ATTITUDES AMONGST HEALTH PROFESSIONALS IN OPERATING THEATRES IN KWAZULU-NATAL

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DECLARATION

This is to certify that the work is entirely my own and not of any other person unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Durban University of Technology or to any other institution for assessment or for any other purpose.

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ABSTRACT

Safety in operating theatres is of concern globally and not an isolated problem in Kwazulu-Natal (Carvallo et al. 2015:104). Globally, operating theatres remain error prone, approximately two hundred and thirty four million (234 000 000) major surgical cases are performed annually (Haugen et al. 2013:807).

In KwaZulu-Natal Department of Health annual report for 2012 to 2013 and the one for 2014 to 2015 revealed that failure to achieve safety in operating theatres have resulted in a tremendous increase of surgical errors leading to inadvertent returns of patients to theatres that have resulted in huge annual claims for surgical errors. The negative attitudes amongst health professionals in operating rooms with its contributing factors is a concern as they constitute a threat to patient's safety thus defeating the purpose of safe culture(Göras et al. 2013:01).

Aims of the study

The aim of the study was to investigate the factors that affect safety attitudes of health professionals in operating theatres.

Methodology

A quantitative non–exploratory descriptive design was used to investigate factors affecting safety attitudes among health professionals in operating theatres. The analysis of 290 questionnaires from consented respondents of 12 regional hospitals from seven (7) health districts was undertaken using descriptive statistics with respect to variables of the study.

Results

The safety climate together with teamwork in operating theatres in relation to patient safety have been rated significantly higher than adequate with the mean values for safety climate starting at 3.61 to 3.87 and for teamwork starting at 3.60 to 3.83 indicating that the attitudes of team members regarding patient safety in both factors is positive. The management climate among the health professionals when it comes to patient safety has been rated significantly lower than adequate with mean values starting at 1.7 to 3.1 which shows that the attitudes of operating team members regarding patient safety is negative. The stress recognition pertaining to

patients safety by the operating team members is rated significantly higher than adequate with mean values starting at 3.69 to 3.93 which indicates that the attitudes of staff in operating theatres is affected by stress exposure.

Conclusion

The safety attitudes of the health professionals in operating theatres is positively and negatively affected by various factors which in turn affect the delivery of safe quality patient care resulting in the occurrence of surgical errors in theatres. The occurrences of surgical errors predispose the institution to lawsuits which drains the health budget leaving the institution unable to or cater for the needs of the institution.

DEDICATION

This work is dedicated to my adorable daughters Londiwe and Phindile for their continuous love and support throughout my study journey. A special dedication is made in memory of my late parents Mr Bhekumusa and Mrs Maria Khoza who were the symbol of hope in my life.

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“The mission in life is not merely to survive but to thrive, and to do so with some passion, some humour and some style” (Maya Angelou)

To God be the glory.

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ACRONYMS

KZN	KwaZulu-Natal
DOH	Department of Health
SSSL	Safer Surgery Saves Lives
WHO	Word Health Organization
NCS	Nation Core Standards
AHRQ	Agency for Health Care Research and Quality
COHASA	Council of Health services Accreditation of South Africa
ICU	Intensive Care Unit
OR	Operating Room
SSCL	Surgical Safety Check List
SPSS	Statistical Packaging for Social Sciences
HPCSA	Health Profession Council of South Africa
SANC	South Africa Nursing Council
HIV	Human Immunodeficiency Vinis
TB	Tuberculosis
MDR	Multi Drug Resistance
MSSCL	Modified Surgical Safety Check List
DPSA	Department of Public Service Administration
APPSA	Association for Peri Operative Practitioners in South Africa
ECRT	Emergency Care Research Institute

SURPASS	Supplemented Urgency Regulating Personal Alert Safety System
SAQ	Safety Attitude Questionnaire
IREC	Institutional Research Ethics Committee
CEO	Chief Executive Officer

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CHAPTER 1: INTRODUCTION

1.1 Introduction

This chapter presents a background to the study, problem statement, aims and objectives, the research question as well as the significance of the study. The theoretical framework which serves as the structure to guide and support the study is discussed. The operational definitions used to give the meaning to the study are explained.

1.2 Background

Surgery is the last resort when all other medical interventions have failed, with the public placing their trust in the hands of the operating theatre team for their safety and recovery from illness, as they believe that it saves lives (Phillips 2013:02). Despite the recent surge in information regarding patient safety awareness, preventable harm to surgical patients remains a problem worldwide. It is for this reason that measures have been adopted in South Africa since the1960s, strengthened by the awareness of a service, that must focus on the safety and quality of patient care (De Meyer 2014:14).

The negative attitudes among some health professionals in operating rooms, with its contributing factors is a concern as they constitute a threat to patient safety, which can affect purpose of a safe culture (Göras et al. 2013: 01). Safety in operating theatres is a concern globally and not an isolated problem in South Africa. The South African Patient Safety and Quality Improvement Act of 2005 (b) promotes a culture of safety in the health care system (Phillips 2013:43). According to Carvalho et al. (2015:104) and Haugen et al. (2013:807), if safety and safety culture were to be achieved, the compliance to its components is important, failure to which results in cultural mediocrity and lead to surgical errors.

Globally, theatres are error prone (Haugen 2013:807), with approximately 234 000 000 major surgical operations being performed annually. As the number and importance of surgery in global health care increases, patient safety and the quality of surgical care gains more attention. Nearly one in ten hospital patients experience iatrogenic event or complications, half of which occur within the peri-operative phase.

The Lancet Commission on global surgery supported this by stating that the marginal gap in crucial surgical care is too wide and unequal thus resulting in high mortality rates (Woodhead 2015:39).

Despite efforts by regulators and professional organisation throughout the world to counter the occurrence of problems such as incorrect site, patient and procedure in theatre operations, the occurrence of preventable harm to surgical patients remains a problem (De Meyer 2014:18). In spite of the Safer Surgery Saves Lives (SSSL) that was promulgated by the World Health Organization(WHO) in as early as 2008 to promote safety in operating theatres, surgical centres are considered high risk scenario and extremely susceptible to errors (Carvalho et al. 2015:104). Göras et al. (2013:01) revealed that half of all preventable injuries occur in connection with surgery or other invasive procedures.

Carvalho et al. (2015:104) identified the features of an unsafety culture in operating theatres as pronounced weakness in the values, attitudes, skills and behaviours amongst health professionals. Göras et al. (2013:104) noted that patient safety is a global problem, and indicated the need to focus on the processes of care instead of blaming individuals.

The report by the South African Department of Health (DoH) revealed that the country is faced with poor health outcomes and the root causes of which are varied and complex. The Minister highlighted that it is for this reason that the DoH identified the need to introduce measures such as the: National Core Standards, of which “safety” is their first priority (National Department of Health 2011). Woodhead (2015:40) reiterated this by stating that there are inadequacies and inequalities in health care facilities that need to be addressed in national and local institutions that will be achieved by addressing issues in theatres, such as patient safety and implementing strategies that have been conceived globally on the basis of collective responsibility and accessibility.

The poor health outcomes are a concern as when inadvertent events occur in operating theatres due to surgical errors, it increases the costs of the procedure and possibly the post-operative care thus affecting the health budget of the country.

Poor health outcomes put additional pressure on the financial resources of already constrained countries, where decisions have to be made about how their small budgets are spent (Malherbe 2012:83). Furthermore, an event of this type compromises the surgical teams, integrity, denudes their dignity, lessens the love for their work and destroys the patient relationship (Carstens and Pearmain 2007:607).

The KZN DoH annual reports for 2012-2013 and 2014-2015 revealed that failure to achieve safety in operating theatres resulted in a considerable increase of surgical errors, leading to inadvertent returns in public operating theatres. The annual claim for surgical errors in the KZN report for 2012-2013 showed an amount of R1 000 637 280 for 165 claims against the DoH for litigations. The report for 2014-2015 on surgical errors outcome claims increased to (R3 034 426 920) for 363 reported cases, which meant that these funds could not be spent on providing patient care across the province.

There is a concern that there have been no successful corrective actions, and that the problem is being exacerbated without a solution. It is therefore necessary to determine the factors contributing to surgical errors in South Africa, at national and local health levels, in an attempt to identify surgical errors that cost the country a considerable amount of money. This negatively affects the image of health professionals and leaves the patients with no confidence in the health care system (Carstens and Pearmain 2007:607).

1.3 Problem statement

The public hospital theatres in KwaZulu-Natal are faced with a tremendous increase of surgical errors. The KZN DoH reports for 2012-2013 and 2014-2015 revealed that failure to achieve safety in operating theatres have resulted in a considerable increase of surgical errors with ultimate increase in surgical litigation claims. This is a concern as these huge amounts of litigation claims drain the country's budget leaving the country unable to cater for the needs of health institutions like buying of sufficient material resources. The problem of surgical errors has led to the frequent broadcasting in the media about the lack of caring of patients by health professionals, specifically nurses, who are negatively perceived by patients and the public having lost trust in them. This is a concern, as the core problem of these

identified negative attitudes by the patients and public are not finding a solution, thus creating negative patient outcomes in theatres. It is regretful to find that human factors are major contributors to surgical errors which impact on patient safety (Mosadeghrad et al. 2014:78).

Despite the uncontrolled shortage of both human and material resources in KZN public operating theatres (Madiba et al. 2011:234), there has not been sufficient evidence to link this problem with negative staff attitudes, which leads to surgical errors. The preventable harm to patients in operating theatres is exacerbated with no solution, despite the surge in information regarding the patient safety in operating theatres and the efforts made by professional organisations and professional bodies in countering the occurrence of wrong site, patient and procedures (De Meyer 2014:18).

According to the South African Minister of Health, safety and a safety culture in operating theatres can be affected by negative staff attitudes that lead to performance mediocrity rather than excellence (National Department of Health (DoH) 2011:01). The report by the Minister revealed that South Africa is faced with poor health outcomes, from surgery, particularly at public sector institutions. This resulted in the Minister introducing the National Core Standards in 2008 in which safety is regarded as its first priority (National Department of Health (DoH) 2011:01). However, there is an absence of information regarding the factors that affect the safety attitudes of health professionals in operating theatres, making it difficult to know to what extent such a policy will have any effect on staff performance.

1.4 Aim and Objectives

The aim of the study was to investigate the safety attitudes of health professionals in operating theatres in public health sector in KwaZulu-Natal Province, South Africa.

The study had the following objectives:

- To investigate factors that impact on safety attitudes of health professionals in operating theatres.
- To identify measures to improve patient safety in operating theatres.

1.5 Research questions

- What are the factors that impact on the safety attitudes of health professionals in operating theatres?
- What measures are adopted to improve safety in operating theatres?

1.6 Significance

There is an uncontrolled occurrence of surgical errors globally which impact on quality patient care in operating theatres with the human factors being the major contributing factor to the occurrence of these surgical errors (Haugen et al. 2013:807). South Africa together with other countries globally have seen the need of putting some measures in place to ensure safety in operating theatres and it is a global message that across the world health care providers are obliged to adopt a system approach towards reducing risk or harm to patients (Governance Advice 2012:02).

The clinical guidelines, policies and tools such as Surgical Safety Checklist, National Core Standards, Safer surgery saves life campaigns and other measures have been put in place by WHO consistently with an attempt to reduce surgical errors but there is lack of evident progress in improving patient safety across health care specialities (Sevdalis et al. 2012:13). Several factors contributing to job dissatisfaction amongst the peri-operative team which leads to a lowering of standards and a sense of not being good enough in the work place is still in existence (Mosadeghrad et al. 2014:01).

The National policy for Patient Safety Incident Reporting and Learning in the public health sector in South Africa has been used to identify patient safety issues as well as forming a cornerstone of patient safety strategies. The Ministerial Medico Legal committee established in 2014 aimed at addressing South African issues, as the country was experiencing an explosion in medical malpractice litigations which was not in keeping with the generally known trend of negligence malpractice and which was also threatening the vision of government of achieving a long and healthy life for all South Africans. (Mosadeghrad et al. 2014:01).

1.7 Operational definitions

The following definitions apply:

Health professionals:

Refers to any person trained to provide clinical care in the operating theatre (Hopkins 2018). This includes theatre support staff, scrub sisters, floor nurses, anaesthetic nurses, ward staff, anaesthetists, anaesthesiologists, consultants and surgeons.

Operating theatre:

An operating theatre is a special room in a hospital that is equipped to perform surgical operations by surgeons (Collins dictionary: 2018, Government notice No. R158 of 1998).

Peri-Operative phase:

Refers to the time around surgery and generally refers to pre, intra and post operative phase (Whitlock 2016:01).

Safety attitudes:

Refer to the employee's tendency to respond positively or negatively towards a safety goal, idea, plan, procedure, prevention or situation. Safety attitudes influence employee's choice of actions and response to challenges, incentives and rewards in the work place (Safety Dictionary, 2018).

Safety climate:

Safety climate is described as an employee's perception, attitude and beliefs about risk and safety. It is an important step in understanding and improving patient safety (Göras et al. 2013:01).

Safety culture:

Safety culture is the individual or collective product of values, attitude, perception, competencies and behaviour patterns that determine the commitment style and competence of a health care organisation in safety promotion (AHRQ,19 December1989).

Surgical patient safety:

Entails quality nursing, clinical surgical care and ethical practices to reduce unintended harm to patients peri-operatively (Woodhead 2015:40). Patient safety applies to initiatives designed to prevent adverse outcome from medical and surgical errors.

Surgery:

Is an indivisible, indispensable part of health care and of progress towards universal health coverage which contributes to addressing a diverse set of cross-cutting health challenges within health system and is essential to the full attainment of global health goals (Woodhead 2015:39).

1.8 Study outline

This document is set out in the following chapters:

Chapter 2 Literature Review:

Details the broad overview of theatre layout, the local and international literature about the factors that affect the attitudes of health professionals in operating theatres and its impact in achieving quality patient care in theatres. The global attempted measures of improving patient safety are discussed as well as theoretical framework of the study.

Chapter 3 Methodology:

This chapter presents the study design, setting, population, sampling, research instrument with its reliability and validity, pilot study, data collection, data analysis, study limitations and ethical issues.

Chapter 4 Results:

This chapter presents the study finding, with the respondent's demographics being followed by the results for Objective1 for each of the five sections that the results have been divided into, then the results of Objective 2.

Chapter 5 Discussion, Conclusion and Recommendation:

In this chapter the findings of the study based on the research objectives have been

discussed with respect to the structure, the processes and outcomes of theoretical framework, under which the findings of the two objectives are presented. The recommendations emanating from the findings are presented and the study limitations outlined.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Surgery plays an increasingly prominent role in health care globally, with growing attention being focused on the safety and quality of the patient care peri-operatively (Haynes et al. 2011:02). The safety attitude of the peri-operative team in relation to patient safety will be discussed in this chapter, these factors in operating theatres are highlighted by several authors (Findik 2015:610; Birgand et al. 2014:01; Haugen et al. 2013:807). This chapter also focuses on the measures to improve patient safety in operating theatres. The search enquiries used to access literature being Google scholar, Pubmed and Safeopedia.

Donabedian's theory of quality of health care was chosen, adapted and used as a framework for this study to emphasize the issue of safety and how the structure, the theatre environment (pre-operative phase), processes, the implementations or practice style of the works (intra-operative) and outcomes, the positive impacts of the processes contribute to the quality and safety of the patient peri–operatively. The different peri-operative phases, as well as operational definitions that provide the knowledge and understanding as to where and how these safety attitudes are identified, will be discussed. The definition of terms will assist in gaining the in-depth knowledge of the study.

2.2 Theoretical framework

The conceptual framework for the study is the theory of quality health care (Polit and Beck 2017:241), which was developed and designed by theorist Donabedian, a physician and a health service researcher in 1996 and later modified in 1976, 1978, 1980, 1982 and 1987. This theory is said to be the one that dominates outcome research (Polit and Beck 2017:241) and provides a framework for examining health services and evaluating quality of health care. Donabedian was concerned about the issue of patient safety and quality in health care industry which was also a global concern (Moore et al. 2015:01; Polit and Beck 2017:241). He emphasised three areas of concern for achieving safety and quality.

- **Structure:** Which describes the context in which care is delivered including hospital building which also involves services rendered, nursing skills, staff, financing and equipment and nursing autonomy in decision making?
- **Processes:** Which denotes the transaction between patients and providers throughout the delivery of health care, which also involves clinical management, decision making and clinical interventions?
- **Outcomes:** Refers to the effects of health care on the health status of the patients and population or clinical end result of patient care.

2.2.1 Structure

Structure relates to the operating theatre unit as a whole which needs sound safety attitudes of the peri-operative team or a good theatre structure to be operational, without risk or untoward events. For the theatre structure to survive it needs operational guidelines for example protocols, scope of practice policies and national core standards, which constitute the broad organizational and administrative features. The structure also needs a vision, mission statement and philosophy of the organization (Polit and Beck 2017:241).

Without these guidelines safety attitude among the peri-operative team can be negatively affected resulting in compromised safety and quality of care. The structure includes the buildings, which for this study consists of the theatre environment which must be conducive to undertaking surgery procedure, with working air conditioners and equipment that will enable appropriate outcomes of the surgical procedures. Staff needs to have the necessary expertise according to their level of speciality to avoid questionable clinical practices that will lead to patient harm. Structure also involves good financing that will cater for the needs of the theatre, which will improve the safety attitude of the health professionals and contribute to patients' safety (Fernandes and Pereira 2016:79).

2.2.2 Processes

The processes relate to the interaction between patients and providers, and include clinical interventions. When applied to the study, these refer to the theatre specific

measures that need to be adhered to, to ensure safety and quality patient care. These processes are the following quality improvement tools:

- Pre- and Post-operative visits that monitor and establish the total wellbeing of the patient prior to any procedure, identifying abnormalities that will prevent the patient from having surgery. Most of the theatre's adverse events are a consequence of failure to do pre- and post-operative check. The post-operative checks are important to exclude complications and to ensure the speedy recovery of the patient.
- Documents and checklist from the ward to the theatre, to ensure that the relevant documents are provided, that is, X-Rays, consent, blood results.
- Peri-operative includes before, during and after surgery, counting the swabs needles and instrument to prevent foreign bodies from being left in patients body and avoiding inadvertent returns to theatre.
- Theatre sterilizing checklist to ensure sterility of items used during procedure to exclude infection.
- Time control monitoring checklists to prevent possible complications, for example,. the duration of a tourniquets exposure to anaesthesia and other events that could result in admission to Intensive care unit (Fernandes and Pereira 2016:89).
- Risk reduction checklist has been identified as part of ensuring a safe service in that it provides the value for best practice in patient care. and from a Risk reduction is a patient centred approach of delivering optimal health care in the best interest of the patient. The checklist is reduces the risk of surgery on the wrong side, incorrect operation and the wrong patient in theatre. Checklist as a process is undertaken before induction of anaesthesia, before skin incision and before a patient leaves an operating room. Adherence to its usage by all members of the peri-operative team will ensure patient safety in theatre. Risk reduction checklists reviewed before the induction team introduces themselves and confirms the procedure, checks the physical well-being of patient, as well as before skin incision, ensuring that the team is well protected, antibiotics are given and before the patient leaves theatre checking the physical wellbeing of patient (De Meyer 2014:21).

The peri-operative checks when not adhered to, will also result in surgical pitfalls for example, wrong procedures done to wrong patients, wrong limbs amputated and foreign bodies left in patients wound cavities (De Meyer 2014:18). Site marking is important and it involves the surgeon marking the operative site with either their initials around or the word yes on the correct site. It prevents operating on the wrong site of the patient thereby preventing the occurrence of surgical errors. Clinical judgments are there as benchmarks to determine the quality of care being rendered in theatre. These benchmarks are there to measure the peri-operative team practice to check if it meets the required and expected standard of care for safety and quality patient care.

For the theatre to function effectively it needs the clinical judgements which are the audit tools and accreditations. The clinical judgements which are audit tools and accreditations will ensure that the perioperative checks of the patient are done and well complied. These will be achieved by conducting regular clinical audits and accreditations to see if the peri-operative teams comply with the standard of care as set up by the Council for Health Service Accreditation of Southern Africa. The Council of Health Services Accreditations of South Africa (COHASASA) developed standards for the structures associated with theatre services to ensure the provision of quality services of all types of health care facilities in South Africa. In order to accredit these institutions for compliance, hospitals are assessed according to standards developed internationally. Statements which are statements that define the holistic care of patient peri-operatively which are from the receiving of the patient in theatre until discharge from theatre. These are called the standard operative procedures.

All these processes or measures need the peri-operative team to adhere to these surgical safety checklists, failure of which can result in negative theatre outcomes. The theatre staff's attitude towards compliance will determine the safety and quality of patient care. The management staff of the department must therefore ensure that they attend to the factors that affect the attitude of the peri-operative team for the processes to be effectively implemented (De Meyer 2014:19).

2.2.3 Outcomes

The outcomes as it refer to the post-operative period which is the period of evaluating the activities being rendered to patients which is uneventful. During this period the patient is announced to have no burns after diathermy use, no compromised circulation after tourniquette use, no post-operative bleeding, patient has recovered well from anaesthesia with no complications like high spinal or airway obstruction. The patient is checked for any possible complications that might have happened while under surgery and anaesthesia through close monitoring up until the anaesthetist confirms the patient suitability for transfer to the ward. The end result period, which is the outcome period, extends up to 24 hours post-surgery, within this period should any adverse event such death of the patient occur, it falls under an anaesthetic death.

The safety attitude among the peri-operative team contribute to ensuring the desired safety quality outcomes of the theatre which are: no unintended occurrences pre, intra and post-operative care, preventing inadvertent returns, preventing unnecessary cost and the speedy recovery of patient post operatively.

2.3 Peri-operative phases

In order to understand the safety attitude of the peri-operative team, it is important to establish their knowledge about the three phases of surgery pre-, intra- and post-operative, as these are where the safety and quality patient care is expected and observed (Phillips 2013:02). The peri-operative phase means around the time of surgery (Phillips 2013:02), the goal of peri-operative care being to provide optimal conditions for patients before, during and after operation (Whitlock 2016:01).

2.3.1 Pre-operative phase: Structure

The pre-operative phase entails preparation and planning and ensuring that the necessary processes that lead to preparation for operation, which are the standards of care, are in place. Pre-operatively, there are standard operative procedures that serves as guidelines for operation, and without them, the clinical practice in theatres will be questionable and will result in occurrence of surgical errors (Malley et al. 2015:01). It is the time before surgery when physical and psychological preparations

are made for the operation, when the skills, expertise, knowledge and experience of the peri-operative team are expected to be displayed. Also when checking the patients' documents and their physical and the psychological wellbeing. It is in this phase that any physical abnormalities of the patient is highlighted and recorded (Malley et al. 2015:01).

The pre-operative period extends from the time the patient is admitted for surgery to the time that the surgery begins (Spruce and Gawande 2014:01). It is the period before the surgical intervention, when the patient will be checked for the completeness of information and their fitness for undergoing the procedure so that if any contra-indication for the operation are identified, the patient may be cancelled from the schedule of operations (Rosness et al. 2015:01).

As part of the structure, finance refers to the procurement of necessary items needed for the operation which are special equipment, loan sets and special surgical consumables. These items need to be prepared pre-operatively to ensure the smooth running of the operation without causing any delays (Phillips 2013:25).

Staff autonomy which is also part of the structure refers to the staff and their decision making towards achieving safety in the operating theatres. This includes their pre-operative visits to the patient and the entire theatre preparations in readiness for the procedure. During pre-operative visits their attitudes are portrayed that ensure patient safety (Whitlock 2016:01). Pre-operative visits performed by the peri-operative team helps to ensure good interaction between the (OR) staff and the patient so as to create a good rapport and to allay any anxiety with its related complications prior to surgery (Aliyu et al. 2015:54).

Aliyu et al. (2015:54) further highlighted that it is in this period that the operating team assess and educate the patient about the procedure and after care to ensure optimal recovery of the patient. Malley et al. (2015:1) emphasised that the pre-operative period is the right time to ensure good preparation prior to surgery. Barbagaloo et al. (2015:06) stated that it is in this period that the anaesthetist will confirm the suitability of the patient for surgery while doing the complimentary checks and arranging for post-operative care. All the investigation results are confirmed in

this period to avoid unnecessary cancellation of patients going to theatre with the relevant specification and interventions being adhered to during this period. The surgeons visit the patient to explain about the nature of the procedure to be performed, and makes final decisions about the surgery and its suitability for the patient (Barbagaloo et al. 2015:06). The Health Act (2003:08) confirms that it is the duty of the surgeon to ensure the signing of the consent by the patient to confirm its validity. During this period the ward staff hand over the report to the theatre staff so as to double check the documents and the physical wellbeing of the patient prior entering the operating room, and to document any pre-existing problems that the patient may have, for example bedsores. Improvements in the structures of care should lead to improvements in the processes, which should in turn improve patient outcome.

2.3.2 Intra–operative: Processes

According to Phillips (2013:02), Donabedian describes the intra-operative period as one that entails all the required clinical activities. This entails the interaction between the patient and the operating team, where the patient has an understanding about the procedure and subjects themselves to the hands of the perioperative team with trust and belief that they are going to safely recover. Clinical management with its interventions are observed at this point when the operation starts with the incision up to the point of skin closure including the anaesthetic period. It refers to the time during surgery, with intra-operative care being rendered during this period. The anaesthetist monitors the patients' vital signs, blood oxygenation level, fluid therapy, medication, transfusion and anaesthesia and retrieves blood samples for laboratory tests (Phillips 2013:23). The intra-operative phase is provided by the surgeons, assistant surgeons, scrub sister, floor nurse, anaesthetic nurse and the anaesthetist without excluding the laboratory staff, the radiographer, the perfusionist and all other comprehensive team members needed for a particular operation. The safety attitude of the staff is important during this stage as surgery on its own is complex due to its inherent risks which contribute to daily risks occurrences even when the surgeons deem themselves as having delivered the best possible skills and expertise (Heever and Carstens 2015:96).

It is during this period where the scrub sister needs to display her safety attitude skills by paying meticulous attention to counting the swabs, instruments and sharps to ensure the safety of the patient and to avoid inadvertent returns to theatre. This is referred to as processes of clinical management and interventions (Phillips 2013:24). It is during this time that the teamwork and proper communication among the peri-operative team is important such as reporting excessive bleeding to the anaesthetist so as to anticipate with volume expanders and blood transfusion. Close monitoring of observations is also done to exclude intra-operative complications such as hypovolemic shock, malignant hyperthermia and cardiac arrest. The anaesthetic nurse and the floor nurse need to be alert for any possible anticipation order change either from the scrub sister, the surgeon, or the anaesthetist that is needed intra-operatively. Sterility standards are also adhered to ensure the safety of the patient against sepsis (Phillips 2013:476).This phase ends when the patient is handed over to the recovery room or intensive care unit staff with a full documented report (Aliyu et al. 2015:59).

2.3.3 Post-operative phase: Outcomes

The post-operative phase is the period after all clinical surgical interventions have been performed on the patient. Donabedian was concerned about the outcomes, which are the end results of the operation after all the pre-operative preparations (structure), and the clinical surgical interventions (processes) have been achieved. This phase extends from the time the patient is transferred to recovery or the intensive care unit until they are discharged from the hospital when a follow-up, known as the post-operative visit, is done (Phillip 2013:31). The post-operative care of the patient includes correct positioning, maintaining an airway, breathing and circulation (ABC), moving the patient from side to side as the condition permits checking their reflex actions, and closely monitoring the vital signs to exclude any possible post-operative complications. This phase is important and has to be strictly monitored as the patient's body is trying to adjust after exposure to anaesthetic agents, with possible complications being likely to occur such as difficulty in breathing aspiration. The safety attitude portrayed by the recovery room team is expected to ensure the safety of the patient. The recovery room phase ends after the anaesthetist has authorised the patient as being fit for transfer to a ward, when the recovery room sister accompanies them to hand over a well-documented report to

the ward staff. This is followed by a post-operative visit by the theatre staff to follow-up on the patient and monitors their progress post-operatively, as any complication that occurs within 24 hours of surgery, including death of the patient all falls under the responsibility of the anaesthetist (Madiba et al. 2011:234).

Safety attitude among the health professionals in operating theatre are the vehicle towards achieving good standard of care, good theatre structures, the necessary practice style or processes and the desired outcomes of patient's safety (Göras et al. 2013:01). When the safety attitude among the staff is negatively affected by factors that constitute the standard of care, the structure and processes are affected which compromises the safety and quality of work thus leading to negative outcomes. The negative outcomes will be wrong procedures done to wrong patients, inadvertent returns to theatre, objects left in patient's body, and the death of patients, leading to allegations and litigations.

2.4 Peri-Operative Team

Understanding the term peri-operative team will assist in comprehending the relevance of safety attitude in relation to the portfolio of each member. The peri-operative team is responsible for the successful peri- operative care of the patients. This team takes extra precautions to ensure that they portray positive safety attitude while the surgical patient is under their care (Phillips 2013:12). It is this team that the public puts their trust in for their recovery from their condition (De Meyer 2014:19). De Meyer (2014:19) emphasised the value of delivering quality patient care and from a patient-centered approach. Carstens and Pearmain (2007:755) emphasized the importance of the peri-operative team by saying that, for diagnostic therapeutic procedures while the patient is under anaesthesia, teamwork is required from the surgeon, the anaesthetist and theatre nursing staff.

The peri-operative team consists of six key staff members, these being:

- Theatre Trained Registered Nurse
- Experienced Theatre Registered Nurse
- Experienced Theatre Enrolled Nurse
- Experienced Theatre Nursing assistant

- Surgeon Specialist (Consultant)
- Specialist Anaesthetist (Anaesthesiologist)

2.4.1 Theatre Trained Registered Nurse

This nurse has successfully completed her speciality training course for theatre and obtained a diploma in theatre operating nursing science. They have all the necessary skills and expertise to work in theatre as a professional scrub sister and are a team leader in a specific surgical discipline. This person is involved in scrubbing gowning and gloving technique in theatre, assists with passing the instruments to the surgeon during surgery, ensures the control of swabs, instruments and sharps and adheres to the safety of the patient. As a team leader, they ensure that there is smooth running of the theatre at all times, and are a licenced practitioner under the South African Nursing Council (SANC) their scope of practice being responsibility for pre, intra, and post-operative safe quality patient care (Phillips 2013:60).

2.4.2 Experienced Theatre Registered Nurse

The experienced theatre registered nurse functions as a scrub sister in the operating room. This registered nurse has the experience of working in theatre with extensive exposure in all surgical disciplines. They work under the supervision of a theatre trained registered nurse and are competent to ensure that safe quality patient care is rendered at all times (Phillips 2013:59).

2.4.3 Experienced Theatre Enrolled Nurse

The enrolled nurse who has the experience of working in the operating room is registered with the SANC and works within the scope of practice as stipulated. The enrolled nurse functions as an anaesthetic nurse and ensures that thorough preparation of relevant items is done prior the patient being put on the table. The enrolled nurse works under the supervision of a theatre trained sister, assists the anaesthetist with anaesthetic induction, and portrays a safety attitude of being alert, being required to undergo a special anaesthetic accreditation course (Phillips 2013:58).

2.4.4 Experienced Theatre Nursing Assistant

The experienced theatre nursing assistant is registered with SANC and functions under her scope of practice. The experienced assistant works under the supervision of a theatre trained sister and theatre experienced sister as a floor nurse who ensures that theatre is thoroughly cleaned, damp-dusted, replenished and ready for use. The nursing assistant together with theatre trained sister and the theatre experienced sister assist with counting of swabs, instruments and sharps pre, intra and post operatively (Phillips 2013:59).

2.4.5 Surgeon Specialist (Consultant)

A consultant surgeon is a medical doctor who has specialised in a particular field of surgery, being either an orthopaedic, general surgery or cardiac specialist. The specialist provides special surgical expertise with skills and advanced technology, and teaches and guides the doctors that are specialising in surgery. They always liaise with the scrub sister about their preferences for surgery prior to starting the procedure to promote efficiency and smooth running of the operation and to prevent unnecessary delays that might lead to complications. The specialist has an assistant surgeon which is a legal requirement by the Health Profession Council of South Africa (HPCSA), the regulatory body governing the practice of surgeons (National Health Act 61 of 2003).

2.4.6 Specialist Anaesthetist (Anaesthesiologist)

The anaesthetist is a medical doctor who has specialised in the field of anaesthesia and renders high skilled expertise in anaesthesia. They are there to supervise, teach and to be consulted should there be a need for their opinion pre-, intra- and post-operatively. The anaesthetist works as a team member with the surgeon, scrub sister, anaesthetic nurse and floor nurse for the smooth running of the operation. They are required to advise the surgeon about the pre-, intra- and post-operative condition of the patient (Carstens and Pearmain, 2007:755).

2.5 Maintaining the peri-operative team's positive attitudes

Changes in the operating theatre curriculum with updated information contributes to broadening the staff's knowledge and creating positive attitudes, which leads to improved safety quality patient care peri-operatively (Poullis 2009:01). Phillips (2013:01) confirmed that every change even in theatre text books has addressed

changing roles, needs and evolving technologies while still keeping the basic focus which remains important for patient care. Dutoit (2015:02). stated that limited staff knowledge leads to non-compliance with the universal precautionary measures for safety of the patient peri-operatively (Dutoit 2015:02). The theatre scope of practice of peri-operative practitioners is much broader, more efficient and demands greater experience than 20 years ago.

Lack of theatre staff skills contributes to surgical errors thus defeating the purpose of patient safety peri-operatively (Dutoit 2015:01). A concern has been expressed that although health care professionals take precautions to some of the measures of quality patient care they do not attain full compliance to universal precautions due to a lack of knowledge (Masinga et al. 2012:150). Poullis (2009:01) further emphasized that to achieve safety in operating theatres, there is a need for regular updates in the scientific knowledge of theatre practitioners. Carstens and Pearmain (2007:700) stated that in a specialised unit such as the theatre there is a need for specialised personnel who have undergone training relevant to their practice to achieve patient safety. To correct role confusion and for the staff to be confident about their work, there is a need for the staff to undergo revised training on a regular bases (Carstens and Pearmain 2007:700).

2.6 Factors affecting the safety attitude of operating theatre staff

Globally, authors have confirmed a lack of safety in operating theatres that has resulted in patient mortality and morbidity rates (Göras et al. 2013:01). The issue of safety in operating theatres revolves around several factors that need to be addressed as they can negatively impact the achievement of safe quality health care (Özsayin and Ozbayir 2016:06). Haugen et al. (2013:807) noted that safety culture relates to personal attitude, thoughts and behaviour within an organization its facets including teamwork and communication. According to Zheng (2012:01), there are many factors that influence the patient safety e.g. attitude and knowledge among health professionals as well as the climate of work place. Zheng (2012:01) focussed on the safety attitude questionnaire as an ideal tool to measure safety attitude and safety climate in the operating room. Other negative cultural components that affect the attitude of the peri-operative team leading to theatre cultural negativity and contribute to a contaminated theatre environment (Findik 2015:6010; Birgand et al.

2014:01, Haugen et al. 2013:807). Safety in operating theatres is an issue of concern globally and not an isolated problem in KwaZulu-Natal Province, South Africa (De Meyer 2014:18). According to Carvallo et al. (2015:104) and Haugen et al. (2013:807) in order to achieve safety and a safety culture, compliance to its components is important, failure resulting in cultural mediocrity which leads to the occurrence of surgical errors.

The following factors affect the safety attitudes of staff in operating theatres and are reviewed further below:

- Role confusion
- Poor working conditions
- Bad experiences
- Poor teamwork and communication
- Poor management

2.6.1 Role confusion

Role confusion amongst the peri-operative team has a negative impact on the safety attitudes of the theatre staff thus defeating the purpose of safety in operating theatres (Masinga et al. 2016:16). Findik (2015:610) revealed that non-compliance to the universal precautions in operating theatres is due to limited staff knowledge. Dutoit (2015:02) stated that lack of operating theatre staff skills contributes to surgical errors in a specialised unit such as the theatre. There is a need for specialised personnel who have undergone special training relevant to their practice to achieve safety. Plaza (2015:43) emphasized that specific training and adequate role definition helps to improve team-work and standardization of information. Sonoda and Daisuke (2017:01) corroborated by stating that training among operating teams improve efficiency and contribute to good results of safety practices. Armour Forse et al. (2011:771) stated that team training improves operating room performance to ensure that the staff members have adequate knowledge for theatre task.

2.6.2 Poor working conditions

Safety in operating theatres is also affected by the attitude of the staff related to poor working conditions. These include excessive workload, staff shortage, time pressure, exposure to potential hazards (i.e. radiation, anaesthetic gases, toxic and infectious agents), and working extended hours in non-physiological positions. These contribute to stress which further contribute to negative staff attitude (Kitaoka and Masuda 2013:01; Le Moual et al. 2013:01). Hazards caused by operating room environment have a negative effect on nurses occupational lives, physical and psychological status, motivation and performance (Kitaoka and Masuda 2013:01; Arora et al. 2010:318; Zihou and Gong 2015:01). Surgical centres are considered high risk areas and extremely susceptible to errors due to work processes that are complex, interdisciplinary with strong reliance on individual and team performance in an environment dominated by pressure and stress.

In the study conducted by Carvalho et al. (2015:104) the results revealed that there is poor cultural sustainability and safety in operating theatres due poor working conditions, with the stress being due to the stressful work environment (Uġurlu et al. 2015:01). Similar findings have been corroborated by Janse Van Rensberg et al. (2016:08), who reported that there is high incidence of occupational health hazards in the theatre environment, which include sharps injuries, low staff vaccination rate, limited staff screening for infectious diseases, re-capping of needles after use, limited staff protective devices, insufficient knowledge on channels of reporting injury on duty, staff shortage resulting in heavy workload limited resources and poor communication.

Janse Van Rensberg et al. (2016:08) highlighted that nurses are exposed to occupational illnesses due to unsafe working environment. This defeats the purpose of the Occupational Health and Safety Act 85 of 1995, which emphasised the implementation of occupational safe services in health facilities. Janse Van Rensberg et al. (2016:08) noted that despite growing research, knowledge about nurses' occupation and safety status plus engagement with occupational health and safety services remain limited. Findik (2015:610) stated that occupational hazards in operating theatres have resulted in staff burnout. Findik (2015:610) study revealed that there is a high incidence of occupational health hazards in orthopaedic operating theatres due to exposure to radiation where there are often no protective devices nor

radiation penetration detectors (dosimeters). Stressors in operating rooms include technical performances, time pressure and increased work load (Arora et al. 2010:318). Kang et al. (2015:284) stated that non-technical skills performance of scrub nurses is associated with factors such as lack of working resources.

2.6.3 Bad experience

With surgery being a stressful enterprise, bad experience among the operating team can affect their safety attitudes towards providing safe patient care peri-operatively. This involves staff getting sick after being infected during work where there were no means of protecting themselves, for example contracting infectious diseases such as Human Immuno Deficiency Virus (HIV), Tuberculosis(TB), Multiple Drug Resistance (MDR) and hepatitis (Arora etal. 2010:318; Uġurlu etal. 2015:01). Janse Van Rensberg et al. (2016:08) study revealed the high prevalence of HIV and hepatitis due to exposure to infected sharps where there are no proper disposal containers due to a shortage of supplies. This changes the attitude of theatre health professionals, and as a result, they lose interest in their work, which puts patient safety is at risk.

The unavailability of resources is one of the situations that the theatre staff find themselves experiencing but are still expected to provide the utmost patient care (Janse Van Rensberg et al. 2016:08). Madiba et al. (2011:234) emphasised that health professionals must recognise the need for greater protection of patients under their care. Komampe (2013:01) corroborated that the unavailability of essential supplies and equipment poses a negative impact not only to the patients who are facing danger but also to the staff who is expected to provide the best care to patients peri-operatively.

The peri-operative staff experience the cancellation of patients coming for surgery, witness patients dying in their hands without any means of providing assistance to them due to unavailability of resources (Komampe 2013:01). The unavailability of equipment, personnel and finance to sustain operating theatres contribute to an unsafe culture and the occurrence of surgical errors (Madiba et al. 2011:234). The underperformance of staff in operating theatres can also be due to staff shortage (Heever and Carstens 2015:96), while, Arora et al. (2010:318) states that operating under stressful conditions is a painful experience.

2.6.4 Poor teamwork and communication

Quality patient care in operating rooms depends on effective multidisciplinary teamwork and communication (Attri et al. 2015:457). Suckerman et al. (2012:12) highlighted that the occurrence of morbidity and mortality in surgical areas can be a result of preventable errors that are due mainly to poor teamwork performance in a constructive and supportive environment, such as theatre. Einav et al. (2010:443) stated that to improve patient safety requires optimal communication within the surgical team, but that teamwork in operating theatres is often suboptimal.

Haugen et al. (2013:87) mentioned that for a safety culture to be achieved in theatres there must be good teamwork and communication among the theatre team. Gabrani et al.'s study (2016:50) confirmed that in health care, a significant percentage of errors are attributed to communication breakdown and lack of effective teamwork. There is a need for hospitals to assess patient safety by promoting teamwork principles to create safe hospital systems, with an emphasis on poor communication and ineffective teamwork as factors that contribute to the occurrence of patient safety incidents (Gabrani et al. 2016:50). Effective teamwork and communication are considered critical for ensuring high reliability and the safe delivery of care. Teamwork and good communication can improve quality and safety, decrease patient harm, promote cross-professional collaboration and the development of common goals, decrease workload issues and improve staff and patient safety factor.

Disruption in communication leads to inefficient patient care, with Sexton et al. (2006:877) indicating that a breakdown in communication and collaboration have resulted in retained sponges intra-operatively, mismatched blood transfusion, wrong patients being operated and wrong procedures performed. Teamwork in the operating room is an important component of operating room efficiency, quality of care and patient safety (Sexton et al. 2006:877).

The Joint Commission on Accreditation of Health Care reported a breakdown in communication in operating rooms as a leading cause of inadvertent returns in theatres. It is for this reason that the Aviation Industry has demonstrated important

ties between teamwork and performance (Sexton et al. 2006:877). Plaza et al. (2015:43) highlighted that approximately (50%) of hospital errors that occur in the operating rooms are commonly due to poor communication. According to the obligatory crew resource management programme that was developed in the United States of America (USA) in 1995 emphasis should be on coordination as a vital component to prevent errors in operating room (Plaza 2015:43). This programme favoured communication and prioritized it in the use of surgical safety checklists, which were approved by World Health Organization (WHO) to reduce peri-operative morbidity and mortality.

The lack of teamwork and communication in theatres leads to lack of accountability and responsibility (National Department of Health 2011). Masinga et al. (2016:16) noted that there is a lack of teamwork and communication among theatre personnel that contributed to the lack of safety in operating theatres. In a study conducted by O' Connor et al. (2013:07) the results revealed a lack of teamwork in operating theatres. Papaspyros et al's. (2010:78) study highlighted that errors in health care services delivery has long been recognised as a significant cause of inpatient morbidity and mortality with the root cause analysis citing communication failure as one of the contributory factor. Gillespie et al. (2010:642) stated that communication failure is a well characterised source of surgical errors in operating rooms and has been found to be associated with lack of teamwork and poor implementation of formalised surgical safety check lists. Poor communication in operating rooms leads to procedural errors, delays, major complications and death (Sonoda and Daisuke 2017:478).

2.6.5 Poor management

According to the National Health Directives, there is a lack of good management support in operating theatres (National Department of Health 2011). It is for this reason that the Minister of Health while launching the National Core Standards in Tshwane in 2011, which refers to the lack of management structures and the need for good leadership at all levels of health care to ensure that safety measures are well adhered to.

In the study conducted by Edmestone and Francis (2012:42) at the University of Cape Town the cause of failure to achieve safety in theatres was found to be related to management problems at the level of personnel. Edmestone and Francis (2012:42) expressed the need for good management system with good leadership structures to be put in place, while Naidoo (2012:49) emphasized the need of staff changes in the management system. In order to implement good measures for surgical safety good management and leadership are needed in operating theatres. According to the Minister of Health, providing safe quality health services are non-negotiable as South Africa is currently faced with poor health outcomes (National Department of Health 2011). Sonoda and Daisuke (2017:478) emphasized the importance of good management support for operating room nurses that leads to safer surgical procedures and better patients' outcome.

2.7 The impact of negative safety attitude in operating theatre

Safety in surgery is an international concern and a goal to be attained by all health institutions globally. Problems in surgical procedures are inevitable due to various reasons some of which are specified as its "involvement in the art of an inexact science" (Woodhead 2015:39). According to Haugen et al. (2013:807), approximately (234 000 000) major surgical operations are performed annually world-wide. As the volume and sophistication of surgical procedures in global health increase, patient safety and quality in surgical care gain more importance. Nearly one in ten in-hospital patients experience iatrogenic event and half occur within their peri-operative care. Ozsayin and Ozbayir (2016:6) stated that in industrialized countries, approximately half of the harmful effect to patients is related to surgery 5%, which could be avoided.

In the (USA), approximately 40% of complications and inadvertent returns arise from surgery, which resulted in the World Health Organization (WHO) in 2008 launching the Safer Surgery Saves Lives (SSSL) campaign to reduce complications associated with procedures. Despite the known benefits of Surgical Safety Check List in operating theatres in USA, the positive attitude of health professional towards the SSCL has been found less than universal (O'Connor et al. 2013:14). O'Connor et al. (2013:14) found that half of all surgical complications are avoidable. They highlighted that between 1990 and 2010 in the USA, there were more than 9 000 surgical errors,

for example retained foreign bodies, wrong operated patients, wrong sites and wrong procedures with a mortality of 6.6%, permanent injuries in 32.9%, with the cost of pay-outs for these events totalling US$1.3 billion.

The WHO published guidelines to improve patient safety in operating theatres, with a 19 item surgical safety checklist being designed to reduce the rate of major surgical complications. In order to promote surgical safety in the peri-operative phase, an attempt has been made to introduce retrospective and prospective sense making. In London a broad consensus was reached about the prospective and retrospective sense making which literally means building an understanding that can inform and direct action to eliminate risks and hazards that are a threat to patient safety (Roseness et al. 2015:01). Roseness et al. (2015:01) contend that prospective sense making requires the surgical team to anticipate mistakes before they happen whereas retrospective sense making entails the surgical team learning from previous problems and thereby being able to prevent the re-occurrences of errors. These two phases focused on the processes of safety and efficient performance of surgical procedures, and safe and successful completion of surgical procedures, and depends on the quality of prospective sense making (Roseness et al. 2015:01).

2.7.1 South Africa

The report by the South African Minister of Health revealed that the country is faced with poor health outcomes the root causes of which are varied and complex. Goras (2015:104) stated that patient safety is characterised as nationwide problems with a need to focus on the processes instead of blaming individuals. The Minister of Health highlighted that the National Department of Health saw a need to introduce measures such as the National Core Standards, with ‘safety’ being the second sub-domain (National Department of Health 2011:01). Woodhead (2015:40) stated that inadequacies and inequalities in health care facilities that need to be addressed in global, national and local institutions could be achieved by addressing issues in theatres, for example, patient safety, and implementing strategies that have been conceived globally on the basis of collective responsibility and accountability.

2.7.2 KwaZulu-Natal Province

According to Dr Naidoo, Head of the Provincial Department in Family Medicine and Clinical unit and the assessor for maternal health in the KwaZulu-Natal (KZN) Department of Health, the health of the pregnant women was a major health priority in South Africa and globally (UKZNDABA 2015:01). He highlighted that anaesthesia and surgery are associated with a greater risk of deaths in pregnant women who give birth through caesarean section in SA compared to those having a normal vaginal delivery (NVD). Dr Naidoo emphasised the need to reduce maternal surgical morbidity and mortality in KZN by ensuring that the peri-operative team adheres to the use of Modified Surgical Safety Check List (MSSCL) safety. The study, which was conducted in 12 districts and six regional hospitals evaluated the surgical outcomes as well as the pre- and post-operative interventions on safety attitudes of staff working in operating theatres regarding the usage of the MSSCL. The results of the study showed that staff had a positive attitude as there was a significant improvement in the post-operative deaths and sepsis. However concern was shown that in the health care industry there is still a bigger challenge of staff shortage, lack of resources as well as a lack of leaders as champions to facilitate the implementation of the MSSCL, all of which contribute to adverse results (UKZNDABA, 2015). Naidoo (2015:01) also suggested that there is a need for implementing the MSSCL in KZN in order to monitor and evaluate the adverse surgical outcomes. There is also a need to introduce the MSSCL in the training programmes of both undergraduates and postgraduates health professionals to improve patient safety in the province.

The KZN DoH Annual Health Report for 2012 -2013 and 2014- 2015 revealed that failure to achieve safety in operating theatres has resulted in a considerable increase in surgical errors leading to unnecessary returns in public operating theatres. The annual claim for surgical errors in the KZN DOH from 2012-2013 showed an amount of R1 000 637 280 for 165 cases being reported. In the 2014-2015 KZN Annual Health report on surgical errors, the claims amounted to R3 034 426 920 for 363 reported cases. There is a concern that no corrective actions have been put in place and that the problem is being exacerbated without a solution. It is therefore necessary to determine the factors that contribute to surgical errors as this affects global, national, and local health systems that cost the country a considerable amount of money and negatively affects people’s lives.

2.8 Attempted risk reduction measures in the peri- operative phase

Along with many other countries, South Africa has identified the need to put measures, tools and strategies in place to ensure safety in operating theatres, with health care providers being obliged to adopt a systems approach towards reducing risk or harm to patients (Clinical Governance Advice 2012:01). Various measures have been put in place over time with an aim of improving the desired outcome of quality patient care. These measures were intended to remind health care professionals about their oath or pledge towards patient care i.e. patient will be their first consideration and an attempt to improve staff attitude towards rendering quality patient care. A number of initiative have been put in place in South Africa and international to promote safe quality patient care and to avoid the occurrence of surgical errors in theatres these being:

a. Bathopele principles

The Bathopele principles serve as a guideline, and mean “patient first”, these being measures that guided the nurses on patient’s expectations while under their care in the peri-operative phase. The Bathopele principles are aimed at meeting the challenges of improving the delivery of service to the citizens of South Africa by enhancing the quality and accessibility of government good services and improving efficiency and accountability (Department of Public Service and Administration 1997:01).

b. National Core Standards

The South African National Core Standards (NCS) were created as a statement of what is expected and required to improve quality patient care. Patient safety was the main subdomain in surgical operating theatres and the most challenging one regarding establishing a theatre culture and achieving more positive staff values and attitude (National Department of Health 2011:08).

c. Safer Surgery Saves Life Campaign

The safer surgery saves life (SSSL) initiatives was established by the World Alliance for Patient Safety as part of WHO’s effort to reduce the number of surgical deaths

across the world. The aim was to reduce the number of complications associated with surgery (Haugen et al. 2013:807; O'Connor et al. 2013:07).

d. The Lancet Commission on Global Surgery

The Lancet Commission on Global Surgery was established to examine the current state of surgery within the global health system due to the wide and unequal marginal gap that was identified in crucial surgical care the aim being to reduce mortality and morbidity rates (De Meyer 2014:18).

e. The Association for Peri-operative Practitioners in South Africa

The Association for Peri-operative Practitioners in South Africa (APPSA) was established in 2015 to update theatre professionals, replacing the South African Theatre Sister's association (SATS) that was formed in 1980. Both the APPSA and SATS aimed to develop and grow peri-operative practices for the benefit of all theatre professionals to nurture a positive attitude in theatre clinical practice (Hicklin 2015:01).

f. The Council for Health Service Accreditation of South Africa

The Council for Health Service Accreditation of South Africa (COHSASA) was established in 1994to assist health care facilities in Southern Africa to deliver safe, quality health care through accreditation and improvement of standards (Quality Improvements in Health Care 1994:01).

g. The national safety agency and standards

Australia, the UK and the USA united to improve the safety, quality and cost effectiveness of the health industry by introducing the Joint Emergency Care Research Institute (ECRT). The Netherlands introduced a Comprehensive Surgical Patient Safety System known as (SURPASS) to try and decrease mortality and morbidity associated with surgery and to change the attitude of the surgical team towards achieving that goal (Clinical Governance Advice 2012).

h. National Policy for Patient Safety incident Reporting and learning in the Public Sector South Africa(PSI)

These are the guidelines undertaken by WHO in 2015 with an aim of developing an effective and sustainable National level Patient Safety Incident Reporting and Learning system.

2.9 Operating theatre specific clinical measure to ensure safe quality patient care

A number of measures have been put in place in South Africa to ensure safety in operating theatres however the need to introduce a specific tool to be used pre, intra and post operatively was ideal. This specific tool is Surgical Safety Checklist which is believed that when properly implemented will prevent the occurrence of surgical errors. The tool focuses on 3 areas of surgical intervention that is:

- Surgical Safety Checklist: Before induction of anaesthesia.
- Surgical Safety Checklist: Before skin incision.
- Surgical Safety Checklist: Before the patient leaves the operating room.

2.9.1 Surgical Safety Check list

The surgical safety checklist (SSCL) was introduced as a tool to give the surgical team a simple and efficient set of priorities to ensure patient safety and facilitate teamwork and communication in every operation performed (Health Quality and Safety Commission 2012:01). In the study conducted by Russ et al. (2013:856), the results revealed that the use of surgical safety checklists creates an open platform of creating and sharing related information, thus promoting team coordination and bridging knowledge gaps. De Meyer (2014:18) pronounced these measures as quality improvement tools for the peri-operative team to ensure that they comply with their implementation for the benefit of the surgical patient.

Despite the known benefits of the use of surgical safety checklists in surgery, the positive attitude of health professionals regarding its implementation has been found to be inconsistent (O'Connor et al. 2013:07). O'Connor et al. (2013:07) found that with the lack of rigor within the theatre staff in applying the SSCL between1990-2010 resulted in surgical event, retained foreign bodies, wrong operation site, with the

wrong procedures being performed on the wrong patients. This has resulted in more than 6% patient mortality, 32% permanent injuries and 59.2% temporal injuries with malpractice claims of R8.3 billion.

Naidoo (2015:01) stated that the attitude of the peri-operative team towards the implementation of the SSCL, which is intended to reduce maternal mortality and morbidity, is negative. There is a need for good championship in leaders to supervise and instil knowledge in the peri-operative team about the benefits of implementing the SSCL. Implementation was a challenge in those institutions where staff and resource are constrained (Naidoo 2015:01). Haugen et al. (2013:807) stated that of the iatrogenic events happening within the peri-operative phase, half can be prevented. The WHO combined the SSSL and MSSCL with the aim of reducing complications and deaths associated with surgery. De Meyer (2014:08) stated that the SSCL is not a panacea to fix safety problem, but is likely to interact with the positive team attitude.

2.9.2 Surgical Safety Check list: Before anaesthesia

The period before the anaesthetics are administered is called ‘sign in’ when the patient from the waiting area is clocked in by the peri-operative team and is channelled to the operating room. During this period, the patient will have confirmed their identity, the site to be operated on, the procedure to be done and the consent confirmed for validity so as to avoid operating on the wrong patient. The site to be operated upon is confirmed and possibly marked to avoid the wrong site procedure (De Meyer 2014:21).

The anaesthesia safety check is done, and includes the patients’ weight to calculate the drugs, confirming that the patient has been starved, observation parameters, blood results and other investigations. The anaesthetist screens the patient on the current drugs they are receiving to avoid any contra indications to the use of anaesthesia or operation, for example clexane and aspirin, as they are anticoagulants and may predispose the patient to excessive bleeding intra-operatively. Any allergies are checked to avoid complications for example, malignant hyperthermia, penicillin or other reactions that might be triggered by anaesthesia or surgery. High risk patient are screened and specialised, for example, those with

pacemakers, so as to avoid the machines that will disturb its functioning. Patient is also checked for any difficult in airway, short neck and previous neck surgeries. This assists in preparing for difficult intubation and closely monitoring the patient intra- and post-operatively. Patients are also checked for any high risk in loosing blood intra-operatively so as to do a cross-match before the operation to keep blood readily available. The anaesthetic safety check helps the anaesthetist to anticipate any problems throughout the operation and post–operatively (Phillips 2013:22).

2.9.3 Surgical Safety Checklist: Before the skin incision

This period is called 'time out' which is the period just before skin incision or before the scrub sister hand over the scalpel to the surgeon. During this period the peri-operative team confirm the following: team members have introduced themselves to the patient; confirmed that this is the correct patient; verbally confirmed with the patient that this is the correct procedure, and again checked if it corresponds with the signed consent; the surgeon has anticipated any critical events, i.e. reviewing any unexpected steps duration the operation and possible blood loss so as to liaise with the anaesthetist; and the availability of items such as diathermy or the tourniquet. The duration of the procedure also needs to be communicated with the anaesthetist to enable them to prepare the extra drugs and ascertain whether the patient might need to be transferred to the intensive care unit post-operatively. 'Time out' is also the period when the scrub sister checks for sterility by inspecting the autoclave indicators, confirming with her team and attaching the indicator strip to patients file for evidence. It is also the time when the sister double checks the instruments, swabs and sharps to establish if they are correct and complete. This helps to identify the missing item intra- and post-operatively. It is in this period that all the drugs given, including antibiotics, are confirmed to combat sepsis. The functioning of the essential equipment is confirmed for the smooth running of the operation (Phillips 2013:22).

2.9.4 Surgical Safety Checklist: Before the patient leaves the operating room

The period after the patient leaves the operating room is called the 'sign out' period, this being once the operation has been completed but before they are transferred to the recovery room or intensive care unit. During this period, the scrub nurse confirms with the team the name of the procedure, as written down by the surgeon, and that

the checklist for the instruments, swabs, and needle counts are correct. Any specimens taken are also checked for correct labelling, and faulty equipment is reported, The surgeons, anaesthetist, and scrub sister review key concerns for the recovery room and patient care management, for example, the need for a special post-operative bed, extra pillows and other accessories that are needed post-operatively to ensure the rapid recovery of the patient (Phillips 2013:22).

2.10 Conclusion

Donabedian's theory of quality of care provided the framework to explore the literature, with issues such as the multidisciplinary team members, the factors that affect their clinical practices in theatres for example, role confusion due to insufficient knowledge towards theatre speciality, poor working conditions that they find themselves being exposed to with no means to correct them, bad experience that they encounter in theatre, poor teamwork, poor communication and poor management support. These factors have been found to have an impact on theatre staff attitudes thus defeating the purpose of safety in theatre. The measures that were put in place globally to improve patient safety as well as the Surgical Safety Checklist as the specific measure in theatre pre-, intra- and post-operatively have been highlighted, that when being followed and complied with, can improve quality patient care and thus reducing mortality and morbidity.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter describes the research design, study setting and population, as well as the sample and selection criteria. It then presents the data collection methods, processes and analysis, which is followed by the ethical considerations applied in the study.

3.2 Research design

A non-exploratory descriptive design was chosen to investigate the factors affecting safety attitudes amongst health professionals in operating theatres in KZN. It was non-exploratory as data was collected without introducing an intervention. It was using the observational approach (Polit and Beck 2017:15). The study entailed the collection of quantitative data in an orderly disciplined way to ensure the authenticity of the findings (Polit and Beck 2017:275). The information was collected under condition of control in designated areas of 12 regional hospitals using formal, objective and systematic process (Burns & Grove 2013:706). Quantitative research is viewed as critical tools for managing bias and enhancing the validity of the conclusion (Polit and Beck 2017:11).

The descriptive approach was selected because it identified the phenomenon of interest, that of safety attitudes amongst health professionals in operating theatres, and identified the variables, described the problem concerned which were the factors affecting the safety attitudes of health professionals in operating theatres (Burns and Grove 2013: 692). A descriptive design may be used to develop theories, identify problems with current practice, make judgements or determine what other nurses in similar situation are doing (Burns and Grove 2013:692).

3.3 Study setting

A research setting describes the location of the study (Polit and Beck 2017:744), this being 12 regional hospitals within seven health districts of KwaZulu-Natal (KZN) province which are Amajuba, Ethekwini, Ilembe, Ugu, Umgungundlovu, Uthukela, Uthungulu. These regional hospitals offer a range of comprehensive specialised

services that are applicable to the study, specifically surgery, and the 12 facilities being presented within their respective districts in Table 3.1. The distribution of the health districts is indicated in Figure 3.1.

Table 3.1 The Health Districts and their respective public sector hospitals

Health districts	Estimated population 2011	Hospital name	No. of beds	Estimated monthly operations
Amajuba	499 839	1.Madadeni 2.Newcastle	822 248	800-900 180-200
Ethekwini	3 442 361	1.Addington	571	350-400
		2. King Dinuzulu	930	323-400
		3.King Edward	922	590-700
		4.RK Khan	543	650-700
Ilembe	606 809	1.Stanger	466	270-300
Ugu	722 484	1.Port Shepstone	333	220-250
Umgungundlovu	1 017 763	1.Edendale	874	950-1000
		2.Greys	530	300-350
Uthukela	668 848	1.Ladysmith	452	270-300
Uthungulu	907 519	1.Ngwelezane	550	370-420

The seven health districts included in this study are indicated in Table 3.1, and present the population as estimated in 2011.

- Amajuba: a rural district with a number of towns that provide support to the surrounding communities and scattered rural homesteads. Amajuba has three Provincial hospitals i.e. Madadeni, Newcastle and Niemeyer Memorial. It consists of one private hospital, six 24 hour service clinics and three gateway clinics.
- Ethekwini: a mainly urban district that consists of district, secondary and tertiary health facilities. This district consists of one Central/Academic hospital, five Regional hospitals, two District hospitals, four specialised hospitals, eight Community Health Clinics, 110 clinics including 57 clinics under local authority, a large number of mobile service points to increase access to service delivery in sub-districts. It also caters for Engonyameni tribal authority in the outskirts of uMlazi.
- ILembe: comprises of a small urban area and a remainder being largely deep rural, caters for KwaDukuza, Mandeni, Maphumulo and Ndwedwe.
- Ugu: comprises of four local municipalities, namely: Umdoni, Umzumbe, Ray Nkonyeni and Umuziwabantu. Eastern Cape residents are also users of health care system in Ugu.

- UMgungundlovu: comprises of seven local municipalities namely: Impendle, Umkhambathini, Umngeni, Richmond, Mooi Mpofana, Msunduzi and Umshwathi.
- UThukela: comprises of five local authority areas. District had one Regional hospital, 36 primary health care facilities, 24 fixed clinics and14 mobile clinics. There are also nine local authority clinics in the District.
- UThungulu: comprises of six local authority clinics, has two Regional hospitals, six District hospitals, 57 fixed clinics, one Community Health Clinics, 14 mobile clinics with 66 mobile stopping points. The District has also six local authority clinics.

3.4 Study Population

The study population consisted of all the 826 theatre nurses in the 12 reginal hospitals, and the 378 theatre doctors, giving a total population of 1 204. Burns and Grove (2013:703) describe the population as an element or individual that meets certain criteria in a given universe. The population refers to the total category of persons with observable characteristics in common who meet the designated criteria of interest in the research (Burns and Grove 2013:46). The target population was the surgical team from 12 regional hospitals within seven Health Districts in KZN, which consisted of the scrub sisters, theatre supervisors, floor nurses, anaesthetic nurses, anaesthetists, surgeons and assistant surgeon, giving total of seven categories.

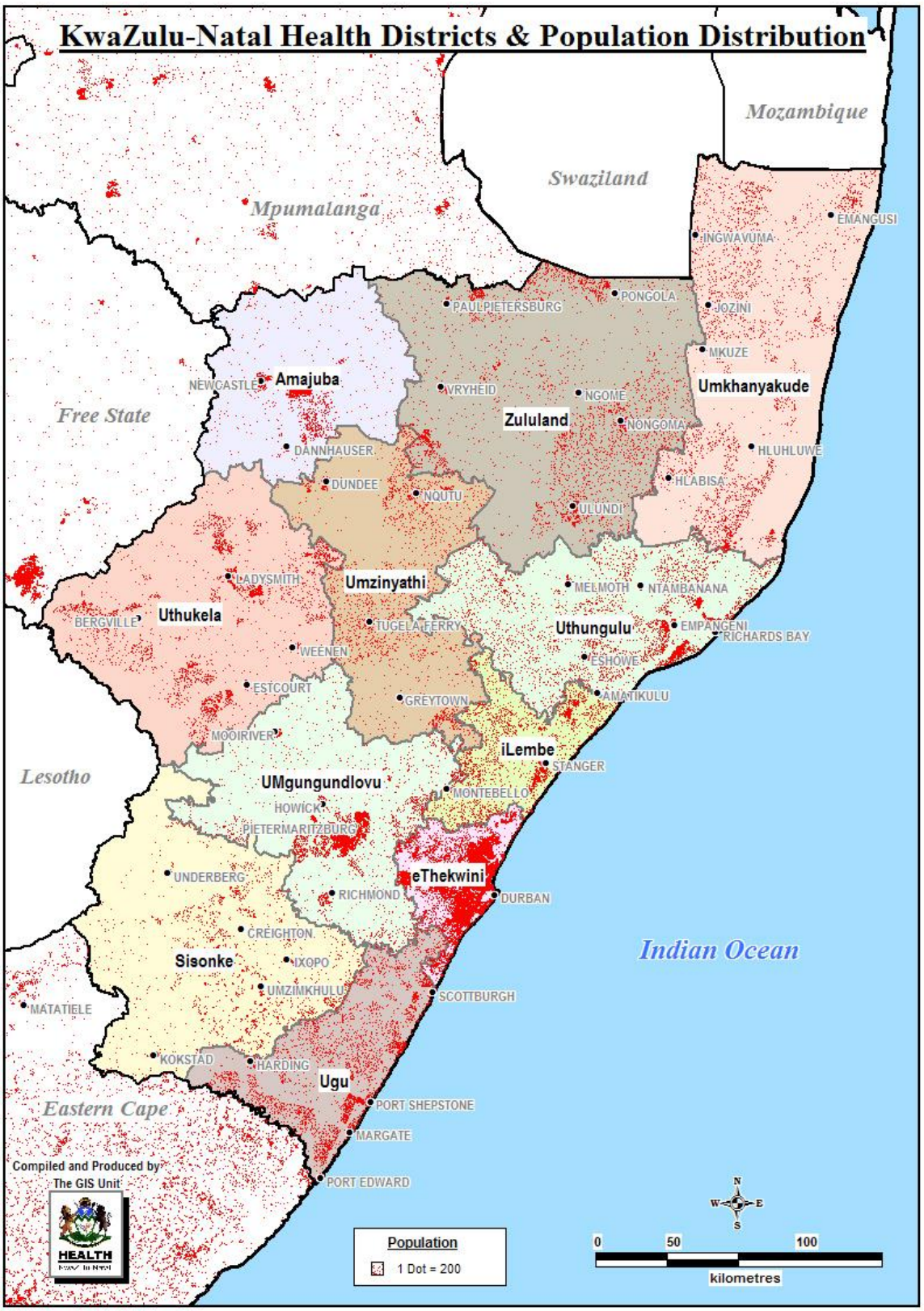


Figure 3.1 KwaZulu-Natal Health Districts and population distribution

3.5 Sampling and sample size

A simple, random, convenient sampling method was used to identify potential study respondents as the surgical team were all the staff working in theatre and who had an equal chance of being selected (Burns and Grove 2013:710). The sample size was achieved in consultation with the statistician, this being 321 surgical team members. The team was randomly selected from the three disciplines of general surgery, orthopaedics, and obstetrics and gynaecological surgeries, these being identified as they were available in all the regional hospitals. Sampling also gives information about the entire population by examining only one part of it (Burns and Grove 2013:709). The sample size was calculated as a representation of the entire theatre population, and enable accurate data to be collected timeously from people who have relevant expertise in their respective disciplines (Burns and Grove 2013:708).

Table.3.2: Study population and sample size.

Hospital	Total theatre nursing staff	Total theatre doctors	Total theatre doctors and nurses	Sample size No
Addington	40	24	64	17
King Dinuzulu	35	12	47	13
Madadeni	85	30	115	33
RK Khan	90	40	130	35
Edendale	111	52	163	43
Greys	90	38	128	34
Newcastle	24	10	34	9
Ngwelezane	50	26	76	20
Port Shepstone	39	16	55	15
King Edward VII	186	94	280	72
Stanger	36	16	52	14
Ladysmith	40	20	60	16
Total	826	378	1204	321

The following constituted the inclusion criteria:

- Scrub sisters, theatre supervisors, floor nurses, anaesthetic nurses, anaesthetists, surgeons and assistant surgeons.
- Staff who worked within the three surgical disciplines of orthopaedics, general, obstetrics and gynaecological surgery.
- Staff who had worked in theatre for more than two years consecutively.
- nurses and doctors who had undergone theatre training.

The exclusion criteria were as follows:

- theatre staff not working in orthopaedics, general, obstetrics and gynaecological surgery;
- student nurses;
- Professional nurses who were allocated for community service in the theatre;
- newly qualified doctors with less than two years of theatre experience; and
- visiting doctors doing locums.

3.6 Data collection instrument

The data collection instrument embraces the two objectives of the study which are:

- To investigate factors that impact on safety attitudes of health professionals in operating theatres.
- To identify measures to improve patient safety in operating theatres.

The data collection instrument consisted of three sections, the first being the respondent's biographical details which included recommendations by the respondents, the second being the communication information and the last section being the personnel experience on the validated Safety Attitude Questionnaire. This is a psychometrically sound instrument for assessing six related domains by systematically eliciting inputs from front line caregivers, having been developed by Brian Sexton, Eric Thomas, and Bob Helmereich with funding from Robert Wood Johnson Foundation and Agency for Healthcare Research and Quality in 2006 as a tool to measure and asses patient safety culture (Carvallo et al. 2015:01). The Safety Attitudes Questionnaire (SAQ) was refined from the Intensive Care Unit Management Attitudes Questionnaire that had been derived from an instrument widely used in commercial aviation (Sexton et al. 2006), all of which used Donabedian's framework. The SAQ has been adapted by other researchers for use in a variety of clinical settings, including the operating room, by making each item specific to the setting.

While the item content is the same, minor modifications reflect the clinical area, for example, "In the operating rooms here, it is difficult to discuss mistakes." (p1). The SAQ is one of the most recommended instruments for use in operating theatres due

to challenges of staff attitudes that theatres are faced with which result in the occurrence of surgical errors thus defeating the purpose of safety (Göras, Unbeck, Nilsson, and Ehrenberg, 2017). It elicits caregiver's attitudes through the five factors analytically derived scales:

- Statements about safety.
- Statements about teamwork.
- Statements about management work satisfaction/dissatisfaction.
- Statements about work stress recognition.
- Statements about work satisfaction/dissatisfaction.

Objective 1.To investigate factors that impact on safety attitudes of health professionals in operating theatres.

For this research, the 57-item version (Safety Attitudes Questionnaire, OR version) was used as provided by the United States Centre for Healthcare Quality and Safety Team (Annexure 6). Each of the 57 items is answered using a five-point Likert scale (Disagree Strongly, Disagree Slightly, Neutral, Agree Slightly, Agree strongly and a Not Applicable option), with some items being negatively worded.
A confirmatory factor analysis using principal components analysis, Promax Rotation with Kaiser Normalisation did not yield a 6 factor structure but rather a 5 factor similar to that used by Wul- Chiang(2010).

The instrument adapted for use in the study consisted of 57 questions (Annexure 6). With the assistant of the statistician out of 57 questions that were used in data collection, 22 were selected due to their ability to summarise the research data. The 22 questions were further grouped into five factor groups that align with research problem statement. The five factors are as follows:

- Factor 1: Safety climate, eight statements.
- Factor 2:. Teamwork climate, five statements.
- Factor 3: Management, four statements.
- Factor 4: Stress recognition, two statements.
- Factor 5: Work satisfaction/dissatisfaction, three statements.

One Sample T- Test was used to analyse each of the 22 questions to test for significant disagreement.

Objective 2: To identify measures to improve patient safety in operating theatres.
The instrument included the recommendations by theatre health professional as well as their level of communication amongst themselves as measures to improve patient safety in operating theatres. The theatre staff were asked to give three recommendations for improving patient safety whereas the quality of communication and collaboration they have experienced was measured using the 5 rating scale of very low, low, adequate, high and very high. Communication was amongst the surgeons, surgeons' consultants, anaesthesiologists, anaesthetists, ward staff, anaesthetic nurses, scrub sisters, floor nurses and theatre support staff.

3.6.1 Reliability of the instrument

The reliability of the instrument measures the attitude consistency and dependability (Polit and Beck, 2017:303). This questionnaire was chosen as the instrument for collecting data due to its consistency and limited opportunity for biased responses (Polit and Beck, 2017:275). The literature review as well as the researchers experience and exposure in the field of theatre surgery assisted in selecting the SAQ. The questionnaire as an instrument is designed to determine the facts about events and situation known by the subject or their level of knowledge or intentions (Burns and Grove 2013:425). The questionnaire was the ideal instrument for collecting data as it enables privacy and anonymity that is required in research. The instrument that was used was pre-approved and was adapted for use in the study. The instrument that was used was preapproved from University of Texas and was developed by Mark Reflex (Appendix 10). The instrument is consistent and dependable as it has been previously used and its reliability measures the attitude consistency and dependability (Polit and Beck, 2017:303).

3.6.2 Validity of the instrument

Validity refers to the degree to which inferences made in the study are accurate and well founded (Polit and Beck, 2017:309). Validity is the means which a measuring tool precisely measure what it is intended to measure (Burns and Grove, 2013:712). Validity is a criteria referring to a degree to which inferences made in the study are

accurate and well founded and the degree which an instrument measures what it is intended to measure (Polit and Beck 2017:747). The use of the pre- approved questionnaire which was well founded from the University of Texas and whose permission was sought ensured its validity (appendix 10).

3.7 Pilot study

To investigate the feasibility of the research instrument a pilot study was done, this being a small scale version of the main study in order to detect any possible flaws in the data collection instrument (Polit and Beck, 2017:739). Pilot studies are done to develop and refine the methodology, such as the instruments' contents or data collection process to be used in the larger study (Polit and Beck, 2017:624). After permission was granted by the Medical Manager of the hospital (Annexure 4), the pilot study was conducted to examine the validity and reliability of research instrument (Burns and Grove, 2013:46). The study was piloted at Prince Mshiyeni Memorial Hospital, a regional hospital that was not included in the study, but which had similar disciplines to those selected for the main study of general, orthopaedics, obstetrics and gynaecology surgery. The piloted hospital had equivalent categories of staff, these being: scrub sister, supervisor, floor nurse, anaesthetic nurse, anaesthetist, surgeon and assistant surgeon. This consisted of a total number of seven people for each of the three disciplines so as to avoid bias, with a total of 21 staff being included.

3.8 Data collection process

Data collection commenced after getting a full ethical approval from Durban University of Technology Institutional Research Ethics Committee (IREC) (Annexure 5). All 12 regional hospitals in the seven health districts were visited after the researcher had obtained permission from their respective operational managers (Annexure 9).

Permission from the hospital manager and the operational manager of each hospital was obtained. A convenient day for visiting the hospital was arranged by phone as the theatres are busy with emergencies. The theatre operational managers' assistance and co-operation was requested to distribute the questionnaires to the relevant theatre staff. The operational manager was briefed about the letter of

information and the importance of staff signing the consent form. After the information letter was read and clarified to the theatre health professionals, they were then requested to sign the consent as an agreement that they would participate in the answering of questionnaires.

With the assistance of the operational managers of the 12 regional hospitals to arrange a date and time at which to meet the relevant theatre staff, this was confirmed shortly before the actual visit. The information letters were first given to the operational managers so that they had a full understanding prior to their distribution to the theatre members, to facilitate the process of data collection and to correct any misconception. The time allocated to distribute the questionnaires and for the researcher to meet with the staff was the same at all the hospitals, 08:00 – 09:00.

The data collection process took three months, as most of the hospitals were distant from Durban, the location of the researcher, and some hospitals had to be visited twice due to unpredictable theatre times. The hospitals were visited as follows:

- Newcastle: 01/11/2017
- Madadeni: 17/11/2017
- Port Shepstone: 30/11/2017
- Ladysmith: 13/12/2017
- RK Khan : 06/01/2018
- Addington: 06/01/2018; 05/09/2018
- Ngwelezane: 09/01/2018
- King Dinuzulu: 31/01/2018
- Greys: 14/02/2018
- Edendale: 14/02/2018
- Stanger: 23/02/2018
- King Edward VIII: 12/01/2018; 09/ 04/2018

The researcher arrived thirty minutes prior to actual time to ensure that the venue was suitable for data collection. Greetings and introductions were made and the

purpose for visit explained further, as the operational managers had briefed them before the researchers' arrival to encourage their attendance at the researchers meeting, which was conducted in English. The theatre team members were relaxed, which made it easy for the researcher to read through the information letter to explain the study and to clarify any misconceptions. The researcher emphasized that they had the right to participate or not without being coerced (Burns and Grove 2013:177).

Many theatre team members signed the consent form and were willing to participate, after which the operational managers' distributed the questionnaires to the consented respondents. Anonymity was ensured as all the questionnaires were coded, and assurance was given that the process was only for academic purposes. The completed questionnaires were put in envelopes and then into a designated box and sealed to ensure confidentiality. The respondents were informed that the questionnaires will be shredded after five years on completion of the study. The retention period of five years is the institution's policy on storage of research data. Electronic data will be deleted from the technological devices after five years. The researcher thanked all the respondents and the operational manager for their cooperation.

3.8.1 Challenges with gatekeepers approval

A number of challenges were encountered while obtaining gate-keepers' permission to prepare for data collection. These included delays in getting the response from the Chief Executive Officers (CEO) and the medical managers of the hospitals, as they denied receiving the emails from the researcher, that emails were no longer functional, or the medical manager or CEO was on leave and nobody would sign on their behalf. In addition the hospitals emails were reportedly not functional after a fire took place, or the CEO was very busy and would look at the request in one week's time, all of which resulted in the researcher having to physically visit the hospital to seek permission in some instances.

3.8.2 Challenges with data collection

The data collection process had some challenges that led to delays with data capturing and analysis, these being:

- **Storm damage:** a storm that took place in October 2017 badly affected the infrastructure of some research settings, such as King Edward VIII and Addington Hospitals. They were closed down and their staff had to be seconded to the other facilities, such as St Aidans and Inkosi Albert Luthuli Central hospital, which made it necessary to delay their inclusion. The only time that was suggested by their operational managers was on weekends, during which time very few were available to participate. The researcher revisited the facility in an attempt to achieve the required sample size, which was not possible.
- **Distance**: Some facilities were a distance from Durban, where the researcher was based, and required her to set aside at least three days to cover the facilities included in the study.
- **Staff unpredictability**: Theatre work can be unpredictable, which resulted in the researcher having to visit some of the hospitals twice due to unavailability of the room required to meet the staff, or their unavailability due to unexpected circumstances.

3.9 Data analysis

Of the 57 items on the questionnaire only 22 were used in data analysis because factor analysis was applied to determine the latent factors present in the data. One has to clean it up by dropping any item that either cross loads or loads too low on to all factors or has a low communality that ultimately the factor structure that remains must make sense and yield reliable measures for individual factors. These 22 items were answered using a five-point Likert scale (Disagree Strongly, Disagree Slightly, Neutral, Agree Slightly and Agree Strongly.

Data analysis is the systemic, organization and synthesis of research data and the testing of hypothesis (Polit and Beck 2017:725). Before conducting data analysis, the researcher had to examine the data for completeness and accuracy (Polit and Beck 2017:725), after which it was electronically captured for each respondent in a systematic and numerical format (Polit and Beck 2017; 57). All questions were marked, coded and captured into a Microsoft Excel spread sheet. Data was collected from three sections of questionnaire which were: the biographic information and the three recommendations for improving patients safety as the first section, the

communication information as the second section which was using the five-point likert scale of very low, low, adequate, high, very high and not applicable and lastly the personnel experience which was also using the five-point likert scale of Disagree strongly, Disagree slightly, Neutral, Agree slightly, Agree strongly.

The analysis of 290 questionnaires from consented respondents was undertaken using descriptive statistics with respect to the 22 variables. All the questions using a five-point likert scale were coded, and those that were negatively worded had to be reversed for statistical analysis. Graphs and tables were constructed to give a visual summary of the analytical results using the latest version of Statistical Packaging for Social Sciences (SPSS) version 17. A confirmatory factor analysis using the principal components analysis, Promax Rotation with Kaiser Normalizationin did not yield a 6 factor structure but rather a 5 factor similar to that used by Wul-Chiang (2010). When applying factor analysis to determine the latent factors present in the data, one has to drop any items that either cross load or load too low onto all factors. Ultimately, the factor structure that remains must make sense and yield reliable measures for the individual factors. By applying factor analysis and reducing the items, five factors were isolated that passed the validity test for convergent and discriminant validity. This is in line with the study conducted by Lee et al. in 2010 using Chinese version where five (5) factors similar to the one used in this study were used. These five factors were: Safety climate, teamwork, management support, stress recognition and work satisfaction/dissatisfaction. The reliability is acceptable given that those with lower alpha have a few items only. The 22 questions were further grouped into five factor groups that align with the research objectives.

Factor one had a groups of eight questions which enquired about the safety climate in public hospitals theatres. Factor two had a group of five questions which enquired about teamwork in public operating theatres. Factor three has a group of four questions which enquired about management support in public hospital operating theatres. Factor four has a group of two questions which enquired about stress recognition in public operating theatres. Lastly factor five had a group of three questions which enquired about work satisfaction and dissatisfaction in public operating theatres. The ‘one-sample t-test’ tool was used in all the twenty two questions to test whether the respondents disagreed or agreed with the statements

In all the five recommendations, a confirmatory factor analysis was used to check any consistency with given responses of the respondents with an ultimate aim of measuring construct validity. The recommendation responses would be correlated with the personnel experience in the Safety Attitude Questionnaire to ensure construct validity.

3.10 Ethical consideration

Ethical consideration is the adherence to ethical standards, principles and guidelines of moral judgement and actions (Phillips 2013:52). Researcher need to adhere to various practices as they are acceptable ethical methods, as required for approval by the Research Ethics Committee (Burns and Grove, 2013:191).

- Full ethical approval IREC number 26/17 (Annexure 5) was obtained from the Durban University of Technology Institutional Research Ethics Committee after having received the researchers' proposal with gatekeepers' permission. The ethical approval gave the researcher the authority to start data collection.
- Permission to conduct the study at 12 regional hospitals from seven health districts was requested and obtained from KZN Department of Health (Annexure 3).
- Written permission was obtained from the Department of Health managers of the seven health districts: Amajuba, eThekwini, ILembe, Ugu, UMgungundlovu UThukela and UThungulu (Annexure 7), to conduct the study.
- Written permission was granted by the CEO and medical managers of the 12 regional hospitals: Addington, Edendale, Greys, King Dinuzulu, King Edward VIII, Ladysmith, Madadeni, Newcastle, Ngwelezane, Port Shepstone, RK Khan and Stanger (Annexure 8), to conduct the study.
- Written permission to distribute the questionnaires to the respondents was granted by the theatre operational managers of the 12 regional hospitals (Annexure 9).

Information letter and informed consent:

The information letter was read, explained and understood by the operational managers to enable them to have a clear understanding about the purpose of the study before distributing the questionnaires to the consented respondents. The letter of information was distributed to the potential respondents who then decided whether or not to sign the consent form, thereby agreeing to participate in the study (Burns and Grove, 2013:180). Information letter (Annexure1) and consent (Annexure2).

Beneficence:

The researcher highlighted to the respondents that the purpose for answering the questionnaires was for academic purpose only, and that they have the right to withdraw at any given time without being coerced, as required for the voluntary participation of respondents (Burns and Grove, 2013:180).

Justice:

The respondents were fairly selected and were specified according to their surgical disciplines, which were highlighted in the inclusion criteria of general, orthopaedics and obstetrics and gynaecology surgery. Surety was given to the respondents that after completion of the research, feedback would be given to them, as per their requests, as the study was for academic purposes. Justice must prevail in every step taken in research, including the fair selection of participants (Burns and Grove 2013:698).

Confidentiality:

All questionnaires were coded to ensure anonymity and privacy, with no names or identifiers being included that could link with a particular respondent. Envelopes were provided into which the answered questionnaires were sealed after being collected to ensure confidentiality. After which the data was digitally captured, it was kept on a password protected laptop and stored appropriately. The participants as the subjects of research have the right to privacy, confidentiality and anonymity (Burns and Grove 2013:171-172).

3.11 Conclusion

To achieve the study objectives, a quantitative non-exploratory and descriptive study was conducted with 290 theatre staff at 12 public sector regional hospitals that provided surgery services in seven health districts in KZN. The Safety Attitude Questionnaire was used to obtain information about their challenges and recommendations to improve patient safety in the operating theatre environment. The results were analysed both descriptively and statistically by objective, with the results being presented in the following chapter.

CHAPTER 4: PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents the results regarding the factors affecting the safety attitudes of health professionals in the operating theatres of public hospitals in KwaZulu-Natal (KZN) Province. The 290 questionnaires were from the consenting respondents of 12 regional hospitals within seven health districts, with descriptive statistics being used to analyse the results. The response rate for the questionnaires was 90%, which consisted of 290 responses out of sample size of 321. The results are presented with respect to the respondents' demographic details, followed by those for Objective 1, to investigate factors that impact on safety attitudes of health professionals in operating theatres and then Objective 2, to identify measures to improve patient safety in operating theatres.

4.2 Demographic Characteristics

The population for this study was 290 respondents from 12 regional hospitals of seven health districts of KZN, as indicated in Table 4.1. The results have been summarised as a total of all respondents rather than being presented per hospital. Most of the responses (n=144, 49.65%) came from four of the province's largest hospitals, Edendale and Greys in Pietermaritzburg, and King Edward and RK Khan in Durban.

Table 4.1: Hospitals and number of participants

Facility	**No. (%)**	**Facility**	**No.(%)**
Addington	24 (8%)	Madadeni	19 (7%)
Edendale	43 (15%)	Newcastle	11(4%)
Greys	32 (11%)	Ngwelezane	20(7%)
King Dinuzulu	20 (7%)	Port Shepstone	20(7%)
King Edward	36 (12%)	RK Khan	33(11%)
Ladysmith	16 (6%)	Stanger	16 (6%)

Most of the respondents were females (70.34%), in the age category of 36 to 66 years while 65.17% (n=189) were Black African. The majority of respondents, 99.65% (n=289) were full time employees and 0.34% (n=1) on contract , 36% had 21-27 years of experience, nurses (anaesthetic, scrub, theatre and floor) accounted

for 72.4% 4 of those interviewed, while almost two thirds (64.14%) work variable shifts.

The race distribution of the respondents was 65.17% (n=189) Black, 20.34% (n=59) Indians, 7.24% (n=21) Whites and 4. 48% (n=13) Coloureds, two (n=2) did not indicate their race.

The position of the respondents comprised of 11.38% (n=33) surgeons, 5.5% (n=16) consultant surgeons, 10.34% (n=30) anaesthetists. This is depicted in Table 4.2.

Table 4.2 Demographic details

Variable	Characteristic	No.	%
Gender (n=290)	Male	86	29.66%
	Female	204	70.34%
Age (n=219)	20-36	46	21%
	37-46	62	28%
	47-56	58	26%
	57-66	53	24%
Race (n=282)	Black	189	65.17%
	Coloured	13	4.48%
	Indian	59	20.34%
	White	21	7.24%
Job status (n=290)	Full-Time	289	99.65%
	Contract	1	0.34%
Years of service (n=244)	3-10	64	26%
	11-20	92	38%
	21-27	88	36%
Position (n=289)	Anaesthetists	30	10.34%
	Anaesthetic nurses	44	15.51%
	Consultant surgeons	16	5.5%
	Surgeons	33	11.38%
	Scrub nurses	89	30.68%
	Scrub nurses (experienced)	18	6.20%
	Theatre trained scrub nurses	53	18.27%
	Floor nurses	6	2.06%
Work shift (n=289)	Day shift	100	34.48%
	Evening shift	4	1.37%
	Variable shift	185	64.14%

4.3 Objective 1. To investigate factors that impact on safety attitudes of health professionals in operating theatres

Safety attitudes were measured by the 59-item Safety Attitudes questionnaire-OR version (Centre for Health Quality and Safety Team, 2016). A confirmatory factor analysis using principal components analysis, Promax Rotation with Kaiser

Normalization did not yield a 6-factor but rather a 5-factor structure similar to that used by Wul-Chiang (2010). The instrument used was adapted for the study and consisted of 57 questions, out of which 22 were used in the data collection due to their ability to summarise the research data. They were further grouped into five factor groups that align with the research problem statement.

- Factor 1: 8 statements about safety climate.
- Factor 2: 5 statements about team work.
- Factor 3: 4 statements about management.
- Factor 4: 2 statements about stress recognition.
- Factor 5: 3 statements about work satisfaction/ dissatisfaction.

One Sample T-Test was used for each of the 22 questions to test for significant disagreement. A one- sample t-test has been used as per Likert scales' items to identify the significant difference from a central/neutral score of 3 so as to arrive to a decisive mean values of either a sig agreement when > 3 or sig disagreement if < 3. On factor 1: safety climate in relation to patients' safety is rated as sig agreement with mean values from 3.61 to 3.87. Factor 2: team work also has mean values with sig agreement from 3.55 to 3.8. Factor 3: management has sig disagreement with mean values from 1.71 to 3.1. Factor 4: stress recognition, has sig agreement with mean values starting from 3.76 to 3.93. The last Factor 5: work satisfaction/dissatisfaction has sig agreement with mean values from 3.05 to 3.33.

4.3.1 Factor 1: Safety Climate

The responses to the eight safety climate statements are presented in Table 4.3. For Statement 7 "*All necessary information is available before the start of the procedure*", most of the respondents agreed (n=92) with the statement, with (n=1) not answering. This equated to 80% (n=176) who agreed with the statement, while 20% (n=45) disagreed and 24% (n=69) were neutral. The data was further analysed by removing the neutral responses and resulted in 80% of respondents agreeing with the statement and 20% disagreeing. The results gathered in this statement leads to the assumption that prior to a procedure in the operating room the majority of the operating team do have the necessary information regarding the procedure with few that disagree with the statement.

Statement 14 states "*Briefings are common in the Operating Room*", and of the 290 respondents, the majority 34% (n=99) strongly agreed, and five did not answer, with a combined total of (n= 49) respondents disagreeing. A combined total of 64% (n=186) agreed with the statement, and once the Neutral had been removed, 78% (n=186) agreeing with the statement and 20% (n=49) disagreed. The results gathered in this statement leads to substantiate that briefings are common in the operating rooms.

Statement 20 states "*I am encouraged by my colleagues to report any patient safety concern I may have*", and of the 290 respondents, 34% (n=98) strongly agree, with four not answering and 32 who disagreed. A combined total of 67% (n=194) agreed with the statement, and once the Neutral had been removed, 84% (n=194) agreed and 14% (n=32) disagreed. The results gathered in this statement lead to the assumption that the operating team members are encouraged in reporting patient safety concerns they might have in the operating rooms.

Statement 27 states "*I know the proper channels to direct questions regarding patient safety in the Operating Rooms here*". Out of 290 respondents, 38% (n=109) strongly agree with this statement, with four not answering the statement, and a combined total of 39 respondents disagreeing. A combined total of 65% (n=189) agreed with the statement, and once the Neutral had been removed, 81% (n=189) agreed and 17% (n=39) disagreed. The results gathered in this statement leads to the assumption that the operating team members know the proper channels to direct their questions regarding patient safety in the operating room.

Statement 29 states "*Disagreements in the Operating Room here are resolved appropriately* (i.e. not who is right but what is best for the patient)" and of 290 the respondents, 29% (n=85) strongly agree, with eight not answering. A combined total of 62% (n=179) agree with the statement, and once the Neutral had been removed, 77% (n=179) agreed and 19% (n=45) disagreed. The results gathered in this statement lead to the assumption that the operating team members feel that disagreements in the operating room are controlled and do not affect patients in the operating room and are resolved amicably.

Statement 33 states "*I have the support I need from other personnel to care for patients*." Out of 290 respondents (n=76) strongly agree with the statement, with four not answering and a combined total of 41 disagreeing. A combined total of 66% (n=191) agreed with the statement, and once the Neutral had been removed, 81% (191) agreed with the statement and 17% (n=41) disagreed. The results gathered in this statement lead to the assumption that the operating room team members feel that they have support from other operating team members when it comes to the care of patients.

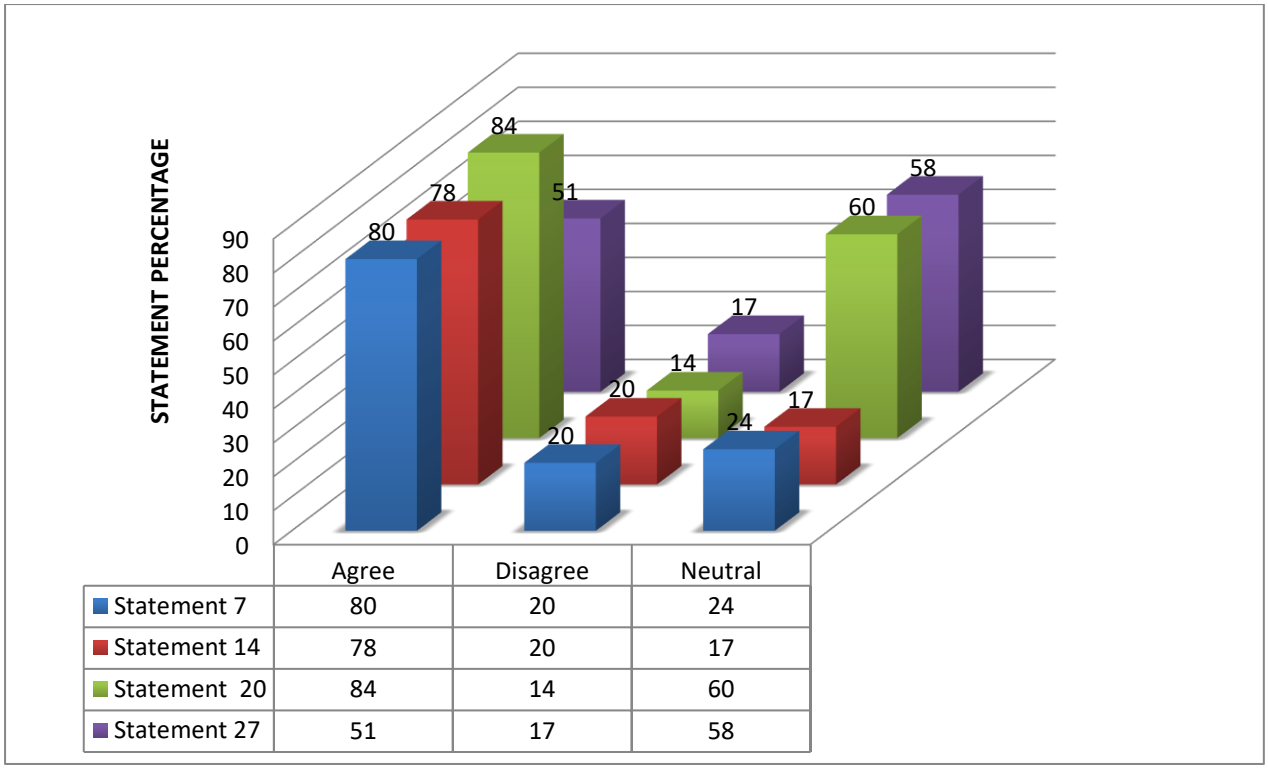
Statement 49 states "*Important issues are well communicated at shift changes*". Out of 290 respondents, 18% (n=53) strongly agreed with the statement, two did not answer, and a combined total of 86 respondents disagreed. A combined total of 47% (n=137) agree with the statement, and once the Neutral had been removed, 61% (n=137) agreed with the statement and 38% (n=86) disagreed. The results gathered in this statement lead to the assumption that the operating room team members feel that important issues are well communicated in the operating rooms at shift changes, as a result patient care is not affected by shift turn over.

Statement 53 states "*Information obtained through incident reports is used to make patient care safer in the Operating Rooms here*". Out of 290 respondents, 30% (n=86) strongly agree with the statement, while(n=5)did not answer the question and a combined total of 47 disagreed. A combined total of 63% (n=182) agree with the statement, and once Neutral had been removed, 78% (n=182) agreed with the statement and 20% (n=47) disagreed. The results gathered in this statement lead to the assumption that the operating room team members feel that the information obtained through the incident report is used to make patient care safer in the operating room.

All eight statements from factor one which is Safety climate, yielded positive results in relation to patient safety in operating rooms. Those positive results ranged from 61% to 84%. The results are shown in Figure 4.1 and 4.2.

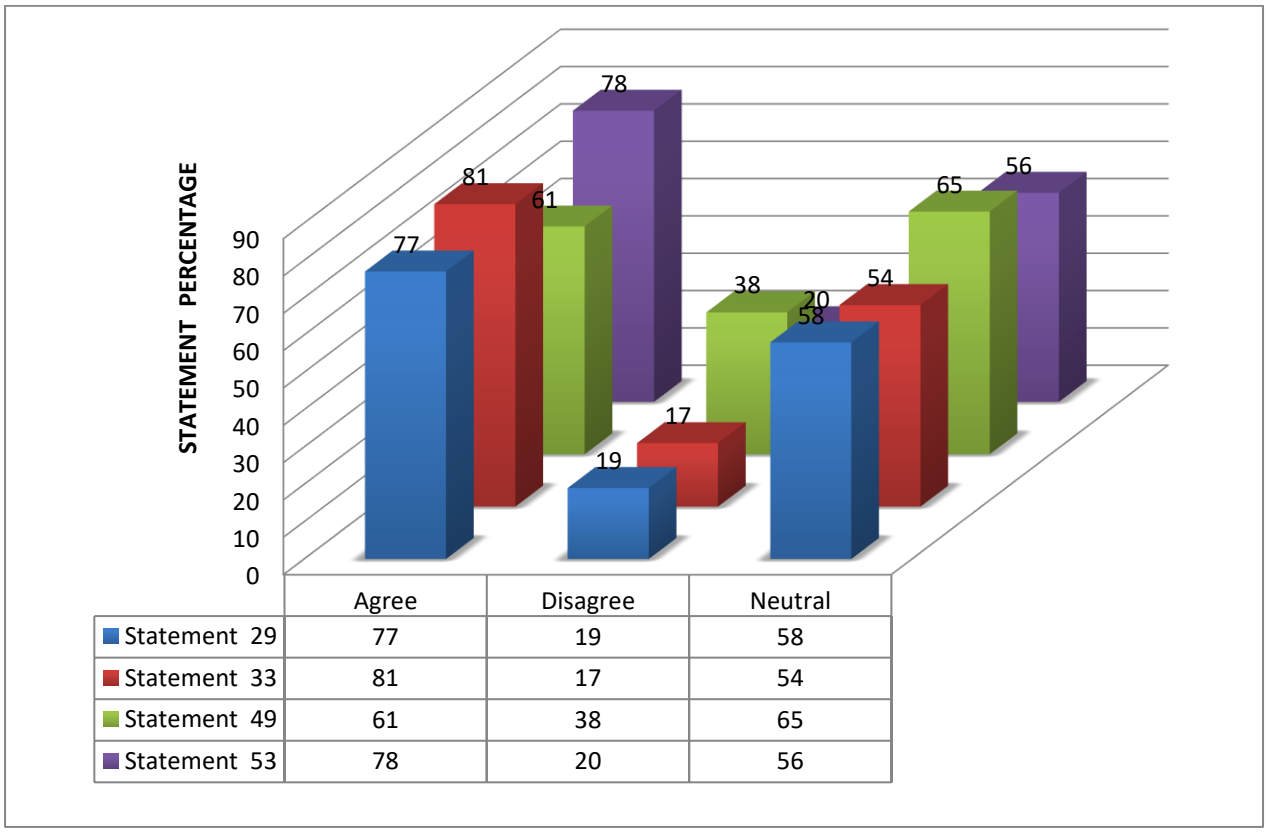
Table 4.3: Safety climate responses

No.	Statements	Responses No. (%)				
		Strongly agree	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
7	All necessary information is available before the start of a procedure. (n=289)	84(29%)	92(32%)	69	20	25
		176/221x100 = (80%)		-	45/221x100 = (20%)	
14	Briefings are common in the Operating Room. (n=285)	99(34%)	87(30%)	50	36	13
		186/240x100 = (78%)		-	49/240x100 = (20%)	
20	I am encouraged by my colleagues to report any patient safety concern I may have. (n=286)	98	96	60	20	12
		194/230x100 = (84%)		-	32/230x100 = (14%)	
27	I know the proper channels to direct questions regarding patient safety in the Operating Rooms here. (n=286)	109	80	58	27	12
		189/232x100 = (81%)		-	39/232x100 = (17%)	
29	Disagreements in the Operating Room here are resolved appropriately i.e. not who is right but what is best for the patient (n=282)	85	94	58	23	22
		179/232x100 = (77%)		-	45/232x100 = (19%)	
33	I have the support I need from other personnel to care for patients. (n=286)	76	115	54	19	22
		191/236x100 = (81%)		-	41/236x100 = (17%)	
49	Important issues are well communicated at shift changes. (n=288)	53	84	65	46	40
		137/225x100 = (61%)		-	86/225x100 = (38%)	
53	Information obtained through incident reports is used to make patient care safer in Operating Rooms here. (n=285)	86	96	56	22	25
		182/234x100 = (78%)		-	47/234x100 = (20%)	



	Agree	Disagree	Neutral
Statement 7	80	20	24
Statement 14	78	20	17
Statement 20	84	14	60
Statement 27	51	17	58

Figure 4.1: Safety climate



	Agree	Disagree	Neutral
Statement 29	77	19	58
Statement 33	81	17	54
Statement 49	61	38	65
Statement 53	78	20	56

Figure 4.2: Safety climate

The results were further analysed using the significant score (sig agreement or sig disagreement) with all the mean values in Figure 4.3 that are >3 being interpreted as agreeing, and the mean values <3 being interpreted as disagreeing. The safety climate in public hospital theatres pertaining to patients by the operation team members is rated significantly higher than adequate, with mean values starting at 3.61 to 3.87. This means that the attitudes and perceptions of the operating team members regarding patient safety are positive.

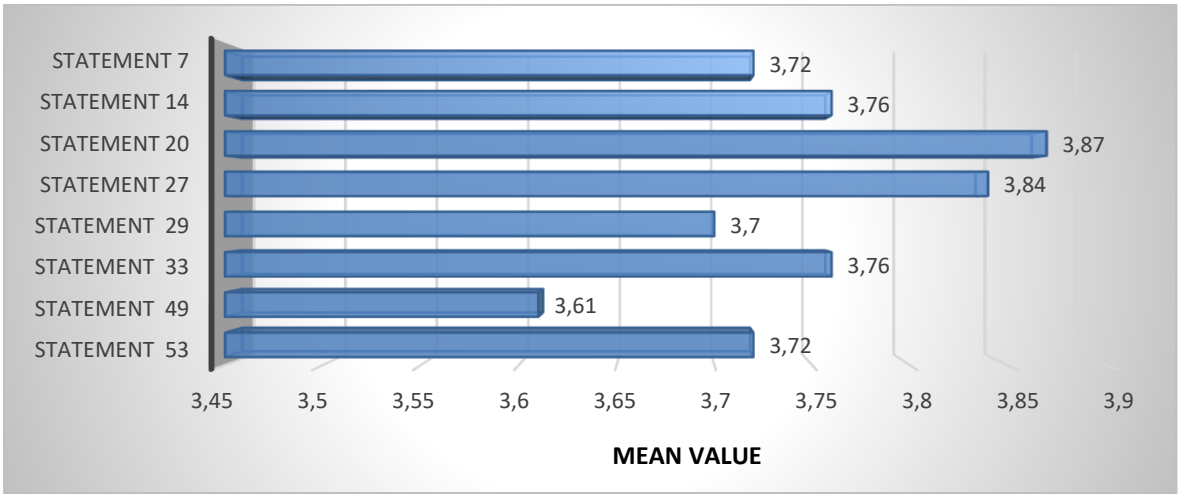


Figure 4.3: Safety climate mean values

4.3.2 Factor 2: Team Work

Factor 2 focuses on Team Work climate and had five statements, as indicated in Table 4.4. Statement 3 states "*Nurses input about patient safety is well received in the OR*". Out of 290 respondents, 32% (n=92) strongly agreed with the statement, with seven not answering a combined total of 33 disagreeing. A combined total of 63% (n=184) agreed with the statement, and once the Neutral had been removed, 82% (n=184) agreed with the statement and 15% (n=33) disagreed.

Statement 6 states "*The hospital does a good job of training new personnel*". Out of 290 respondents, 26% (n=74) strongly agreed with this statement, with three not answering the statement and a combined total of 52 who disagreed. A combined total of 57% (n=165) agree with the statement, and once the Neutral had been removed, 75% (n=165) agreed with the statement and 24% (n=52) disagreed.

Statement 8 states "*Working in this hospital is like being part of a large family*". Out of 290 respondents, 33% (n=96) strongly agree with this statement, with three not answering the statement and a combined total of 37 that disagreed. A combined total of 64% (n=185) agree with the statement, and once the Neutral had been removed, 82% (n=185) agreeing with the statement and 16% (n=37) disagreed.

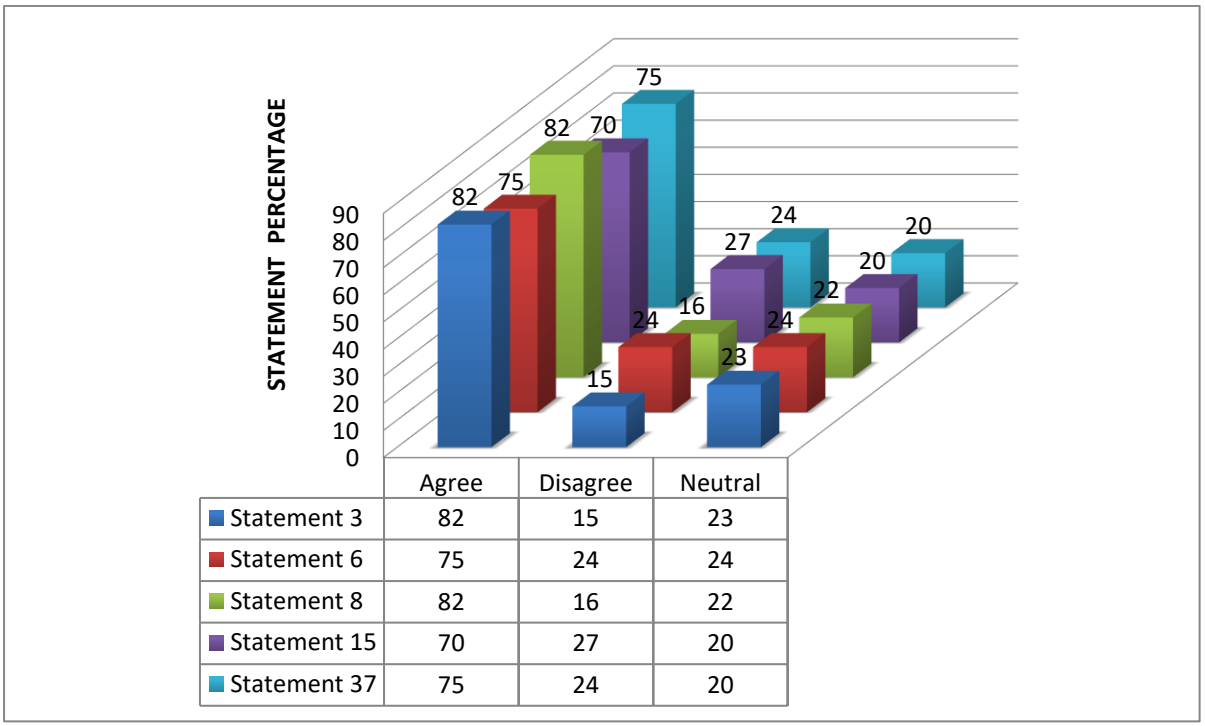
Statement 15 states "*This hospital is a good place to work*". Out of 290 respondents, 27% (n=78) strongly agreed with this statement, with seven not answering the statement and a combined total of 62 who disagreed. A combined total of 56% (n=161) agree with the statement, and once the Neutral had been removed, 70% (n=161) agreeing with the statement and 27% (n=62) disagreed.

Statement 37 states "*The surgeons and anaesthetists here work together as a well-coordinated team*". Out of 290 respondents, 25% (n=71) strongly agreed with the statement, with two not answering and a combined total of 57 who disagreed. A combined total of 60% (n=174) agree with the statement, and once the Neutral had been removed, 75% (n=174) agreeing with the statement and 24% (n=57) disagreed.

Figure 4.4 illustrates the response pertaining to team work climate in public hospital operating theatres. The results show response which agreed with the team work climates being pleasant for all personnel.

Table 4.4: Teamwork responses

No.	Statement	Responses No. (%)				
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
3	Nurse input about patient care is well received in the OR. (n=283)	92	92	66	15	18
		184/224x100 (82%)		-	33 / 224 x 100 (15%)	
6	The hospital does a good job of training new personnel. (n=287)	74	91	70	23	29
		165/220x100 75%		-	52/220X100 (24%)	
8	Working in this hospital is like being part of a large family (n=287).	96	89	65	16	21
		185/225x100 (82%)		-	37/225x100 (16%)	
15	This hospital is a good place to work. (n=283)	78	83	60	35	27
		161/230x100 (70%)		-	62/230x100 (27%)	
37	The surgeons and anaesthetists here work together as a well-coordinated team. (n=288)	71	103	57	26	31
		174/233x100 (75%)		-	57/233x100 (24%)	



	Agree	Disagree	Neutral
Statement 3	82	15	23
Statement 6	75	24	24
Statement 8	82	16	22
Statement 15	70	27	20
Statement 37	75	24	20

Figure 4.4: Team work climate

Further analysis of the results showed that all mean values >3 can be interpreted as being in agreement and those <3 being in disagreement. The team work climate in public hospital theatres amongst health professionals in the operating team relating

to patient's care is rated higher than adequate, with mean values ranging from 3.55 to 3.83. This means that the attitudes and perceptions of operating team members regarding patient safety are positive (Figure 4.5).

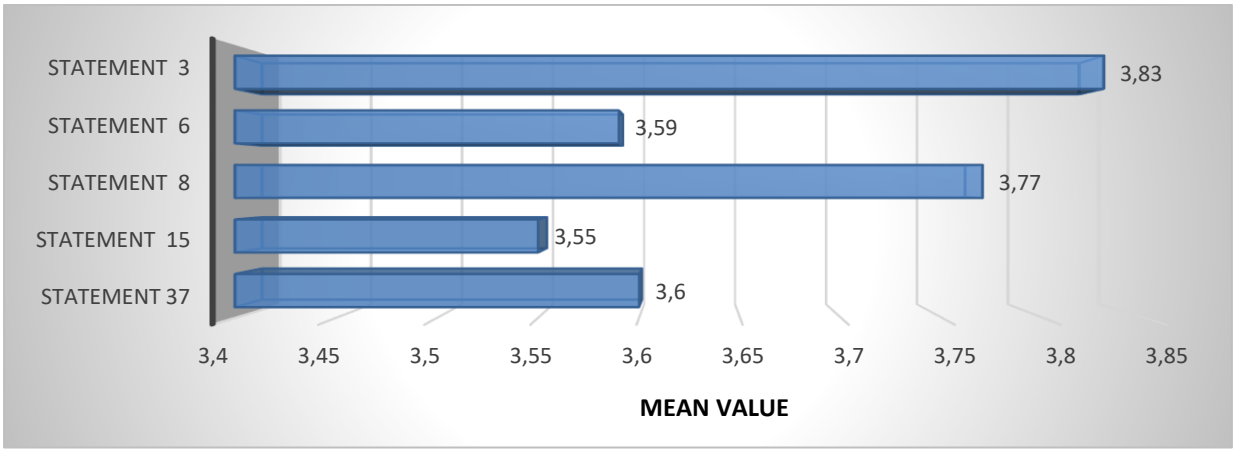


Figure 4.5: Mean values for team work

4.3.3 Factor 3: Management

Factor 3 focused on the management climate and had four statements in the group, as indicated in Table 4.5, Statement 1 states "*High levels of workload are not common in the Operating Rooms here*". Out of 284 respondents, 62% (n=180) strongly disagreed with this statement, with six not answering and a combined total of 30 who agreed. A combined total of 77% (n=222) disagreed with the statement, and once the neutral had been removed, 77% (n=222) disagreeing with the statement and 12% (n=30) agree.

Statement 18 states "*The level of staffing on our ORs is sufficient to handle the number of patients*". Out of 290 respondents, 39% (n=113) strongly disagreed with this statement, with one not answering the statement and a combined total of 34% (n=98) agreeing. A combined total of 59% (n=170) disagree with the statement, and once the Neutral had been removed, 63% (n=170) disagreeing with the statement and 36% (n=98) agreed.

Statement 22 states "*Medical Equipment in the ORs here is adequate*". Out of 290 respondents, 31% (n=90) strongly disagreed with this statement, with one not answering the statement and a combined total of 38% (n=110) agreeing. A combined

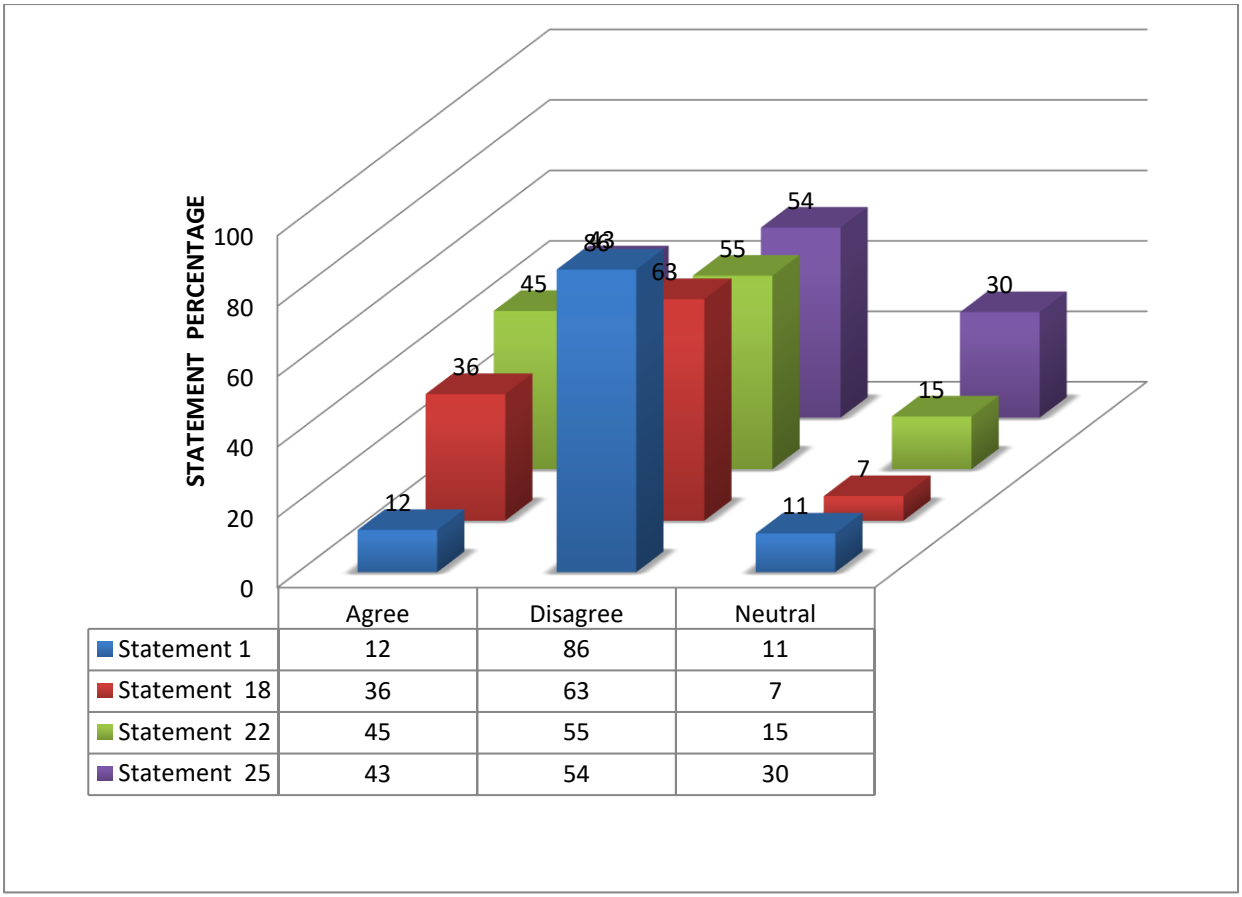
total of 47% (n=135) disagree with the statement, and once the Neutral had been removed, 55% (n=135) disagreeing with the statement and 45% (n=110) agreed.

Statement 25 states "*I am provided with adequate, timely information about events in the hospital that might affect my work*". Out of 290 respondents, 18% (n=53) strongly disagreed with the statement, with six not answering the statement and a combined total of 88 who agreed. A combined total of 38% (n=109) disagree with the statement, and once the Neutral had been removed, 54% (n=109) disagreeing with the statement and 43% (n=88) agree.

Figure 4.6 illustrates the response pertaining to the management climate in public hospital operating theatres. The results show that many disagreed with the management climate, which this leads to the assumption that management is not communicating well with operating room personnel who feel that there is room for improvement.

Table 4.5: Management

No.	Statement	Responses No. (%)				
		Strongly agree	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
1	High levels of workload are not common in the ORs here (n=284).	14	16	32	42	180
		30/258x100 (12%)		-	222 / 258 x 100 (77%)	
18	The level of staffing in our ORs is sufficient to handle the number of patients. (n=289)	52	46	21	57	113
		98/269x100 (36%)		-	170/269X100 (63%)	
22	Medical equipment in the ORs here is adequate. (n=289)	60	50	44	45	90
		110/246x100) (45%)		-	135/246x100 (55%)	
25	I am provided with adequate, timely information about events in the hospital that might affect my work. (n=284)	37	51	87	56	53
		88/203x100 (43%)		-	109/203x100 (54%)	



	Agree	Disagree	Neutral
Statement 1	12	86	11
Statement 18	36	63	7
Statement 22	45	55	15
Statement 25	43	54	30

Figure 4.6: Management

All mean values in Figure 4.7 that are >3 can be interpreted as being in agreement and those <3 in disagreement. The management climate in public hospital theatres amongst health professional in the operating team relating to patients care is rated as disagreement. This means that the attitudes and perceptions by operating team members regarding patient safety are positive. Only statement 25 is above 3.

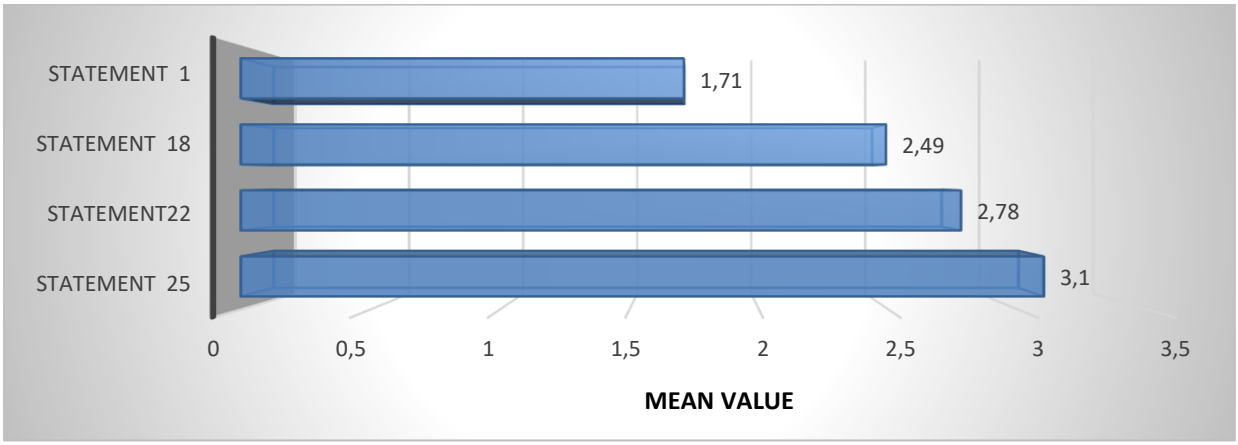


Figure 4.7: Management mean value

4.3.4 Factor 4: Stress Recognition

Factor 4 focuses on stress recognition, which consisted of three statements. Statement 16 states "*Fatigue impairs my performance during emergency situations*." Out of 290 respondents, 35% (n=102) strongly agreed with the statement, with one not answering the question and a combined total of (n=58) respondents disagreeing. A combined total of 66% (n=192) agree with the statement, and once the Neutral had been removed 77% (n=192) agreeing with the statement and 23% (n=58) disagreed with the statement.

Statement 24 states "W*hen my workload becomes excessive, my performance is impaired*". Out of 290 respondents, 34% (n=99) strongly agree with this statement, with four not answering the question and a combined total of 47 who disagreed. A combined total of 63% (n=182) agree with the statement, and once the Neutral had been removed, 78% (n=182) agreeing with the statement and 20% (n=47) disagreed.

Statement 30 states "*I am less effective at work when fatigued*". Out of 290 respondents, 40% (n=115) strongly agreed with this statement, with three not answering the question and a combined total of 41 respondents who disagreed. A combined total of 71% (n=207) agree with the statement, and once the Neutral had been removed, 82% (n=207) agreeing and 16% (n=41) disagreed.

Figure 4.8 illustrates the response pertaining to stress recognition in operating theatres. The results show that most of the response agreed with the statements, leading to the assumption that operating room team members and personnel have high stress levels that lead to ineffective work as depicted in Table 4.6.

Table 4.6: Stress recognition

No.	Statement	Responses No. (%)				
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
16	Fatigue impairs my performance during emergency situations. (n=289)	102	90	30	20	38
		192/250x100 (77%)		-	58 / 250 x 100 (23%)	
24	When my workload becomes excessive, my performance is impaired. (n=286)	99	83	57	24	23
		182/233x100 (78%)		-	47/233X100 (20%)	
30	I am less effective at work when fatigued. (n=287)	115	92	39	18	23
		207/251x100) (82%)		-	41/251x100 (16%)	

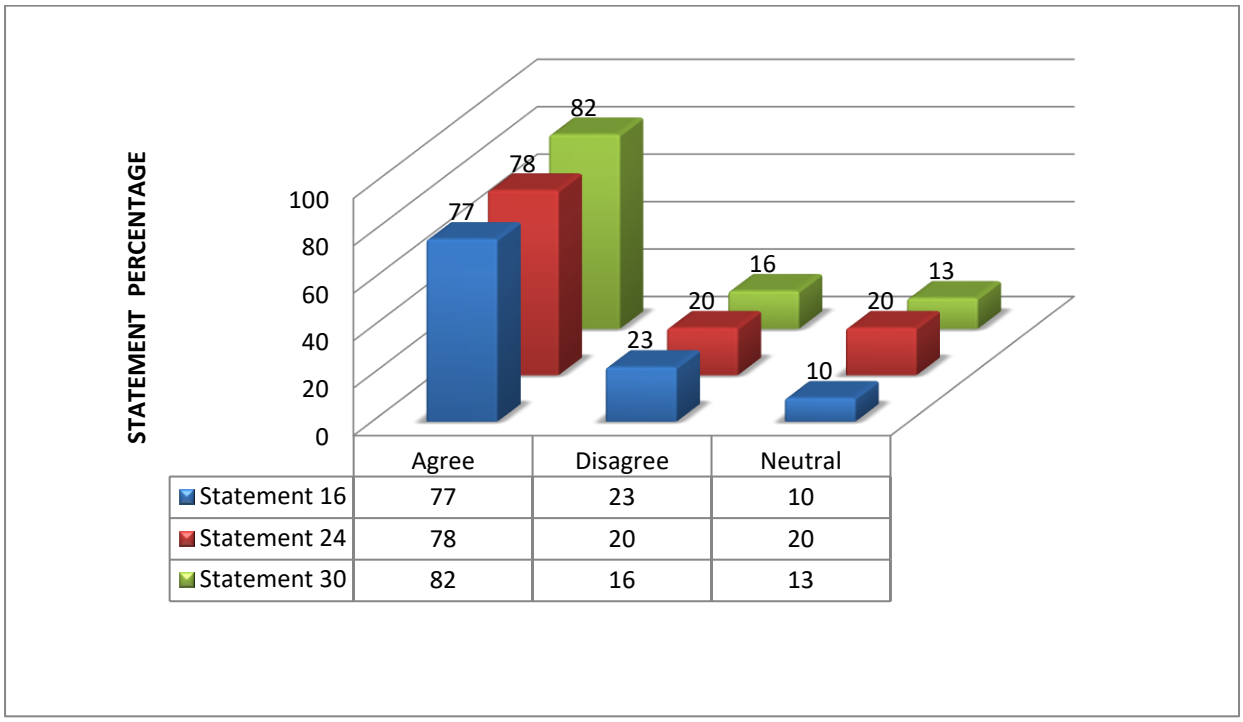


Figure 4.8: Stress recognition

The mean values that are >3 can be interpreted as being in agreement and <3 as being in disagreement (Figure 4.9). The stress recognition climate in public hospital theatres pertaining to patients by the operation team members is rated as agreement with mean values starting at 3.76 to 3.93. This means that the attitudes and perceptions by operating team members regarding patient safety is positive but it is affected by stress.

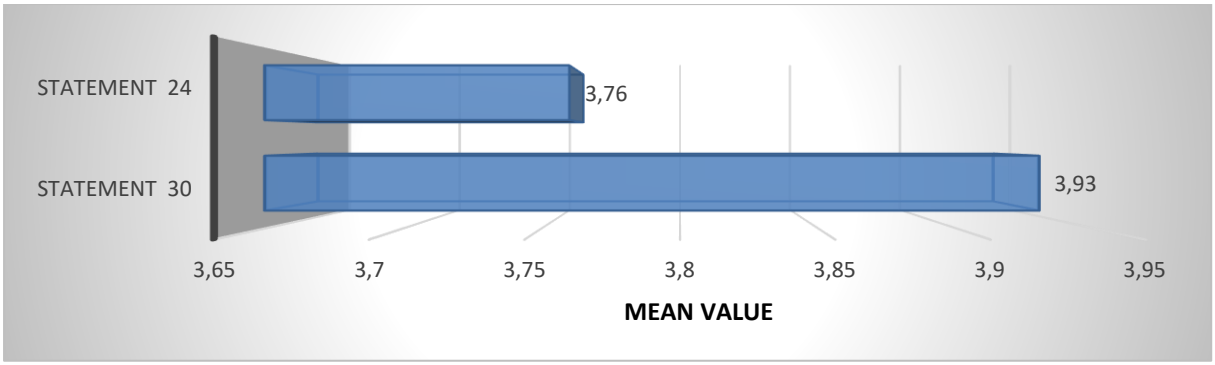


Figure 4.9: Mean values for stress recognition.

4.3.5 Factor 5: Work Satisfaction/Dissatisfaction

Factor 5 focuses on work satisfaction/dissatisfaction and had three statements in the group. Statement 46 states "*I feel fatigued when I get up in the morning and have to face another day on the job*". Out of 290 respondents, 19% (n=55) strongly agreed with the statement, with 10 not answering the question and a combined total of 69 respondents who disagreed. A combined total of 50% (n=144) agree with the statement, and once the Neutral had been removed, 65% (n=144) agreeing with the statement and 31% (n=69) disagreed (Table 4.7).

Statement 48 states "*I feel burned out from my work*". Out of 290 respondents, 18% (n=53) strongly agree with the statement, with two not answering and a combined total of 30% (n=86) who disagreed. A combined total of 47% (n=137) agree with the statement, and once the Neutral had been removed, 61% (n=137) agreeing with the statement and 38% (n=86) disagreed.

Statement 51 states "*I feel frustrated by my job*". Out of 290 respondents 16% (n=47) strongly agree with the statement, with seven not answering the question and a combined total of 34% (n=98) who disagreed. A combined total of 40% (n=117) agree with the statement, and once the Neutral had been removed, 53% (n=117) agreeing with the statement and 44% (n=98) disagreed.

Figure 4.10 illustrates the response relating to work satisfaction and dissatisfaction in operating theatres. The results show that many agreed that they experienced high stress levels, fatigue and job frustration in the OR's of public hospitals as shown in Table 4.7

Table 4.7: Work satisfaction/dissatisfaction

No.	Statement	Responses No. (%)				
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
46	I feel fatigued when I get up in the morning and have to face another day on the job. (n=280)	55	89	67	33	36
		144/223x100 (65%)		-	69 / 223 x 100 (31%)	
48	I fell burned out from my work. (n=288)	53	84	65	40	46
		137/225x100 (61%)		-	86/225X100 (38%)	
51	I feel frustrated by my job. (n=283)	47	70	68	47	51
		117/222x100) (53%)		-	98/222x100 (44%)	

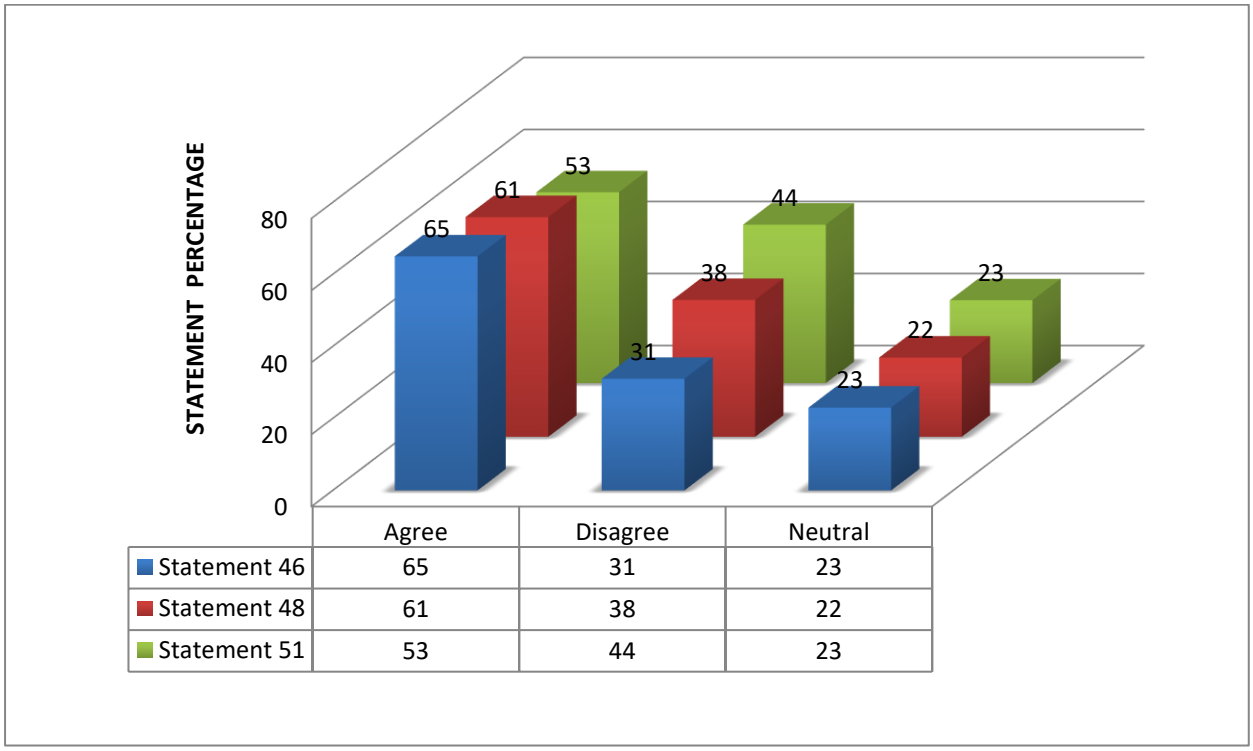


Figure 4.10: Work satisfaction/dissatisfaction

The mean values >3 can be interpreted as being in agreement and those<3 as being in disagreement (Figure 4.11). The job satisfaction climate in public hospital theatres relating to patients by the operation team members is rated as general agreement with mean values starting at 3.05 to 3.33. This means that the attitudes and perceptions by operating team members regarding patient safety is positive.

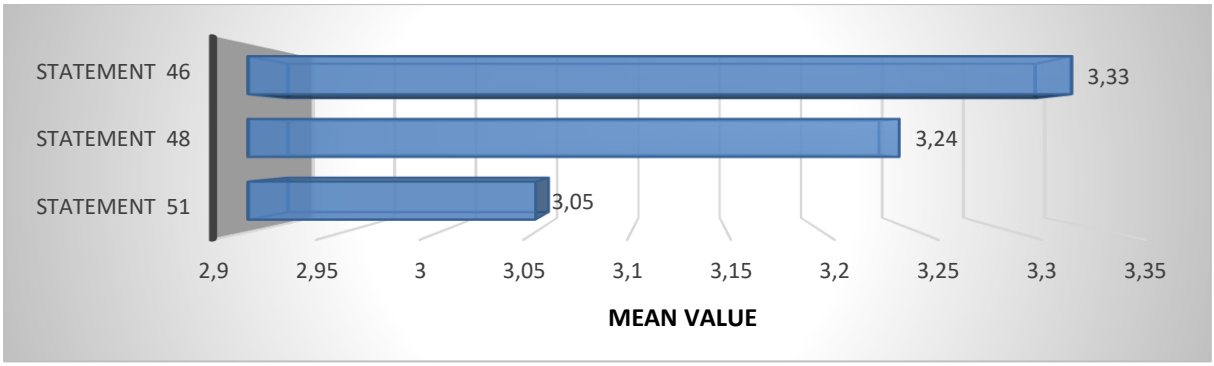


Figure 4.11: Mean value for work satisfaction.

4.4 Statistical analysis

The statement in each of the five factor groups were aggregated to establish a total mean, with those >3 being regarded as generally in agreement and those<3 being in disagreement. As indicated in Figure 4.12, four of the factor groups were above 3, with Management (2.53) being below, indicating room for improvement. At a mean of 3.79, Stress Recognition was the highest, and indicates a major concern by the respondents about their levels of stress and fatigue. This is closely followed by Safety Climate (3.75), and indicates that the staff agreed that there are opportunities for addressing safety issues. At 3.66, Team Work is generally regarded as good, while at 3.2, Job Satisfaction is only marginally above 3, indicating that the staff agree that they are not happy about the working conditions and as a result they feel frustrated and have burn out with exhaustion when they have to go to work.

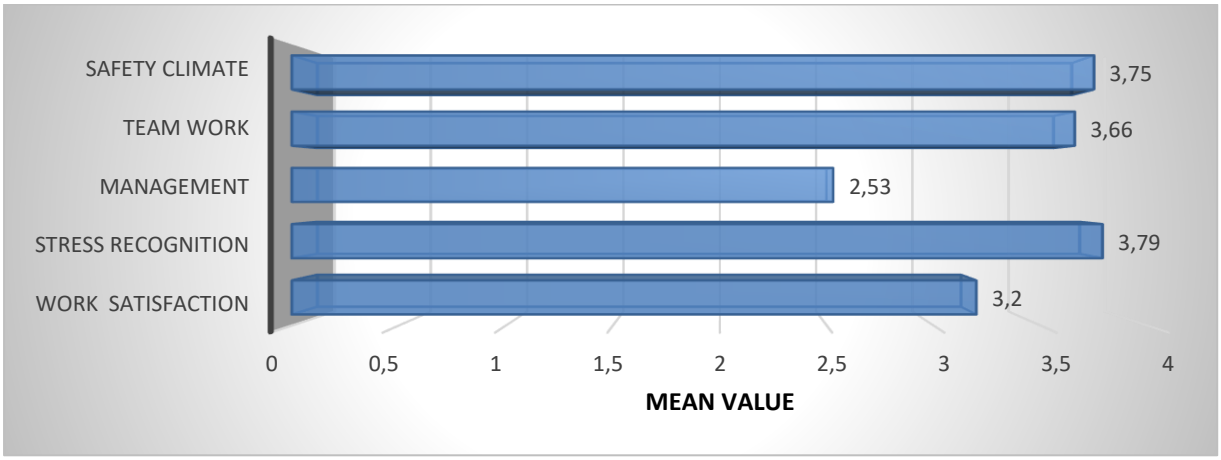


Figure 4.12: Mean value average summary

Table 4.8, presents results each construct being individually tested for reliability using Cronbach's. Cronbach's alpha was used to measure the internal consistency,

of how closely related a set of items are as a group it was used to measure scale reliability. In this factor analysis it was not appropriate to give a single value across all factor items since they were measuring different things. Factor loading was used as part of the outcome from factor analysis which served as a data reduction method isolated five factors that pass the validity test for convergent and discriminate validity and was used to explain the correlation between observed variables using a smaller number of factors. Corrected item total correlation was used to give correlation between each item and a scale score that excludes that item. The reliability is acceptable given that those with lower alpha have a few items only. Cronbach's alpha was used as a measure of the reliability of a multiple item scale of a tool with the aim of improving such scale. It was found to not be appropriate to give a single value across all factor items as they measured different things. A one-sample t-test was used to establish the average score, which is the agreement score as per the Likert scale used for the items, and whether they were significantly different from a central or neutral score of 3. This was tested by a mean scoring of >3 as sig agreement and a scoring of <3 as sig disagreement. Factor loading and corrected item-total correlation was used, while factor analysis was used so as to pass the validity test for convergent and discriminant validity.

Table: 4.8 Analysis of factors groups and their statements

No.	Item	Cronbach's alpha	Factor loading	Corrected item-total correlation
Factor 1: Safety climate		.735		
7	All the necessary information is available before the start of a procedure.		.564	.427
14	Briefings are common in the OR.		.476	.405
20	I am encouraged by my colleagues to report any patient safety concern I may have.		.687	.472
27	I know the proper channels to direct questions regarding patient safety in the ORs here.		.490	.390
29	Disagreements in the ORs here are resolved appropriately (i.e. not who is right but what is best for the patient)		.621	.497
33	I have the support I need from other personnel to care for patients.		.601	.453
49	Important issues are well communicated at shift changes.		.492	.361
53	Information obtained through incident reports is used to make patient care safer in the ORs here.		.663	.429
Factor 2: Teamwork climate		.630		
3	Nurse input about patient care is well received in the OR.		.620	.292
6	The hospital does a good job of training new personnel.		.528	.359
8	Working in this hospital is like being part of a large family.		.659	.460
15	This hospital is a good place to work.		.650	.451
37	The surgeons and anaesthetists here work together as well-coordinated team.		.599	.353
Factor 3: Management		.638		
1	High levels of workload are not common in the Operating Rooms here.		.656	.350
18	The level of staffing in our ORs is sufficient to handle the number of patients.		.704	.399
22	Medical equipment in the ORs here is adequate.		.744	.498
25	I am provided with adequate, timely information about events in the hospital that might affect my work.		.608	.432
Factor 4: Stress recognition		.542		
16	Fatigue impairs my performance during emergency situations.		.462	.213
24	When my workload becomes excessive, my performance is impaired.		.789	.451
30	I am less effective at work when fatigued.		.828	.422
Factor 5: Work satisfaction/dissatisfaction		.540		
46	I feel fatigued when I get up in the morning and have to face another day on the job.		.525	.408
48	I feel burned out from my work.		.689	.391
51	I feel frustrated by my job.		.798	.408

4.5 Objective 2. To identify measures to improve patient safety in operating theatres

The measures for improving patient safety are:

- The recommendations by the respondents
- The quality of communication and collaboration they have experienced amongst themselves when working with each other.

The response to recommendations for improving patient safety showed that 278 (95.86%) out of the 290 respondents commented, with 4.13% (n=12) not providing input, as indicated in Table 4.9. The top three recommendations by the staff for improving patient safety, with high responses were: staffing, equipment and communication. The training of staff and management were the last with low responses.

Table 4.9 Category recommendations for improving patient safety

Category		**No.**	**%**
1	Communication	60	21.58
2	Equipment	68	24.46
3	Staffing	91	32.73
4	Training	25	8.99
5	Management	34	12.24
	Total	(278)	100

The theatre team regarded communication and collaboration amongst themselves when working in theatre as an important measure for improving patient safety. The staff categories that felt that communication needed to be improved (Very High) were the theatre support staff, floor nurses, scrub sisters and anaesthetic nurses. The categories that felt that communication could be improved (High) were the anaesthetist, while those who regarded it as “Adequate” were the ward staff, anaesthesiologists, consultants, and surgeons. In the questionnaire, the respondents were asked to rate the level of communication and collaboration to improve patient safety amongst themselves on a scale of Very high to Very low importance. This is illustrated in Figure 4.13.

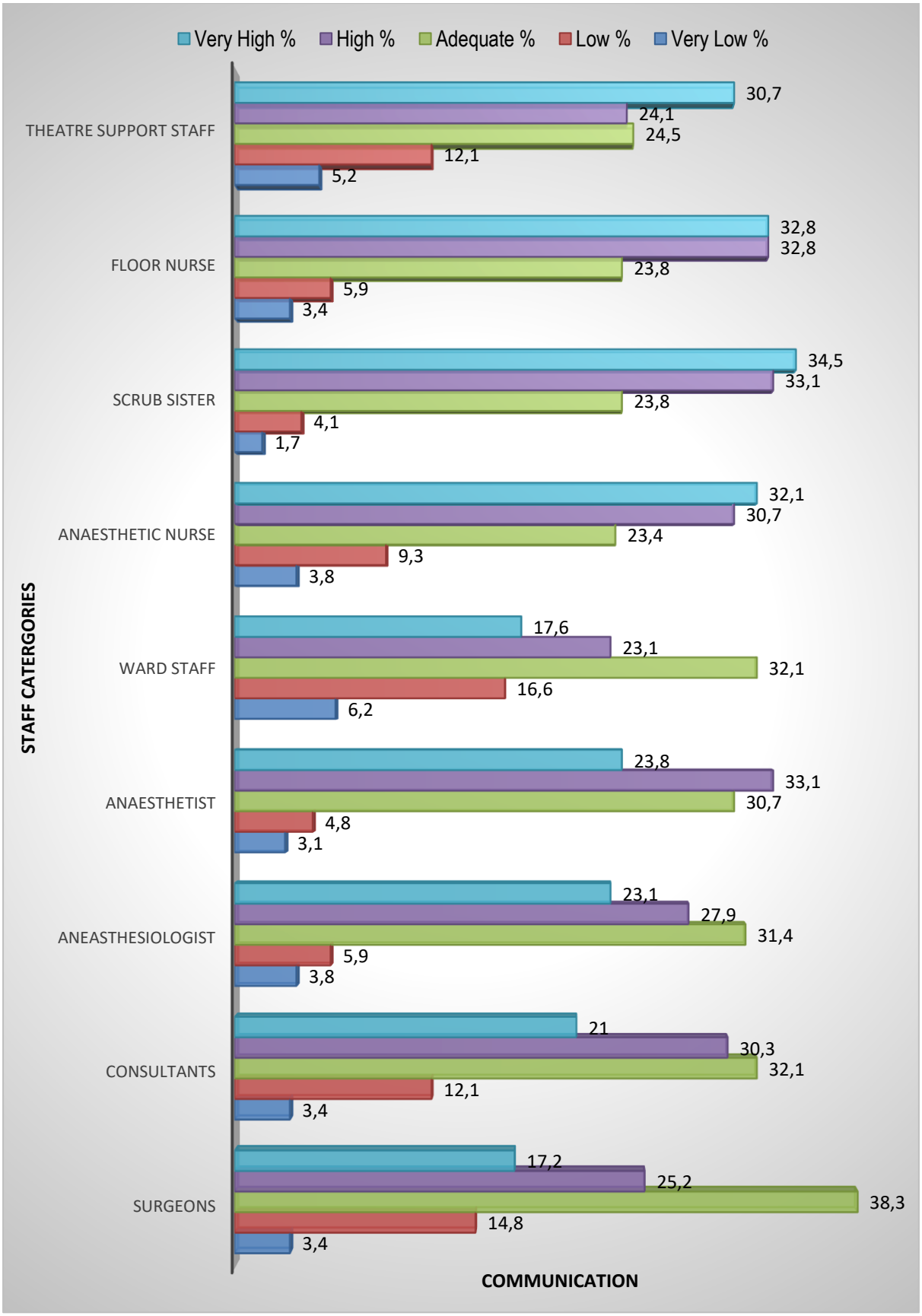


Figure 4.13: Communication

The communication and collaboration average amongst the theatre staff was good from all professionals who participated in the study, with 'high' and 'adequate' responses being similar in percentages of 28.9%, followed by 25.9 for 'very high', 9.5% for 'low' and 3.8% for 'very low', as illustrated in Figure 4.14.

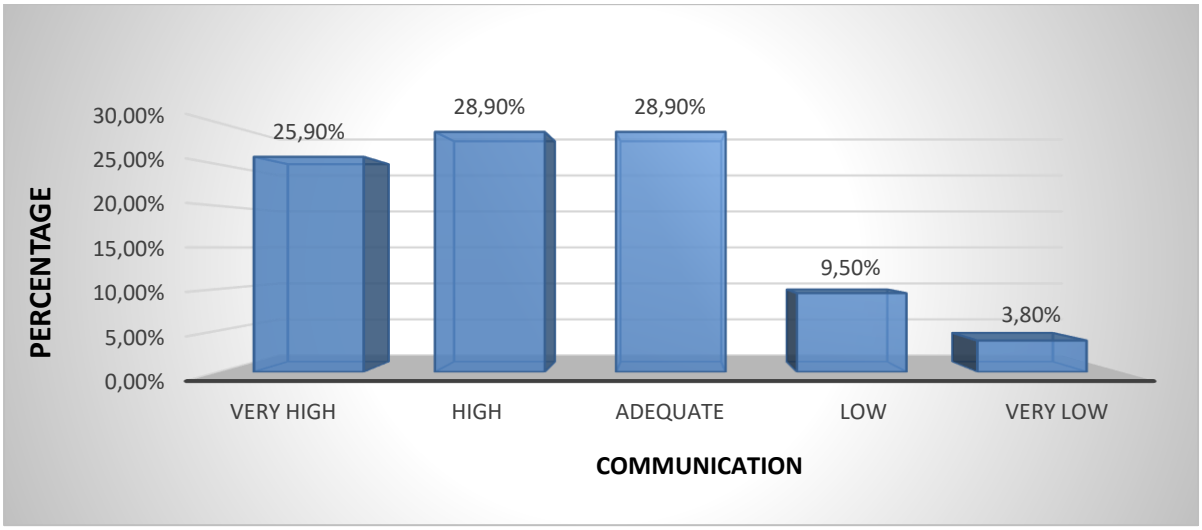


Figure 4.14: Communication average

The data for communication that is more than adequate was further analysed using the mean values, which is explained as the value greater than the value of three, and can be interpreted as more than adequate in each of the job categories, as illustrated in Figure 4.15.

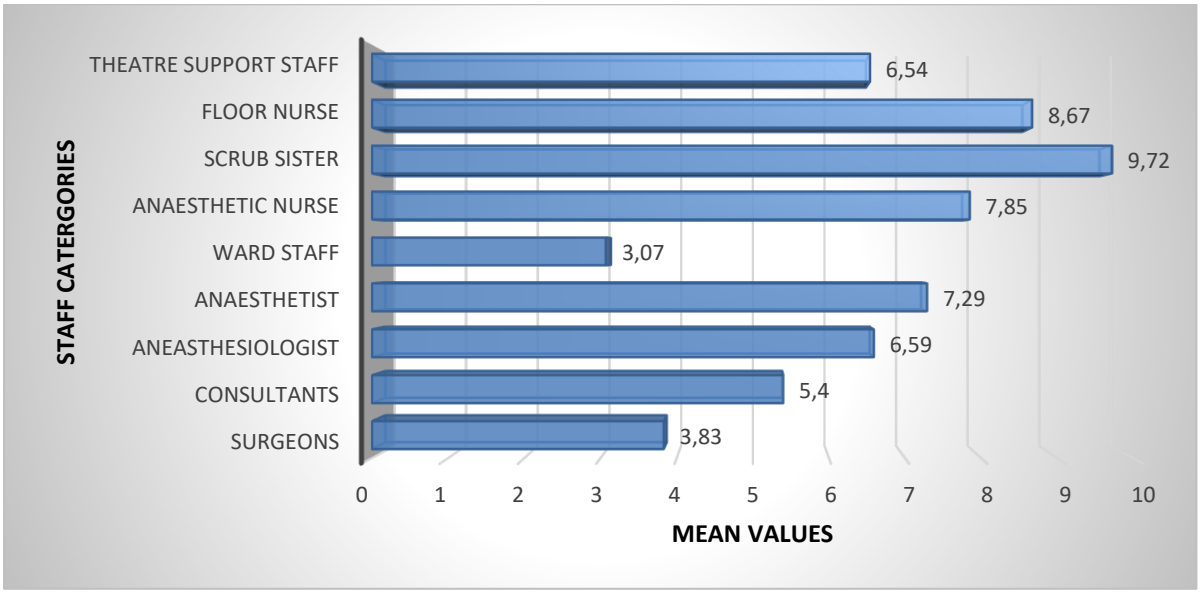


Figure 4.15: Mean values for communication

The communication and collaboration experienced by the staff was rated for all categories of staff, as follows:

- Surgeons: 3.83%.
- Consultant surgeons: 5.4%.
- Anaesthesiologists: 6.59%.
- Anaesthetists were rated significantly higher than adequate, with mean values starting at 7.29%.
- Ward staff were rated significantly higher than adequate, with mean values starting at 3.07%.
- Anaesthetic nurses were rated significantly higher than adequate, with mean values starting at 7.85%.
- Scrub sisters were rated significantly higher than adequate, with mean values starting at 9.72%.
- Floor nurses were rated significantly higher than adequate, with mean values starting at 8.67%.
- Theatre support Staff were rated significantly higher than adequate, with mean values starting at 6.54%.

4.6 Conclusion

This chapter presented the findings and statistical analysis of data collected from the questionnaire. The data was presented according to the objectives and included the demographic characteristics, the five factors and their related statements. The five factors were safety climate, team work, management, stress recognition and work satisfaction/dissatisfaction.

The statistical analysis included descriptive, parametric, non-parametric and inferential statistics. These analyses were used to summarise the questionnaire variables and ascertain factors that impact on safety attitudes of health professionals and to identify and improve patient safety in operating theatres.

A majority of team members responded positively on the first two factors and their statements that safety climate and teamwork is about the environment they work in and the personal relationship amongst themselves. The negative response

emanated on the last three factors and their statement which are management, stress recognition and work satisfaction/ dissatisfaction. Frequency tables, graphs and figures were used to show distribution and categorical variables.

CHAPTER 5: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the study finding as per the two research objectives, these being one, to investigate the factors that impact on the safety attitude of health professionals in operating theatres, and two, to identify measures to improve patient safety in operating theatres. The aim of the study was to investigate the safety attitudes of health professionals in operating theatres in public health sector in KwaZulu-Natal Province, South Africa.

The conceptual framework is a triad consisting of three elements which are: Structure, Processes and Outcomes and constitutes of the components of quality in the operating rooms. These elements are intimately linked and interrelated to give the meaning of how quality patient care is achieved in various stages as quality in health services is an increasing responsibility and not an option.

The aim of the conceptual framework is to examine the health care services and the evaluation of the health care rendered and to determine cause of deviation and the reasons for deviation. The intention was to achieve the standard of care that contribute to quality and safety of the patient with safety attitudes of the health professionals being taken into consideration (Moore et al. 2015:1168).

The exploratory, descriptive survey design was used to establish whether the method served its purpose, and if bias and validity were observed and highlighted (Polit and Beck 2017:11). The problems in the current practices and their

justification are identified, and the contributing factors towards the occurrence of surgical errors discussed (Burns and Grove 2013:692).

5.1.1 Discussion of findings

The following will be discussed based on the findings:

- Demographic characteristics.
- Structure: Pre-operative phase
- Process: Intra-operative phase
- Outcome: Post-operative
- Recommendations.

5.2 Demographic Characteristics

In terms of 70.3% of the respondents being female, this would reflect the gender distribution of the nursing staff, where most are women (Ndou and Moloko-Phiri 2018:01). The South African Nursing Council statistics for 2013 revealed that male nurses are a minority in South Africa. Most of the respondents were Black Africans (65.17%), the demographic distribution being similar to that reported in the KwaZulu-Nata (KZN) census results of 2011 (KwaZulu-Natal Census : 2011).

The years of service of respondents ranged from 3- 37 years, with many having more than 10 years' experience, making their comments particularly useful, as it is based on extensive experience. In terms of their positions in the theatre, the scrub, theatre experienced, floor and anaesthetic nurses constituted 72.65% of the respondents, the remainder being specialists, indicating input from a broad range of staff with their various skills. All but one staff member was full-time, indicating that their responses are based on consistent experiences. Their shifts consisted of both day and night, indicating that the experiences reported on were common across all time.

5.3 Structure: Pre-operative phase

Structure is the main determinant of quality patient care with the following categories being available and recommended: well-structured facility to work in, sufficient good working equipment, financial resources and organizational resources (Fernandes

and Pereira 2016:79). The discussions are presented according to factor 3: management and the related statements.

5.3.1 Factor 3: Management

The second correlation is identified between the two variables, this being the five factors of the Safety Attitudes Questionnaire (SAQ), which is the instrument of the study (safety climate, teamwork climate, management, stress recognition and work satisfaction/dissatisfaction), and the three categorical dimensions of the conceptual framework (structure, processes and outcome). The factor that fall under structure is management, which gives the strategic direction of the institution, as the structure in the conceptual framework is mainly about how care is organised in the health institution. This involves the stable elements that enable the system to function effectively in the organisation e.g. services rendered, medical equipment availability and functionality, level of staffing, including their skills and sufficiency to handle the number of patients, provision of adequate and timeous information to the staff relevant to their work, and financing of the organisation. It is the responsibility of the management, as the structure of the organisation, to ensure that it is able to identify and diagnose dysfunctional units, make decisions on how to intervene to solve the problems, make plans or choices about interventions, and to consider the safety attitudes of the staff in relation to the achieving the standard of care necessary to ensure patient safety (Mitchel and Lang 2004:01). The cause of failure to achieve safety in theatres is related to management at the level of personnel (Edmestone 2012:42).

5.3.1.1 Statement 6: The hospital does a good job of training new personnel

Seventy five percent agreed that the hospital does a good job of training new personnel, while 24% disagreed. Sonoda and Daisuke (2011:71) corroborates the findings by stating that training among OR team members improves OR efficiency and outcomes. Amour Forse et al. (2011:71) emphasized that team training improves performance in the ORs. The nature of work that the OR nurses is exposed to require them to be specialised, which means that they must have the necessary skills, knowledge and articulation in their scope of practice. This assists in preventing litigations (Singer et al. 2015:298) and The training of new personnel in the hospital improves their skills to achieve safety in the OR. In a specialised unit,

such as a theatre, there is a need for specialised personnel who have undergone special training relevant to their practice to achieve safety (Du Toit 2015:02). Ongun and Intepeler (2017:01) rebuts stating that professional attitude towards patient safety is more related to lack of training and knowledge.

5.3.1.2 Statement 8: Working in this hospital is like being part of a large family

Eighty two percent of the respondents agree and 16% disagree with this statement. This gives an impression that the theatre environment is conducive and comfortable for the operating room team, and that they have adapted themselves well to working in theatre. Comradery in the operating theatre is recommended for quality patient care, as safety depends on effective teamwork and multidisciplinary interpersonal relationship (Attri et al. 2015: 457). The operating room team is dependent on other essential services and needs to adopt a multidisciplinary team approach, for example, laboratories, X-Rays and ICU, as they are also indirectly needed for the patient in theatre to ensure safe quality patient care (Heever and Carstens 2015:96).

5.3.1.3 Statement 15: This hospital is a good place to work

Seventy percent agree that the hospital is a good place to work and 28% disagree with the statement. This indicates that the OR team regarded the hospital as a good environment to work in, as for the safety climate to be achieved, the attitude of the theatre team needs to be positive about the environment, with negativity in theatres creating harm to the patient (Göras et al. 2013:104). Uğurlu et al. (2015 :104) further stated that most of the stress in the OR is incorporated with stressful work environment.

5.3.1.4 Statement 25: I am provided with adequate, timely information aboutevents in the hospital that might affect my work

Forty three percent of the respondents disagreed that they are provided with adequate, timely information about events in the hospital that might affect my work and 35 % agreed with the statement. This indicates that there is no constant or regular update of staff by managers on issues pertaining to hospital, which compromise their workload e.g. polices, standard operating procedures, feedback from meetings or updates pertaining to the hospital. Edmestone (2012:42) corroborated this by stating that the cause of failure to achieve safety in theatres is

all related to management problems at the level of personnel. According to Naidoo (2012: 49), good management and leadership support is required to implement appropriate measures for surgical safety in operating theatres.

5.3.2 Measures to improve patient safety in operating theatres.

The top five recommendations for improving patient safety were:

- . 32. 7% (n=91) recommended employing sufficient staff.
- . 24. 46% (n=68) recommended availability of good working equipment;
- . 21. 5% (n=60) recommended good communication;
- 12. 2% (n=34) recommended management support;
- 9% (n=25) recommended staff training as an ideal method of improving patient safety.

5.3.2.1 Employing sufficient staff

Staff shortages have been highlighted as one of the main factors that impacts on staff attitudes and contributes to poor working conditions. Employing sufficient staff is very importance to achieve the activities and processes to ensure quality patient care in operating theatres, all of which need human potential. Janse Van Rensberg et al. (2016: 08) stated that theatre is compromised without the availability of staff. The public places their trust in the hands of the operating team for their safety and recovery from illness, and believe that surgery saves lives (Phillips 2013:02). Arora et al. (2010:10) stresses that in the operating room, a high level of technical performance is required, the staff is time pressure with a high workload, all of which require a sufficient number of staff.

5.3.2.2 Availability of good working equipment

For efficient theatre functioning, the availability of working equipment is essential. . The unavailability of equipment contributes to staff attitude, particularly when they witness the cancellation of operations. The unavailability of good working equipment in the operating room is supported by Janse Van Rensberg et al. (2016:08), who stated that the challenges is the lack of equipment, which affects the staff's expertise. The unavailability of essential supplies and equipment has a negative

impact, not only on the patients who are facing danger, but also the patient peri-operatively (Komampe 2013:01). The staff experience cancellation, the death of patients due to unavailability of equipment without any means to assist with the situation. The unavailability of resources contributes to an unsafe culture and the occurrence of surgical errors (Janse Van Rensburg et al. 2016:08).

5.3.2.3 Good communication

Communication was highlighted in the finding as being a contributory factor that impacts on the safety attitudes of staff in the operating room. The smooth running of the operating theatres requires good communication amongst the theatres team. Suckerman et al. (2012:12) highlighted that the occurrence of morbidity and mortality in surgical areas are a result of preventable errors that emanate mainly from poor teamwork performance, specifically in constructive and supportive environments such as operating theatres.

According to Sonoda and Daisuke (2017:91) and Prati et al. (2014:01), communication in operating rooms helps to reduce mortality and morbidity in theatres.

5.3.2.4 Management support

This is part of the Bathopele Principles of good leadership and strategic direction, where the management must play a major role in ensuring that safe surgical procedures are well adhered to by ensuring that they meet the needs of the staff and the hospital for the benefit of the patients. According to Edmestone (2012:42) and Sonoda and Daisuke (2017:478), the cause of failure to achieve safety in operating rooms is related to management problems at the level of personnel.

5.3.2.5. Staff training

The importance of staff training has been highlighted as one of the factors that impacts on staff attitudes. The findings revealed that 8.9% of the recommendation responses indicate that the staff must undergo theatre training and relevant courses to improve patient safety in theatres. There is role confusion among the staff due to a lack of knowledge (Masinga et al. 2016:01). To avoid confusion and ensure quality patient care in theatre, there is a need for the staff to undergo special training (Du

toit 2015:02). This will assist in broadening their knowledge and improve their efficiency. There is a need for regular updates in scientific knowledge, as the scope of' peri-operative practitioners are broad and demands considerable experience (Du toit 2015:02). Dutoit (2015:02) further emphasized that the lack of skilled operating theatre staff contributes to surgical errors, making it necessary to have staff in specialised area, such as the OR, to undergo special training.

Specific training improves teamwork and standardization of information (Armour Forse et al. 2011:771).

5.4 Process: Intra-operative phase

The quality of care means the quality of the processes of care, which are achieved in the intra-operative phase and involves the following categories: teamwork, communication, human potential, quality strategies and the role of user and family (Fernandes and Pereira, 2016:80).

5.4.1 Factor 1: Safety climate

The factors that fall on processes are: safety and teamwork climates. These factors correlate in the sense that the processes is about the required clinical activities, which are the transactions between the operating team in the study. Those transactions include pre-, intra- and post-operative interventions. The teamwork and the safety climates are the necessary components required to achieve the clinical activities, and to facilitate good transaction between the patient and the operating team (Sexton et al. 2006:877) It is for this reason that the aviation industry has demonstrated important ties between teamwork and performance (Sexton et al 2006:877). The following statements were selected by the researcher and the statistician to better assess the safety climate in public hospital theatres: 1, 7, 14, 20, 27, 29, 33, 49 and 53.

5.4.1.1 Statement 1: High levels of workload are common in the OR

Eighty six percent of the respondents disagree with the statement and only 12% agreed with the statement. This indicates that the staff is over-burdened and stretch themselves to cover the theatre workload, which is not recommended. They noted that when their work load is excessive, their work performance becomes impaired, which predispose them to making errors in the operating room as they are fatigued.

This is an un-recommended work environment that is confirmed by one author, who states that most of the stress in operating theatres is attributed to a stressful working environment (Ugurhu 2015:01). Carvallo et al. (2015:104) noted that centres of surgery are rated as high risks settings and are highly exposed to errors due to complex work processes, and interdisciplinary practices with a strong dependence on individual and team performance in an environment that is dominated by pressure and stress. The OR team feels that their concern with regard to the workload is not considered by management staff. Excessive workload changes the attitude of the OR team members, thus leading to potential risks (Sonoda and Daisuke 2017:10).

5.4.1.2 Statement 3: Nurse input about patient care is well received in the OR

The majority (82%) of the respondents agree that the nurse's input about patient care is well received while 18% disagreed with the statement. It can therefore be assumed that nurses in the OR know that their input regarding to patient safety is well received and valued by their colleagues. These inputs about patient safety become evident during peri-operative visits, which is a mandatory visit during the surgical care of a patient where a thorough assessment is conducted. By communicating with other ward team members, OR nurses obtain all the relevant input about the patient as well as during the handing over of patients by ward team. All necessary information is received and all possible complications are excluded for safe quality patient care (Alliyu et al. 2015:54).

5.4.1.3 Statement 7: All the necessary information is available before the start of a procedure

This statement was supported by 60% of staff, which showed that there is concern regarding patient safety amongst operating room team members. The surgical safety checklists as a means of obtaining information prior the procedure is assumed to be in use by operating room team members, as without the adherence of the SSCL, the information obtained prior to surgery will not be complete (O'Connor et al. 2013:07). O'Connor et al. (2013:07) further emphasized that for SSCL to be a successful solution of fixing safety in the OR, a positive team attitude towards its implementation is important (De Meyer, 2014:08). De Meyer further stated that it is very important to ensure patient safety by doing the SSCL before induction, skin incision and before the patient leaves the operating room.

5.4.1.4 Statement 14: Briefings are common in the OR.

The results showed that 78% of the respondents agreed that briefings are common in the OR. According to Santana et al. (2016:586) and Einav et al,(2010:01), orientation about a procedure is common in public hospital operating rooms prior to commencement of the operation to ensure the safety of patient peri-operatively. According to Einav et al. (2010:01) the importance of the briefing is for the operating room team to prepare and plan the necessities pre-, intra- and post-surgery, and helps avoid complications.

5.4.1.5 Statement 20: I am encouraged by my colleagues to report any patient safety concern I may have

The results revealed that 84% agreed and 14% disagreed with the statement. This indicates that the operating room team members do not feel free to report concerns about patient safety but prefer to rely on colleagues' for their suggestions. This is supported by Edmestone (2012:42), who stated that the cause of failure to achieve safety in operating theatres is related to management problems at the level of personnel.

5.4.1.6 Statement 27: I know the proper channels to direct questions regarding patient safety in the ORs here.

Eighty one percent of the respondents agreed with this statement and 17% disagreed. These findings indicated that the majority are concerned about patients' safety (Davoodvand et al. 2016:04). According to Phillips (2013:02), the public believes that surgery saves lives, with nurses being advocates for the patient and providing justice for them.

5.4.1.7 Statement 29: Disagreements in the ORs here are resolved appropriately (i.e., not *who* is right but *what* is best for the patient)

This statement shows that the operating room team strive to resolve all conflicts before it creates a negative impact to the patient, as they are in a working environment that put patient care above everything else (Attri et al. 2015:457). This high response that is in agreement with this statement gives an indication that the peri-operative disagreements are resolved amicably.

5.4.1.8 Statement 37: The surgeons and anaesthetists here work together as a well-coordinated team

Seventy five percent of the respondents agreed that surgeons and anaesthetists work together as well-coordinated team, while 24% disagreed. This indicates that surgeons and anaesthetists, as heads of surgery in theatres, need to have a mutual understanding about safety. Safety cannot be achieved in the process of surgery if the surgeon cannot operate without anaesthesia. Likewise, the anaesthetist cannot anaesthetise a patient without the opinion of the surgeon, making it important for them to work as a team (Singer et al. 2015:298).

5.4.1.9 Statement 49: Important issues are well communicated at shift changes

Sixty one percent agree and 38 % disagreed with the statement, which indicates that important issue are well communicated in the operating room, and that patient care is not affected by shift turnover, which is a highly recommended issue in operating room to ensure patient safety through continuity of care. Carney et al. (2010:08) emphasized that interruptions during shift change-over can cause some unaccountable gaps in patient care.

5.4.1.10 Statement 53: Information obtained through incident reports is used to make patient care safer in the OR

The majority (78%) of respondents agreed and 20% disagree with the statement. The information is obtained through incident reports, that is, the mistakes that occur in theatres, with the OR team being prepared to learn from those errors to improve patient care and safety. This agrees with what is happening in the United Kingdom, where monthly surgical morbidity and mortality meeting are conducted which acts as a form of discussion for complications and deaths (Roseness et al., 2015:01). These are learning opportunity to correct the previous mistakes, and is referred to as prospective and retrospective sense making in operating theatre practice (Sukha et al. 2015:208).

5.4.2 Communication Information and collaboration amongst the peri-operative team

In the current study, communication amongst the theatre operating team members is regarded as important. All professionals who participated in this study responded "very high" for communication amongst themselves in operating theatres with an average of 25.9%. This was followed by a "high" response, with an average of 28.9% for communication amongst themselves. The "adequate" response followed with an average of 28% and lastly is the response of low and very low communication which had an average of 9.5% and 3.8% respectively.

The positive response of communication amongst team members in this study is an indication that there is good rapport amongst the professionals, which is essential. Communication in operating theatres is required to improve quality patient care (Einav et al. 2013:807). The significance of surgical errors in the operating theatres is attributed to a breakdown in communication, indicating that for positive theatre staff attitudes to be maintained, good communication is needed (Gabrani et al. 2016:50). Good communication amongst theatre staff should be maintained because the operating room is a very complex and volatile workplace, where two co-equal physicians share a responsibility for one patient. Further to this, the quality of care depends on effective team work, for which multidisciplinary communication is essential and any disruption may lead to inefficient care (Attri et al. 2015:457).

5.5 Outcome: Post-operative

Despite being described as the last component of quality assessment, outcome is the first step in a series of activities, along which adjustments can be made, including the revision of the entire processes to achieve the desired outcome of quality patient care (Fernandes and Pereira, 2016:82).

5.5.1 Factor 5. Stress Recognition

The third factors that fall on the outcome is stress recognition and work satisfaction/dissatisfaction. The outcome in the conceptual framework refers to the effect of health care on the health status of the patient and population, which also depends on the safety attitudes of the health professionals (Moore et al 2015:1168). Stress recognition is the negative expectation or outcome towards the achievement of the required standard of patient care. Fatigue and an excessive workload with limited staff contribute to negative outcomes. Work satisfaction/dissatisfaction can

also has a negative impact on achieving the expected quality standard of patient care. The theatre health care professionals will not produce satisfactory patient outcomes when their attitudes are affected by stress and job dissatisfaction.

5.5.1.1 Statement 18: The level of staffing in our ORs is sufficient to handle the number of patients

Sixty seven percent of the respondents disagreed that the level of staffing in operating rooms is sufficient to handle the number of patients, and 36% agreed. The assumption is that there are insufficient staff in the operating theatre, which exposes the patient to surgical errors, this being their main concern. Sonoda (2017:10) supports this by stating that a lack of staffing compromises the life of surgical patients, and that management needs to intervene when such a situation arise, as this contribute to negative staff attitude and unintended surgical patient outcome.

5.5.1.2 Statement 22: Medical equipment in the ORs here is adequate

Fifty five percent of the respondents disagreed that medical equipment in the ORs is adequate and 45% agreed, which indicates that it is inadequate in public hospital operating theatres. This is a concern, as a lack of equipment contributes to the negative staff attitudes, with negative surgical outcomes on patient safety. Janse Van Rensberg et al. (2016:08) corroborated this by stating that staff tend to lose their patient due to persistence unresolved equipment shortage, which changes their attitude, as they find themselves failing to provide suitable safe surgical care to patients, and affects their attitude to and expertise for work.

5.5.1.3 Statement 24: When my workload becomes excessive, my performance impaired

Seventy eight percent of the respondents agreed that the workload becomes excessive and performance is impaired, and 20% disagreed. This indicates that an excessive workload, combined with a shortage of staff, can overburden staff. This can also be associated with insufficient working resources, for example, one fully operational theatre instead of two due to the shortage of equipment, which increases the workload to staff. Poor cultural sustainability in OR is a result of poor working conditions (Uġurlu et al. 2015:01).

5.5.1.4 Statement 30: I am less effective at work when fatigue

Eighty three percent of the respondents agreed that they are less effective at work when fatigued and 16% disagreed, which indicates that staff fatigue is related to being over-burdened due to excessive workload, this being due to poor staffing, insufficient working resources or lack of support from management. Heever and Carstens (2015:96) state that underperformance of staff in operating theatres is a results of staff shortage, while Arora et al. (2010:318) noted that being able to operate under stressful conditions is a challenging exercise.

5.5.1.5 Statement 33: I have the support I need from other personnel to care for patients

Sixty percent agree and 14% disagree with the statement, which indicates that theatre team members feel they have the support from each other, this denoting a good team spirit amongst themselves. According to Sonoda and Daisuke (2017:01), good team spirit is recommended for achieving patient safety in operating theatres.

5.5.1.6 Statement 46: I feel fatigued when I get up in the morning and have to face another day on the job

Sixty five percent of the respondents agreed that they feel fatigued when they get up in the morning and have to face another day on the job, and 31% disagreed. This indicates continuous stress at work, which is unresolved and affects those exposed to it. This can be due to the fact that they are overburdened with workload, have an unresolved shortage of human and material resources, lack support from management or experience conflict that is unresolved. Stressors in the operating room include technical performance, time, pressure and increased workload (Arora et al. 2010:318).

5.5.1.7 Statement 48: I feel burned out from my work

Sixty one percent of the respondents agreed that they feel burned out from work and 38% disagreed. The findings indicate that burnout is related to unfavourable work conditions, which could either be caused by factors such as a shortage of human and equipment resources and overwork, with no solutions to the problem. The persistent stress to staff leads to burnout, as it has a negative impact on their

physical and mental wellbeing (Findik 2015:610). Kitaoka and Masuda (2013:01) agreed that staff burnout has a negative impact in work-place occupational lives, as well as to physical, psychological status, motivation and performance.

5.5.1.8 Statement 51: I feel frustrated by my job

Fifty three percent of the respondents agreed that they feel frustrated by their job and 44% disagreed. This indicates that the staff in the operating room has frustration related to the workplace, which threatens the security of the staff. Several authors reported that there are various factors that negatively impact the staff attitude in theatres (Edmestone 2012:42; Arora et al. 2010:318; Carvallo et al. 2015:10) .

5.6 Recommendations.

Management of theatres requires co-ordination of both human and material resources in such a way that surgery can be performed efficiently (Komampe 2013:01). The measures that have been identified in the study as the means for improving patient safety in theatres need to be reinforced, implemented, monitored and evaluated to establish if they meet the desired outcome of patient safety in operating theatres. Based on the findings of the study about the factors that impact on the safety attitudes of health professionals in operating theatres of public hospitals in KZN, the following recommendations are made.

5.6.1 Material resources/ equipment shortage

The un-availability of both human and material resources needs attention, as it defeats the purpose of safety in operating theatres. This can be achieved by:

- Cost containment of equipment bought/purchased, that is. equipment to be well taken care of and serviced regularly, and in-service education on use, care and handling of equipment needs to be done to sustain life span of equipment.
- The purchase of equipment needs to be based on the statistics that the equipment is used for. The buying of unnecessary equipment that is not used but having been purchased with a considerable amount of money needs to be avoided.

- Schedules need to be developed and measures put in place to safeguard the availability of material resources (Walla 2010:01).
- The urgency for purchasing equipment also needs to be based on statistics.
- Equipment audits need to be conducted regularly to check on what is available, sent for repairs, condemned, newly ordered, lost and borrowed.

5.6.2 Human resources shortage

It is recommended that management must make sure that there are enough staff in theatre as it is a critical area. They must ensure that the care for the patient coming for surgery is not compromised due to staff shortage.

- The staff turnover must be well attended to i.e. posts to be advertised for the staff who exit the service, are transferred, promoted, retired, resigned or died, and employment to be done for replacement.
- The calibre of staff employed in theatre need to be assessed e.g. trained, and consist of experienced persons who are eager to learn or have interest in theatre.
- Absenteeism of staff needs to be well monitored as this can also contribute to staff shortages.
- The optimal staff allocation needs to be monitored, as inappropriate staffing can contribute to staff shortage e.g. change over allocation, leave bookings, off duty rosters and daily allocation of staff.
- The strategy need to be designed to retain the existing staff and create a pool of skilled personnel e.g. awarding trophies and incentives for the staff who do well or have continuous outstanding performance.
- Staff needs to be motivated by sending them for course upgrades.

Sonoda (2017:10) stated that staff shortages in theatres can compromise the life of surgical patients, and that management needs to intervene when such situations arise, as lack of staff contribute to negative staff attitude adverse surgical outcome.

5.6.3 Management support

The identified problem of poor management support in operating rooms needs to be re-visited and addressed. The Bathopele principles state that good leadership with strategic direction is required to ensure safety in working environment (National Department of Health, 2011). Management must strive by all possible means to

allay stress and burnout of staff by taking opportunities to know their staff concerns before it complicates the services they provide and affects the patient who came for surgery. Staff suggestion boxes are one way to find out about staff concerns and need to be promoted, as failure to achieve safety in operating theatres is related to management at the level of personnel (Edmestone, 2012:42).

5.7 Study limitations

A limitation of the study was that a full sample for the study was not achieved in some settings as many staff were seconded to other hospitals during the hospital renovation process after the floods. The challenge was encountered on the 10th of October 2017 during a storm disaster and floods that occurred when the researcher was starting data collection at the various settings. King Edward VIII and Addington Hospitals were badly affected by these disasters, which made it difficult to obtain the required sample size. Those hospitals had to be revisited on a number of occasions by the researcher to locate the staff, specifically at weekends, when they came as on call staff for the weekend. The distance of some settings contributed to the prolonged data collection process, for example, Edendale, Ladysmith, Madadeni, Newcastle, Ngwelezane, and Port Shepstone.

5.8 Conclusion

In this final chapter, the major findings of the study have been set out and discussed. The study was on safety attitudes of health professionals in operating theatres in the public health sector in KwaZulu-Natal Province. The conceptual framework aimed to examine and evaluate the health care services rendered and to determine the cause and reasons for deviations in operating theatres. The structure focused on pre-operative phase, process on intra-operative and outcome on post-operative phase.

The safety attitudes of the health care professionals in operating theatres were assessed on the five factors, namely, safety climate, teamwork, management, stress recognition and job satisfaction/ dissatisfaction, yielded both positive and negative outcomes.

There was a positive response on the first two factors, that is, safety climate and teamwork. The respondents regarded theatres as the good place to work in, teamwork and good interpersonal relationship amongst themselves.

The negative responses were on last three factors, management, stress recognition and job satisfaction/dissatisfaction. The majority of team members responded negatively on stress recognition and work satisfaction/ dissatisfaction which emanated from the staff shortage as they felt being overworked with overabundance of workload leading to high level of stress. The respondents felt being less productive, fatigue and having impaired performance. . Quality in health services in an increasing responsibility and requires a reflection of practice with relevance of the triad elements of structure, processes and outcome as guiding components of quality in operating theatres.

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ANNEXURE 1

Appendix 2a

LETTER OF INFORMATION

Dear Respondent

Warm greetings, thank you for agreeing to participate in this study

Title of the Research Study:
Safety attitudes amongst health professionals in public operating theatres in Kwa-Zulu Natal.

Principal Investigator/s/researcher: Thandazile Khoza: Professional Nurse for 30 years; specialist theatre nurse; B-Tech Nursing Management

Co-Investigator/s/supervisor/s: Supervisor: Dr. A Razak: PhD: Honorary Research Fellow
Co-supervisor: Mrs. P Pillay: Master of Nursing: Lecturer in Nursing Management.

Brief Introduction and Purpose of the Study: As volume and importance of surgery in global health care increases, patient safety and quality in surgical care gain more attention. Nearly one in ten in hospital patients experience iatrogenic event and half of them occur within peri operative care. In the USA about 40% of complications and inadvertent returns arise from surgery performed(Woodhead 2015:39) South Africa is faced with poor health outcomes and the root causes of which is varied and complex . In KwaZulu- Natal the annual report for 2012 to 2013 and the one for 2014 to 2015 revealed that failure to achieve safety have resulted in a tremendous increase of inadvertent returns of patients to theatre and that have resulted in a huge annual claims for surgical errors. It is for this reason that the World Health Organisation (WHO) in 2008 launched the Safer Surgery Saves Lives campaign to reduce complications associated with surgery.

The aim of the study is to investigate the factors affecting safety attitudes of health professionals in operating theatres. The objectives of the study will are; to investigate factors that impact on safety attitudes of health professionals in operating theatres and to identify measures to improve patient safety in operating theatres . The research questions are; what measures are adopted to improve safety in operating theatre? What are the factors that impact on the safety attitudes of health professionals in operating theatres?

Outline of the Procedures:

The researcher will visit the theatres of the chosen regional hospitals to distribute the questionnaires to the consented chosen professionals. Information letter regarding the purpose and aim of the study will be explained, the professionals will be requested to sign the consent. All questionnaires will be written in the official language which is english and which is the preferred language of choice by all employees in the working place. The convenient venue will be chosen by the operational managers of the operating theatre.

All consented professionals will be requested to give answers to the questions that are provided to them. The assistance of the operational managers of respective hospitals will be sought with regards to the distribution of the questionnaires. Any possible queries that the respondents might have relating to the study will be clarified. Enough time will be given to answer the questionnaires. Questions will be coded to ensure anonymity and envelopes will be provided to ensure privacy. The venue will be chosen by operational managers for convenience and to ensure that no disturbances occur while surgical operations are in progress. The professionals will be clarified that they have the right to participate and not to participate, as well as to withdraw from the study without being coerced. All answered questionnaires will be put in a sealed envelope to be used only by the researcher. Assurance should be given that after completion of research all answered questionnaires will be put in a sealed box in highly confidential institutional archives and will be shredded after 5 years as the purpose is only for academics. Results of the research will be given to the respondents at their request.

Risks or comforts to the Participant: None

Benefits: The answers obtained from you will be of value to the institution and will better the situation and correct the problems being researched. The reputation of the hospital will be protected and the re-occurrence of the problem will be prevented.

Reason/s why the Participant May Be Withdrawn from the Study: Your response to the study is voluntarily you have the right to withdraw from the study without being coerced and your human rights are taken into consideration.

Remuneration: There will be no monetary or any type of remuneration given as the research is for study purposes and for the benefit of the health institution. You are being chosen fairly for the suitability of the study.

Costs of the Study: There will be no cost to you as a respondent.

Confidentiality: Anonymity and confidentiality will be ensured as questions will be coded and envelops provided. All collected data will be handled by operational manager and will be given directly to the researcher. All the questionnaires will be stored in secured archives and will be destroyed after five years.

Research-related Injury: There will be no research related injury being anticipated in this study.

Persons to Contact in the Event of Any Problems or Queries:

Please contact the researcher: Ms. T Khoza: Cell No (0732354458), my supervisor: Dr A Razak): Cell No (083 7867 282), my co-supervisor : Mrs. P Pillay: work (031 373 2293) cell no. (082 653 0179) or the Institutional Research Ethics Administrator on 031 373 2375. Complaints can be reported to the Director: Research and Postgraduate Support, Prof Carin Napier on 031 373 2577 or carinn@dut.ac.za

ANNEXURE 2

CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, _____ (name of researcher), about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _____,
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____
Full Name of Participant	**Date**	**Time**	**Signature / Right Thumbprint**

I, _____ (name of researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

_____	_____	_____
Full Name of Researcher	**Date**	**Signature**
_____	_____	_____
Full Name of Witness (If applicable)	**Date**	**Signature**
_____	_____	_____
Full Name of Legal Guardian (If applicable)	**Date**	**Signature**

Please note the following:

Research details must be provided in a clear, simple and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level - use Flesch Reading Ease Scores on Microsoft Word), selecting of a non-threatening environment for interaction and the availability of peer counselling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. a wrong date or spelling mistake, a new document has to be completed. The incomplete original document has to be kept in the participant's file and not thrown away, and copies thereof must be issued to the participant.

References:

Department of Health: 2004. *Ethics in Health Research: Principles, Structures and Processes* http://www.doh.gov.za/docs/factsheets/guidelines/ethnics/

Department of Health. 2006. *South African Good Clinical Practice Guidelines*. 2nd Ed. Available at: http://www.nhrec.org.za/?page_id=14

ANNEXURE 3

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE:
Health Research & Knowledge Management

Physical Address: 330 Langalibalele Street, Pietermaritzburg
Postal Address: Private Bag X9051
Tel: 033 395 2805/ 3189/ 3123 Fax: 033 394 3782
Email:
www.kznhealth.gov.za

HRKM Ref: 231/17
NHRD Ref: KZ_2017RP31_144

Date: 21 June 2017
Dear Ms T. Khoza
Durban University of Technology

Approval of research

1. The research proposal titled '**Safety attitudes amongst health professionals in public operating theatres in KwaZulu-Natal**' was reviewed by the KwaZulu-Natal Department of Health.

   The proposal is hereby **approved** for research to be undertaken at Addington, King Edward VIII, RK Khan, King Dinuzulu, Edendale, Grey's, Madadeni, Newcastle, Ladysmith, Stanger, Port Shepstone, Ngwelezane Hospital.

2. You are requested to take note of the following:
   a. Make the necessary arrangement with the identified facility before commencing with your research project.
   b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.

3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Mr X. Xaba on 033-395 2805.

Yours Sincerely

Dr E Lutge
Chairperson, Health Research Committee
Date: 21/6/17

ANNEXURE 4

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE: Senior Medical Manager

Mangosuthu Highway, Private Bag X 07
MOBENI
Tel: 031 907 8317/8304 Fax: 031 906 1044 Email:myint.aung@kznhealth.gov.za
www.kznhealth.gov.za

Prince Mshiyeni Memorial
Hospital

Enquiry: Dr. M AUNG
Ref No: 31/RESH/2017
Date: 10/07/2017

TO: Thandazile Khoza

RE: LETTER OF SUPPORT TO CONDUCT RESEARCH AT PMMH

Dear researcher;

I have pleasure to inform you that PMMH has considered your application to conduct research on **"Safety attitudes amongst health professionals in the public operating theatres in KwaZulu-Natal"** in our institution.

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure this office is informed before you commence your research.
4. The institution will not provide any resources for this research.
5. You will be expected to provide feedback on you finding to the institution.

Should the following requirements be fulfilled, a Permission/ Approval letter will follow.

- Full research protocol, including questionnaires and consent forms if applicable.
- Ethical approval from a recognized Ethic committee in South Africa

Thank you.

MYINT AUNG
Senior Medical Manager & specialist in Family Medicine
MBBS, DO(SA), PGDip in HIV (Natal), M.Med.Fam.Med (natal), PhD
Tel: 031 9078317
Fax: 031 906 1044
myint.aung@kznhealth.gov.za

ANNEXURE 5

DUT
DURBAN UNIVERSITY OF TECHNOLOGY

Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
2nd Floor, Berwyn Court
Gate 1, Steve Biko Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

Tel: 031 373 2375
Email: lavishad@dut.ac.za
http://www.dut.ac.za/research/institutional_research_ethics

www.dut.ac.za

14 September 2017

IREC Reference Number: **REC 26/17**

Ms T Khoza
73 A Pardy Road
Isipingo Hills

Dear Ms Khoza

Safety attitudes amongst health professionals in public operating theatres in KwaZulu-Natal

The Institutional Research Ethics Committee acknowledges receipt of your notification regarding the piloting of your data collection tool.

Kindly ensure that participants used for the pilot study are not part of the main study.

In addition, the IREC acknowledges receipt of your gatekeeper permission letters.

Please note that FULL APPROVAL is granted to your research proposal. You may proceed with data collection.

Yours Sincerely,

Professor J K Adam
Chairperson: IREC

DUT DURBAN UNIVERSITY OF TECHNOLOGY
2017 -09- 14
INSITUTUTIONAL RESEARCH ETHICS COMMITTEE
P O BOX 1334 DURBAN 4000 SOUTH AFRICA

ANNEXURE 6

APPENDIX 3a: Questionnaires

Questionnaire Number	

Select <u>one</u> response option for each of the following by using X

SECTION 1: <u>Demographic Information</u>

1. Gender

Male	
Female	

2. Age ----------

3. Race

Black	
Coloured	
Indian	
White	
Other: Please specify	

4. State years of service in the hospital ----------

5. Job Status

Full- time	
Contract	

6. Position: (mark your position with an X)

Surgeon	
Consultant	
Anaesthesiologist	
Anaesthesia Resident or Fellow	
Anaesthetist	
Scrub nurse	
Anaesthetist nurse	
Scrub nurse theatre trained	
Scrub nurse experienced	
Floor nurse	

7. Usual shift

Days	
Evening	
Nights	
Variable shift	

8. State years of experience in the specialty ----------

9. COMMENTS: What are your top three recommendations for improving patient safety in the operating theatre?

9.1----------

9.2----------

9.3----------

SECTION 2

Communication information

A	B	C	D	E	X
Very Low	Low	Adequate	High	Very High	Not Applicable

Use the scale to describe the quality of communication and collaboration you have experienced with:

1	Surgeons	A	B	C	D	E	X
2	Surgeon Consultants	A	B	C	D	E	X
3	Anaesthesiologist	A	B	C	D	E	X
4	Anaesthetist	A	B	C	D	E	X
5	Ward staff	A	B	C	D	E	X
6	Anaesthetic nurse	A	B	C	D	E	X
7	Scrub sister	A	B	C	D	E	X
8	Floor nurse	A	B	C	D	E	X
9	Theatre support stuff	A	B	C	D	E	X

SECTION 3

Personnel experience

A	B	C	D	E	X
Disagree Strongly	Disagree Slightly	Neutral	Agree Slightly	Agree Strongly	Not Applicable

1	High levels of workload are common in the ORs here.	A	B	C	D	E	X
2	I like my job as a peri-operative team member.	A	B	C	D	E	X
3	Nurse input about patient care is well received in the OR.	A	B	C	D	E	X
4	I would feel safe being treated here as a patient.	A	B	C	D	E	X
5	Medical errors are handled appropriately in this hospital.	A	B	C	D	E	X
6	The hospital does a good job of training new personnel.	A	B	C	D	E	X
7	All the necessary information is available before the start of a procedure.	A	B	C	D	E	X
8	Working in this hospital is like being part of a large family.	A	B	C	D	E	X
9	The administration of this hospital is doing a good job.	A	B	C	D	E	X
10	Hospital administration supports my daily efforts.	A	B	C	D	E	X
11	I receive appropriate feedback about my performance.	A	B	C	D	E	X
12	In the OR, it is difficult to discuss errors.	A	B	C	D	E	X
13	Briefing OR personnel before a surgical procedure is important for patient safety.	A	B	C	D	E	X
14	Briefings are common in the OR.	A	B	C	D	E	X
15	This hospital is a good place to work.	A	B	C	D	E	X
16	Fatigue impairs my performance during emergency situations.	A	B	C	D	E	X
17	Hospital management does not knowingly compromise the safety of patients.	A	B	C	D	E	X
18	The level of staffing in our ORs are sufficient to handle the number of patients.	A	B	C	D	E	X
19	Decision making in the OR utilizes input from relevant personnel.	A	B	C	D	E	X
20	I am encouraged by my colleagues to report any patient safety concern I may have.	A	B	C	D	E	X
21	The culture in the ORs here makes it easy to learn from the errors of others.	A	B	C	D	E	X
22	Medical equipment in the ORs here is adequate.	A	B	C	D	E	X
23	In the ORs here, it is difficult to speak up if I perceive a problem with patient care.	A	B	C	D	E	X
24	When my workload becomes excessive, my performance is impaired.	A	B	C	D	E	X
25	I am provided with adequate, timely information about events in the hospital that might affect my work.	A	B	C	D	E	X
26	I have seen others make errors that had the potential to harm patients.	A	B	C	D	E	X
27	I know the proper channels to direct questions regarding patient safety in the ORs here.	A	B	C	D	E	X
28	I am proud to work at this hospital.	A	B	C	D	E	X
29	Disagreements in the ORs here are resolved appropriately (i.e., not *who* is right but *what* is best for the patient)	A	B	C	D	E	X
30	I am less effective at work when fatigued.	A	B	C	D	E	X

SECTION 3

Personnel experience

A	B	C	D	E	X
Disagree Strongly	Disagree Slightly	Neutral	Agree Slightly	Agree Strongly	Not Applicable

1	High levels of workload are common in the ORs here.	A	B	C	D	E	X
2	I like my job as a peri-operative team member.	A	B	C	D	E	X
3	Nurse input about patient care is well received in the OR.	A	B	C	D	E	X
4	I would feel safe being treated here as a patient.	A	B	C	D	E	X
5	Medical errors are handled appropriately in this hospital.	A	B	C	D	E	X
6	The hospital does a good job of training new personnel.	A	B	C	D	E	X
7	All the necessary information is available before the start of a procedure.	A	B	C	D	E	X
8	Working in this hospital is like being part of a large family.	A	B	C	D	E	X
9	The administration of this hospital is doing a good job.	A	B	C	D	E	X
10	Hospital administration supports my daily efforts.	A	B	C	D	E	X
11	I receive appropriate feedback about my performance.	A	B	C	D	E	X
12	In the OR, it is difficult to discuss errors.	A	B	C	D	E	X
13	Briefing OR personnel before a surgical procedure is important for patient safety.	A	B	C	D	E	X
14	Briefings are common in the OR.	A	B	C	D	E	X
15	This hospital is a good place to work.	A	B	C	D	E	X
16	Fatigue impairs my performance during emergency situations.	A	B	C	D	E	X
17	Hospital management does not knowingly compromise the safety of patients.	A	B	C	D	E	X
18	The level of staffing in our ORs are sufficient to handle the number of patients.	A	B	C	D	E	X
19	Decision making in the OR utilizes input from relevant personnel.	A	B	C	D	E	X
20	I am encouraged by my colleagues to report any patient safety concern I may have.	A	B	C	D	E	X
21	The culture in the ORs here makes it easy to learn from the errors of others.	A	B	C	D	E	X
22	Medical equipment in the ORs here is adequate.	A	B	C	D	E	X
23	In the ORs here, it is difficult to speak up if I perceive a problem with patient care.	A	B	C	D	E	X
24	When my workload becomes excessive, my performance is impaired.	A	B	C	D	E	X
25	I am provided with adequate, timely information about events in the hospital that might affect my work.	A	B	C	D	E	X
26	I have seen others make errors that had the potential to harm patients.	A	B	C	D	E	X
27	I know the proper channels to direct questions regarding patient safety in the ORs here.	A	B	C	D	E	X
28	I am proud to work at this hospital.	A	B	C	D	E	X
29	Disagreements in the ORs here are resolved appropriately (i.e., not *who* is right but *what* is best for the patient)	A	B	C	D	E	X
30	I am less effective at work when fatigued.	A	B	C	D	E	X

ANNEXURE 7.1

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE:
AMAJUBA DISTRICT OFFICE

38 Voortrekker street
Newcastle
Tel: 0343267002 Fax: 0343123123 Email: abdus.cassim@kznhealth.gov.za
www.kznhealth.gov.za

MEMORANDUM

Date: 14/07/2017	File No: 12/1
To: Ms. THANDAZILE KHOZA DURBAN UNIVERSITY OF TECHNOLOGY	From: MRS A.M.E.T. TSHABALALA DIRECTOR DISTRICT
Subject: APPROVAL TO CONDUCT STUDY AT AMAJUBA DISTRICT	

Dear Ms. Khoza

I have pleasure in informing you that permission has been granted to you by the Amajuba District Office to conduct research on "Safety attitudes amongst health professionals in public operating theatres in Kwa-Zulu Natal."

Please note the following:

1. Please ensure that you adhere to all policies, procedures, protocols and guidelines of the Department of Health with regards to this research.

2. Please ensure that this office is informed before you commence your research.

3. The District Office will not provide any resources for this research.

4. You will be expected to provide comprehensive feedback on your findings to the District Office upon completion of the study.

Thank you

.....
MRS. A. M. E. T. TSHABALALA
DIRECTOR DISTRICT
AMAJUBA DISTRICT OFFICE

ANNEXURE 7.2

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE: CORPORATE SERVICES

83 King Cetshwayo Highway
Mayville, Durban, 4001
Tel: 031 240 5455 Email: awashni.harrichandparsad@kznhealth.gov.za
www.kznhealth.gov.za

ETHEKWINI HEALTH DISTRICT OFFICE

24 May 2017

Dear Ms T Khoza

Re: Permission To Conduct Research at eThekwini District Facilities.

This letter serves to confirm that your application to conduct the research study titled, "Safety attitudes amongst health professionals in public operating theatres in KwaZulu-Natal.", in the eThekwini district at the following health care facilities has been recommended:

1) Addington Hospital
2) King Edward VIII Hospital
3) King Dinuzulu Hospital
4) RK Khan Hospital

Kindly upload this letter together with your application as required to the Health Research and Knowledge Unit for the KZN Department of Health for Approval.

Please also note the following:

1. This research project should only commence after final approval by the KwaZulu-Natal Health Research and Knowledge Unit, and full ethical approval, has been granted.
2. That you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
3. All research activities must be conducted in a manner that does not interrupt clinical care at the health care facility.
4. Ensure that this office is informed before you commence your research
5. The District Office/Facility will not provide any resources for this research
6. All logistical details must be arranged with the CEO/medical manager /operational manager of the facility.
7. You will be expected to provide feedback on your findings to the District Office/Facility

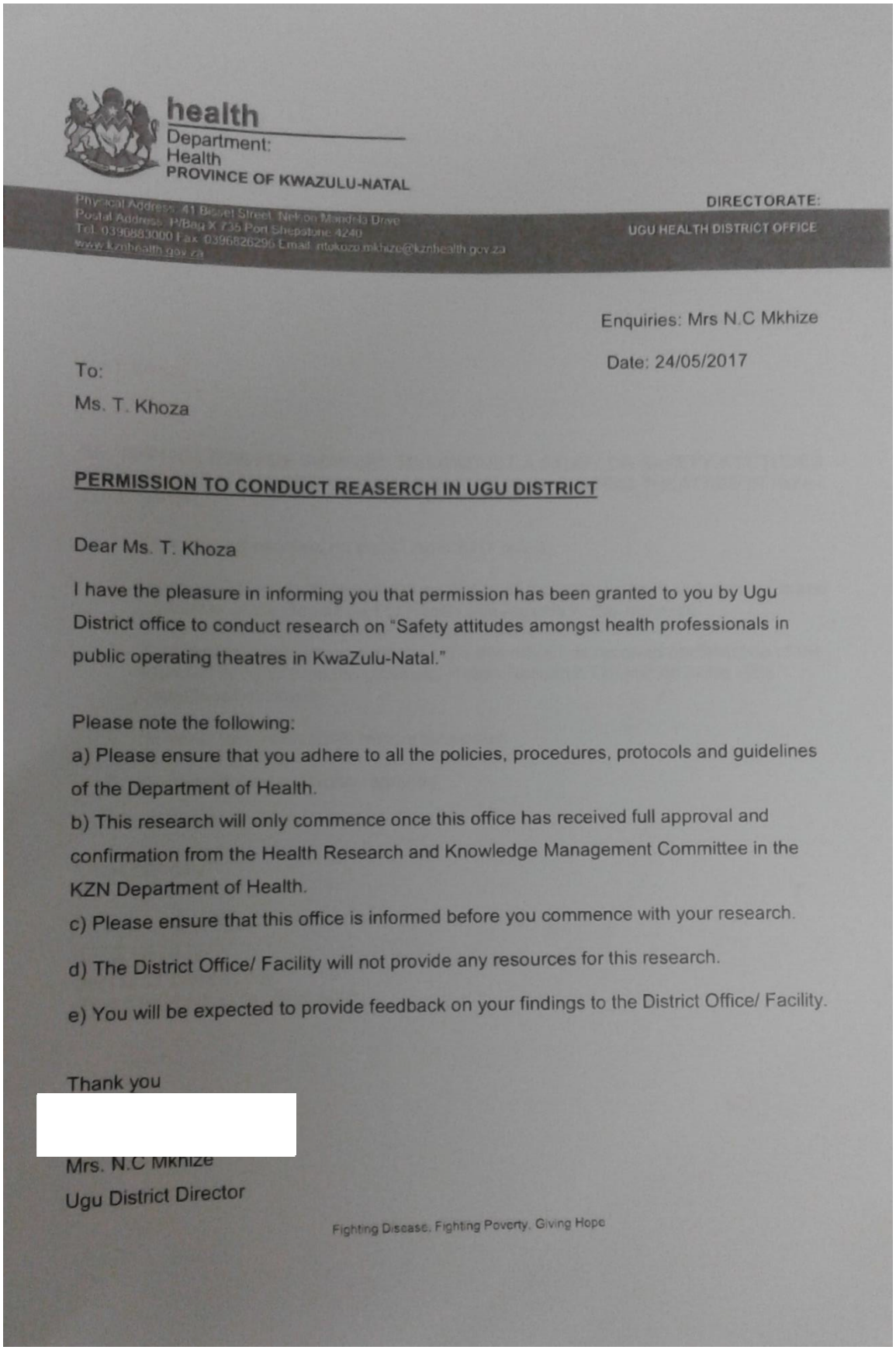
Yours sincerely

Dr. A. Harrichandparsad

PP: Ms. T. P. Msimango
Chief Director (Acting)
eThekwini Health District

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE 7.3



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address: 41 Bissel Street, Nelson Mandela Drive
Postal Address: P/Bag X 735 Port Shepstone 4240
Tel: 0396883000 Fax: 0396826296 Email: ntokozo.mkhize@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE:
UGU HEALTH DISTRICT OFFICE

Enquiries: Mrs N.C Mkhize

Date: 24/05/2017

To:
Ms. T. Khoza

PERMISSION TO CONDUCT REASERCH IN UGU DISTRICT

Dear Ms. T. Khoza

I have the pleasure in informing you that permission has been granted to you by Ugu District office to conduct research on "Safety attitudes amongst health professionals in public operating theatres in KwaZulu-Natal."

Please note the following:

a) Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health.

b) This research will only commence once this office has received full approval and confirmation from the Health Research and Knowledge Management Committee in the KZN Department of Health.

c) Please ensure that this office is informed before you commence with your research.

d) The District Office/ Facility will not provide any resources for this research.

e) You will be expected to provide feedback on your findings to the District Office/ Facility.

Thank you

Mrs. N.C Mkhize
Ugu District Director

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE 7.4

health

Department:
Health
PROVINCE OF KWAZULU-NATAL

ILEMBE HEALTH DISTRICT OFFICE
Postal Address: Private Bag x 10620, KwaDukuza, 4450
Physical Address: OK Mall, 36/40 Cnr Mahatma Ghandi
& Chief Albert Luthuli St, KwaDukuza
Tel.:032 437 3500, Fax.: 032 551 1590
Email.:thenjiwe.thwala@kznhealth.gov.za
www.kznhealth.gov.za

Enquiries: Ms Thwala
Telephone: 032 – 437 3503
Date: 24 May 2017

73A Pardy Road
Isipingo Hills
Isipingo
4133

Dear Ms. Khoza

RE: PERMISSION TO CONDUCT RESEARCH AT DISTRICT/FACILITY

I have pleasure in informing you that permission has been granted to you by the District to conduct research on:

a) Safety attitudes amongst health professionals in public operating theatres in KwaZulu-Natal.

Please note the following:

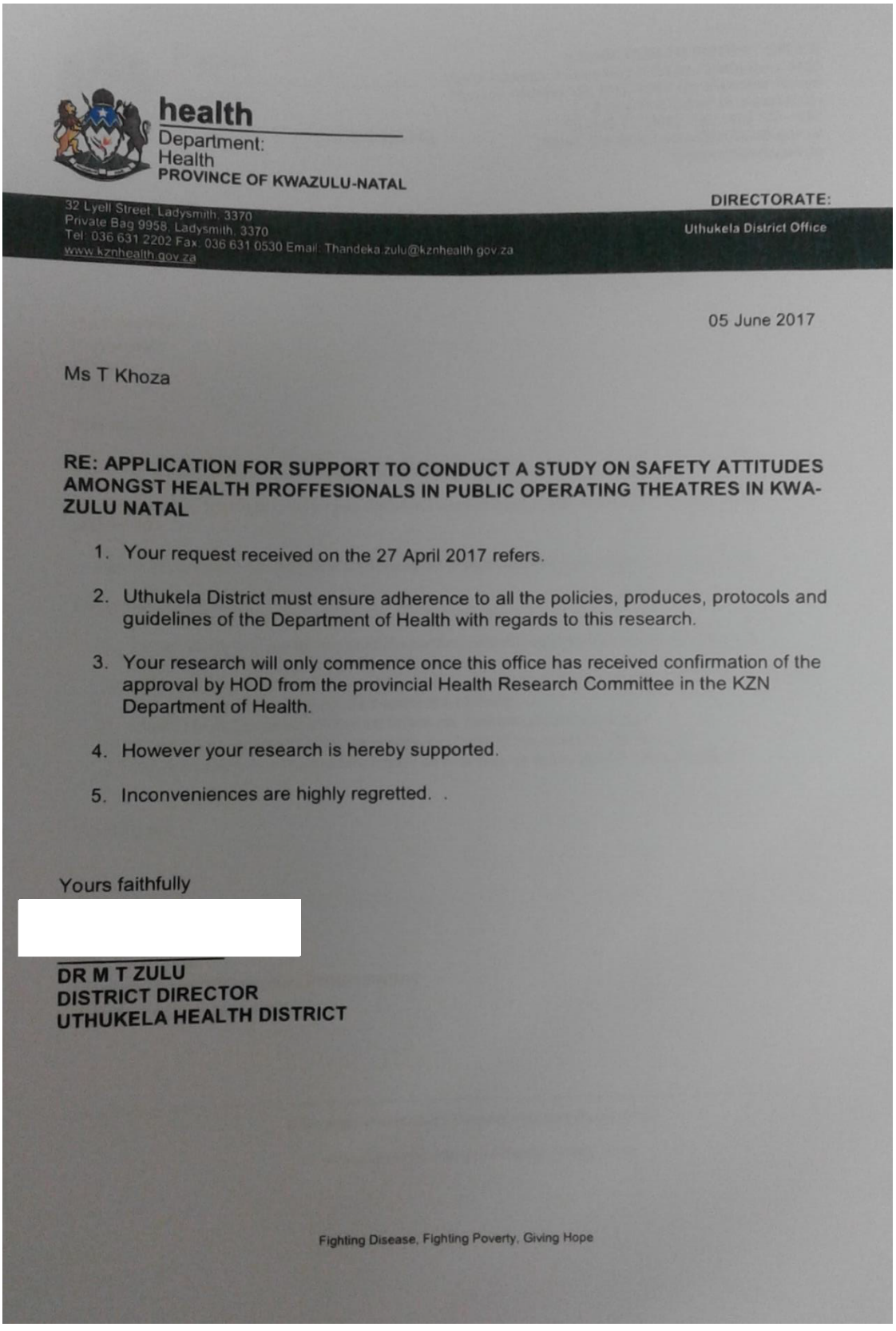
1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of health with regards to this research.
2. This research will only commence if this office has received confirmation from the Provincial Health Research Office Committee in the Department of Health.
3. Please ensure this office is informed before you commence your research.
4. The District Office/Facility will not provide any financial resources for this research.
5. You will be expected to provide feedback on your findings to the District Office/Facility.

Thanking you

[redacted]

Ms. M Banda
Deputy District Director: Programmes
Ilembe Health District

ANNEXURE 7.5



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

32 Lyell Street, Ladysmith, 3370
Private Bag 9958, Ladysmith, 3370
Tel: 036 631 2202 Fax: 036 631 0530 Email: Thandeka.zulu@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE:
Uthukela District Office

05 June 2017

Ms T Khoza

RE: APPLICATION FOR SUPPORT TO CONDUCT A STUDY ON SAFETY ATTITUDES AMONGST HEALTH PROFFESIONALS IN PUBLIC OPERATING THEATRES IN KWA-ZULU NATAL

1. Your request received on the 27 April 2017 refers.
2. Uthukela District must ensure adherence to all the policies, produces, protocols and guidelines of the Department of Health with regards to this research.
3. Your research will only commence once this office has received confirmation of the approval by HOD from the provincial Health Research Committee in the KZN Department of Health.
4. However your research is hereby supported.
5. Inconveniences are highly regretted. .

Yours faithfully

DR M T ZULU
DISTRICT DIRECTOR
UTHUKELA HEALTH DISTRICT

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE 7.6

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DISTRICT MANAGERS OFFICE

Enquiries: Mrs. N. M. Zuma-Mkhonza
27 JULY 2017

TO: MS T KHOZA
73A PARDY ROAD
ISIPINGO

DEAR MS T KHOZA

RE: SAFETY ATTITUDES AMONGST HEALTH PROFESSIONALS IN PUBLIC OPERATING THEATRES IN KWA-ZULU NATAL.

I have pleasure in informing you that support and permission have been granted to you by the District Office UMgungundlovu to conduct a research in: ***Safety attitudes amongst health professionals in public operating theatres in Kwa-Zulu Natal.***

PLEASE NOTE THE FOLLOWING

1. Please ensure that you adhere to all policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received the full ethics approval has been received and the confirmation from the Provincial Health Research Committee in the KZN Department.
3. Please ensure that this office is informed before you commence your research.
4. The District Office will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to the District Office.

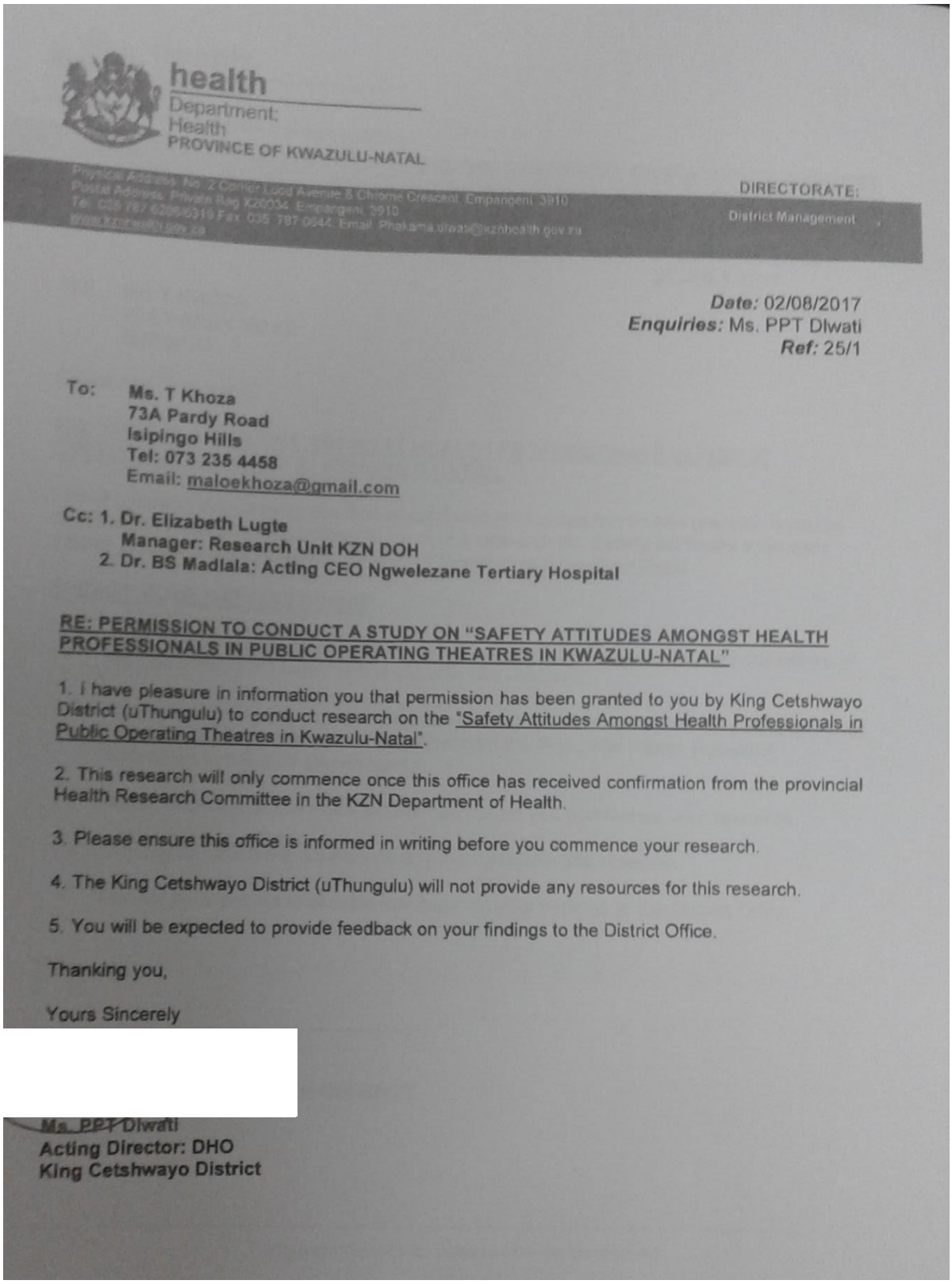
Thank you.

MRS N.M. ZUMA - MKHONZA
DISTRICT DIRECTOR
UMGUNGUNDLOVU HEALTH DISTRICT

UMnyango Wezempilo. Departement van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE 7.7



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Provincial Address: No. 2 Connor Lucid Avenue & Chlorine Crescent, Empangeni, 3910
Postal Address: Private Bag X20034, Empangeni, 3910
Tel: 035 787 6289/6319 Fax: 035 787 0944 Email: Phakama.dlwati@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE:
District Management

Date: 02/08/2017
Enquiries: Ms. PPT Dlwati
Ref: 25/1

To: **Ms. T Khoza**
73A Pardy Road
Isipingo Hills
Tel: 073 235 4458
Email: maloekhoza@gmail.com

Cc: 1. **Dr. Elizabeth Lugte**
Manager: Research Unit KZN DOH
2. **Dr. BS Madlala: Acting CEO Ngwelezane Tertiary Hospital**

RE: PERMISSION TO CONDUCT A STUDY ON "SAFETY ATTITUDES AMONGST HEALTH PROFESSIONALS IN PUBLIC OPERATING THEATRES IN KWAZULU-NATAL"

1. I have pleasure in information you that permission has been granted to you by King Cetshwayo District (uThungulu) to conduct research on the "Safety Attitudes Amongst Health Professionals in Public Operating Theatres in Kwazulu-Natal".

2. This research will only commence once this office has received confirmation from the provincial Health Research Committee in the KZN Department of Health.

3. Please ensure this office is informed in writing before you commence your research.

4. The King Cetshwayo District (uThungulu) will not provide any resources for this research.

5. You will be expected to provide feedback on your findings to the District Office.

Thanking you,

Yours Sincerely

Ms. PPT Dlwati
Acting Director: DHO
King Cetshwayo District

ANNEXURE 8.1

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE: CHIEF EXECUTIVE OFFICER
EDENDALE HOSPITAL

Physical Address: No.89 Selby Msimang Road, Pietermaritzburg, 3216
Postal Address: P/Bag X 509, PLESSISLAER, 3216
Tel: 033 395 4040 Fax: 033 395 4087 Email:
www.kznhealth.gov.za

Enquiries: Ms. H.G Grace
Ext: 4040
Date: 18 August 2017

Ms T Khoza
Student – Durban University of Technology

Dear Ms Khoza

RE: SAFETY ATTITUDES AMONGST HEALTH PROFESSIONALS IN PUBLIC OPERATING THEATRES IN KWAZULU NATAL.

Your request dated 12/08/2017 is acknowledged and refers.

I have pleasure in informing you that permission has been granted to you by Edendale Hospital to conduct research.

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. The Hospital will not provide any resources for this research.
4. You will be expected to provide feedback on your findings to Edendale Hospital.

Yours Sincerely

Mrs ZSI Ndwandwe
Chief Executive Officer
Edendale Hospital

ANNEXURE 8.2

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address: Hospital Street No 4 Newcastle 2940
Postal Address: Private Bag x 6603, Newcastle 2940
Tel: 034-328 0926 Fax:034-328 922 Email Thabisile.sakyi@kznhealth.gov.za
www.kznhealth.gov.za

NEWCASTLE REGIONAL HOSPITAL

To	: Ms.T. Khoza
From	: Mrs. TBT Sakyi CEO Newcastle Regional Hospital
Date	: 28th August 2017
Subject	: Permission to conduct research at Newcastle Hospital

I have pleasure in informing you that permission has been granted to you by the facility to conduct research on "Safety attitudes amongst health professionals in public operating theatres in KwaZulu –Natal."

Please note the following:

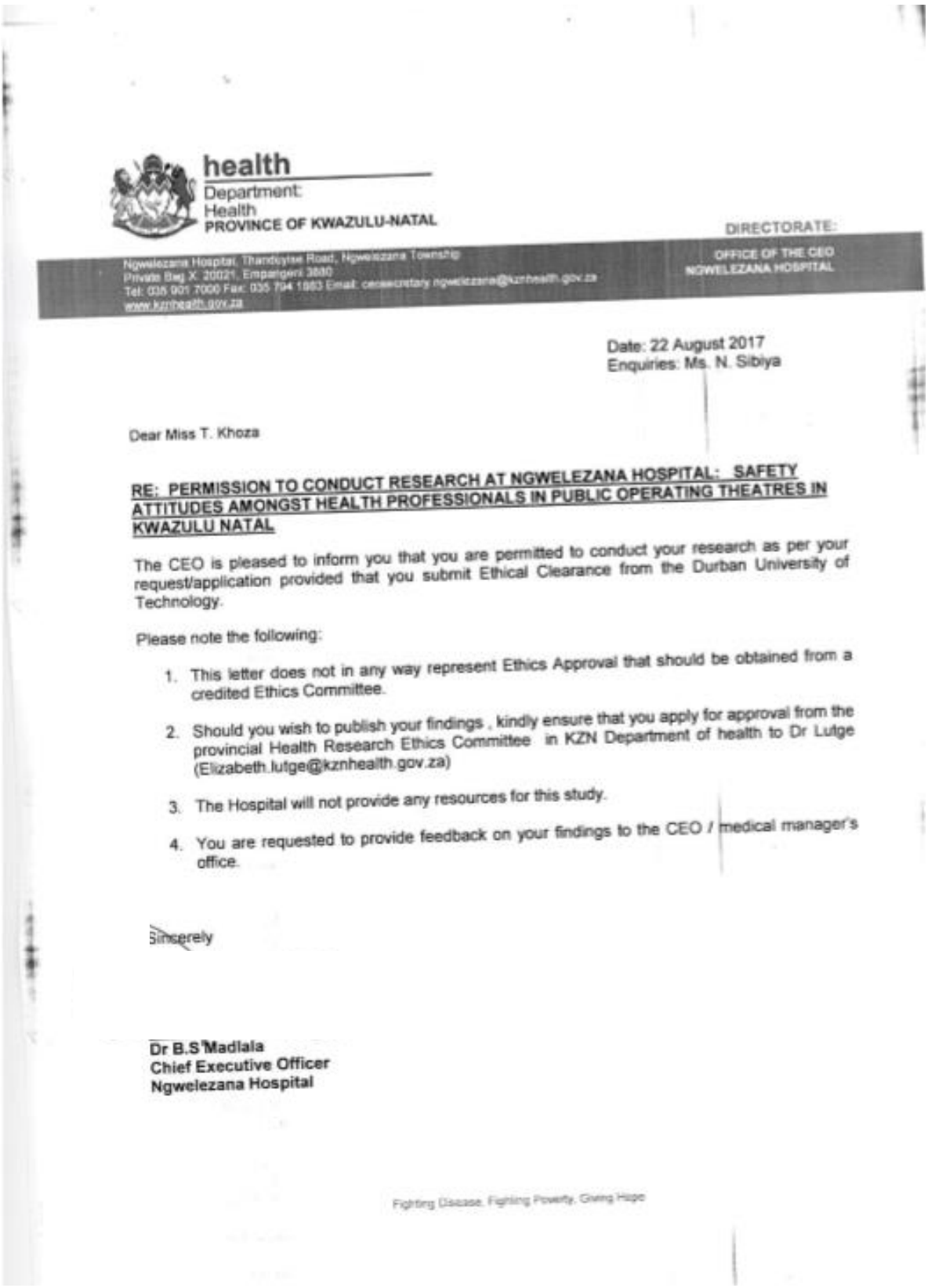
1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department with regards to this research.
2. Please ensure that this office is informed before you commence your research.
3. The hospital will not provide any resources for this research.
4. You will be expected to give feedback to the hospital.

Thank you.

Mrs. T.B.T. Sakyi
CHIEF EXECUTIVE OFFICER
NEWCASTLE REGIONAL HOSPITAL

2017/08/28
DATE

ANNEXURE 8.3



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE:
OFFICE OF THE CEO
NGWELEZANA HOSPITAL

Ngwelezana Hospital, Thandolyse Road, Ngwelezana Township
Private Bag X 20021, Empangeni 3880
Tel: 035 901 7000 Fax: 035 794 1983 Email: ceosecretary.ngwelezana@kznhealth.gov.za
www.kznhealth.gov.za

Date: 22 August 2017
Enquiries: Ms. N. Sibiya

Dear Miss T. Khoza

RE: PERMISSION TO CONDUCT RESEARCH AT NGWELEZANA HOSPITAL: SAFETY ATTITUDES AMONGST HEALTH PROFESSIONALS IN PUBLIC OPERATING THEATRES IN KWAZULU NATAL

The CEO is pleased to inform you that you are permitted to conduct your research as per your request/application provided that you submit Ethical Clearance from the Durban University of Technology.

Please note the following:

1. This letter does not in any way represent Ethics Approval that should be obtained from a credited Ethics Committee.
2. Should you wish to publish your findings , kindly ensure that you apply for approval from the provincial Health Research Ethics Committee in KZN Department of health to Dr Lutge (Elizabeth.lutge@kznhealth.gov.za)
3. The Hospital will not provide any resources for this study.
4. You are requested to provide feedback on your findings to the CEO / medical manager's office.

Sincerely

Dr B.S Madlala
Chief Executive Officer
Ngwelezana Hospital

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE 8.4

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address : R.K. Khan Circle
Physical Address : CHATSWORTH
Tel: [031] 4596001 Fax:[031] 4011247 Email:Sharon.gounden@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE:
R.K. KHAN HOSPITAL
OFFICE OF THE CEO

ENQUIRIES : DR P.S. SUBBAN

22 August 2017

Ms T. Khoza
Student No. 20930780
Durban University of Technology

Dear Madam

RE: PERMISSION TO CONDUCT RESEARCH: SAFETY ATTITUDES AMONGST HEALTH PROFESSIONALS IN PUBLIC OPERATING THEATRES IN KWAZULU NATAL

Permission is granted to conduct the study at this institution.

Please note the following:

1. Please ensure that you adhere to all the policies, procedures protocols and guidelines of the Institution with regards to this research.

2. Please ensure this office is informed before you commence your research and your University's Ethics approval must be attached.

3. You will be expected to provide feedback on your findings to this institution.

4. You will be liaising with : Mrs F.J. Ngidi
Nurse Manager
Tel : [031 – 4596384]

Yours faithfully

DR P.S. SUBBAN
CHIEF EXECUTIVE OFFICER

HOSPITAL C.E.O.
R.K. KHAN HOSPITAL
22 -08- 2017
PRIVATE BAG X004
CHATSWORTH 4030

ANNEXURE 8.5

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

NAME OF INSTITUTION/DISTRICT/COMPONENT
Postal Address: Private Bag x10609, Stanger 4450

Tel: 0324376015 Fax. 0867567812
Email.gustavo.lopez@kznhealth.gov.za
www.kznhealth.gov.za

OFFICE OF THE SENIOR MANAGER: MEDICAL SERVICES

Enquiries: DR.G.Lopez
EXT: 6015
DATE: 01/09/2017

RE: PERMISSION TO CONDUCT RESEARCH AT STANGER HOSPITAL.

I have pleasure in informing you that permission has been granted to you by Stanger Hospital to conduct research on "Safety attitudes amongst health professionals in public operating theatres in Kwa-Zulu Natal".Please note the following:

1. Please ensure that you adhere to all policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure this office is informed before you commence your research.
4. Stanger Hospital will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to Stanger Hospital.

Thanking you;

Senior Manager: Medical Services
Stanger Hospital

ANNEXURE 8.6

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

GREYS HOSPITAL
OFFICE OF THE CEO
Private Bag X 9001, Pietermaritzburg, 3200
Town Bush Road, Chase Valley, Pietermaritzburg, 3201
Tel.: 033 – 897 3321 Fax.: 033 - 8973398
www.kznhealth.gov.za

To:	Ms. T. Khoza 73 A Pardy Road Isipingo Hills
From:	Dr. K. B. Bilenge CEO - Greys Hospital
Date:	14 August 2017
Re:	Request for permission to conduct research at Grey's Hospital: *Safety attitudes amongst health professionals in public operating theatres in KwaZulu-Natal*

Dear Ms. Khoza

Your request to conduct research at Grey's Hospital refers.

Permission to conduct the above study is hereby not approved due to the following:

- Your research sampling targets regional hospitals, and Grey's Hospital is not a regional hospital. Grey's Hospital is a tertiary hospital.

Dr L. Naidoo
Senior Manager: Medical Services

Dr K. B. Bilenge
Hospital CEO

ANNEXURE 8.7

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

OFFICE OF THE HOSPITAL CEO
KING EDWARD VIII HOSPITAL

Private Bag X02, CONGELLA, 4013
Corner of Rick Turner (Francois Road) & Sydney Road
Tel: 031-3603553, Fax 031-2061457, Email: [redacted]
www.kznhealth.gov.za

Ref.: KE 2/7/1/(37/2017
Enq.: Mrs. R. Sibiya
Research Programming

21 July 2017

Ms. T. Khoza
73A Pardy Raod
Isipingo Hills
ISIPINGO
4133

Dear Ms. Khoza

Protocol: "Safety attitudes amongst Health Professionals in Public Operating Theatres in KwaZulu-Natal"

Your request to conduct research at King Edward VIII Hospital has been approved.

Please ensure the following:

- That King Edward VIII Hospital receives full acknowledgment in the study on all publications and reports and also kindly present a copy of the publication or report on completion.

Before commencement:

* Discuss your research project with our relevant Clinical Head/Assistant Nursing Manager
* Sign an indemnity form at Room8, CEO's Complex, Admin. Block.

The Management of King Edward VIII Hospital reserves the right to terminate the permission for the study should circumstances so dictate.

Yours faithfully

SUPPORTED/~~NOT SUPPORTED~~

29/08/2017

DR. SA MOODLEY
ACTING SENIOR MEDICAL MANAGER

DATE

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE 8.8

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

F0001, Section 6, Madadeni
Private bag X 6642, Newcastle, 2940
Tel: 034 328 8042 Fax: 034 374 9227 Email: jabu.duze@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE:
OFFICE OF THE CEO
MADADENI PROVINCIAL HOSPITAL

Reference: Permission for research
Enquiries: Dr. JJN Duze
Telephone: (034) 328 8257
Date: 29/08/2017

Ms. Thandile Khoza
DUT

RE: PERMISSION TO CONDUCT RESEARCH AT MADADENI HOSPITAL: "Safety attitudes amongst health professionals in public operating theatres in Kwa-Zulu Natal"

I have pleasure in informing you that permission has been granted to you by Madadeni Hospital-Department of Health to conduct research on **"Safety attitudes amongst health professionals in public operating theatres in Kwa-Zulu Natal"**

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure this office is informed before you commence your research.
4. Madadeni Hospital and the Department of Health will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to the Madadeni Hospital -Department of Health.

Thank you.

Yours faithfully.

Dr. JJN Duze
C.E.O Madadeni

ANNEXURE 8.9

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE:
King Dinuzulu Hospital Complex

Physical Address :75 R.D. Naidu road, Sydenham
Physical Address:PO Dormerton ,4015
Tel: 031 242 6000 Fax: 031 2099586
Email address:shamin .maharaj@kznhealth.gov .za
www.kznhealth.gov.za

Enquiries: Dr S.B. Maharaj
28 August 2017

Dear Ms T. Khoza
Durban University of Technology

I have pleasure in informing you that permission has been granted to you by King Dinuzulu Hospital Complex to conduct a research in Theatre Department.

Please note the following:

1. Please ensure that you adhere to all policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure that this office is informed before you commence your research.
4. Neither the District Office nor KDHC will provide any resources for this research.
5. Your attention is drawn to the maintenance of confidentiality with respect to patient's records/files.
6. You will be expected to provide feedback on your findings to KDHC.

Yours sincerely

DR S.B. MAHARAJ
MEDICAL MANAGER

ANNEXURE 8.10

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE:
LADYSMITH REGIONAL HOSPITAL
OFFICE OF THE CHIEF EXECUTIVE OFFICER

Physical Address: 36 Malcom Road, LADYSMITH,3370
Postal Address: Private Bag X9928, LADYSMITH,3370
Tel: 036 367 2111 EXT 398 Fax: 036 631 4221 Email: Lorraine.Mbele@kznhealth.gov.za
www.kznhealth.gov.za

Enquiries: Dr R.S. Moeketsi
Telephone: 036 6372111 X398

Date: 29 August 2017

To: Ms T. Khoza

Dear Madam

RE: PERMISSION TO CONDUCT RESEARCH AT LADYSMITH REGIONAL HOSPITAL

I have pleasure in informing you that permission has been granted to you by Ladysmith Hospital to conduct research/trials on ***'Safety attitudes amongst health professionals in public operating theatres in Kwa-Zulu Natal.***

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation/approval from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure this office (CEO`s Office) is informed before you commence your research.
4. Ladysmith hospital will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to Ladysmith hospital and to the Provincial Health Research Committee in the KZN Department of Health.

Thank you
Regards

Dr R.S. Moeketsi 24/08/2017
HOSPITAL CEO
LADYSMITH REGIONAL HOSPITAL

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE 8.11

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

P.O. Box 977, DURBAN, 4000
16 Erskine Terrace, South Beach
Tel: (031) 327-2597[illegible] Email: Mthetheleli.ndlangisa@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE
Addington Hospital

04 September 2017

AD/9/2/3/R

Enquiries: Dr M. Ndlangisa
Extension: 2970/2568

Principal Investigator:
- **Ms T Khoza**

PERMISSION TO CONDUCT RESEARCH AT ADDINGTON HOSPITAL: "SAFETY ATTITUDES AMONGST HEALTH PROFESSIONALS IN PUBLIC OPERATING THEATRES IN KWAZULU NATAL"

I have pleasure in informing you that permission has been granted to you by Addington Management to conduct research on "safety attitudes amongst health professionals in public operating theatres in KwaZulu Natal"

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure this office is informed before you commence your research.
4. Addington Hospital will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to Addington Hospital.

HOSPITAL MANAGER
DR M NDLANGISA
ADDINGTON HOSPITAL

ANNEXURE 8.12

Department:
Health
PROVINCE OF KWAZULU-NATAL

GREYS HOSPITAL
OFFICE OF THE CEO
Private Bag X 9001, Pietermaritzburg, 3200
Town Bush Road, Chase Valley, Pietermaritzburg, 3201
Tel.:033 – 897 3321 Fax.: 033 - 8973398
www.kznhealth.gov.za

To:	Ms. T. Khoza 73 A Pardy Road Isipingo Hills
From:	Dr. K. B. Bilenge CEO - Greys Hospital
Date:	28 August 2017
Re:	Request for permission to conduct research at Grey's Hospital: *Safety attitudes amongst health professionals in public operating theatres in KwaZulu-Natal*

Dear Ms. Khoza

Your request to conduct research at Grey's Hospital refers.

Permission to conduct the above study is hereby granted under the following conditions:

- Final ethics approval is a prerequisite for conducting your study at our hospital. Once obtained, please submit a copy of the full and final ethics approval;
- Confidentiality of hospital information, including staff and patient medical and/or contact information, must be kept at all times; **Patient/staff records are not to be removed from the hospital premises nor are you allowed to photocopy/ photograph them.**
- **You are to ensure that your data collection process will not interfere with the routine services at the hospital; You are under no circumstance allowed to carry out data collection within the theatre complex. Data collection involving participants working in Theatre must be carried out outside the theatre complex.**
- You are to ensure that hospital resources are not used to manage your data collection, e.g. hospital staff collecting and/or collating data; photocopying; telephone; facsimile, etc.;
- Informed consent is to be obtained from all participants in your study, if applicable;
- Policies, guidelines and protocols of the Department of Health and Grey's Hospital must be adhered to at all times;
- Professional attitude and behaviour whilst dealing with research participants must be exhibited;
- The Department of Health, hospital and its staff will not be held responsible for any negative incidents and/or consequences, including injuries and illnesses that may be contracted on site, litigation matters, etc. that may arise as a result of your study or your presence on site;
- You are required to submit to this office a summary of study findings upon completion of your research.
- You are requested to make contact with the **Operational Manager of Grey's Hospital Main Theatre Complex, Mrs. Lehmann**, at Grey's Hospital once you are ready to commence data collection.

Recommended by:

Dr L. Naidoo
Senior Manager: Medical Services

Approved by:

Dr. K B. Bilenge
Hospital CEO

ANNEXURE 9.1

ANNEXURE 9

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE: THEATRE

King Edward Hospital

Physical Address : King Edward VIII, Corner Rick Tuner (Francois) & Sydney Road
Physical Address: Private Bag X 02, Congella, 4013
Tel: 031 3603677 Email:Nombuso.Zumgu@kznhealth.gov.za

09 April 2018

RE: CONFIRMING OF AUTHORITY TO CONDUCT RESEARCH IN OPERATING THEATRE

This serves to confirm that Thandazile Khoza requested permission to conduct research in our Theatre and was granted.

She explained the purpose of the study and how to complete the questionnaire.

King Edward was affected by storm damage which took place in October 2017 therefore we were unable to make her fulfill the full sample size of King Edward Theatre as most of the staff were deployed in different hospitals to continue with their duties.

Thank you
Theatre Operational Manager

N.E. Ndongeni

[redacted]

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE 9.2

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

201 Townbush Road, Northern park
Pietermaritzburg.3201
Private Bag X 9001
Tel:033-8973322 Fax: 033-8973328 Email: Mckenziekt.mckenzie@kznhealth.gov.za
www.kznhealth.gov

Grey's Hospital
Office of the Nursing Manager

Reference: M/S F. Heeralall
Ext: 6291/2
Date: 14/02/2018

TO: Chairperson IREC
Durban University of Technology
P.O. Box 1334
Durban
4001

IREC Reference NO: REC26/17
THANDAZILE KHOZA-STUDENT NUMBER: 2093080

I **MRS K T MCKENZIE** Nursing Manager Grey's Hospital hereby confirm that the above mentioned student was granted permission to conduct research on "Safety attitudes amongst health professionals in 3 discipline in Operating Theatre:

1. Orthopaedic surgery
2. General Surgery
3. Obstetrics and Gynaecology surgery

Full explanation and enough time was given to the respondents inclusive of all category of staff i.e.

1. Doctors/surgeons/ consultants
2. Anesthetists/consultants
3. Scrub-nurses (sisters)- Professional Nurses
4. Anaesthetics Nurses- Enrolled Nurses
5. Circulating Nurses- Auxiliary Nurses

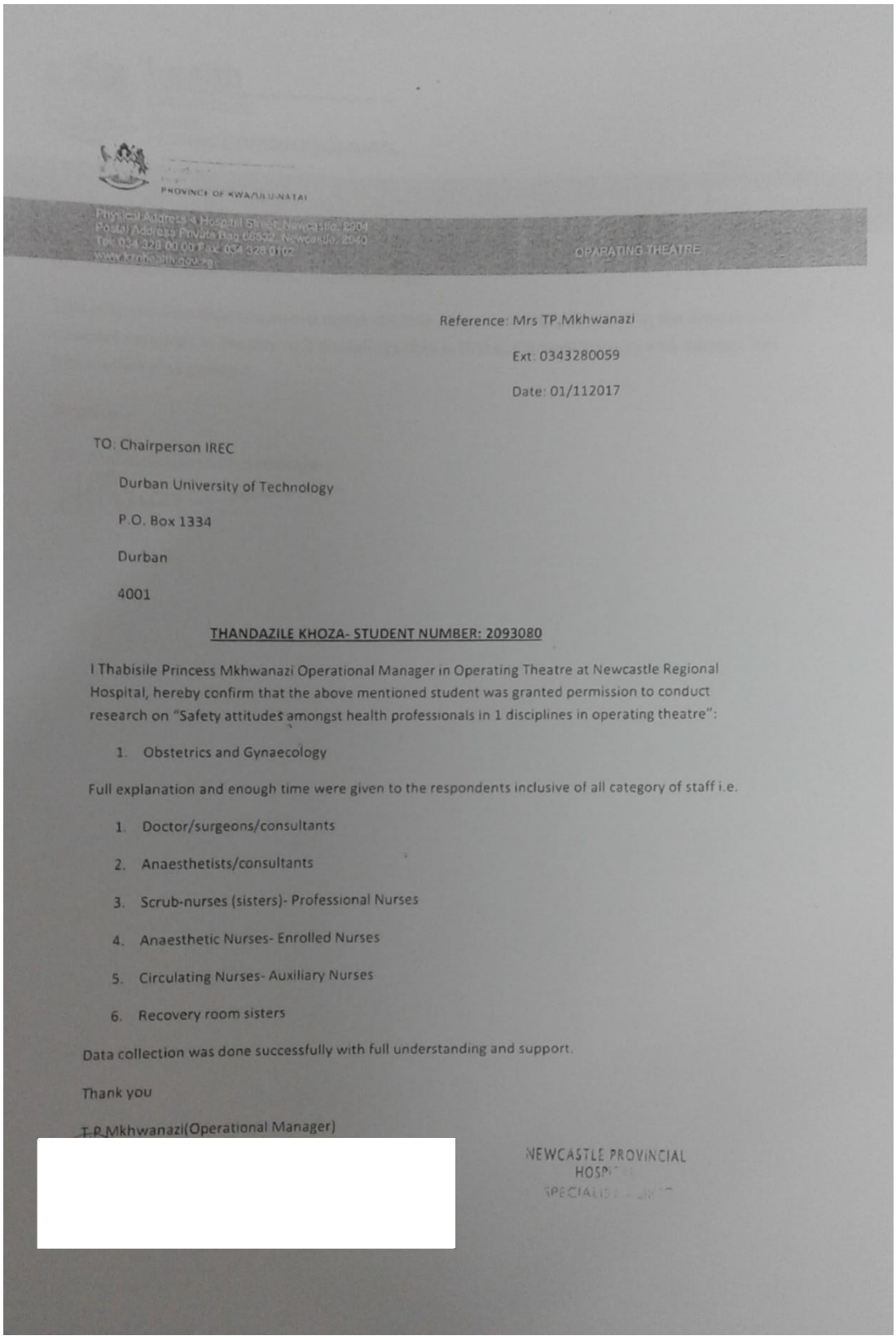
Data collection was done successfully with full understanding and support.

Thank you

MRS K.T. MCKENZIE
NURSING MANAGER
SANC No: 12037818

MRS K T MCKENZIE
MANAGER: NURSING SERVICES

ANNEXURE **9.3**



PROVINCE OF KWAZULU-NATAL

Physical Address: 4 Hospital Street, Newcastle, 2940
Postal Address: Private Bag 66001, Newcastle, 2940
Tel: 034 328 0000 Fax: 034 328 0100
www.kznhealth.gov.za

OPERATING THEATRE

Reference: Mrs TP.Mkhwanazi

Ext: 0343280059

Date: 01/112017

TO: Chairperson IREC

Durban University of Technology

P.O. Box 1334

Durban

4001

THANDAZILE KHOZA- STUDENT NUMBER: 2093080

I Thabisile Princess Mkhwanazi Operational Manager in Operating Theatre at Newcastle Regional Hospital, hereby confirm that the above mentioned student was granted permission to conduct research on "Safety attitudes amongst health professionals in 1 disciplines in operating theatre":

1. Obstetrics and Gynaecology

Full explanation and enough time were given to the respondents inclusive of all category of staff i.e.

1. Doctor/surgeons/consultants
2. Anaesthetists/consultants
3. Scrub-nurses (sisters)- Professional Nurses
4. Anaesthetic Nurses- Enrolled Nurses
5. Circulating Nurses- Auxiliary Nurses
6. Recovery room sisters

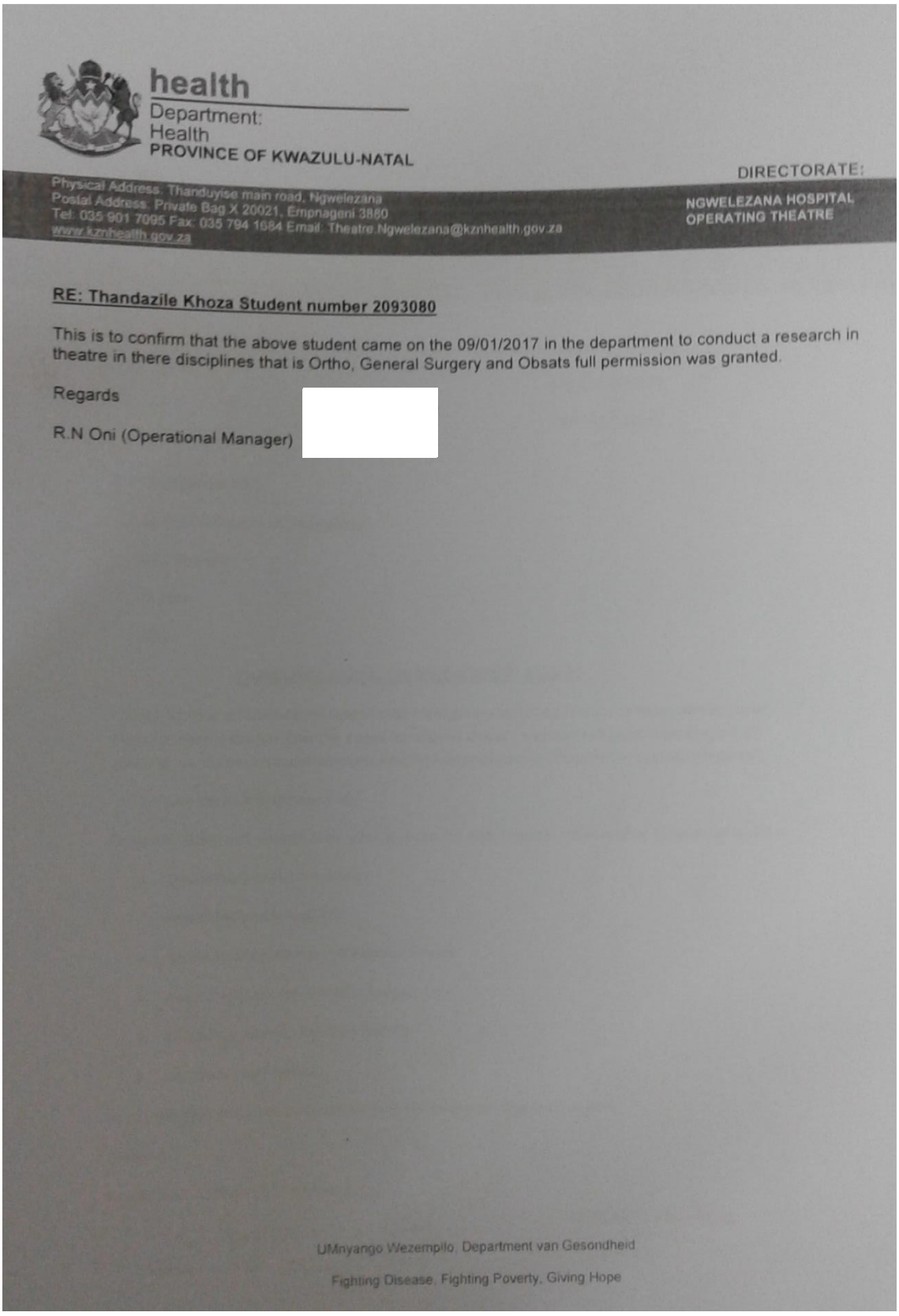
Data collection was done successfully with full understanding and support.

Thank you

T.P.Mkhwanazi(Operational Manager)

NEWCASTLE PROVINCIAL HOSP
SPECIALIST

ANNEXURE 9.4



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address: Thanduyise main road, Ngwelezana
Postal Address: Private Bag X 20021, Empnageni 3880
Tel: 035 901 7095 Fax: 035 794 1684 Email: Theatre.Ngwelezana@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE:
NGWELEZANA HOSPITAL
OPERATING THEATRE

RE: Thandazile Khoza Student number 2093080

This is to confirm that the above student came on the 09/01/2017 in the department to conduct a research in theatre in there disciplines that is Ortho, General Surgery and Obsats full permission was granted.

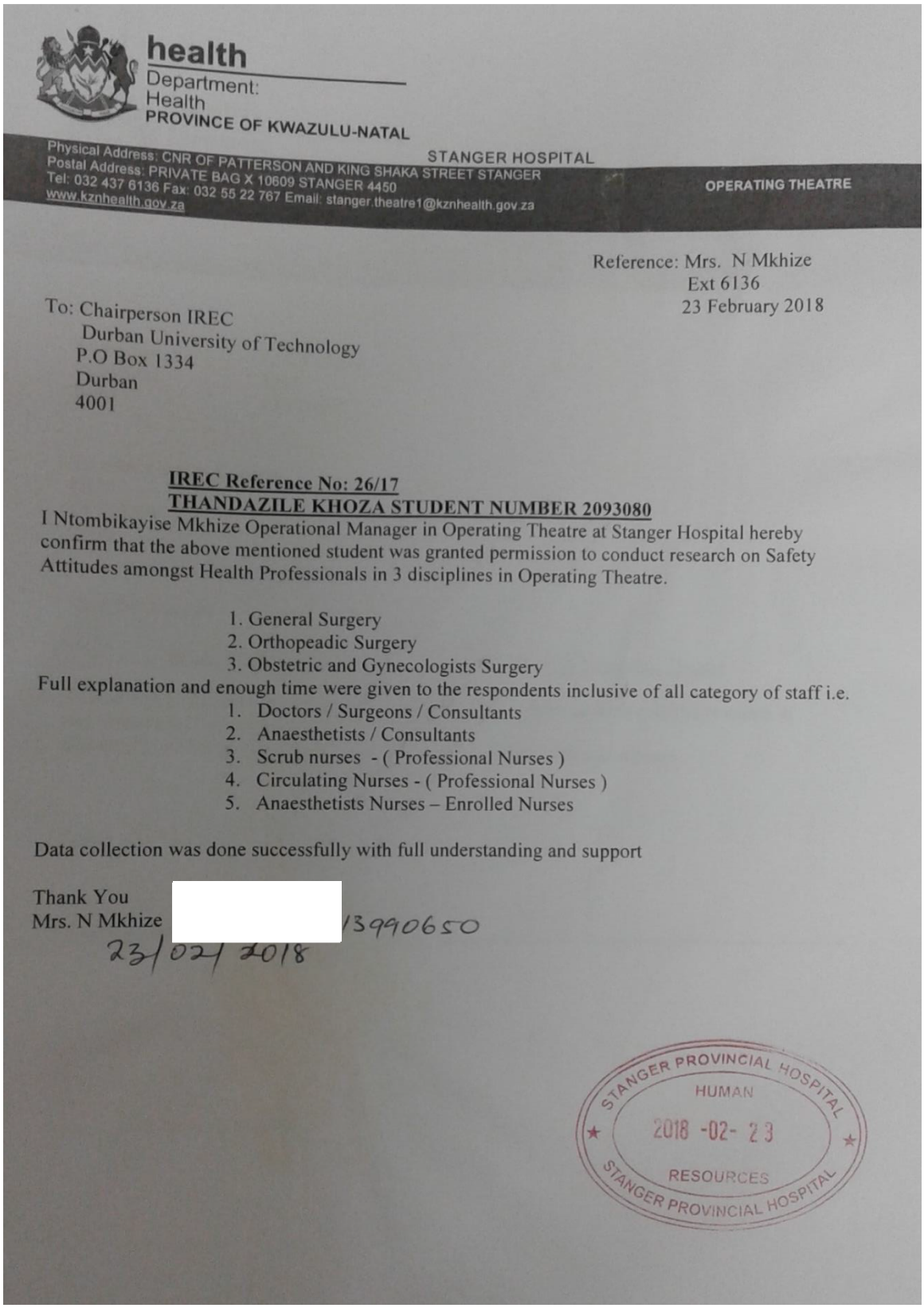
Regards

R.N Oni (Operational Manager)

UMnyango Wezempilo, Department van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE 9.5



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

STANGER HOSPITAL
Physical Address: CNR OF PATTERSON AND KING SHAKA STREET STANGER
Postal Address: PRIVATE BAG X 10609 STANGER 4450
Tel: 032 437 6136 Fax: 032 55 22 767 Email: stanger.theatre1@kznhealth.gov.za
www.kznhealth.gov.za
OPERATING THEATRE

Reference: Mrs. N Mkhize
Ext 6136
23 February 2018

To: Chairperson IREC
Durban University of Technology
P.O Box 1334
Durban
4001

IREC Reference No: 26/17
THANDAZILE KHOZA STUDENT NUMBER 2093080

I Ntombikayise Mkhize Operational Manager in Operating Theatre at Stanger Hospital hereby confirm that the above mentioned student was granted permission to conduct research on Safety Attitudes amongst Health Professionals in 3 disciplines in Operating Theatre.

1. General Surgery
2. Orthopeadic Surgery
3. Obstetric and Gynecologists Surgery

Full explanation and enough time were given to the respondents inclusive of all category of staff i.e.

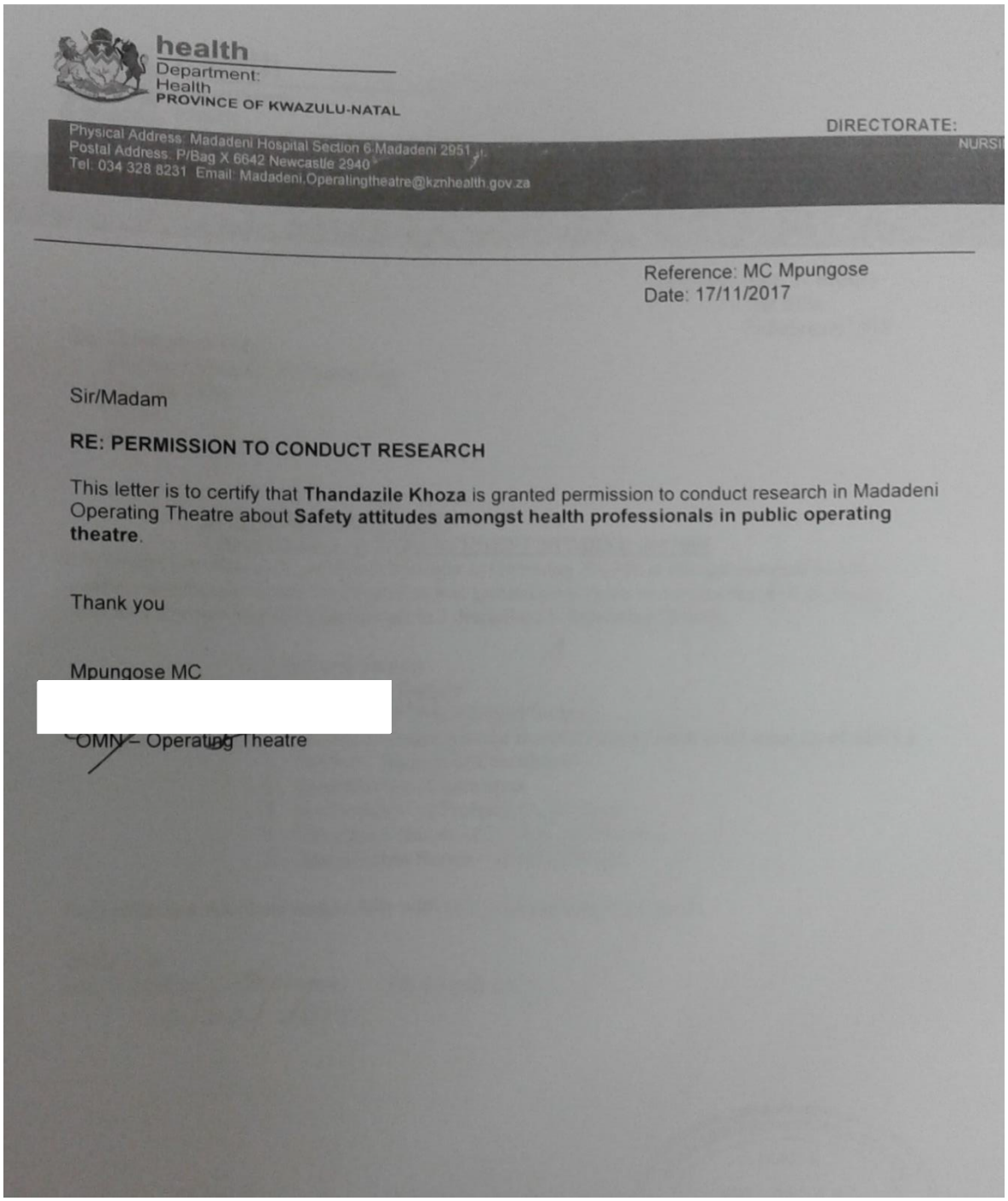
1. Doctors / Surgeons / Consultants
2. Anaesthetists / Consultants
3. Scrub nurses - (Professional Nurses)
4. Circulating Nurses - (Professional Nurses)
5. Anaesthetists Nurses – Enrolled Nurses

Data collection was done successfully with full understanding and support

Thank You
Mrs. N Mkhize [redacted]13990650
23/02/2018

STANGER PROVINCIAL HOSPITAL
HUMAN
2018 -02- 23
RESOURCES
STANGER PROVINCIAL HOSPITAL

ANNEXURE 9.6



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE:

Physical Address: Madadeni Hospital Section 6 Madadeni 2951
Postal Address: P/Bag X 6642 Newcastle 2940
Tel: 034 328 8231 Email: Madadeni.Operatingtheatre@kznhealth.gov.za

Reference: MC Mpungose
Date: 17/11/2017

Sir/Madam

RE: PERMISSION TO CONDUCT RESEARCH

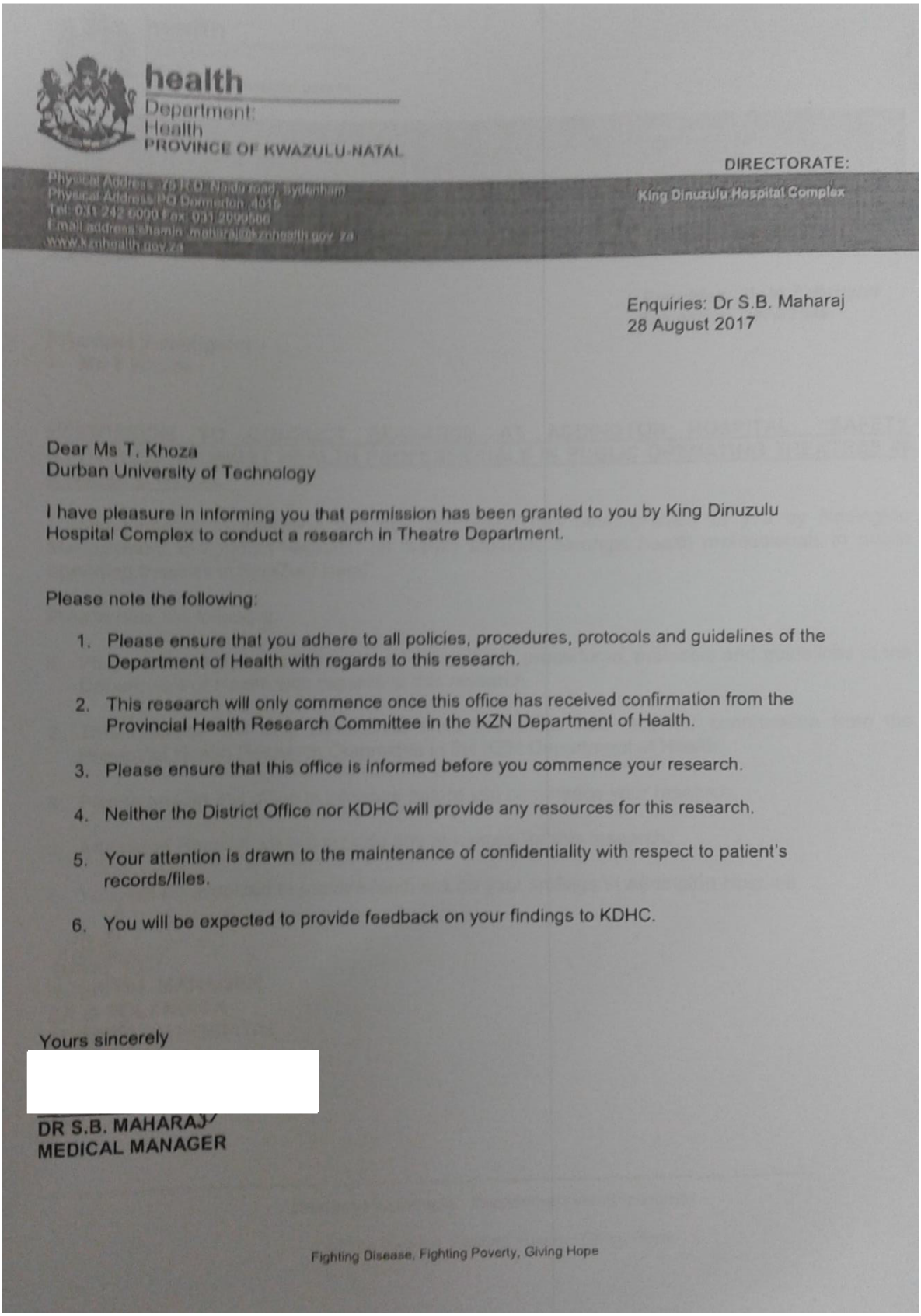
This letter is to certify that **Thandazile Khoza** is granted permission to conduct research in Madadeni Operating Theatre about **Safety attitudes amongst health professionals in public operating theatre**.

Thank you

Mpungose MC

OMN – Operating Theatre

ANNEXURE 9.7



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE:
King Dinuzulu Hospital Complex

Physical Address: 701 K.D. Naidoo road, Sydenham
Physical Address PO Dormerton, 4015
Tel: 031 242 6000 Fax: 031 2099586
E-mail address: shamla.maharaj@kznhealth.gov.za
www.kznhealth.gov.za

Enquiries: Dr S.B. Maharaj
28 August 2017

Dear Ms T. Khoza
Durban University of Technology

I have pleasure in informing you that permission has been granted to you by King Dinuzulu Hospital Complex to conduct a research in Theatre Department.

Please note the following:

1. Please ensure that you adhere to all policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure that this office is informed before you commence your research.
4. Neither the District Office nor KDHC will provide any resources for this research.
5. Your attention is drawn to the maintenance of confidentiality with respect to patient's records/files.
6. You will be expected to provide feedback on your findings to KDHC.

Yours sincerely

DR S.B. MAHARAJ
MEDICAL MANAGER

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE 9.8

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address: No. 89 Selby Msimang Road, Pietermaritzburg, 3216
Postal Address: P/Bag X 509, PLESSISLAER, 3216
Tel: 033 395 4014 Fax:033 395 4060 Email: Lindiwe.khumalo3@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE: ASSISTANT NURSE MANAGER

EDENDALE HOSPITAL

TO:	The Chairperson Durban University of Technology P.O.Box 1334 4001, Durban
FROM:	Mrs R.L. Kumalo OT & CSSD AMN, Edendale Hospital
DATE:	23 January 2018
RE:	Thandazile Khoza-Student Number: 2093080 IREC Reference No : REC 26/17

Good day

This is to report that Ms Thandazile Khoza was granted permission to conduct research on 'Safety attitudes amongst health professionals' in 3 disciplines in Operating Theatre, namely

-General surgery
-Orthopedics surgery and
-Obstetrics and Gynecology surgery

A thorough explanation and enough time were given for the respondents by the following categories of staff;

-Doctors / surgeons/ consultants
-An sthetists/consultants
-Scrub nurses (sisters) – professional Nurses
-Anaesthetics Nurses- Enrolled Nurses
-Circulating Nurses – Auxiliary Nurses

Data collection was successfully with full understanding and support

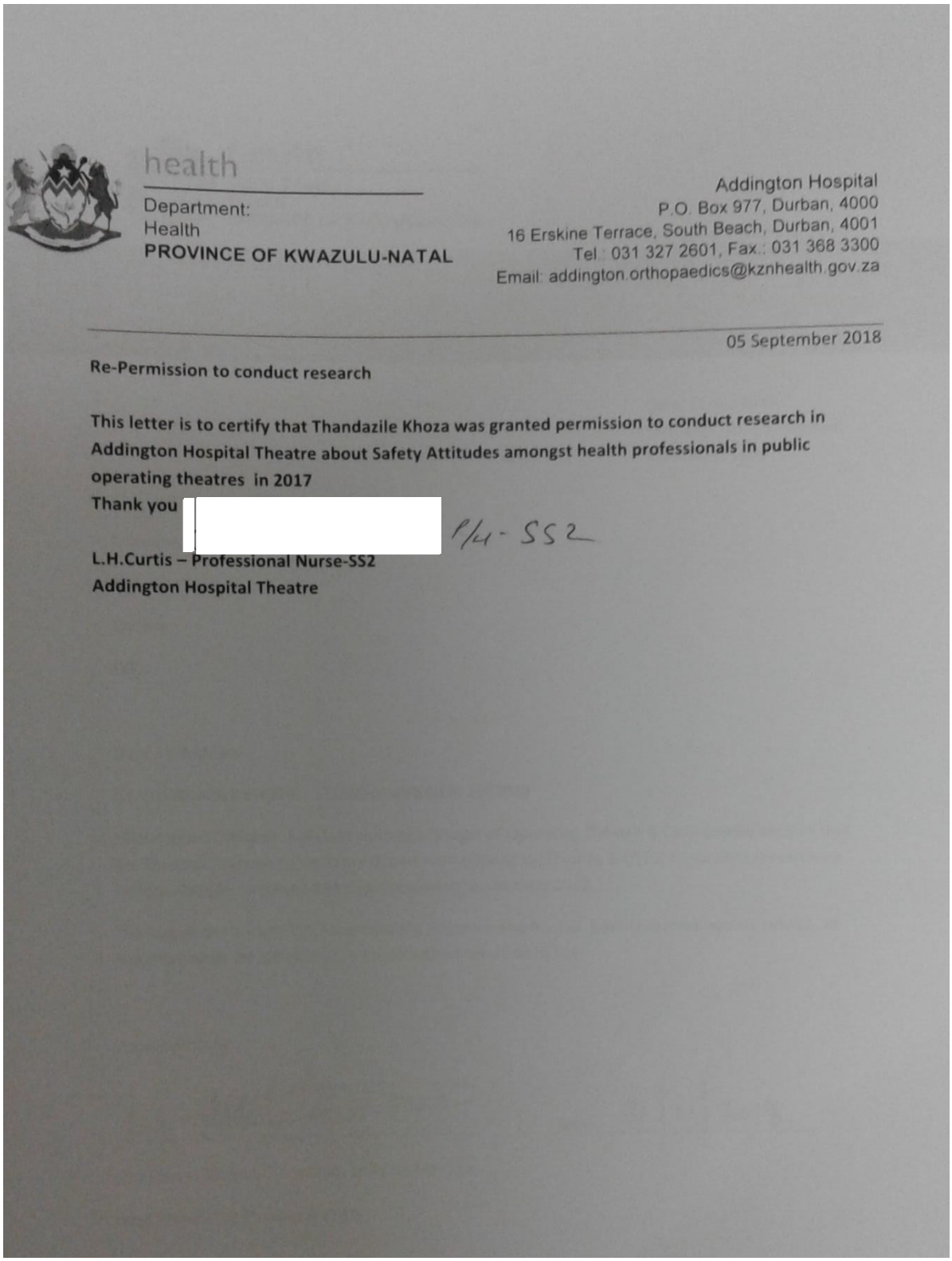
Thank you

[redacted]

R.L. Kumalo

EDENDALE HOSPITAL
2018 -01- 23
Private Bag X509, Plessislaer, 3216

ANNEXURE 9.9



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

Addington Hospital
P.O. Box 977, Durban, 4000
16 Erskine Terrace, South Beach, Durban, 4001
Tel: 031 327 2601, Fax.: 031 368 3300
Email: addington.orthopaedics@kznhealth.gov.za

05 September 2018

Re-Permission to conduct research

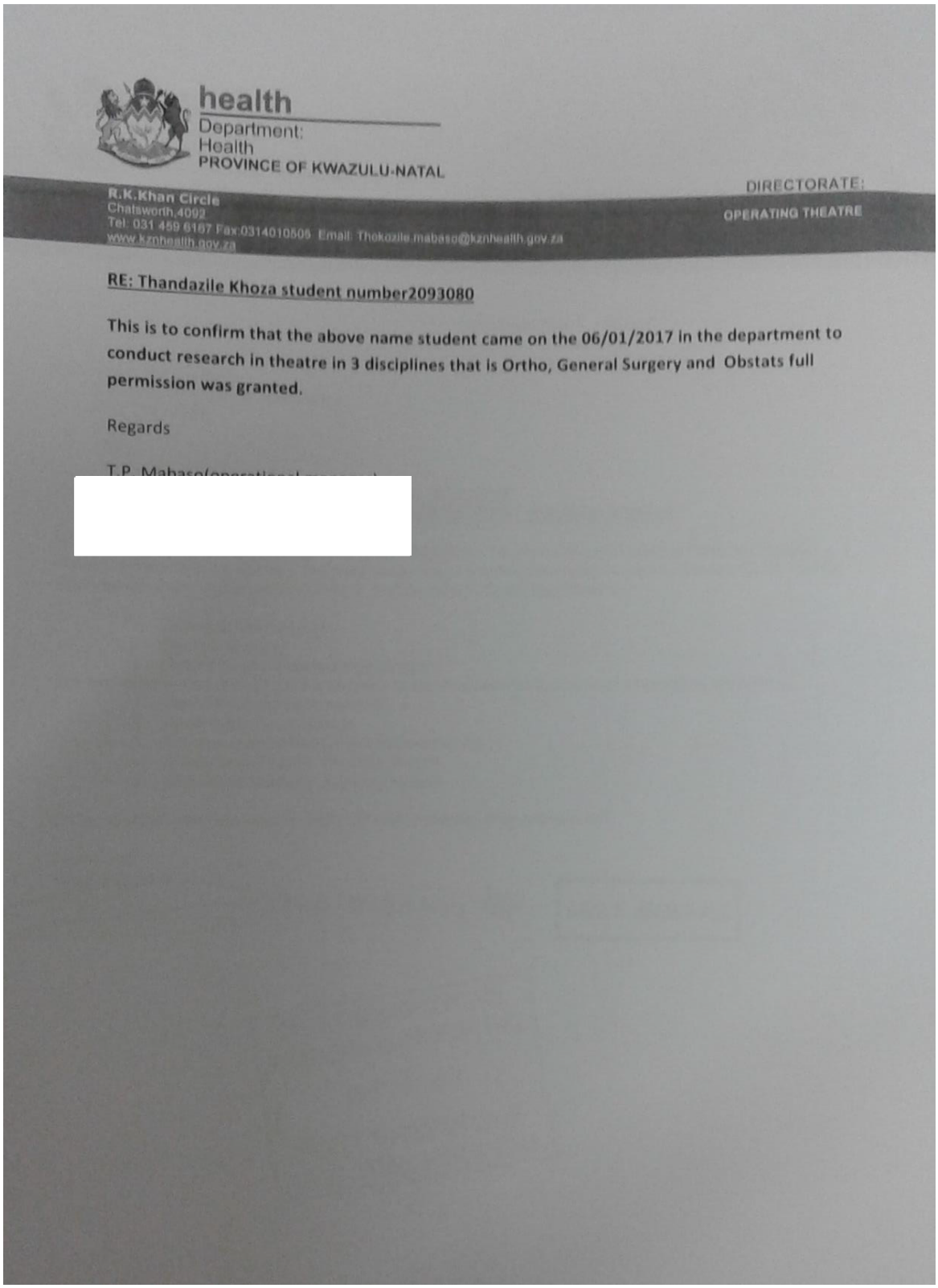
This letter is to certify that Thandazile Khoza was granted permission to conduct research in Addington Hospital Theatre about Safety Attitudes amongst health professionals in public operating theatres in 2017

Thank you

P/N - SS2

L.H.Curtis – Professional Nurse-SS2
Addington Hospital Theatre

ANNEXURE 9.10



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

R.K.Khan Circle
Chatsworth,4092
Tel: 031 459 6167 Fax:0314010505 Email: Thokozile.mabaso@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE:
OPERATING THEATRE

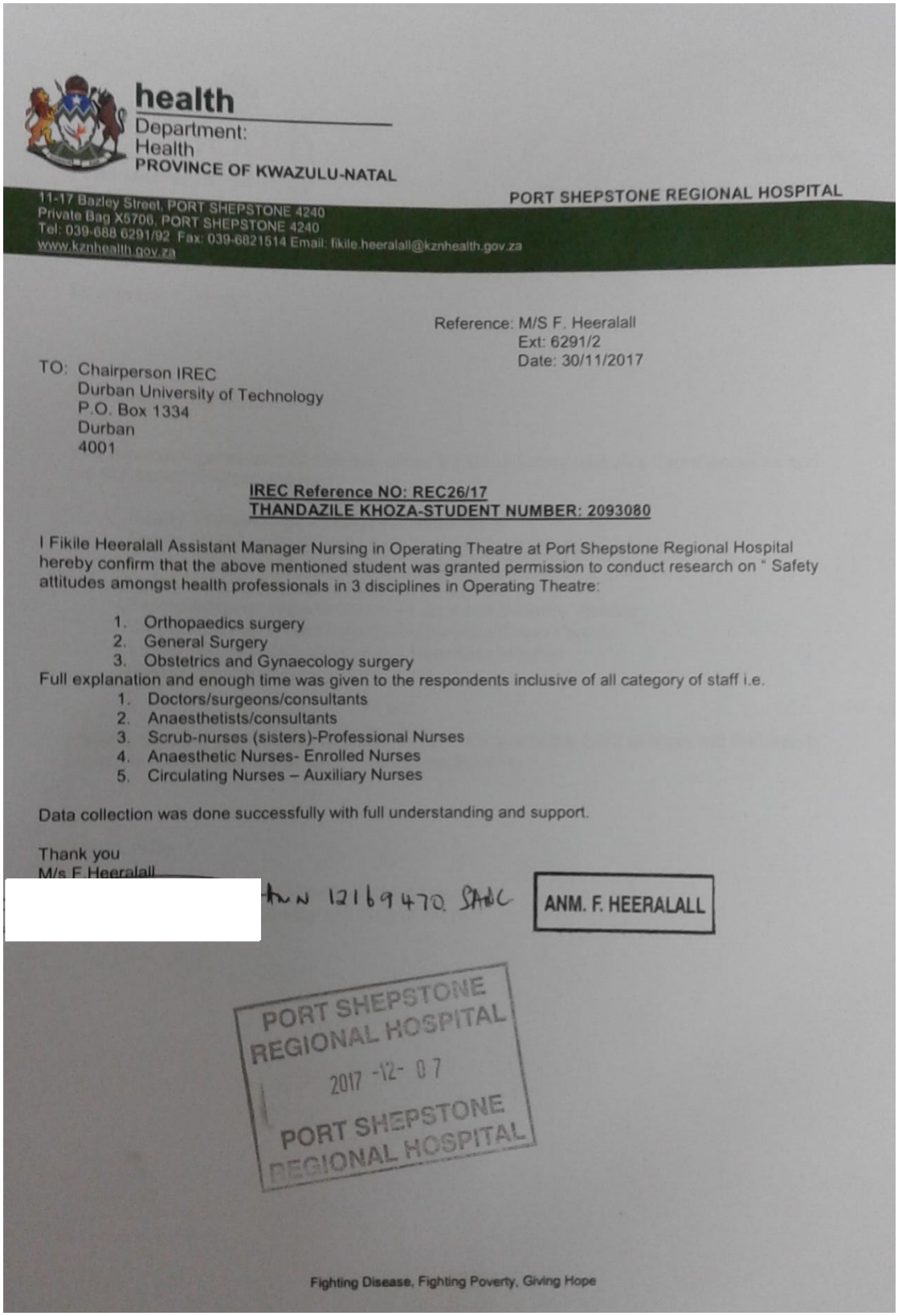
RE: Thandazile Khoza student number2093080

This is to confirm that the above name student came on the 06/01/2017 in the department to conduct research in theatre in 3 disciplines that is Ortho, General Surgery and Obstats full permission was granted.

Regards

T.P. Mabaso(

ANNEXURE 9.11



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

PORT SHEPSTONE REGIONAL HOSPITAL

11-17 Bazley Street, PORT SHEPSTONE 4240
Private Bag X5706, PORT SHEPSTONE 4240
Tel: 039-688 6291/92 Fax: 039-6821514 Email: fikile.heeralall@kznhealth.gov.za
www.kznhealth.gov.za

Reference: M/S F. Heeralall
Ext: 6291/2
Date: 30/11/2017

TO: Chairperson IREC
Durban University of Technology
P.O. Box 1334
Durban
4001

IREC Reference NO: REC26/17
THANDAZILE KHOZA-STUDENT NUMBER: 2093080

I Fikile Heeralall Assistant Manager Nursing in Operating Theatre at Port Shepstone Regional Hospital hereby confirm that the above mentioned student was granted permission to conduct research on " Safety attitudes amongst health professionals in 3 disciplines in Operating Theatre:

1. Orthopaedics surgery
2. General Surgery
3. Obstetrics and Gynaecology surgery

Full explanation and enough time was given to the respondents inclusive of all category of staff i.e.

1. Doctors/surgeons/consultants
2. Anaesthetists/consultants
3. Scrub-nurses (sisters)-Professional Nurses
4. Anaesthetic Nurses- Enrolled Nurses
5. Circulating Nurses – Auxiliary Nurses

Data collection was done successfully with full understanding and support.

Thank you
M/s F Heeralall

[redacted]

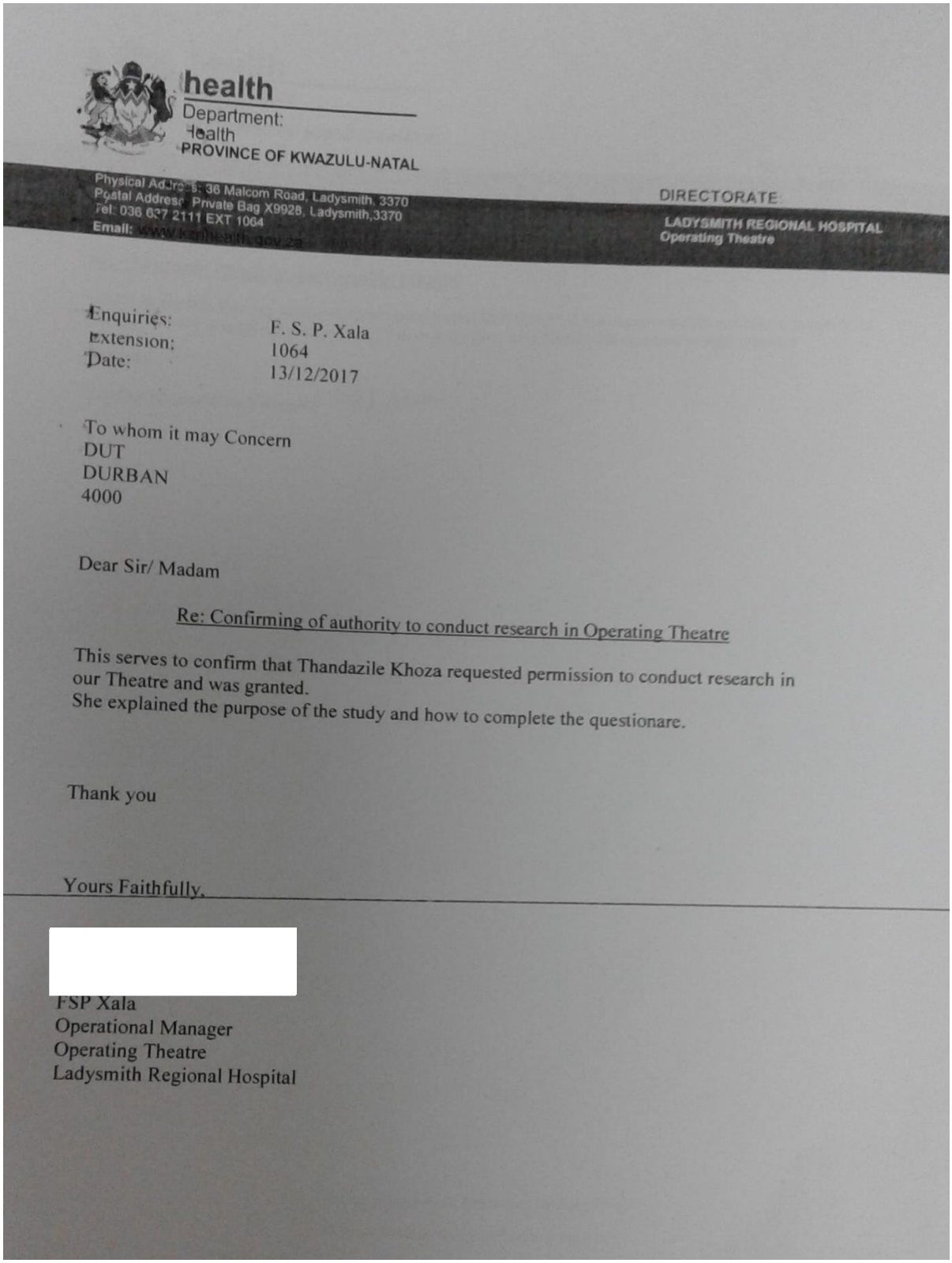
N 1216470 SANC

ANM. F. HEERALALL

PORT SHEPSTONE REGIONAL HOSPITAL
2017 -12- 07
PORT SHEPSTONE REGIONAL HOSPITAL

Fighting Disease, Fighting Poverty, Giving Hope

ANNEXURE 9.12



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address: 36 Malcom Road, Ladysmith, 3370
Postal Address: Private Bag X9928, Ladysmith,3370
Tel: 036 637 2111 EXT 1064
Email: www.kznhealth.gov.za

DIRECTORATE
LADYSMITH REGIONAL HOSPITAL
Operating Theatre

Enquiries: F. S. P. Xala
extension: 1064
Date: 13/12/2017

To whom it may Concern
DUT
DURBAN
4000

Dear Sir/ Madam

Re: Confirming of authority to conduct research in Operating Theatre

This serves to confirm that Thandazile Khoza requested permission to conduct research in our Theatre and was granted.
She explained the purpose of the study and how to complete the questionare.

Thank you

Yours Faithfully,

FSP Xala
Operational Manager
Operating Theatre
Ladysmith Regional Hospital

ANNEXURE 10

UTHealth
The University of Texas
Health Science Center at Houston

Medical School
University of Texas at Houston-Memorial Hermann
Center for Healthcare Quality and Safety

September 7, 2016

Dear Khoza Thandazile,

You have our permission to use any of the following Safety Attitudes Questionnaires and the corresponding scoring keys:

Safety Attitudes Questionnaire – Short Form
Safety Attitudes Questionnaire – Teamwork and Safety Climate
Safety Attitudes Questionnaire – Ambulatory Version
Safety Attitudes Questionnaire – ICU Version
Safety Attitudes Questionnaire – Labor and Delivery Version
Safety Attitudes Questionnaire – Operating Room Version
Safety Attitudes Questionnaire – Pharmacy Version
Safety Climate Survey

Please note, we do not have editable versions for any of the SAQ surveys but feel free to modify the surveys to meet your research endeavors.

Respectfully,

University of Texas at Houston-Memorial Hermann
Center for Healthcare Quality and Safety Team

6410 Fannin Street
UTPB Suite 1100
Houston, TX 77030
https://med.uth.edu/chqs/

ANNEXURE 11

Durban
South Africa
11 November 2019

To whom it may concern

Title: Safety Attitudes amongst Health Professionals in Operating Theatres in KwaZulu-Natal Province

Student: Thandazile Khoza

I have edited the Thesis and provided comments but have not seen the final version, having left that to the discretion of the Author. However, should she have address my comments, I am satisfied that the document will be ready for submission. I am assuming that the supervisor will have read and approved the final version for submission.

Regards

Ms Carrin Martin
Academic Editor
MSocSci, PGDPH