (12.5%) on 3, one (12.5%) on 2, and one (12.5%) on 0
Diligence	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Functioning as a team member	6	0	100% ranked 5 on Likert scale
Interpretation of quality tests performed on sterile packs in Central Sterilisation Department	5.5	0.8	Five (62.5%) ranked 5 on Likert scale, with two (25%) on 4, and one (12.5%) on 3
Organised	5.5	0.5	Four (50%) ranked 5 and 4 on Likert scale each
Packing sterile packs	4.9	0.8	Two (25%) ranked 5 on Likert scale, with three (37.5%) each on 4, and 3
People skills	5.4	0.5	Three (37.5%) ranked 5 on Likert scale, with five (62.5%) on 4
All aspects pertaining to accurate documentation	6	0	100% ranked 5 on Likert scale
All aspects pertaining to preparation of the operating room	6	0	100% ranked 5 on Likert scale
Pre-operative assessment of the patient to prepare the operating room specific to the needs of the patient	5	0.9	Three (37.5%) ranked 5 on Likert scale, with two (25%) on 4 and three (37.5%) on 3
Pre-operative responsibilities including patient identification	6	0	Three (37.5%) ranked 5 on Likert scale, with two (25%) on 4, and three (37%) on 3

**TABLE 4.11: Ranking of Minimum Competencies regarding pre-operative skills, Phase 2 (continued)**

COMPETENCIES REGARDING PRE-OPERATIVE SKILLS			Comments
Competency	Average (mean)	Standard deviation	
Pre-operative responsibilities including receiving of a patient	5.3	0.9	Three (37.5%) ranked 5, and 4 each on Likert scale with two (25%) on 3
Preparation of sterile packs and supplies	6	0	100% ranked 5 on Likert scale
Safe and correct positioning of the patient for surgery	5.5	1.4	Seven (87.5%) ranked 5 on Likert scale, one (12.5%) on 1
Safe transfer of the patient to the operating table	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale with one (12.5%) on 4.

The average for the 21 competencies listed above was 5.5 out of a possible 6.

#### **4.4.4.3      *Ranking of Minimum Competencies Regarding Intra-Operative Knowledge (N=8)***

In Table 4.12 it can be seen that the following competencies are regarded as very important, with an average of 6:

- Correct handling of instruments, swabs and sharps, according to policy
- Medico-legal risks of different surgical procedures
- Safe patient care
- Steps of surgical procedures
- Sterility and aseptic technique (maintaining the sterile field),

The following competencies rated between 4.5 - 4.8:

- Relevant microbiology with regard to the surgery
- Relevant pathophysiology
- Relevant physiology.



**TABLE 4.12: Minimum competencies ranked regarding intra-operative knowledge, Phase 2**

COMPETENCIES REGARDING INTRA-OPERATIVE KNOWLEDGE			
Competency	Average (mean)	Standard deviation	Comments
Complications of different surgical procedures	5	0.5	One (12.5%) ranked 5 on Likert scale, with six (75%) on 4 and one (12.5%) on 3
Correct handling of instruments, swabs and sharps, according to policy	6	0	100% ranked on 5 on Likert scale
Emergency procedures in the operating room	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Equipment and instrumentation used in the different procedures	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, one (12.5%) on 4
Functioning as a circulating person	5.9	0.4	Seven (85.7%) ranked 5 on Likert scale, with one (12.5%) on 4
Medico-legal risks of different surgical procedures	6	0	100% ranked 5 on Likert scale
Needs of the patient and surgeon	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Relevant infection control practices	5.3	0.7	Three (37.5%) ranked 5 on Likert scale with four (50%) on 4 and one (12.5%) on 3
Relevant microbiology	4.8	1.3	Two (25%) ranked 5 on Likert scale, with two (50%) on 4, one (12.5%) on 3 and one (12.5%) on 1
Relevant pathophysiology	4.5	1.2	One (12.5%) ranked 5 on Likert scale, with four (50%) on 4, two (25%) on 3 and one (12.5%) on 1
Relevant physiology	4.6	1.3	Two (25%) ranked 5, with three (37.5%) on 4, two (25%) on 3, and one (12.5%) on 1
Relevant surgical anatomy	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with One (12.5%) on 4
Safe patient care	6	0	100% ranked 5 on Likert scale
Steps of surgical procedures	6	0	100% ranked 5 on Likert scale
Sterility and aseptic technique (maintaining the sterile field)	6	0	100% ranked 5 on Likert scale
Superior knowledge in one or two speciality areas (Example: Neurosurgery , ophthalmic surgery, etc.).	5.1	0.9	Three (42.9%) ranked 5 on Likert scale, with two (28.6%) each 4 and 3. In this competency only seven respondents entered a response.

The average of the 16 competencies above was 5.55, out of a possible 6

#### **4.4.4.4      *Minimum Competencies Regarding Intra-Operative Skills*** **(N=8)**

In Table 4.13, it can be seen that the following Minimum competencies were regarded as very important with an average of 6:

- Apply aseptic and sterile technique
- Create and maintain sterile field (application of aseptic and sterile technique during surgical procedures)
- Manage specimens correctly, according to policy
- Manage swab, instrument and sharps control, according to policy during the surgical procedure
- Pass instrumentation, equipment and supplies to surgeon and surgical assistant, as needed
- Record keeping according to legal requirements
- Record keeping according to policies and procedures
- Scrubbing, gowning and gloving for surgical procedure
- Setting of sterile trolleys
- Skin preparation of the patient for surgery
- Specimen care.

The following competencies were rated 4.8:

- Management skills.

**TABLE 4.13: Ranking of minimum competencies regarding Intra-operative skills, Phase 2**

COMPETENCIES REGARDING INTRA-OPERATIVE SKILLS			
Competency	Average (mean)	Standard deviation	Comments
Able to do call after hours and during weekends	5.4	0.7	Four (50%) ranked 5 on Likert scale, with three (37.5%) on 4, and one (12.5%) on 3
Act as a circulator in all surgical disciplines	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Advanced organisational skills	5.4	0.7	Four (50%) ranked 5 on Likert scale, with three (37.5%) on 4, and one (12.5%) on 3
Alert and quick to respond	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Apply aseptic and sterile technique	6	0	100% ranked 5 on Likert scale
Assertiveness	5.5	0.5	Four (50%) ranked 5 on Likert scale, with four (50%) on 4
Assist with, and ensure safe patient positioning	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Assist with other intra-operative tasks	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Attend to needs of surgeon	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Create and maintain sterile field (application of aseptic and sterile technique during surgical procedures)	6	0	100% ranked 5 on Likert scale
Draping patient for surgery	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Good communication skills	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Good observation skills	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Manage and delegate tasks pertaining to completion of the case	5.6	0.5	Five (62.5%) ranked 5 on Likert scale, with three (37.5%) ranked on 4
Manage specialised equipment correctly (includes flexible and rigid endoscopes, micro-instruments and microscopes).	5.6	0.5	Five (62.5%) ranked 5 on Likert scale, with three (37.5%) ranked on 4.

**TABLE 4.13: Ranking of Minimum Competencies regarding Intra-operative skills, Phase 2 (continued)**

COMPETENCIES REGARDING INTRA-OPERATIVE SKILLS			
Competency	Average (mean)	Standard deviation	Comments
Manage specimens correctly according to policy	6	0	100% ranked 5 on Likert scale
Manage swab, instrument and sharps control according to policy during the surgical procedure	6	0	100% ranked 5 on Likert scale
Management skills	4.8	0.9	Two (25%) ranked each at 5 and 4 on Likert scale, with four (50%) on 3
Medication preparation and handling (receiving medication on the surgical field, controlling the medication with the surgeon, and marking the medication)	5.3	1.4	Five (62.5%) ranked 5 on Likert scale, with two (25%) on 4, and one (12.5%) on 1
Non-technical skills (such as communication; teamwork; situation awareness; leadership; decision-making)	5.3	0.7	Three (37.5%) ranked 5 on Likert scale, with four (50%) on 4, and 1 one (12.5%) on 3
Pass instrumentation, equipment and supplies to surgeon and surgical assistant, as needed	6	0	100% ranked 5 on Likert scale
Plan for the list booked by the surgeon	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Prepare and apply sterile wound dressing	5.6	0.7	Six (75%) ranked 5 on Likert scale, with one (12.5%) each on 4, and 3
Record keeping according to legal requirements	6	0	100% ranked 5 on Likert scale
Record keeping according to policies and procedures	6	0	100% ranked 5 on Likert scale
Scrub, gown and glove for surgical procedure	6	0	100% ranked 5 on Likert scale
Scrub independently for surgical procedures	6	0	100% ranked 5 on Likert scale.

**TABLE 4.13: Ranking of minimum competencies regarding intra-operative skills, Phase 2 (continued)**

COMPETENCIES REGARDING INTRA-OPERATIVE SKILLS			
Competency	Average (mean)	Standard deviation	Comments
Setting of sterile trolleys	6	0	100% ranked 5 on Likert scale
Skilled in Basic Life Support	5.5	0.5	Four (50%) ranked both 5 and 4 on the Likert scale
Skilled as a circulating person	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Skilled in stress situations	5.4	0.7	Four (50%) ranked 5 on Likert scale, with three (37.5%) at 4 and one (12.5%) on 3
Skin preparation of the patient for surgery	6	0	100% ranked 5 on Likert scale
Specimen care	6	0	100% ranked 5 on Likert scale
Supervision skills pertaining to circulating and other team members	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4.

The average of the 34 competencies listed above was 5.76, out of a possible 6.

#### **4.4.4.5     *Minimum Competencies Regarding Post-Operative Knowledge (N=8)***

In Table 4.14 it can be seen that the following competencies are regarded as very important, with an average of 6:

- Correct handover of patient to post-anaesthesia care personnel
- Correct healthcare risk waste management, according to the policies and procedures
- Disinfection of the operating room after surgical procedure, and list.

The following competencies were rated 4.5-4.8:

- Action and adverse effects of medications
- Complications of procedure that might occur in the post-operative phase
- Roles and responsibilities of different team members.

**TABLE 4.14: Ranking of minimum competencies regarding post-operative knowledge, Phase 2**

COMPETENCIES REGARDING POST-OPERATIVE KNOWLEDGE			
Competency	Average (mean)	Standard deviation	Comments
Action and adverse effect of medication	4.5	0.9	One (12.5%) ranked 5 on Likert scale, with three (37.5%) ranked on 4 and 3 each and one (12.5%) ranked on 2
Assist other team members with terminal cleaning of surgical suite for next patient	5.4	1.1	Five (62.5%) ranked 5 on Likert scale, with two (25%) on 4 and one (12.5%) on 2
Care of specialised instrumentation and equipment	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Cleaning the operating room after surgical procedure, and a list	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Complications of procedures that might occur in the post-operative phase	4.5	1.2	One (12.5%) ranked 5 on Likert scale, with four (50%) on 4, two (25%) on 3, and one (12.5%) 1
Correct handover of patient to post-anaesthesia care personnel	6	0	100% ranked 5 on Likert scale
Correct healthcare risk waste management, according to the policies and procedures	6	0	100% ranked 5 on Likert scale
Disinfection of the operating room after surgical procedure, and list	6	0	100% ranked 5 on Likert scale
Policies and procedures of the post-operative phase	5.1	1.5	Five (62.5%) ranked 5 on Likert scale, with one (12.5%) on 4, and 3 each, and one (12.5%) on 1
Possible medico legal risks in the post-operative phase	5.4	0.9	Five (62.5%) ranked 5 on Likert scale, with one (12.5%) on 4, and two (25%) on 3
Preparation of instrumentation for terminal sterilisation	5.9	0.4	Seven (85.7%) ranked 5 on Likert scale, with one (12.5%) on 4
Roles and responsibilities of different team members in the post-operative phase	4.8	1.5	Three (37.5%) ranked 5, and 4 each, and one (12.5%) each on 1, and 2 of the Likert scale.

The average of 12 competencies listed above was 5.45 out of a possible 6

#### **4.4.4.6      *Minimum Competencies Regarding Post-Operative Skills*** **(N=8)**

In Table 4.15 it can be seen that the following competencies are regarded as very important, with an average of 6:

- Safe transfer of the patient to his / her bed on completion of the surgical procedure.

The following competencies were rated 4.4:

- Complete and accurate documentation of patient's condition in the post-operative period
- Roles and responsibilities of post anaesthesia care personnel.



**TABLE 4.15: Ranking of minimum competencies regarding post-operative skills Phase 2**

COMPETENCIES REGARDING POST-OPERATIVE SKILLS			
Competencies	Average (mean)	Standard deviation	Comments
Able to perform Basic Life Support	5.5	0.5	Four (50%) ranked each 5 and 4 on the Likert scale
Complete and accurate documentation of a patient's condition in the post-operative period	4.4	1.6	Two (25%) ranked 5 on Likert scale, with three (37.5%) on 4, and one (12.5%) on 3
Connecting the patient to monitoring equipment in the post anaesthesia care unit	5	1.3	Three (37.5%) ranked 5 on the Likert Scale, with four (50%) on 4, one (12.5%) on 1
Correct identification and handover of the patient to the post anaesthesia care unit personnel	5.8	0.5	Six (75%) ranked 5 on the Likert scale, with two (25%) on 4
Decontamination of the operating room between cases and after the list	5.8	0.5	Six (75%) ranked 5 on the Likert scale, with two (25%) on 4
Good communication skills	5.6	0.5	Four (57.1%) ranked 5 on the Likert scale, with three (42.9%) on 4. Note N=7
Interpretation of data to recognise risks to the patient	5.6	0.5	Five (62.5%) ranked 5 on Likert scale, with three (37.5%) on 4
Management of specimens	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Roles and responsibilities of the post anaesthesia care unit personnel	4.4	0.7	0% ranked 5 on the Likert scale, with four (50%) on 4, three (37.5%) on 3, and one (12.5%) at 2
Safe transfer of the patient to his / her bed after completion of the surgical procedure	6	0	100% ranked 5 on the Likert scale.

The average of ten competencies listed above was 5.4, out of a possible 6.

#### **4.4.4.7    *Minimum Competencies regarding Peri-Operative Attitude (N=8)***

In Table 4.16 it can be seen that the following minimum competencies are regarded as very important, with an average of 6:

- Accepting responsibility for all delegated tasks
- Professionalism
- Respect for patients and colleagues
- Surgical conscience (integrity).

The following competency was rated 4.9:

- Influence.

**TABLE 4.16: Ranking of minimum competencies regarding the peri-operative attitude, Phase 2**

COMPETENCIES REGARDING PERI-OPERATIVE ATTITUDE			
Competencies	Average (mean)	Standard deviation	Comments
Accepting responsibility for all delegated tasks	6	0	100% ranked 5 on Likert scale
Adaptability	5.5	0.5	Five (62.5%) ranked 5 on Likert scale, with three (37.5%) on 4
Approachability	5.5	0.8	Five (62.5%) ranked 5 on Likert scale, with two (25%) on 4, and one (12.5%) on 3
Assertiveness	5.5	0.5	Four (50%) each ranked 5, and 4 on the Likert scale
Calm and unrushed demeanour in emergency situations	5.6	0.5	Five (62.5%) ranked 5 on the Likert scale, with three (37.5%) on 4
Control	5.6	0.5	Five (62.5%) ranked 5 on the Likert scale, with three (37.5%) on 4
Cooperativeness	5.6	0.5	Five (62.5%) ranked 5 on the Likert scale, with three (37.5%) on 4
Courteousness	5.6	0.5	Five (62.5%) ranked 5 on the Likert scale, with three (37.5%) on 4
Emotionally stability	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Ensuring safety, privacy and comfort of each patient	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Enthusiasm	5.5	0.5	Four (50%) ranked each at 5 and 4 on Likert scale
Good communication skills	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Honesty	5.9	0.4	Seven (87.5%) ranked 5 on the Likert scale, with one (12.5%) on 4
Influence	4.9	1.5	Four (50%) ranked 5 on Likert scale, with one (12.5%) on 4, two (25%) on 3, and one (12.5%) on 1
Leadership abilities	5.1	0.8	Three (37.5%) ranked each at 5 and 4 on Likert scale, and two (25%) on 3
Mutual trustworthiness	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4.

**TABLE 4.16: Ranking of minimum competencies regarding the peri-operative attitude, Phase 2 (continued)**

COMPETENCIES REGARDING PERI-OPERATIVE ATTITUDE			
Competencies	Average (mean)	Standard deviation	Comments
Performance driven	5.6	0.5	Five (62.5%) ranked 5 on the Likert scale, with three (37.5%) on 4
Personal integrity	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Positiveness	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Pro-activeness in identifying possible medical legal risks	5.8	0.5	Six (75%) ranked 5 on Likert scale, with two (25%) on 4
Professionalism	6	0	100% ranked 5 on Likert scale
Respect for patients and colleagues	6	0	100% ranked 5 on Likert scale
Respectfulness	5.9	0.4	Seven (87.5%) ranked 5 on Likert scale, with one (12.5%) on 4
Stamina and endurance	5.5	0.8	Five (62.5%) ranked 5 on Liker scale, with two (25%) on 4, and one (12.5%) on 3
Surgical conscience	6	0	100% ranked 5 on Likert scale.

The average of 25 competencies listed above was 5.68, out of a possible 6.

#### **4.4.5 Phase 3(a) Consensus on minimum competencies (N=8)**

In Phase 3(a) those minimum competencies (rated according to importance during Phase 2) with an aggregate average of 70% to 100% were listed in alphabetical order. The respondents were requested to agree / disagree with the ranking of the competencies on a 0-5 Likert scale. An electronic link provided by the EvaSys administrator was sent to the nine respondents with a scheduled closing date for the data sheet. The respondents were again reminded via e-mail to complete the data sheet.

This time the researcher received a total of eight responses. The responses were electronically analysed and the EvaSys administrator sent the results to the researcher in PDF format.

Those results are illustrated below.

##### **4.4.5.1 *Minimum Competencies Regarding Pre-Operative Knowledge (N=8)***

In Table 4.17, all the minimum competencies are listed which obtained an agreement score of 87.5% and higher.

**TABLE 4.17: Consensus on minimum competencies regarding pre-operative knowledge, Phase 3**

<b>COMPETENCIES REGARDING PRE-OPERATIVE KNOWLEDGE</b>		
<b>Competency</b>	<b>Agreement rate</b>	<b>Disagreement rate</b>
Appropriate knowledge of policies and procedures pertaining to the preparation of the operating room	100%	0%
Use of surgical instrumentation	100%	0%
Appropriate knowledge of policies and procedures pertaining to accurate documentation	100%	0%
Names of instrumentation	100%	0%
Theoretical content of surgical anatomy	87.5%	12.5%
Preparation of the operating room specific to different procedures	87.5%	12.5%
Classification of surgical instruments	87.5%	12.5%

Seven competencies were listed, of which four (57%) had an agreement score of 100%, while three (47%) had an agreement score of 87.5%. This is seen as a high level of consensus among the respondents.

#### **4.4.5.2      *Minimum competencies regarding pre-operative skills***

In Table 4.18 it can be seen that all the competencies that are listed had an agreement score of 87.5% and higher.

**TABLE 4.18:            Consensus on minimum competencies regarding pre-operative skills, Phase 3**

COMPETENCIES REGARDING PRE-OPERATIVE SKILLS		
Competency	Agreement rate	Disagreement rate
Checking correct functioning of equipment to be used	100%	0%
Checking sterile packs	100%	0%
Pre-operative responsibilities, including patient identification	100%	0%
Preparation of sterile packs and supplies	100%	0%
Safe transfer of the patient to the operating table	100%	0%
Basic Life Support, should the need arise	100%	0%
Correct preparation for the performance of anaesthesia	100%	0%
Diligence	100%	0%
Functioning as a team member	87.5%	12.5%
All aspects pertaining to accurate documentation	87.5%	12.5%
All aspects pertaining to preparation of the operating room	87.5%	12.5%
Safe, correct positioning of the patient for surgery	87.5%	12.5%

Of the twelve competencies that are listed, eight (66.6%) had an agreement score of 100%, with while four (33.4%) had an agreement score of 87.5%. This is seen as a high level of consensus.

#### **4.4.5.3 Minimum Competencies Regarding Intra-Operative Knowledge**

In Table 4.19 it can be seen that all the competencies that were listed had an agreement score higher than 87.5%.

**TABLE 4.19: Consensus on minimum competencies regarding intra-operative knowledge, Phase 3**

<b>COMPETENCIES REGARDING INTRA-OPERATIVE KNOWLEDGE</b>		
<b>Competency</b>	<b>Agreement rate</b>	<b>Disagreement rate</b>
Correct handling of instruments, swabs and sharps according to policy	100%	0%
Emergency procedures in the operating room	100%	0%
Equipment and instrumentation used in different procedures	100%	0%
Relevant surgical anatomy	100%	0%
Complication of different surgical procedures	100%	0%
Medico-legal risks of different surgical procedures	87.5%	12.5%
Safe patient care	87.5%	12.5%
Steps of surgical procedures	87.5%	12.5%
Sterility and aseptic technique (maintaining the sterile field)	87.5%	12.5%
Functioning as a circulating person	87.5%	12.5%
Needs of the patient and surgeon	87.5%	12.5%

Eleven competencies were listed five (45.5%) had an agreement score of 100%, with six (54.5%) had an agreement score of 87.5%. This can be seen as high level of consensus.

#### **4.4.5.4 Minimum Competencies Regarding Intra-Operative Skills (N=8)**

In Table 4.20, the minimum competencies that are listed had an agreement score of 87.5% and higher. The consensus agreement on one competency was 75%.



**TABLE 4.20: Consensus on minimum competencies regarding intra-operative skills Phase 3**

COMPETENCIES REGARDING INTRA-OPERATIVE SKILLS		
Competency	Agreement rate	Disagreement rate
Apply aseptic and sterile technique	100%	0%
Create and maintain a sterile field (application of aseptic technique during procedures	100%	0%
Manage specimens correctly, according to policy	100%	0%
Pass instrumentation, equipment and supplies to the surgeon and surgical assistant, as needed	100%	0%
Manage swab, instrument and sharps control according to policy during surgical procedures	100%	0%
Scrub independently for surgical procedures	100%	0%
Setting of sterile trolleys	100%	0%
Skin preparation of the patient for surgery	100%	0%
Specimen care	100%	0%
Assist with, and ensure safe patient positioning	100%	0%
Assist with other intra-operative tasks, as required	100%	0%
Attend to the needs of the surgeon / surgical assistant	100%	0%
Draping of the patient for surgery	100%	0%
Planning the list, as booked by the surgeon	100%	0%
Prepare and apply sterile wound dressings	100%	0%
Skills as a circulating person	100%	0%
Record keeping according to legal requirements	87.5%	12.5%
Scrub, gown and glove for surgical procedures	87.5%	12.5%
Good communication skills	87.5%	12.5%
Good observational skills	87.5%	12.5%
Acting as a circulator for all surgical disciplines	87.5%	12.5%
Alert and quick to respond	87.5%	12.5%
Record keeping, according to policies and procedures	75%	25%

Of twenty three competencies that were listed, 16 (69.5%) had an agreement score of 100%, with 7 (30.5%) achieving an agreement score of 87.5%. This can be seen as a high level of consensus.

#### 4.4.5.5 *Minimum competencies Regarding Post-Operative Knowledge (N=8)*

In Table 4.21, the minimum competencies that are listed had an agreement rate of higher than 87.5%.

**TABLE 4.21: Consensus on minimum competencies regarding post-operative knowledge, Phase 3**

COMPETENCIES REGARDING POST-OPERATIVE KNOWLEDGE		
Competency	Agreement rate	Disagreement rate
Correct handover of the patient to post-anaesthesia care personnel	100%	0%
Correct healthcare risk waste management, according to policy and procedures	100%	0%
Disinfection of the operating room between surgical procedures, and after the daily list	100%	0%
Care of specialised instrumentation and equipment	100%	0%
Cleaning of the operating room after surgical procedure, and after the daily list	100%	0%
Preparing instrumentation for terminal sterilisation	87.5%	12.5%

Of the six competencies that were listed, 5 (83.3%) had an agreement score of 100%, while 1 (16.7%) an agreement score of 87.5%. This can be seen as a high level of consensus.

#### **4.4.5.6      *Minimum Competencies Regarding Post-Operative Skills*** **(N=8)**

In Table 4.22, the minimum competencies that are listed had an agreement score of 100%.

**TABLE 4.22:      Consensus on minimum competencies regarding post-operative skills, Phase 3**

COMPETENCIES REGARDING POST-OPERATIVE SKILLS		
Competency	Agreement rate	Disagreement rate
Safe transfer of the patient to his / her bed at completion of the surgical procedure	100%	0%
Management of specimens	100%	0%
Correct identification and handover of the patient to the post anaesthesia care unit personnel	100%	0%
Decontamination of the operating room between cases and after the list	100%	0%

Four competencies were listed and all had an agreement score of 100%. This is seen as a high level of consensus.

#### **4.4.5.7      *Minimum Competencies Regarding Peri-Operative Attitude***

In Table 4.23 the minimum competencies that are listed had an agreement rate of 87.5% and higher. The following competencies were seen as personality traits, rather than attitudes:

- Emotional stability
- Good communication skills.

These are, however, considered to be important traits of the Operating Department Assistant (ODA) and therefore are worth listing.

**TABLE 4.23: Consensus on minimum competencies regarding peri-operative attitude, Phase 3**

COMPETENCIES REGARDING PERI-OPERATIVE ATTITUDE		
Competency	Agreement rate	Disagreement rate
Honesty	100%	0%
Mutual trust	100%	0%
Respectfulness	100%	0%
Emotional stability	100%	0%
Good communication skills	100%	0%
Personal integrity	100%	0%
Positivity	100%	0%
Pro-activeness in identifying possible medico-legal risks	100%	0%
Accepting of the responsibility for all delegated tasks	87.5%	12.5%
Professionalism	87.5%	12.5%
Respect for patients and colleagues	87.5%	12.5%
Surgical conscience	87.5%	12.5%
Ensuring the safety, dignity and comfort to each patient	87.5%	12.5%

Of the 13 competencies that were listed, eight (61.5%) had an agreement score of 100%, while for five (38.5%) the agreement score dropped to 87.5%. This is seen as a high level of consensus.

## 4.5 CONCLUSION

In Chapter 4 the results obtained with the Delphi Technique (Phase 1 – 3 (b)) have been described. Although the researcher initially experienced difficulty in ensuring commitment to participate in the study, the final seven respondents in Phase 1, and the eight respondents of Phases 2 and 3 who agreed to proceed have provided invaluable feedback. Each Data Sheet (1 - 3) included instructions for the respondents, and a set due date for the submission of feedback. In each phase the researcher developed a renewed, more refined Data Sheet, with the aim of gaining more consensus about the minimum competencies expected from the trained ODAs. In each phase it was seen that a level of consensus of higher than 70% was reached.

In Phase 2, the minimum competencies had to be ranked on a 0-5 Likert scale. It can be concluded that the majority of minimum competencies that were listed under pre-, intra-, post- and peri-operative attitude received a score of either 4 or 5 on the Likert scale due to the perceived value of these attitudes in an operation room staff member. It was found that only two minimum competencies needed to be ranked, namely care concepts, and creating an individualised care plan for each patient's surgical needs, and the needs of the surgeon / surgical assistant for each specific case. Six competencies received a rating of 1, indicating that only one respondent placed value on these competencies. The competencies include were: different personnel members' intra-operative responsibilities; safe, correct positioning of the patient for surgery; relevant microbiology, physiology and patho-physiology connected with the surgery; medication preparation and handling (receiving medication on the surgical field, checking the medication with the surgeon, and marking the medication); knowledge of the complications that might occur in the post-operative phase; the roles and responsibilities of different team members in the post-operative phase; and skills in connecting the patient to monitoring equipment in the post-anaesthesia care unit.

In Chapter 5 the final conclusions and recommendations on the minimum competencies for the ODA course, the limitations and some suggestions for further research will be discussed.

## 4.6 CHAPTER LAYOUT

<b>Chapter 1:</b>	Introduction and problem statement
<b>Chapter 2:</b>	An overview of the literature related to the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa.
<b>Chapter 3:</b>	A description of the methodology selected for the study.
<b>Chapter 4:</b>	An analysis and description of the results obtained with the Delphi technique.
<b>Chapter 5:</b>	<b>Conclusions, recommendations, limitations of the study and suggestions for possible future research.</b>

## 4.7 REFERENCES

South African Nursing Council. 2014. *Additional Qualification on Register of Nurses and Midwives*. [Online]. Available from:< [www.sanc.co.za](http://www.sanc.co.za).> [Accessed on 29<sup>th</sup> of June 2015].

South African Nursing Council. 2014. *Age Distribution: Registered Nurses / Midwives*. [Online]. Available from: [http://www.sanc.co.za/stata/stats2014/Age%20stats% 202014.pdf](http://www.sanc.co.za/stata/stats2014/Age%20stats%202014.pdf) [Accessed 29<sup>th</sup> of June 2015].

# CHAPTER FIVE

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## CONCLUSION, RECOMMENDATIONS, LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FUTURE RESEARCH

### 5.1 INTRODUCTION

In Chapter 5, the conclusions based on the results and the recommendations with regard to the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa will be described, as well as the limitations identified in the study, and some suggestions for future research will be discussed.

**The aim of this study was to obtain consensus on the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa directly from involved theatre staff educators and clinical personnel.**

The researcher is convinced that the aim of the study has been reached and that consensus has been obtained on the minimum competencies required.

### 5.2 CONCLUSION BASED ON RESULTS

After three rounds of research, using the Delphi Technique, the following competencies were agreed upon by the respondents, with more than an 80% consensus. Due to the fact that the final level of consensus was much higher (> 80%) than the 70% that was initially envisioned, those competencies that achieved a consensus of between 80% and 100% were finally accepted and listed as the minimum competencies required from trained ODAs.

The researcher concluded that the minimum competencies agreed upon by the respondents are in line with the competencies that are described in literature, as seen in Chapter 2. **Therefore, it is the opinion of the researcher that the listed competencies represent the core and most important competencies for ODAs trained in South Africa.**

In Table 5.1 a breakdown of the number of competencies is given. The number of competencies in Phase 1 (c) are shown in column **P1(c)**, followed by the final number of minimum competencies identified from Phase 3 (b) under column **P3(b)**.

**TABLE 5.1: Breakdown of number of competencies**

DOMAIN	PRE- OPERATIVE		INTRA- OPERATIVE		POST- OPERATIVE		PERI- OPERATIVE	
	P1(c)	P3(b)	P1(c)	P3(b)	P1(c)	P3(b)	P1(c)	P3(b)
Knowledge	21	7	16	11	12	6		
Skills	21	12	34	23	10	4		
Attitude							28	13

In Table 5.2 and 5.3 the competencies regarding knowledge and skills in the pre-, intra- and post-operative phases with a consensus score from 87.5% to 100% are listed.

**It should be noted that the ideal attitudes required from ODAs are described in the peri-operative column, but address attitudes that are expected from ODAs during all operative phases.**



**TABLE 5.2: Listed competencies regarding knowledge in the pre-, intra- and post-operative phases**

COMPETENCIES REGARDING KNOWLEDGE IN THE PRE-, INTRA- AND POST-OPERATIVE PHASES		
Pre-Operative Phase	Intra-Operative Phase	Post-Operative Phase
Appropriate policies and procedures pertaining to the preparation of the operating room	Correct handling of instruments, swabs and sharps according to policy	Correct handover of the patient to the post-anaesthesia care personnel
Use of surgical instrumentation	Emergency procedures in the operating room	Correct healthcare risk waste management, according to the policies and procedures
Appropriate policies and procedures pertaining to accurate documentation	Equipment and instrumentation used in different procedures	Disinfection of the operating room after individual surgical procedures, and the daily list
Names of instrumentation	Relevant surgical anatomy	Care of specialised instrumentation and equipment
Theoretical content of surgical anatomy	Complication of different surgical procedures	Cleaning of the operating room after individual surgical procedures, and the daily list
Preparation of the operating room, specifically for different procedures	Medico-legal risks of different surgical procedures	Preparation of instrumentation for terminal sterilisation.
Classification of surgical instruments.	Safe patient care	
	Steps of the surgical procedures	
	Sterility and aseptic technique (maintaining the sterile field)	
	Functioning as a circulating person	
	Needs / requirements of the patient and surgeon / surgical assistant.	

**TABLE 5.3: Listed competencies regarding skills in the pre-, intra- and post-operative phases**

COMPETENCIES REGARDING SKILLS IN THE PRE-, INTRA- AND POST-OPERATIVE PHASES		
Pre-Operative Phase	Intra-Operative Phase	Post-Operative Phase
Checking the correct functioning of equipment to be used	Apply aseptic and sterile technique	Safe transfer of the patient to his / her bed after completion of the surgical procedure
Checking sterile packs	Create and maintain the sterile field (application of aseptic technique during procedures)	Management of specimens
Pre-operative responsibilities, including patient identification	Manage specimens correctly, according to policy	Correct identification and handover of the patient to the post anaesthesia care unit personnel
Preparation of sterile packs and supplies	Pass instrumentation, equipment and supplies to the surgeon and surgical assistant, as needed	Decontamination of the operating room between cases and after the list
Safe transfer of the patient to the operating table	Manage swab, instrument and sharps control, according to policy during surgical procedures	
Basic Life Support, should the need arise	Scrub independently for surgical procedures	
Correct preparation for the performance of anaesthesia	Setting of sterile trolleys	
Diligence	Skin preparation of the patient for surgery	
Functioning as a team member	Specimen care	
Accurate documentation	Assist with, and ensure safe patient positioning	
Preparation of the operating room	Assist with other intra-operative tasks	
Safe, correct positioning of the patient for surgery	Attend to needs of surgeon / surgical assistant	
	Draping of patient for surgery	
	Planning the list, as booked by the surgeon	
	Prepare and apply sterile wound dressing	
	Skills as a circulating person	
	Record keeping according to legal requirements	
	Scrubbing, gowning and gloving for surgical procedures	
	Good communication skills	
	Good observational skills	
	Acting as a circulator in all surgical disciplines	
	Alert and quick to respond	
	Record keeping according to policies and procedures	

The minimum competencies regarding an ODA's peri-operative attitude is listed below. The consensus on these competencies was placed between 87.5% and 100%.

**TABLE 5.4:            Listed competencies regarding attitude in the peri-operative phase**

COMPETENCIES REGARDING ATTITUDE IN THE PERI-OPERATIVE PHASE	
<b>Peri-operative Phase</b>	
	Honesty
	Respectfulness
	Emotional stability
	Good communication skills
	Personal integrity
	Positivity
	Pro-activeness in identifying possible medico-legal risks
	Acceptance of responsibility for all delegated tasks
	Professionalism
	Respect for patients and colleagues
	Surgical conscience

The following competencies were listed under attitude, but speak more to personality traits. These have been identified as cardinally important traits and are therefore included in the results:

- Emotional stability
- Good communication skills
- Personal integrity.

### 5.3 RECOMMENDATIONS

The researcher feels and recommends that this study be repeated and that the competencies be refined to include a ranking to indicate the importance attached to each of the minimum competencies.

A further recommendation is that the study be broadened to include all of the private and public institutions that are offering training for ODAs.

The competencies listed in the pre-, intra-, and post-, and per-operative could have been categorised in the following categories:

- Technical Practice
- Care Provision
- Communication
- Problem Solving
- Advocacy
- Collaboration
- Team Approach
- Leadership
- Management

The presently listed minimum competencies should be included in the curriculum of the ODAs, and the objectives in the curriculum should meet the outcomes required by the clinical practice. Currently the emphasis is on teaching anatomy, physiology, pharmacology and medical microbiology. The research results indicate that the respondents viewed surgical anatomy as very important, but that physiology, pharmacology and microbiology were not considered to be requisite minimum competencies.

## **5.4 LIMITATIONS OF THE STUDY**

The researcher acknowledges it as a limitation that the selected expert panel was very small due to the lack of interest expressed by theatre staff from hospitals where the ODAs are being trained. The study could also only be conducted in one private hospital group, as this is presently the only training area for ODAs in South Africa. Furthermore, the researcher could have included hospitals from the public sector. Although the researcher is of the opinion that these factors did not have a major influence on the results of the study, validity and reliability would have been improved if more of the public and private hospitals had been involved in the training of ODAs.

Furthermore, due to the time constraint caused by having to repeat phase one of the study more than once, the Delphi Technique process was limited to only three phases. The researcher would have preferred to initiate a fourth phase in which the respondents could have had the opportunity to rank the first five competencies with regard to knowledge, skills and attitude.

Due to the limited number of respondents the decision was made not to do a pilot study. Care was however taken to ensure that the respondent's feedback on the posed question was applicable.

## **5.5 SUGGESTIONS FOR FUTURE RESEARCH**

The researcher would like to suggest that further research is done to refine the competencies by ranking them according to their importance in the clinical setting. Future studies on the minimum competencies required from ODAs should include all role players offering training from the private and public sectors.

Furthermore nursing mentors, preceptors, clinical facilitators and operating room educators from any hospital or training institution to refine the competency ranking.

Research could be undertaken with regard to the feeling / view of operating room nurses with regard to the training and inclusion of ODAs in their personnel component and in the peri-operative setting.

The researcher would like to suggest that research be done in the field of mid-level workers, and whether the ODAs can be considered in this level of health care workers, since this category of worker do no function under any registered body to date and do not perform duties independently, as is the case with the non-physician clinicians and surgical technicians.

## **5.6 CONCLUSION**

The researcher is confident that the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa have been sufficiently well determined.

It is the view of the researcher that training institutions should take the responsibility to ensure that these competencies are included in the curricula of the ODAs to ensure safe patient care.

# **ADDENDUM 1**

## **Template for round 1 data collection**

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## TEMPLATE FOR ROUND 1 DATA COLLECTION

What, according to you, are the minimum competencies, knowledge, skills and attitudes an Operating Department Assistant (ODA) should have in the pre-operative, intra-operative and post operative phases, in order to be a safe practitioner?

Please list the competencies with the help of the table provided below.

<b>Operative Phase</b>	<b>Knowledge</b>	<b>Skills</b>	<b>Attitude</b>
<b>Pre-operative Phase</b>			
<b>Intra-operative Phase</b>			
<b>Post-operative Phase</b>			

Thank you for your participation.



## **ADDENDUM 2**

**Letter of permission to Nursing  
Executive of Mediclinic to conduct  
research in Mediclinic hospitals**

---

Ms G Botha  
PO Box 28233  
Danhof  
Bloemfontein  
9310

Date: 28 /05/2013

Miss Estelle Jordaan  
Nursing Executive  
Mediclinic Southern Africa  
Strand Road  
Stellenbosch  
7600  
PO Box 456  
Stellenbosch  
7599

Dear Miss Jordaan

**RE: PERMISSION TO CONDUCT RESEARCH: CONSENSUS ON MINIMUM COMPETENCIES FOR DIPLOMA IN NON-NURSING OPERATING DEPARTMENT ASSISTANCE IN SOUTH AFRICA.**

I, Margaretha Jansje Botha (1984011872) a Master Degree student at the University of the Free State, hereby kindly request permission to conduct my research at training facilities and hospitals in the Mediclinic Southern Africa group.

The aim of the study is to gain consensus on the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa.

Data collection will be done electronically, using the Delphi technique. The date for the initial data collection will be finalized as soon as permission is granted.

The data collected will not be linked to training facilities or hospitals as no names will be published in the research report. It is however my plan to present results at conferences and to publish an article.

Attached please find a copy of the proposal and letter of approval from the Ethics Committee, Faculty of Health Sciences at the University of the Free State.

I trust that approval of the above request will be granted. Due to the stated time limits your prompt feedback will be appreciated.

Yours sincerely



Gretha Botha  
Student number: 1984011872  
Phone: 0824132275

## **ADDENDUM 3**

**Letter of permission to Nursing  
Education manager of Mediclinic to  
conduct research in Mediclinic  
hospitals**

---

Ms G Botha  
PO Box 28233  
Danhof  
Bloemfontein  
9310

Date: 28/05/2013

Mrs Ann van Zyl  
Nursing Education Manager  
Mediclinic Southern Africa  
Tijgerpark 1 Willie van Schoor Drive  
Belville  
7530  
PO Box 5228  
Tygervally  
7536

Dear Mrs van Zyl

**RE: PERMISSION TO CONDUCT RESEARCH: CONSENSUS ON MINIMUM COMPETENCIES FOR DIPLOMA IN NON-NURSING OPERATING DEPARTMENT ASSISTANCE IN SOUTH AFRICA.**

I, Margaretha Jansje Botha (1984011872), a Master Degree student at the University of the Free State, hereby kindly request permission to conduct my research at training facilities and hospitals in the Mediclinic Southern Africa group.

The aim of the study is to gain consensus on minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa.

Data collection will be done electronically, using the Delphi technique. The date for the initial data collection will be finalised as soon as permission is granted.

The data that will be collected will not be linked to the training facilities or hospitals as no names will be published in the research report. It is however my plan to present the research results at conferences and to publish an article.

Attached please find a copy of the proposal and the letter of approval from the Ethics Committee, Faculty of Health Sciences at the University of the Free State.

I trust that the above request will be granted. Due to the stated time limits your prompt feedback will be appreciated.

Yours sincerely



.....  
Gretha Botha  
Student number: 1984011872  
Phone: 0824132275

## **ADDENDUM 4**

### **Information document to School of Nursing concerning masters degree**

---

# **SCHOOL OF NURSING**

## **Information Document M Study**

### **TO WHOM IT MAY CONCERN**

**Title:** Consensus on the minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa

I, Margaretha Jansje Botha 1984011872 am enrolled for the Master Degree in Nursing at the University of the Free State. I am conducting research on the minimum competencies required from Operating Department Assistants in South Africa.

A quantitative research study will be conducted, and the Delphi method, which is a consensus technique, will be used to gather data. The respondents in this study will be persons involved in the training of the Operating Department Assistants and persons where these Assistants are placed during their training. Respondents will be asked to list the minimum knowledge, skills and attitudes (competencies) expected from Operating Department Assistants at the end of their three year diploma in Operating Department Assistance training. The researcher will subsequently compile a data sheet that will include (1) the competencies listed by the respondents and (2) competencies identified through a literature review. Respondents will then be asked to rank the competencies. This process may be repeated several times until at least 70% of the respondents agree on the ranking. This study will be conducted electronically in private hospitals and learning centers where Operating Department Assistants are trained. We envision that the study will benefit the training of Operating Department Assistants by ensuring that they meet the minimum expectations of the South African work place.

Participation in this study will be voluntary and respondents can withdraw from the study at any time. No reimbursement will be applicable for participation in the study.

Confidentiality will be ensured by keeping personal information restricted.

In the event of results being published, no personal information will be made public.

**Contact details of researcher:** M.J Botha  
0824132275  
gretha.botha@mediclinic.co.za

## **ADDENDUM 5**

### **Letter of consent to participate in research**

---

# CONSENT TO PARTICIPATE IN THE RESEARCH

**Project title:** Minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa

You have been asked to participate in a research study.

You have been informed about the study by \_\_\_\_\_

You may contact \_\_\_\_\_ at \_\_\_\_\_ any time if you have questions about the research.

You may contact the Secretariat of the Ethics Committee of the Faculty of Health Sciences, UFS, at telephone number (051) 4052812 should you have any questions about your rights as a research participant.

Your participation in this research is voluntary, and you will not be penalised or lose benefits should you refuse to participate or decide to terminate your participation at any time.

If you agree to participate, you will be given a copy of this document as well as the participant's information sheet, which is a written summary of the research proposal.

The research study, including the information included above has been described to me telephonically.

I understand what my involvement in the study means, and I voluntarily agree to participate in it.

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Witness

\_\_\_\_\_  
Date



## **ADDENDUM 6**

### **Letter of consent from the Ethical Committee to participate in research**

---

Research Division  
Internal Post Box G40  
☎ (051) 4052812  
Fax (051) 4444359

E-mail address: StraussHS@ufs.ac.za

Ms H Strauss/hv

2013-06-07

REC Reference nr 230408-011  
IRB nr 00006240

MS MJ BOTHA  
SCHOOL OF NURSING  
UFS

Dear Ms Botha

ECUFS NR 83/2013

MS MJ BOTHA

SCHOOL OF NURSING

PROJECT TITLE: CONSENSUS ON THE MINIMUM COMPETENCIES FOR THE DIPLOMA IN  
NON-NURSING OPERATING DEPARTMENT ASSISTANCE IN SOUTH AFRICA.

- You are hereby kindly informed that the Ethics Committee approved the above project at the meeting held on 4 June 2013.
- Committee guidance documents: Declaration of Helsinki, ICH, GCP and MRC Guidelines on Bio Medical Research. Clinical Trial Guidelines 2000 Department of Health RSA; Ethics in Health Research: Principles Structure and Processes Department of Health RSA 2004; Guidelines for Good Practice in the Conduct of Clinical Trials with Human Participants in South Africa, Second Edition (2006); the Constitution of the Ethics Committee of the Faculty of Health Sciences and the Guidelines of the SA Medicines Control Council as well as Laws and Regulations with regard to the Control of Medicines.
- Any amendment, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.
- The Committee must be informed of any serious adverse event and/or termination of the study.
- A progress report should be submitted within one year of approval of long term studies and a final report at completion of both short term and long term studies.
- Kindly refer to the ETOVS/ECUFS reference number in correspondence to the Ethics Committee secretariat.

Yours faithfully

.....  
**PROF WH KRUGER**  
**CHAIR: ETHICS COMMITTEE**

Cc Prof A Joubert

## **ADDENDUM 7**

**Letter of consent from the manager  
of nursing education from Mediclinic  
Southern Africa to participate in  
research**

---

3 June 2013

The Ethics Committee  
University of the Free State  
P O Box 339  
Bloemfontein  
9300

Dear Committee Members

**PERMISSION MASTER'S DEGREE IN NURSING STUDY: MJ BOTHA**

This letter serve to inform the Ethics Committee that permission was granted to MJ Botha (student number: 1984011872) to conduct research, to determine the 'Consensus on minimum competencies for diploma in non-nursing Operating Department Assistance in South Africa', at the following delivery sites of Mediclinic (Pty) Ltd Private Higher Education Institution:

- Cape/Bellville
- Bloemfontein
- Sandton
- Tshwane (Pretoria)
- Nelspruit

Yours faithfully,



Mrs A van Zyl  
Manager: Nursing Education

## **ADDENDUM 8**

**Letter of consent from the Nursing  
Executive from Mediclinic Southern  
Africa to participate in research**

---

30 May 2013

Ms MJ Botha  
150 General Dan Pienaar Drive  
Dan Pienaar  
BLOEMFONTEIN  
9301

Dear Gretha

**PERMISSION TO CONDUCT RESEARCH AT MEDICLINIC KIMBERLEY**

Your research proposal entitled "*Consensus on minimum competencies for the diploma in non-nursing Operating Department Assistance in South Africa*" refers.

It is in order for you to conduct your research at Mediclinic Kimberley as well as any of our other hospitals where you receive operational approval, provided we receive the necessary ethical approval from your university.

I wish you success with this project and we look forward to sharing in the results of your research.

Yours sincerely

  
ESTELLE JORDAAN  
Nursing Executive

# **ADDENDUM 9**

## **Data Sheet 1**

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EvaSys	Gretha M	

Mark as shown: ☐ ☒ ☐ ☐ ☐ Please use a ball-point pen or a thin felt tip. This form will be processed automatically.

Correction: ☐ ☒ ☐ ☒ ☐ Please follow the examples shown on the left hand side to help optimize the reading results.

## 1. Qualification

1.1 Select all qualifications obtained (you may select more than one option)

- |   |   |                                     |
|---|---|-------------------------------------|
| <input type="checkbox"/> General          | <input type="checkbox"/> Midwifery      | <input type="checkbox"/> Psychiatry |
| <input type="checkbox"/> Community Health | <input type="checkbox"/> Administration | <input type="checkbox"/> Education  |
| <input type="checkbox"/> Operating Room   | <input type="checkbox"/> Other          |                                     |

## 2. Biographical data

Indicate applicable data

- |  |   |   |   |
|--|---|---|---|
| 2.1 Indicate your gender                           | <input type="checkbox"/> Male                 | <input type="checkbox"/> Female               |   |
| 2.2 Indicate your race                             | <input type="checkbox"/> Black                | <input type="checkbox"/> White                | <input type="checkbox"/> Coloured                       |
|  | <input type="checkbox"/> Asian                | <input type="checkbox"/> Other                |   |
| 2.3 Indicate your age range                        | <input type="checkbox"/> 20-30 years          | <input type="checkbox"/> 30-40 years          | <input type="checkbox"/> 40-50 years                    |
|  | <input type="checkbox"/> 50-60 years          | <input type="checkbox"/> Older                |   |
| 2.4 Indicate your experience in the Operating Room | <input type="checkbox"/> 1-10 years           | <input type="checkbox"/> 10-15 years          | <input type="checkbox"/> 15-20 years                    |
|  | <input type="checkbox"/> 20-25 years          | <input type="checkbox"/> 25-30 years          | <input type="checkbox"/> More than 30 years             |
| 2.5 Indicate your current position                 | <input type="checkbox"/> Nurse Educator       | <input type="checkbox"/> Training Manager     | <input type="checkbox"/> Deputy Nursing Manager Theatre |
|  | <input type="checkbox"/> Unit Manager Theatre | <input type="checkbox"/> Clinical Facilitator | <input type="checkbox"/> Registered Scrub Nurse         |



Competencies regarding pre-operative knowledge of:

Indicate your agreement or disagreement in relation to the following aspects of knowledge in the pre-operative phase

- 3.1 Receiving a patient in the Operating Room
- 3.2 Care concepts
- 3.3 Assessment of patient to meet specific needs in surgery
- 3.4 Theoretical content of surgical anatomy
- 3.5 Theoretical content of physiology
- 3.6 Theoretical content of microbiology
- 3.7 Theoretical content of infection control
- 3.8 Theoretical content of pharmacology

5

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<sup>5</sup> Competencies regarding pre-operative knowledge was inserted due to the fact that point 3.1-3.8 was lost in the process of inserting a PDF document.

### 3. Competencies regarding pre-operative knowledge of: [Continue]

	Agree	Disagree
3.9 Appropriate policies and procedures, pertaining to preparation of the operating room	<input type="checkbox"/>	<input type="checkbox"/>
3.10 Appropriate policies and procedures pertaining to accurate documentation	<input type="checkbox"/>	<input type="checkbox"/>
3.11 Sterilisation processes for safe reprocessing of instrumentation	<input type="checkbox"/>	<input type="checkbox"/>
3.12 Preparation of the operating room specific to different procedures	<input type="checkbox"/>	<input type="checkbox"/>
3.13 Different personnel member's responsibilities	<input type="checkbox"/>	<input type="checkbox"/>
3.14 Different types of anaesthesia	<input type="checkbox"/>	<input type="checkbox"/>
3.15 Layout of the operating room	<input type="checkbox"/>	<input type="checkbox"/>
3.16 Requirements of the operating room	<input type="checkbox"/>	<input type="checkbox"/>
3.17 Names of surgical instrumentation	<input type="checkbox"/>	<input type="checkbox"/>
3.18 Classification of surgical instrumentation	<input type="checkbox"/>	<input type="checkbox"/>
3.19 Use of surgical instrumentation	<input type="checkbox"/>	<input type="checkbox"/>
3.20 Updated on new technology and developments in the field of surgery	<input type="checkbox"/>	<input type="checkbox"/>
3.21 Requirements of sterile storage of sterile equipment and instruments used in sterile procedures	<input type="checkbox"/>	<input type="checkbox"/>

### 4. Competencies regarding pre-operative skills

Indicate your agreement or disagreement pertaining to pre-operative skills

	Agree	Disagree
4.1 Pertaining to preparation of the operating room	<input type="checkbox"/>	<input type="checkbox"/>
4.2 Checking correct functioning of equipment to be used	<input type="checkbox"/>	<input type="checkbox"/>
4.3 Preparation of sterile packs and supplies	<input type="checkbox"/>	<input type="checkbox"/>
4.4 Safe transfer of the patient to the operating table	<input type="checkbox"/>	<input type="checkbox"/>
4.5 Safe correct positioning of the patient for surgery	<input type="checkbox"/>	<input type="checkbox"/>
4.6 Pertaining to accurate documentation	<input type="checkbox"/>	<input type="checkbox"/>
4.7 Pre-operative responsibilities including receiving of patient	<input type="checkbox"/>	<input type="checkbox"/>
4.8 Pre-operative responsibilities including patient identification	<input type="checkbox"/>	<input type="checkbox"/>
4.9 Pre-operative responsibilities including patient assessment within set work profile	<input type="checkbox"/>	<input type="checkbox"/>
4.10 People skills	<input type="checkbox"/>	<input type="checkbox"/>

4.11 Diligence	<input type="checkbox"/>	<input type="checkbox"/>
4.12 Assertive	<input type="checkbox"/>	<input type="checkbox"/>
4.13 Organised	<input type="checkbox"/>	<input type="checkbox"/>

#### 4. Competencies regarding pre-operative skills [Continue]

	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
4.14 Checking of sterile packs	<input type="checkbox"/>	<input type="checkbox"/>
4.15 Packing sterile packs	<input type="checkbox"/>	<input type="checkbox"/>
4.16 Interpretation of the quality tests performed in Central Sterilising Department	<input type="checkbox"/>	<input type="checkbox"/>
4.17 Correct preparation for the performance of anaesthesia	<input type="checkbox"/>	<input type="checkbox"/>
4.18 Basic Life Support should the need arise	<input type="checkbox"/>	<input type="checkbox"/>
4.19 Pre-operative assessment the patient to prepare the operating room specific to the needs of the patient	<input type="checkbox"/>	<input type="checkbox"/>
4.20 Function as a team member	<input type="checkbox"/>	<input type="checkbox"/>
4.21 Create an individualised care plan for each patient's surgical needs and needs of the surgeon for each specific case	<input type="checkbox"/>	<input type="checkbox"/>

#### 5. Competencies regarding intra-operative knowledge of:

Indicate your agreement or disagreement pertaining to knowledge in the intra-operative phase

	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
5.1 Steps of surgical procedures	<input type="checkbox"/>	<input type="checkbox"/>
5.2 Relevant surgical anatomy	<input type="checkbox"/>	<input type="checkbox"/>
5.3 Relevant pathophysiology	<input type="checkbox"/>	<input type="checkbox"/>
5.4 Relevant physiology	<input type="checkbox"/>	<input type="checkbox"/>
5.5 Relevant microbiology	<input type="checkbox"/>	<input type="checkbox"/>
5.6 Relevant infection control practices	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
5.7 Equipment and instrumentation used in different procedures	<input type="checkbox"/>	<input type="checkbox"/>
5.8 Safe patient care	<input type="checkbox"/>	<input type="checkbox"/>
5.9 Sterility and aseptic technique (maintaining the sterile field)	<input type="checkbox"/>	<input type="checkbox"/>
5.10 Complications different surgical procedures	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
5.11 Medico legal risks of different surgical procedures	<input type="checkbox"/>	<input type="checkbox"/>
5.12 Needs of the patient and surgeon	<input type="checkbox"/>	<input type="checkbox"/>
5.13 Correct handling of instruments, swabs and sharps according to policy	<input type="checkbox"/>	<input type="checkbox"/>
5.14 Function of a circulating person	<input type="checkbox"/>	<input type="checkbox"/>
5.15 Emergency procedures in the operating room	<input type="checkbox"/>	<input type="checkbox"/>
5.16 Superior knowledge in one or two speciality areas (Example neurosurgery, ophthalmic surgery etc.)	<input type="checkbox"/>	<input type="checkbox"/>

## 6. Competencies regarding intra-operative skills

Indicate your agreement or disagreement pertaining to intra-operative skills

6.1	Scrub independently for procedures	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Disagree
6.2	Able to do call after hours and during weekends	<input type="checkbox"/>		<input type="checkbox"/>	
6.3	Plan the list as booked by the surgeon	<input type="checkbox"/>		<input type="checkbox"/>	
6.4	Alert and quick to respond	<input type="checkbox"/>		<input type="checkbox"/>	
6.5	Good observation skills	<input type="checkbox"/>		<input type="checkbox"/>	
6.6	Skilled in stress situations	<input type="checkbox"/>		<input type="checkbox"/>	
6.7	Assertive	<input type="checkbox"/>		<input type="checkbox"/>	
6.8	Apply aseptic and sterile technique	<input type="checkbox"/>		<input type="checkbox"/>	
6.9	Manage swab, instrument and sharps control according to policy during surgical procedure	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Disagree
6.10	Manage and delegate tasks pertaining to the completion of the case	<input type="checkbox"/>		<input type="checkbox"/>	
6.11	Manage specimens correctly according to policy	<input type="checkbox"/>		<input type="checkbox"/>	
6.12	Manage specialised equipment correctly ( includes flexible and rigid endoscopes, micro-instruments, and microscopes)	<input type="checkbox"/>		<input type="checkbox"/>	
6.13	Scrub, gown and glove for surgical procedure	<input type="checkbox"/>		<input type="checkbox"/>	
6.14	Setting of sterile trolleys	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Disagree
6.15	Skin preparation of patient for surgery	<input type="checkbox"/>		<input type="checkbox"/>	
6.16	Draping of patient for surgery	<input type="checkbox"/>		<input type="checkbox"/>	
6.17	Attend to needs of the surgeon	<input type="checkbox"/>		<input type="checkbox"/>	
6.18	Assist with, and ensure safe patient positioning	<input type="checkbox"/>		<input type="checkbox"/>	
6.19	Skilled in Basic Life Support	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Disagree
6.20	Management skills	<input type="checkbox"/>		<input type="checkbox"/>	
6.21	Supervision skills pertaining to circulating and other team members	<input type="checkbox"/>		<input type="checkbox"/>	
6.22	Record keeping according to legal requirements	<input type="checkbox"/>		<input type="checkbox"/>	
6.23	Record keeping according to policies and procedures	<input type="checkbox"/>		<input type="checkbox"/>	

6.24	Act as a circulator in all surgical disciplines	<input type="checkbox"/> Agree	<input checked="" type="checkbox"/> Disagree
6.25	Good communication skills	<input type="checkbox"/>	<input type="checkbox"/>
6.26	Create and maintain sterile field (application of aseptic and sterile technique during surgical procedures)	<input type="checkbox"/>	<input type="checkbox"/>
6.27	Skilled as circulating person	<input type="checkbox"/>	<input type="checkbox"/>
6.28	Non-technical skills such as ( communication; teamwork; situation awareness; leadership; decision-making)	<input type="checkbox"/>	<input type="checkbox"/>
6.29	Pass instrumentation, equipment, and supplies to the surgeon and surgical assistant as needed	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
6.30	Medication preparation and handling (receiving of medication on the surgical field, checking the medication with the surgeon, and marking the medication)	<input type="checkbox"/>	<input type="checkbox"/>
6.31	Specimen care	<input type="checkbox"/>	<input type="checkbox"/>
6.32	Assist with other intra-operative tasks	<input type="checkbox"/>	<input type="checkbox"/>
6.33	Prepare and apply sterile wound dressing	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
6.34	Advanced organisational skills	<input type="checkbox"/>	<input type="checkbox"/>

## 7. Competencies regarding post-operative knowledge of:

Indicate your agreement or disagreement pertaining to knowledge in the post-operative phase

7.1	Correct handover of patient to post-anaesthesia care personnel	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
7.2	Policies and procedures in the post-operative phase	<input type="checkbox"/>	<input type="checkbox"/>
7.3	Roles and responsibilities of different team members in the post-operative phase	<input type="checkbox"/>	<input type="checkbox"/>
7.4	Possible medico legal risks in the post-operative phase	<input type="checkbox"/>	<input type="checkbox"/>
7.5	Action and adverse effects of medications	<input type="checkbox"/>	<input type="checkbox"/>
7.6	Correct waste management according to the policies and procedures	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
7.7	Complications of procedures that might occur in the post-operative phase	<input type="checkbox"/>	<input type="checkbox"/>
7.8	Cleaning of the operating room after surgical procedure, and list	<input type="checkbox"/>	<input type="checkbox"/>
7.9	Disinfection of the operating room after surgical procedure, and list	<input type="checkbox"/>	<input type="checkbox"/>
7.10	Care of specialised instrumentation and equipment	<input type="checkbox"/>	<input type="checkbox"/>
7.11	Prepare instrumentation for terminal sterilisation	<input type="checkbox"/>	<input type="checkbox"/>
7.12	Assist other team members with terminal cleaning of the surgical suite for the next patient	<input type="checkbox"/>	<input type="checkbox"/>

## 8. Competencies regarding post-operative skills

Indicate your agreement or disagreement pertaining to skills in the post-operative phase

	Agree	Disagree
8.1 Good communication skills	<input type="checkbox"/>	<input type="checkbox"/>
8.2 Safe transfer of the patient to his / her bed at completion of surgical procedure	<input type="checkbox"/>	<input type="checkbox"/>
8.3 Connecting patient to monitoring equipment in post anaesthesia Care unit	<input type="checkbox"/>	<input type="checkbox"/>
8.4 Correct identification and handover of the patient to post anaesthesia care unit personnel	<input type="checkbox"/>	<input type="checkbox"/>
8.5 Roles and responsibilities of post anaesthesia care unit personnel	<input type="checkbox"/>	<input type="checkbox"/>
8.6 Management of specimens	<input type="checkbox"/>	<input type="checkbox"/>
	Agree	Disagree
8.7 Decontamination of operating room between surgical cases and after the list	<input type="checkbox"/>	<input type="checkbox"/>
8.8 Able to perform Basic Life Support	<input type="checkbox"/>	<input type="checkbox"/>
8.9 Interpretation of data to recognise risk to the patient	<input type="checkbox"/>	<input type="checkbox"/>
8.10 Complete and accurate documentation of patient's condition in the post-operative period	<input type="checkbox"/>	<input type="checkbox"/>

## 9. Competencies regarding peri-operative attitude

Indicate the competencies regarding attitude that you will expect peri-operatively (pre-operatively, intra-operatively, and post-operatively) of an Operating Department Assistant

	Agree	Disagree
9.1 Positive	<input type="checkbox"/>	<input type="checkbox"/>
9.2 Good communication skills	<input type="checkbox"/>	<input type="checkbox"/>
9.3 Calm and un-rushed in emergency situations	<input type="checkbox"/>	<input type="checkbox"/>
9.4 Control	<input type="checkbox"/>	<input type="checkbox"/>
9.5 Honest	<input type="checkbox"/>	<input type="checkbox"/>
	Agree	Disagree
9.6 Accept responsibility for all delegated tasks	<input type="checkbox"/>	<input type="checkbox"/>
9.7 Mutual trust and respect	<input type="checkbox"/>	<input type="checkbox"/>
9.8 Performance driven	<input type="checkbox"/>	<input type="checkbox"/>
9.9 Influential	<input type="checkbox"/>	<input type="checkbox"/>
9.10 Respectful	<input type="checkbox"/>	<input type="checkbox"/>
9.11 Enthusiastic	<input type="checkbox"/>	<input type="checkbox"/>

9.12 Emotionally stable	<input type="checkbox"/>	Agree	<input type="checkbox"/>
9.13 Adaptable	<input type="checkbox"/>		<input type="checkbox"/>
9.14 Approachable	<input type="checkbox"/>		<input type="checkbox"/>
9.15 Professional	<input type="checkbox"/>		<input type="checkbox"/>
9.16 Leadership abilities	<input type="checkbox"/>		<input type="checkbox"/>
9.17 Personal integrity	<input type="checkbox"/>	Agree	<input type="checkbox"/>
9.18 Surgical conscience	<input type="checkbox"/>		<input type="checkbox"/>
9.19 Stamina and endurance	<input type="checkbox"/>		<input type="checkbox"/>
9.20 Co-operative	<input type="checkbox"/>		<input type="checkbox"/>
9.21 Willing to learn	<input type="checkbox"/>		<input type="checkbox"/>
9.22 Assertive	<input type="checkbox"/>		<input type="checkbox"/>
9.23 Mutual trust	<input type="checkbox"/>		<input type="checkbox"/>
9.24 Respect for patient and colleagues	<input type="checkbox"/>		<input type="checkbox"/>
9.25 Ensuring safety, privacy, dignity and comfort to each patient	<input type="checkbox"/>	Agree	<input type="checkbox"/>
9.26 Proactive in identifying possible medico legal risks	<input type="checkbox"/>		<input type="checkbox"/>
9.27 Performance driven	<input type="checkbox"/>		<input type="checkbox"/>
9.28 Courteous	<input type="checkbox"/>		<input type="checkbox"/>

Thank you for taking part in this research. You will be informed when next data sheet is available for your responses

# **ADDENDUM 10**

## **Data sheet 2**

---



Mark as shown: ☐ ☒ ☐ ☐ ☐ Please use a ball-point pen or a thin felt tip. This form will be processed automatically.

Correction: ☐ ☒ ☐ ☒ ☐ Please follow the examples shown on the left hand side to help optimize the reading results.

## 1. Competencies regarding pre-operative knowledge of:

Indicate the importance of the competencies on a scale of 0-5 with 0 being the least important and 5 being the most important. Note that the competencies are listed in the data sheet alphabetically.

- |      |   |                                     |                                     |                                     |                                     |                                     |                                     |
|------|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1.1  | Appropriate policies and procedures pertaining to accurate documentation                            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 1.2  | Appropriate policies and procedures pertaining to preparation of the operating room                 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.3  | Assessment of the patient to meet specific needs of the patient in surgery                          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.4  | Care concepts   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.5  | Classification of surgical instruments  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|      |   |                                     |                                     |                                     |                                     |                                     |                                     |
| 1.6  | Different personnel member's responsibilities   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 1.7  | Different types of Anaesthesia  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.8  | Layout of the operating room  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.9  | Names of surgical instrumentation   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.10 | Preparation of the operating room specific to different procedures                                  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|      |   |                                     |                                     |                                     |                                     |                                     |                                     |
| 1.11 | Receiving a patient in the operating room   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 1.12 | Requirements of the operating room  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.13 | Requirements of the sterile storage of sterile equipment and instruments used in sterile procedures | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.14 | Sterilisation processes for safe reprocessing of instrumentation                                    | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.15 | Theoretical content of infection control  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|      |   |                                     |                                     |                                     |                                     |                                     |                                     |
| 1.16 | Theoretical content of microbiology   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 1.17 | Theoretical content of pharmacology   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.18 | Theoretical content of physiology   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.19 | Theoretical content of surgical anatomy   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.20 | Updated on new technology and developments in the field of surgery                                  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 1.21 | Use of surgical instrumentation   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

## 2. Competencies regarding pre-operative skills

Indicate the importance of the competencies on a scale of 0-5 with 0 being the least important and 5 being the most important. Note that the competencies are listed alphabetically.

- |     |           |                                     |                                     |                                     |                                     |                                     |                                     |
|-----|-----------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 2.1 | Assertive | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|-----|-----------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|

2.2	Basic life support should the need arise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3	Checking correct functioning of equipment to be used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.4	Checking of sterile packs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.5	Correct preparation for the performance of anaesthesia	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2.6	Create an individualised care plan for each patient's surgical needs and needs of the surgeon for each specific case	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.7	Diligence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.8	Function as a team member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.9	Interpretation of quality test performed in Central Sterilisation Department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.10	Organised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.11	Packing sterile packs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2.12	People skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.13	Pertaining to accurate documentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.14	Pertaining to preparation of the operating room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.15	Pre-operative assessment of the patient to prepare the operating room specific to the needs of the patient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.16	Pre-operative responsibilities including patient assessment within set work profile	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2.17	Pre-operative responsibilities including patient identification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.18	Pre-operative responsibilities including receiving of a patient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.19	Preparation of sterile packs and supplies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.20	Safe correct positioning of the patient for surgery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.21	Safe transfer of the patient to the operating table	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 3. Competencies regarding intra-operative knowledge of:

Indicate the importance of the competencies on a scale of 0-5 with 0 being the least important and 5 being the most important. Note that the competencies are listed alphabetically.

3.1	Complications of the different surgical procedures	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.2	Correct handling of instruments, swabs and sharps according to policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3	Emergency procedures in the operating room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4	Equipment and instrumentation used in different procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.5	Functioning as a circulating person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.6	Medico legal risks of different surgical procedures	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.7	Needs of the patient and surgeon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.8	Relevant infection control practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.9	Relevant microbiology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.10	Relevant pathophysiology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.11	Relevant physiology	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.12	Relevant surgical anatomy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- |  |                                     |                                     |                                     |                                     |                                     |                                     |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 3.13 Safe patient care   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 3.14 Steps of surgical procedures  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 3.15 Sterility and aseptic technique ( maintaining the sterile field)                                  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3.16 Superior knowledge in one or two speciality areas (Example neurosurgery, ophthalmic surgery etc.) | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

#### 4. Competencies regarding intra-operative skills

Indicate the importance of the competencies on a scale of 0-5 with 0 being the least important and 5 being the most important. Note that the competencies are listed alphabetically.

- |  |                                     |                                     |                                     |                                     |                                     |                                     |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 4.1 Able to do call after hours and during weekends  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4.2 Act as a circulator in all surgical disciplines  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.3 Advanced organisational skills   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.4 Alert and quick to respond   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.5 Apply aseptic and sterile technique  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.6 Assertive  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4.7 Assist with, and ensure safe patient positioning   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.8 Assist with other intra-operative tasks  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.9 Attend to needs of surgeon   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.10 Create and maintain sterile field (application of aseptic and sterile technique during surgical procedures)   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.11 Draping of the patient for surgery  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4.12 Good communication skills   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.13 Good observation skills   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.14 Manage and delegate tasks pertaining to completion of the case  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.15 Manage specialised equipment correctly (includes flexible and rigid endoscopes, micro-instruments, and microscopes)                                       | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.16 Manage specimens correctly according to policy  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4.17 Manage swab, instrument and sharps control according to policy during the surgical procedure  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.18 Management skills   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.19 Medication preparation and handling (receiving medication on the surgical field, controlling the medication with the surgeon, and marking the medication) | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.20 Non-technical skills such as (communication; teamwork; situation awareness; leadership; decision-making)  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.21 Pass instrumentation, equipment, and supplies to the surgeon and surgical assistant as needed   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4.22 Plan the list as booked by the surgeon  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.23 Prepare and apply sterile wound dressing  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.24 Record keeping according to legal requirements  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.25 Record keeping according to policies and procedures   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.26 Scrub, gown and glove for surgical procedure  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.27 Scrub independently for surgical procedures   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

- |      |   |                                     |                                     |                                     |                                     |                                     |                                     |
|------|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 4.28 | Setting of sterile trolleys                 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4.29 | Skilled in Basic Life Support               | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.30 | Skilled as a circulating person             | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.31 | Skilled in stress situations                | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4.32 | Skin preparation of the patient for surgery | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

- |      |   |                                     |                                     |                                     |                                     |                                     |                                     |
|------|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 4.33 | Specimen care   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4.34 | Supervision skills pertaining to circulating and other team members | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

## 5. Competencies regarding post-operative knowledge of:

Indicate the importance of the competencies on a scale of 0-5 with 0 being the least important and 5 being the most important. Note that the competencies are listed alphabetically.

- |      |   |                                     |                                     |                                     |                                     |                                     |                                     |
|------|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 5.1  | Action and adverse effect of medications  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5.2  | Assist other team members with terminal cleaning of the surgical suite for the next patient | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 5.3  | Care of specialised instrumentation and equipment   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 5.4  | Cleaning of the operating room after surgical procedure, and list                           | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 5.5  | Complications of procedures that might occur in the post-operative phase                    | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 5.6  | Correct handover of patient to post-anaesthesia care personnel                              | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 5.7  | Correct waste management according to the policies and procedures                           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5.8  | Disinfection of the operating room after surgical procedure, and list                       | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 5.9  | Policies and procedures in the post-operative phase   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 5.10 | Possible medico legal risks in the post-operative phase                                     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 5.11 | Prepare instrumentation for terminal sterilisation  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 5.12 | Roles and responsibilities of different team members in the post-operative phase            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

## 6. Competencies regarding post-operative skills

Indicate the importance of the competencies on a scale of 0-5 with 0 being the least important and 5 being the most important. Note that the competencies are listed alphabetically.

- |     |  |                                     |                                     |                                     |                                     |                                     |                                     |
|-----|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 6.1 | Able to perform Basic Life Support   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6.2 | Complete and accurate documentation of patient's condition in the post-operative period        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 6.3 | Connecting patient to monitoring equipment in post anaesthesia care unit                       | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 6.4 | Correct identification and handover to the patient to the post anaesthesia care unit personnel | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 6.5 | Decontamination of the operating room between cases and after the list                         | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 6.6 | Good communication skills  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

- |      |   |                                     |                                     |                                     |                                     |                                     |                                     |
|------|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 6.7  | Interpretation of data to recognise risks to the patient                              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6.8  | Management of specimens   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 6.9  | Roles and responsibilities of post anaesthesia care unit personnel                    | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 6.10 | Safe transfer of the patient to his / her bed at completion of the surgical procedure | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

## 7. Competencies regarding peri-operative attitude

Indicate the importance of the competencies on a scale of 0-5 with 0 being the least important and 5 being the most important. Note that the competencies are listed alphabetically.

- |      |   |                                     |                                     |                                     |                                     |                                     |                                     |
|------|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 7.1  | Accept responsibility for all delegated tasks                 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7.2  | Adaptable   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.3  | Approachable  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.4  | Assertive   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.5  | Calm and unrushed in emergency situations                     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.6  | Control   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7.7  | Co-operative  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.8  | Courteous   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.9  | Emotionally stable  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.10 | Ensuring safety, privacy, dignity and comfort to each patient | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.11 | Enthusiastic  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7.12 | Good communication skills                                     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.13 | Honest  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.14 | Influential   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.15 | Leadership abilities  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.16 | Mutual trust  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7.17 | Performance driven  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.18 | Personal integrity  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.19 | Positive  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.20 | Proactive in identifying possible medico legal risks          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.21 | Professional  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7.22 | Respect for patients and colleagues                           | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.23 | Respectful  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.24 | Stamina and endurance   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7.25 | Surgical conscience   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

Thank you for completion data sheet 2. You will be informed when the next data sheet will be available.

# **ADDENDUM 11**

## **Data sheet 3**

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Mark as shown: ☐ ☒ ☐ ☐ ☐ Please use a ball-point pen or a thin felt tip. This form will be processed automatically.

Correction: ☐ ☒ ☐ ☒ ☐ Please follow the examples shown on the left hand side to help optimize the reading results.

## 1. Competencies regarding pre-operative knowledge of:

Competencies that had an aggregate score of 70% and higher are listed below. The competencies are listed in order of importance and alphabetically as was ranked by the respondents in data sheet 2. Please indicate your agreement or disagreement on the ranked competencies.

- |   | Agree                    | Disagree                 |
|---|--------------------------|--------------------------|
| 1.1 Appropriate policies and procedures pertaining to preparation of the operating room | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.2 Theoretical content of surgical anatomy   | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.3 Use of surgical instrumentation   | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.4 Appropriate policies and procedures pertaining to accurate documentation            | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.5 Names of instrumentation  | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.6 Preparation of the operating room specific to different procedures                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.7 Classification of surgical instruments  | <input type="checkbox"/> | <input type="checkbox"/> |

## 2. Competencies regarding pre-operative skills

Competencies that had an aggregate score of 70% and higher are listed below. The competencies are listed in order of importance and alphabetically as was ranked by the respondents in data sheet 2. Please indicated your agreement or disagreement on the ranked competencies.

- |   | Agree                    | Disagree                 |
|---|--------------------------|--------------------------|
| 2.1 Checking correct functioning of equipment to be used            | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.2 Checking of sterile packs                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.3 Functioning as a team member                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.4 Pertaining to accurate documentation                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.5 Pertaining to preparation of the operating room                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.6 Pre-operative responsibilities including patient identification | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.7 Preparation of sterile packs and supplies                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.8 Safe correct positioning of the patient for surgery             | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.9 Safe transfer of the patient to the operating table             | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.10 Basic Life Support should the need arise                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.11 Correct preparation for the performance of anaesthesia         | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.12 Diligence  | <input type="checkbox"/> | <input type="checkbox"/> |

### 3. Competencies regarding intra-operative knowledge of:

Competencies that had an aggregate score of 70% and higher are listed below. The competencies are listed in order of importance and alphabetically as was ranked by the respondents in data sheet 2. Please indicate your agreement or disagreement with the ranked competencies

	Agree	Disagree
3.1 Correct handling of instruments, swabs and sharps according to policy	<input type="checkbox"/>	<input type="checkbox"/>
3.2 Medico legal risks of different surgical procedures	<input type="checkbox"/>	<input type="checkbox"/>
3.3 Safe patient care	<input type="checkbox"/>	<input type="checkbox"/>
3.4 Steps of surgical procedures	<input type="checkbox"/>	<input type="checkbox"/>
3.5 Sterility and aseptic technique (maintaining the sterile field)	<input type="checkbox"/>	<input type="checkbox"/>
3.6 Emergency procedures in the operating room	<input type="checkbox"/>	<input type="checkbox"/>
3.7 Equipment and instrumentation used in different procedures	<input type="checkbox"/>	<input type="checkbox"/>
3.8 Functioning as a circulating person	<input type="checkbox"/>	<input type="checkbox"/>
3.9 Needs of the patient and surgeon	<input type="checkbox"/>	<input type="checkbox"/>
3.10 Relevant surgical anatomy	<input type="checkbox"/>	<input type="checkbox"/>
3.11 Complications of the different surgical procedures	<input type="checkbox"/>	<input type="checkbox"/>

### 4. Competencies regarding intra-operative skills

Competencies that had an aggregate score of 70% and higher are listed below. The competencies are listed in order of importance and alphabetically as was ranked by respondents in data sheet 2. Please indicate your agreement or disagreement with the ranked competencies.

	Agree	Disagree
4.1 Apply aseptic and sterile technique	<input type="checkbox"/>	<input type="checkbox"/>
4.2 Create and maintain sterile field (application of aseptic technique during surgical procedures)	<input type="checkbox"/>	<input type="checkbox"/>
4.3 Manage specimens correctly according to policy	<input type="checkbox"/>	<input type="checkbox"/>
4.4 Pass instrumentation, equipment, and supplies to surgeon and surgical assistant as needed	<input type="checkbox"/>	<input type="checkbox"/>
4.5 Manage swab, instrument and sharps control according to policy during surgical procedure	<input type="checkbox"/>	<input type="checkbox"/>
4.6 Record keeping according to legal requirements	<input type="checkbox"/>	<input type="checkbox"/>
4.7 Record keeping according to policies and procedures	<input type="checkbox"/>	<input type="checkbox"/>
4.8 Scrub, gown and glove for surgical procedures	<input type="checkbox"/>	<input type="checkbox"/>
4.9 Scrub independently for surgical procedures	<input type="checkbox"/>	<input type="checkbox"/>
4.10 Setting of sterile trolleys	<input type="checkbox"/>	<input type="checkbox"/>



#### 4. Competencies regarding intra-operative skills [Continue]

	Agree	Disagree
4.11 Skin preparation of the patient for surgery	<input type="checkbox"/>	<input type="checkbox"/>
4.12 Specimen care	<input type="checkbox"/>	<input type="checkbox"/>
4.13 Assist with, and ensure safe patient positioning	<input type="checkbox"/>	<input type="checkbox"/>
4.14 Assist with other intra-operative tasks	<input type="checkbox"/>	<input type="checkbox"/>
4.15 Attend to needs of surgeon	<input type="checkbox"/>	<input type="checkbox"/>
4.16 Draping of the patient for surgery	<input type="checkbox"/>	<input type="checkbox"/>
4.17 Good communication skills	<input type="checkbox"/>	<input type="checkbox"/>
4.18 Good observation skills	<input type="checkbox"/>	<input type="checkbox"/>
4.19 Plan the list as booked by the surgeon	<input type="checkbox"/>	<input type="checkbox"/>
4.20 Act as a circulator in all surgical disciplines	<input type="checkbox"/>	<input type="checkbox"/>
4.21 Alert and quick to respond	<input type="checkbox"/>	<input type="checkbox"/>
4.22 Prepare and apply sterile wound dressing	<input type="checkbox"/>	<input type="checkbox"/>
4.23 Skilled as a circulating person	<input type="checkbox"/>	<input type="checkbox"/>

#### 5. Competencies regarding post-operative knowledge of:

Competencies that had an aggregate score of 70% and higher are listed below. The competencies are listed in order of importance and alphabetically as ranked by the respondents in data sheet 2. Please indicate your agreement or disagreement with the ranked competencies.

	Agree	Disagree
5.1 Correct handover of the patient to post-anaesthesia care personnel	<input type="checkbox"/>	<input type="checkbox"/>
5.2 Correct waste management according to the policies and procedures	<input type="checkbox"/>	<input type="checkbox"/>
5.3 Disinfection of the operating room after surgical procedures, and list	<input type="checkbox"/>	<input type="checkbox"/>
5.4 Care of specialised instrumentation and equipment	<input type="checkbox"/>	<input type="checkbox"/>
5.5 Cleaning of the operating room after surgical procedure, and list	<input type="checkbox"/>	<input type="checkbox"/>
5.6 Prepare instrumentation for terminal sterilisation	<input type="checkbox"/>	<input type="checkbox"/>

## 6. Competencies regarding post-operative skills

Competencies that had an aggregate score of 70% and higher are listed below. The competencies are listed in order of importance and alphabetically as was ranked by the respondents in data sheet 2. Please indicate your agreement or disagreement with the ranked competencies.

6.1	Safe transfer of the patient to his / her bed at completion of the surgical procedure	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
6.2	Management of specimens	<input type="checkbox"/>	<input type="checkbox"/>
6.3	Correct identification and handover of the patient to the post-anaesthesia care unit personnel	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
6.4	Decontamination of the operating room between cases and after the list	<input type="checkbox"/>	<input type="checkbox"/>

## 7. Competencies regarding peri-operative attitude

Competencies that had an aggregate score of 70% and higher are listed below. The competencies are listed in order of importance and alphabetically as was ranked by the respondents in data sheet 2. Please indicate your agreement or disagreement with the ranked competencies.

7.1	Accept responsibility for all delegated tasks	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
7.2	Professional	<input type="checkbox"/>	<input type="checkbox"/>
7.3	Respect for patients and colleagues	<input type="checkbox"/>	<input type="checkbox"/>
7.4	Surgical conscience	<input type="checkbox"/>	<input type="checkbox"/>
7.5	Ensuring safety, privacy, dignity and comfort to each patient	<input type="checkbox"/>	<input type="checkbox"/>
7.6	Honest	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
7.7	Mutual trust	<input type="checkbox"/>	<input type="checkbox"/>
7.8	Respectful	<input type="checkbox"/>	<input type="checkbox"/>
7.9	Emotionally stable	<input type="checkbox"/>	<input type="checkbox"/>
7.10	Good communication skills	<input type="checkbox"/>	<input type="checkbox"/>
7.11	Personal integrity	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
7.12	Positive	<input type="checkbox"/>	<input type="checkbox"/>
7.13	Proactive in identifying possible medico legal risks	<input type="checkbox"/>	<input type="checkbox"/>

Thank you very much for your willingness to take part in this research.

## **ADDENDUM 12**

### **Example of email sent to respondents**

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Dear colleagues

I am a Master's degree student at the University of the Free State. I am doing my dissertation on the Minimum Competencies of the Operating Department Assistance in South Africa.

My study was approved by the Ethics committee of the University of the Free State. If you would prefer it I could mail my proposal to you

I was granted permission by Miss Estelle Jordaan and your Nursing Managers to perform my research at your hospitals. I am using Delphi Technique for my study and would like your participation as experts in my study. Your participation in the research is voluntary and you may withdraw at any time.

Attached is the consent to take part in the research, and a questionnaire concerning the competencies you expect from the ODA's in your department.

The questionnaire is divided into different fields of knowledge, skills and attitude, in the pre-operative, intra-operative, and post-operative phases

I would like to thank you for your participation, and would inform you of the results at the end of the study.

If possible could you please give me feedback by the 15<sup>th</sup> of November

Thank you very much for your help.

You can contact me if you have any question regarding my research. I hope that the research will be beneficial to you and the company.

**Gretha Botha**

Nurse Educator

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