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THE NURSES' EXPERIENCE IN CARING FOR MECHANICALLY VENTILATED PATIENTS IN THE INTENSIVE CARE UNIT OF AN ACADEMIC HOSPITAL IN GAUTENG

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A research report submitted to the
Faculty of Health Sciences, University of the Witwatersrand, Johannesburg
in partial fulfilment of the requirements for the degree
Of
Masters of Science in Nursing

Johannesburg, 2020

DECLARATION

I Judith Nkeiruka Mbachu, declare that this research report is my own work, it is being submitted for the degree of Masters of Science (in Nursing) in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.



Signature.....

12th December 2020

Protocol number: M180531

DEDICATION

This work is dedicated whole heartedly to my God almighty who gave me the strength and courage and the guidance to complete these program, I am forever grateful God. And to my God giving heritage my children; my joy whose love and strength kept me going.

ACKNOWLEDGEMENTS

I have confidence in God; he never fails; I have trust in God my God never fails. My heart is filled with great Joy that a journey that started 2017 have finally come to an expected end, who are my that God is mindful of me thank you, Jesus, for leading me through and crowning my efforts with success, am grateful.

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To the adorable husband of my youth Emmanuel Stevens, your support, sacrifices and encouragement have been my strength; you are my strong pillar of support, this would not have been possible without your support. May God continue to bless you immensely Amen. And to my blessed children Munachimso, Kamsiriochukwu and Jidechukwu i cannot thank God enough for giving you all to me, you all rock my world.

To my parents, my nuclear and extended family, thank you all for your encouragement and prayers. I appreciate you All. Thanks all for being part of my journey.

ABSTRACT

Aim: This study explored and described the experiences of nurses caring for patients mechanically ventilated in intensive care units of the academic hospitals in Johannesburg

Method: A qualitative, descriptive and exploratory design was used in this study. A purposive sample of 10 intensive care nurses were recruited from a total of participants (intensive care nurses) recruited from the total population of (n =31) nurses working in the two ICUs of an academic hospital in Gauteng. Data was collected using one open-ended question and followed by probes. Data was analysed using Clark and Braun's (2013 method of thematic analysis and findings were reported in the narrative.

Findings: From the findings of the study, three themes emerged during the analysis process which reflected the nurses' experience of caring for mechanically ventilated patients which include nurses' feelings and emotions, nurses' knowledge and experience and nurses' skills. In this study, the nurses' feelings were expressed by the participants through compassionate care and requirement to ensure the patient was comfortable and pain-free. The nurses' knowledge and experience included technical knowledge, knowledge and professional experience. Categories supporting knowledge and professional experience were expressed as knowing the patient, caring for family, technical knowledge, prioritising time for caring interventions and managing critical situations. The nurses' skills included nurse-patient interaction, physical care, supportive care and barriers that impede the delivery of effective caring for mechanically ventilated patients.

Conclusion: The study offered South African nurses' in intensive care an opportunity to share their experiences of caring for mechanically ventilated patients. Insight and a deeper understanding of the nature of nurses' caring is provided that will enable future research in this area for development. Recommendations are made for clinical practice, education and further research.

Key words: *Caring, Intensive care nurses, Mechanical ventilation, South Africa*

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LIST OF ABBREVIATIONS

AAC	Augmentative and Alternative Communication
ET	Endotracheal tube
ICU	Intensive Care Unit
SANC	South African Nursing Council

CHAPTER ONE

OVERVIEW OF THE STUDY

1.0 INTRODUCTION

Chapter One provides an overview of the study, which comprises the background, problem statement, purpose and objectives and significance for nursing practice, and the theoretical foundation. Included is also an overview of the research methods and design, measures of trustworthiness of the study and ethical considerations.

1.1 BACKGROUND

The need for mechanical ventilation is one of the reasons for admitting a patient into the Intensive Care Unit (ICU). Patients need to be as comfortable as possible during the time they are mechanically ventilated in ICU. Whether the reasons for mechanical ventilation are to provide adequate oxygen saturation or to secure the patients airway it's still essential that the ICU nurses makes the ICU patient comfortable. Mechanical ventilation is a commonly used form of respiratory support in the Intensive Care Unit, which helps patient's breath by assisting them to inhale oxygen into the lungs and exhale carbon dioxide, depending on the condition of the patient.

A study by Coyer *et al.* (2007) write in full stated that caring for patients on mechanical ventilation in the Intensive Care Unit is a foundational competency and a fundamental component of the nurse's clinical practice in the ICU. Sedation adds in providing comfort to patient such as relieving their pain, anxiety and agitation. This is in order to keep the patient safe as the latter behaviour could cause the patient to accidentally disconnect from the monitoring devices used to determine their hemodynamical status. The latter does influence the treatment they patient receives as well which can be detrimental. The main aim of sedative therapy is to ensure a cooperative, calm and appropriately sleeping patient, who is painless and less nervous with less sedation (Lavery, 2004).

Recent changes in the sedation management of critically ill patients in the Intensive Care Unit and on mechanical ventilation reportedly comprise of a shift in paradigm (Mehta, McCullagh & Burry, 2011). Devabhakthuni *et al*. (2012) stated that the advancement of this recently developed paradigm includes analgo-sedation, which is the managing and treating of suffering first, before the administration of sedation, as needed by the patient. The current changes in the management of sedation can affect both the patients and the healthcare professionals practicing in Intensive Care Units, thus making it essential to explore nursing practice within this new developing paradigm. The recently developed pattern of sedation enables the nurse to monitor the neurological functions of the patient in a better manner, which promotes an improved outcome for patients (Wunsch & Kress, 2009).

The Intensive Care Unit is a high technological environment, in which the nurses have developed the capability to balance caring for the patient and the use of technology (Almerud *et al.,* 2008; Price, 2013). This balance is frequently one of the most substantial challenges facing nurses in the Intensive Care environment. Both nurses and patients have reported frustrations; nurses report their frustration could be due to their inability to understand and communicate with the patient, whereas the patients complain about being unable to communicate with their family members or the nurses (Karlsson & Bergbom, 2015). A study by Karlsson, Forsberg and Bergbom (2010) found patient's relatives felt anxious when observing the facial expression of discomfort on the patient, and such pressure could transfer to the nurses, which could lead to distress. The nurses experienced frustrations as they were unable to make the patients comfortable and this resulted in a feeling of helplessness and despair.

In a recent study that explores the perspectives of Intensive Care nurses' experience of lightly sedated patients, it was concluded that sedating a patient minimally enabled the nurses to provide individualised care, improved better verbal response and established a good nurse-patient relationship (Tingsvik et al, 2013). Another study by Everinghan, Fawcett and Walsh (2014) highlights that the nurse's experiences in caring for minimally sedated patients was more challenging and thus increased their workload. In a study by Karlsson and Bergbom (2015), investigating the experiences nurses and nurse assistants had caring for conscious patients

admitted in the Intensive Care Unit and receiving mechanical ventilation, the findings were that nurses experienced it as difficult because the suffering of the patient was apparent. A study by Learkner, Egerod and Hansen (2015) on the Intensive Care nurses' experiences of caring for non- sedated patients, found it to be both challenging and rewarding. The Intensive Care nurses described their experiences when caring for mechanically ventilated patients as a challenge because it requires the increased presence of the nurse next to the patient's bed, requires knowledge, creativity and expertise, and requires the nurse to develop an appropriate communication skill.

Currently, more than 60% of patients admitted to the Intensive Care Unit receiving mechanical ventilation have reportedly developed delirium, which is associated with prolonged ventilation and hospitalisation. Sedation of patients increased the risk of developing depressive symptoms, delirium and delusional memories of the Intensive Care Unit (Ely *et al.,* 2004). The development of delirium among the mechanically ventilated patients in the ICU further increases the burden on the Intensive Care nurses, which in turn increases their frustration leading to the use of physical or chemical restraint to demobilise these patients during their course of care.

A study carried out by Egerod, Albaran and Ring (2013) emphasised that factors within the Intensive Care Unit environment, such as the size of the ICU, patient/staff ratio and the collaboration of the multidisciplinary team, affect sedation practice. This is consistent with a survey in the United States of America, which revealed the majority of the nurses consider mechanical ventilation stressful and sedation is required to make the patients comfortable (Guttormson *et al.,* 2010). It has been reported that mechanically ventilated patients experience various degrees of unpleasant experiences in the ICU, which include the devices, treatment, ICU environment, pain, endotracheal tube related discomfort and impaired communication (Fredriksen & Ringsberg, 2007; Samuelson ,Lundberg & Fridlund, 2007). For these reasons, the Intensive Care nurses need to decide on a unique way of intervening for the patients that will have a positive impact and assist in the patient's progression towards the desired outcome.

In summary, the literature suggested the change in sedation practice, high disease profile in South Africa and lack of adequate technologies to care for mechanically ventilated patients increases the demand on the nurses to improve their competency and the level of care they give, as well as developing good communication skills and empathy in other to provide adequate care. Therefore, this study intends to explore and describe nurses' views on providing holistic care to patients receiving mechanical ventilation in the Intensive Care Unit, and nurses' experiences when caring for such patients.

1.2 PROBLEM STATEMENT

The need for mechanical ventilation is one of the primary reasons for admitting patients to the ICU. The problem in this study is caring for the mechanically ventilated patients in the ICU setting, which is often unpredictable and very stressful for both nurses and patients. The situation in South Africa is different from other developed countries due to high disease profile and lack of highly sophisticated technologies to care for these mechanically ventilated patients, making the Intensive Care nurses the strength of the ICU. There have been many studies on the experiences of ICU patients and their families, but to date, no studies on the experiences of ICU nurses caring for mechanically ventilated patients in South Africa. With the recent introduction of highly sophisticated technology, new treatments, evidence-based guidelines have resulted in changes to the nursing practice and care of mechanically ventilated patients. Consequently, the experiences of ICU nurses may have changed from the past, thus there is need to research more on this topic to achieve the goal of providing holistic and quality care for patients.

1.3 RESEARCH QUESTION

This study addressed the following research question:

- What are the experiences of registered (specialised and experienced) intensive care nurses, caring for mechanically ventilated patients in the ICUs of one academic hospital in Gauteng.

1.4 PURPOSE AND OBJECTIVES

The purpose of this study is to describe and explore the registered ICU nurses' experiences caring for mechanically ventilated patients in two ICUs in an academic hospital in Gauteng.

The objectives of the study were to:

- To describe the experiences of registered ICU nurses caring for mechanically ventilated patients in two ICUs of an academic hospital in Gauteng.
- To explore what barriers and enablers affect the experiences of the ICU nurses, in caring of mechanically ventilated patients in two ICUs of an academic hospital in Gauteng.

1.5 SIGNIFICANCE FOR NURSING PRACTICE

This study intended to ascertain information that would explain the experience of nurses caring for mechanically ventilated patients in the Intensive Care Unit. The researcher hopes that information obtained from this study will be of significance to practice, by equipping the Intensive Care nurses to improve the quality of nursing care given to patients with greater insight and understanding, and aid successful weaning of the patient off the ventilator, improve nurses' knowledge of the new paradigm on sedation protocol, and create self-dependence and self-reliance for the patients. The hope is that the data obtained from this study will positively inform the educational settings, and add to the existing body of knowledge of the scope of nursing practice regarding this topic.

1.6 THEORETICAL FOUNDATION OF THE STUDY

Burns and Grove (2017) stated, "A theory is an integrated set of defined concepts and relational statements that presents a view of phenomenon and can be used to explain, describe, predict or control the phenomenon." Polit and Beck (2012:12) indicated that assumptions are basic premises believed to be true without proof or

verification. The meta-theoretical assumptions in nursing include the person, environment, health and nursing. In this study, the following theory guided the meta-theoretical assumptions.

Swanson's Theory of Caring described caring as having five processes: maintaining belief, knowing, doing for, being with and enabling. This helps to motivate the nurses' attitudes and beliefs towards caring and in turn, improving patients' well-being. Caring entails maintaining belief in individuals by having a good knowledge of the reality of others, which is conveyed via being physically present with the individual and endorsed by doing for that person, which enables the person to achieve what they usually achieve (Swanson, 1991).

- Maintaining belief

The first step in caring is maintaining belief, and it is essential for the nurse to maintain belief in persons before they decide on how to care for the individual, because maintaining belief is the central base of caring in nursing. Nurses define what matters, and how to address the issue of care in the clinical practice; hence, the point of departure in caring for patients is maintaining beliefs. In order for the nurses to maintain belief for the patient, they must view the patient as a being made of the spirit and a mystical being in need of a relationship. Nurses must understand the uniqueness and differences of each individual, and accord maximum respect to each person as an individual created by God (Swanson, 1991).

- Knowing

Knowing refers to striving to understand events as they have meaning in the life of the other. Hence, to have adequate knowledge of the patient, the nurse must pay undivided attention to the patient, be committed, intensely involved with the patient and thus respect the fact that the patient is a unique individual. Furthermore, the nurses should competently assess the physical and biopsychosocial needs of the patient, and thus consider the wishes of the family members and cultural beliefs when caring for these patients (Swanson, 1991).

- Being with

This entails the nurses being emotionally present and supportive to the patient. In this caring category, the Intensive Care nurse shares the meaning, feelings and lived experiences of the one cared for (the patient). The patients receive assurance their realities are appreciated and the nurse shows a willingness to be there for the patient towards the period of illness. In being with the patients, gives the patient undivided attention and thoughtful response.

- Doing for

This means doing for others what they could do for themselves if it were possible. This involves the action the nurse takes towards caring for the long-term wellbeing of the patient, including comforting the patient, anticipating the needs of the patient, competent and skilful performance, protecting the patient from undue harm and ensuring the patient's dignity is preserved (Swanson, 1993). This entails the nurse assisting with activities that can help the patient, ensuring patients' comfort is protected, ensuring the needs of the patients are met, and competency in assisting the patient in carrying out all activities they would do if they were healthy and whole, thus involving the patients in their care to enable them to gain independence and be able to do things themselves.

- Enabling

This refers to the ability of the nurse to facilitate the patient in transitioning through life and unfamiliar events in order to support and ensure the patients are involved in their care and can practice self-care, which comprises coaching the patient, informing the patient of what it entails to care for themselves and their current health status, explaining to the patient the procedures used in their management, providing support for the patient and family, assisting the patient in generating substitutes. The aim of enabling is to ensure the long-term goals of others (patients) is achieved (Swanson, 1993). The ability of a nurse to enable depends on her interpersonal relationship with patients and their families, by sympathising with patient's families, understanding and respecting their cultural and religious beliefs, illness and

experiences. The nurse must ensure patients and families receive information concerning all procedures, both invasive and non-invasive, and medications used in caring for the patients. Furthermore, the nurses can enable the patient's to carry out their self-care by educating and supporting them, directing them and providing alternatives to a difficult task, and guiding them in the best way to improve their health; all this is aimed at providing a long-term goal of improving the patient's health.

The following are the meta-theoretical concepts based on this study, as defined by Swanson's Theory of Caring:

- **The person**

The most significant concept in nursing practice is a person who is a human being, and the recipient of care who forms the focus of nursing practice. Swanson (1993) refers to a patient as a person who is a unique being and in the process of becoming which reflects in the person's feelings, thoughts and behaviours. Hence, a person consists of the body, mind and spirit, which comprise genetic and spiritual characteristics, and free will (Swanson, 1993); a holistic individual who strives to adapt to changes in both the external and internal environment (University of Central Oklahoma (UCO), 2009).

In this study, a person is referred to as the critically ill patient, admitted to the ICU and receiving mechanical ventilation, who is vulnerable and has unmet needs and rights that must be protected by the Intensive Care nurses. These patients are under the care of experienced Intensive Care registered nurses and other members of the multi-disciplinary team of healthcare professionals.

Furthermore, the person is interactive and integrated with their health, environment and nursing. The central focus of care in the ICU are the critically ill patients who require a high level of nursing care provided daily on a 24 hour basis. According to Roy's Adaptation Model (1999), a person who receives nursing care is a biopsychosocial, physiologically, sociological, psychologically and spiritual creature constantly interacting with its internal and external environment, nursing assists in

promoting the adaptation of patient during health and illness.

- **Environment**

The environment refers to the surrounding of the care recipient, processes the individual interacts with which impact positively or negatively on the individual at a given time, and the setting in which nursing care of the recipient takes place. Swanson (1993) described the environment as any situation that has an impact on the patient, or influenced by the patient, and these influences could be the internal and external environmental factors, which include cultural, economic, social, physical and psychological factors. An environment is viewed as exterior factors and situations, inclusive of policies, settings, atmosphere, time of the day, humans and happenings and all these comprise of the internal and the external factors, which can physiologically, spiritually, socio-culturally and psychologically influence man. Correspondingly, the ICU comprises the physical and internal environment; the technology surrounding the patient constitutes the physical environment, while attitudes and norms of the nurses constitute the internal environment (Meriläinen, Kyngäs & Ala- Kokko*,* 2010).

In this study, the ICU setting is the environment for the mechanically ventilated patients, which is very new and complex for these patients, and comprises all the technological equipment and invasive therapies they are undergoing, which contribute to an increased level of stress for these patients. The life-threatening critically ill condition of the patient and the technological intensive care environment they find themselves in comes causes stress, including the noise from the alarms, invasive equipment and lights, all of which cause sleep deprivation for the patients. Minimising these stressors will aid in maintaining a safe, comfortable and conducive environment for the patient; by so doing, the internal and external environmental factors, as well as stimuli that affect the patients' adaptation to the environment, are maintained.

- **Nursing**

Nursing is a practice discipline designed to produce purposeful results. Thus,

nursing is an informed caring for the well-being of others (Carper, 1978). Swanson (1993) further added that nurses are dedicated to providing care, ensuring the dignity of the human as a person is preserved, and instituting measures to ensure the preservation of the well-being of others. Nursing care must be evidence-based, which originates from knowledge acquired from nursing, humanities, insights and understanding. According to the World Federation of Critical Care Nurses (WFCCN, 2005), the Intensive Care nurse has the unique role of providing specialised care to critically ill patients with one or two vital organ failures.

The Intensive Care nurses are central in this study content because they work in collaboration with the multi-disciplinary team to provide the best evidence-based specialist care to the critically ill patient aimed at alleviating pain and suffering and providing specialised nursing care for those with actual or potential dysfunction of the vital organs (WFCCN, 2005). The Intensive Care nurse possesses the necessary expertise, skills, and competencies to provide holistic care to critically ill patients.

The role of a specialist Intensive Care nurse in the ICU is to acquire knowledge and skills in the use of technological equipment, as well integrate it in caring, make sound clinical judgements, understand the constant changes, adaptation of the patients, and adjustments and individual responses of the patients during mechanical ventilation, as this will minimise complications associated with mechanical ventilation in order to restore the patients' health.

- **Health and wellness**

Health in the ICU is not merely the absence of disease, but the attainment of minimal ability to function independently with little support of the specialised intensive care machines and personnel (Swanson, 1993). The care of critically ill mechanically ventilated patients, aims at managing life-threatening conditions until patients are more stable to support their respiratory functions and there is a correction in their vital organ dysfunction. Thus, nursing not only alleviates illness, it helps the patient to attain and maintain an optimal level of well-being. The National Wellness Institute (2016), described "wellness as an active process of becoming aware of and making

choices towards a more successful existence." Wellness is more than being free from illness it is a dynamic process of change and growth.

1.7 DEFINITION OF TERMS

Definitions of the key terms used in the study are as follows:

- **Critically ill patient**

Critically ill patients are persons who have actual and potentially life-threatening illness, injury and complications (Elliot, Aiken & Chaboyer, 2013). These patients are vulnerable, unstable and require a high level of specialised care in the ICU. In this study, the critically ill patient refers to an individual receiving mechanical ventilation treatment under the care and monitoring of trained and experienced Intensive Care nurses.

- **Intensive Care nurse**

In this study, an Intensive Care nurse refers to nurses practicing in the ICUs at the selected study site, who obtained the necessary educational qualification and training at an accredited institution, and are registered with the South African Nursing Council (SANC) as an Intensive Care nurse (critical care nurse), under the Nursing Act, 2005 (SANC 2014).

- **Mechanical ventilation**

Mechanical ventilation is a commonly used form of respiratory support in the Intensive Care Unit that helps the patient to breathe by assisting them to inhale oxygen into the lungs and exhale carbon dioxide, depending on the patient's condition (Urden *et al.,* 2008). In this study, mechanical ventilation refers to the use of nasal or oral endotracheal tube inserted into the trachea of a critically ill patient and connected to a mechanical ventilator to facilitate ventilation for these patients.

- **Caring**

Caring is the art of looking after those with varying degrees of dependency. Potter *et al.* (2016) described caring as a universal phenomenon that influences the way people think, feel, and behave towards each other and is the focus of highly skilled nursing. Caring in this study will refer to understanding, showing affection, being present attentively, advocating for critically ill mechanically ventilated patients in order to meet their personal, emotional and psychological needs.

- **Experience**

According to the Oxford English Dictionary (2010), the definition of experience is the real-world observation of realities and information gained over time. Experience in this study refers to collaboration, information, thoughts and feelings shared with the sampled Intensive Care nurses who have cared for mechanically ventilated patients.

1.8 OVERVIEW OF RESEARCH METHODOLOGY

The research methodology refers to the “blueprint that guides the study to have control over the factors that could interfere with the desired outcomes” (Burns & Grove, 2017). An overview of the research methodology is provided in the next section, and will be discussed in detail in Chapter Three.

A qualitative, exploratory and descriptive design was utilised to achieve the study objectives. The study population was Intensive Care registered nurses affiliated to ICUs in a 1088-bedded public sector hospital in Johannesburg; the two ICUs included the General ICU and Trauma ICU.

The Human Ethics Research Committee (Medical) of the University of the Witwatersrand, the hospital’s Chief Executive Officer (CEO) and Director of Nursing Services for the Gauteng Department of Health granted ethical clearance and permission to conduct the study. Participation in the study was voluntary and participants were free to withdraw at any point in time.

After obtaining permission from the hospital and relevant ICU nurse managers, consent was obtained from the Intensive Care registered nurses who agreed to participate in the study. An unstructured questionnaire guide collected the data through in-depth individual interviews. Qualitative thematic analysis analysed the results of the study.

Concepts of credibility, reliability, dependability and conformability maintained the trustworthiness of the study. Enhancing the accuracy of the study was by ensuring the researcher was the sole collector of data, with an inquiry audit conducted by the supervisor. The sample size was achieved purposively and data verified by participants through member checking. Experienced researchers conducted an audit trail to verify the truth of findings.

1.9 LAYOUT OF THE STUDY

The presentation of the study will be as follows:

Chapter One:	Overview of the study
Chapter Two:	Literature review
Chapter Three:	Research design and methods
Chapter Four:	Findings
Chapter Five:	Discussion of findings, limitations, recommendations, and conclusions

1.10 SUMMARY

This chapter provided an overview of the study. First was a description into the background, followed by the problem statement, the research questions, and the purpose of the study, the objectives, definitions consistently used in the study, and a discussion of the theoretical foundations of the study.

The next chapter will discuss the literature review.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents the literature review for this study. A literature review is an organised writing presentation, by the researcher, of previously published work on the topic under study. Literature review assists in familiarising the researcher with the already existing body of knowledge in relation to the topic under study (De Vos *et al.,* 2011). Thus, the purpose of this literature review is to provide a descriptive summary and critically evaluate other research works

An Electronic Literature Search used the databases available in the WITS academic library, CINAHL with SCOPUS, EBSCO HOST, Willey online library, Google scholar, Medline literature online. The latter, accessed through PubMed, used the following search words: critical illness, caring, mechanical ventilation and nurse's experiences.

2.2 AN OVERVIEW OF CRITICAL ILLNESS

The World Federation of Critical Care Nurses (WFCCN) described critical illness, in respect to the critically ill patient, as the severity of their health condition and the environment in which they are cared for (WFCCN, 2005). Some of these critically ill patients may suffer from underlying traumatic and life threatening conditions, which can affect both the patient and family members. This situation has been described by family members as being very disruptive and alienating (Boniatti et al, 2011; Kinrade, Jackson & Tomnay, 2009).

Critical illness can be either Acute or Chronic. There is evidence in literature that states that 8% to 10% of patients with acute critical illness can progress to chronically critically ill; this is mainly when they have ongoing respiratory failure, become fully dependent on mechanical ventilation, as well as having repeated episodes of sepsis (De Freitas, 2010; Yang, 2016). Patients who are chronically

critically ill can develop more than one type of organ failure, thus making their management and care more complex (Yang, 2016; Zimmerman, Kramer & Knaus, 2013). The latter increases the critically ill patients stay in the Intensive Care Unit.

Most of the acute critically ill patients spend an average of two to three days in the ICU, while the chronically critically ill patients spend an average of seven to twenty-one days mechanically ventilated in the ICU (Yang, 2016).

There is well-documented evidence which shows that the severity of a patient's condition has an effect on their family as well as the nursing staff. Caring and comforting the patient and the family is essential in an ICU setting, as they are one item. ICUs worldwide are thus becoming patient-family-centred care units.

2.3 CRITICAL ILLNESS AS EXPERIENCED BY PATIENTS, FAMILY AND NURSES

2.3.1 The Patient

Critical illness is traumatising for patients due to the nature of the illness. Patients suffer from different aspects of their conditions, ranging from unconsciousness or confusion, which often leads to prolonged ICU admissions. According to Tembo, Parker & Higgins (2012), the participants in their study expressed experiences of being in limbo, and a feeling of disruption in their life when admitted into an ICU setting because of critically illness. Some participants experienced a feeling of suspense between life and death while they were unconscious, described as having a near death experience.

Tembo, Parker and Higgins' (2012) participants also expressed a feeling of imprisonment in the ICU setting, attributed to the invasive monitoring and endotracheal tube, which took away their ability to communicate. They described that due to the latter, they had to fight for survival (Tembo, Parker & Higgins, 2012). Conversely, participants in another study expressed that their survival from critical illness gave them the true meaning of life, and hence they appreciated being alive more (Cutler, Hayter & Ryan, 2013).

Even after ICU discharge, some participants in the study by Zeilani and Seymour expressed they felt disabled due to the inability to regain a sense of their previous identity. Forgetfulness and sleeplessness was the greatest challenge their participants faced while critically ill in the ICU, and the latter was even experienced once discharged from the ICU (Zeilani & Seymour 2010).

Impaired communication was a big challenge and stressful for the mechanically ventilated participant in a study by Kalrson, Bergbom and Forsberg (2012) and Guttormson, Bremer and Jones (2015). These participants described their experience as devastating because they tried, as much as they could, to make themselves heard and understood. These participants felt vulnerable and powerless, which was where their discomfort due to mechanical ventilation originated.

Participants in Tingsvik *et al*. (2018) and Friese's (2008) study experienced sleep deprivations in the ICU setting, which was attributed to the patients' medical condition, psychological problems and other modifiable factors, such as noise, light, patient care interaction, the severity of their critical illness, mechanical ventilation, alarms, discomfort, and pain. Participants experienced thirst, loss of taste, loss of appetite and the inability to move, which disheartened them, thus they lost their sense of living and belonging (Friese, 2008; Tingsvik *et al*., 2018).

Interestingly the mechanically ventilated patients felt neglected because they could not take care of their needs. The latter caused the participants to experience a sense of not being in touch with reality, which constituted a treat to their sense of security and dignity. Delusions, dreams and hallucinations, which the participants experienced in a study by Tingsvik *et al.* (2018), made the participants scared, as they experienced them as being very real. They experienced being exhausted and weak, and had the feeling of just giving up.

Advanced technology used in the ICU to improve the critically ill patients' outcomes, are devices that cause immobility, which is strange for many participants. Having restraints attached to their body and alarms that alerted others of every slight movement or change in the monitored bodily functions resulted in patients feeling

imprisoned and they became distressed. Many participants felt the ICU nurse caring for them was more concerned about the technology aspect of care, thus ignored their needs (Tembo, Parker & Higgins, 2012; Zeilani & Seymour, 2010). Participants experienced feelings of absolute dependence on Intensive Care nurses and technology in the studies done by (Adamson *et al.,* 2004; Almerud *et al.,* 2008; Johansson & Fjellman-Wiklund 2005).

The feeling of being alone and separated from the world and their family was experienced by the mechanically ventilated patients. The participants felt safer whenever family members visited and reminded there was a life outside the ICU. According to Cutler, Hayter and Ryan (2013), their participants claimed their family visits inspired hope they would get better.

2.3.2 The Family

When a patient is mechanically ventilated, family care, comfort and support are essential in the ICU setting. World wise all ICUs are striving towards making the ICU environment a patient-family-centred care unit. In a qualitative study by Eggenberger and Nelms (2007), findings from participants show that the presence of the family next to the critically ill patient's bed gave the family members a feeling of belonging and protection, especially when they felt powerless and exposed in the strange ICU environment. Further findings by Eggenberger and Nelms' (2007) study expressed that relatives felt excluded from the care of their loved ones, thus making them angry and sad, as well as not wanting to trust what the ICU staff did or told them. Family members also felt the information provided by the nurses did not help decrease their anxieties, as they were searching for certainties with respect to the survival rate of their relatives in the ICU

The factors that have contributed to the latter are due to impaired communication, uncertainty, the fear of their relative developing a disability or dying (Siegel et al, (2008). Reportedly, 34% of family members in an American study developed depression and anxiety disorders due to their relative being in an ICU. These findings were similar to a study by Anderson *et al*. (2015), as two-thirds of their participants developed post-traumatic stress disorders because their family

members were in the ICU.

In a study by Löf, Sandström and Engström (2010), family members described the ICU environment as catastrophic. The invasive monitoring, intravenous lines and tubes connected to the patient, made them afraid to go close to the patient in case they harmed them. According to Zetterlund *et al.* (2012), families of critically ill patients also experienced varying degrees of emotional turmoil, disbelief and shock because of the ICU environment.

Families appreciated the caring nature of the nurses and the way they incorporated them in the care of their critically ill relatives. Additionally, nurses expressed they felt satisfied whenever the health condition of their patients improved, and seeing the patient happy and the family satisfied with the outcome of their relatives health gave the nurses fulfilment and encouraged them to provide holistic care for the patients (Engstrom *et al.,* 2013; Karlson ,Bergbom & Forseberg ,2012; Zetterlund *et al.,* 2012).

Findings from an American study by Cypress (2010), explored the experiences of ICU nurses, patients and family members. The author's findings showed that families saw the nurses as part of their family and correspondingly, nurses in the same study accepted patients and family members as one unit. Thus, the ICU nurses could provide care for both the patient and their family. The latter enabled holistic care for the patient, which was also family-centred.

2.3.3 The Nurse

The following paragraphs will elaborate on the individual experiences of the ICU nurses, when caring and comforting the mechanically ventilated patients and their families.

In a qualitative study by Engström, Uusitalo and Engström (2011), conducted in Sweden, ICU nurses expressed they experienced relatives of critically ill ventilated patients as being demanding and a burden. Although experiencing the latter, they did express that they understood the demanding behaviour of the relatives and the fear of the family experience. The critical illness and thoughts of their relative dying

contributed to their demanding behaviour (Engström, Uusitalo & Engström., 2011). Critical care nurses acknowledged that relatives had an important role to play in the nursing care of their loved ones in the ICU, because relatives are vital aspects of patients' lives, and can provide vital information needed in providing care for these patients (Engstörm, Uusitalo & Engström 2011). Interestingly, Learkner, Egerod and Hansen (2015) stated that bonding with the patient was essential when caring for the mechanically ventilated patient.

Additionally, nurses in this study expressed that the involvement of relatives in the care of the mechanically ventilated patients in the ICU was essential, especially when patients were from different cultures and spoke different languages (Mitchell & Chaboyer, 2010).

A British study, by Limbu, Kongsuwan and Yodchai (2019), exploring the lived experiences of ICU nurses in caring for critically ill patients, found participants expressed a high level of stressors, felt a failure and were very frustrated while caring for the ICU patient. They experienced these feelings because they felt the malfunction of technology was a major problem, as well as not having enough nursing staff per patient. Learkner, Egerod and Hansen (2015) found that the ICU nurses felt hopeless when they were unable to use their advanced skills as Intensive Care nurses to monitor and provide adequate intervention for patients when the patient's condition deteriorated. Tunlund, Granstrom and Engström (2015) performed a descriptive qualitative study, which aimed at describing critical care nurses' experiences of performing nursing care in a high technological healthcare environment. The latter author's results showed that managing the technical equipment was a burden to the ICU nurses. In the same study, the ICU nurses' revealed it was time consuming when a patient was connected to technical equipment, because basic care took longer and created more work for the ICU nursing staff (Tunlund, Granstrom & Engström, 2015).

McGrath (2008), in Ireland, described the Intensive Care Unit as an alien environment where patients were dehumanised, depersonalised and controlled by lifesaving technologies.

Conversely, Wikstrom, Cederborg and Johanson (2007) conducted an ethnographic study, which explored 12 Swedish ICUs nurses understanding of technology use in an ICU setting. This study found that ICU nurses experienced that technology directly facilitated their decision-making and patient care. The above findings were the same as the study by Price (2013), who observed and stated that technological competency allowed the nurses to feel free, safe and in control of their patients care, hence technology enabled patients to progress quickly towards recovery and stability. Interestingly, Kongsuan and Locsin (2011) also suggested that technological competency or mastery incorporates compassionate caring

Stayt (2007) stated that their participants expressed a lack of confidence and were afraid when family members approached them and asked questions about the condition of their family member. The participants were afraid they may give the family the wrong information, or they will not be able to provide adequate answers to the questions. This is consistent with the early findings of Cooper (1993). Regarding the above statements, ICU nurses felt vulnerable when they were unable to make decisions with regard to the progression of their patients' care and end of life-related decisions.

In conclusion, from the literature the patient, family and nurses expressed different experiences in an ICU setting. It is evident that the patient, their family and nurse need to form a bond in order to promote optimal care for the critically ill patient.

The difficulty ICU nurses face each day in the ICU setting when nursing critically ill, ventilated patients is that caring and giving compassion as well as providing comfort for the critically ill patient and their family is very complex. The complexity is in balancing the time the ICU nurse has in providing the care, comfort and giving compassion to the critically ill patient as well as to the patient's families. The ICU nurses also needs to be able to incorporate the patients, the patient's families and her physical and emotional needs that need to be considered in her daily nursing care of the mechanically ventilated patient.

A patient-family-centred environment can alleviate some of the negative experiences the patient and family members have when their loved one is critically

ill and mechanically ventilated. There is also evidence that involving the family in the care of the patient results in improved patient outcome and alleviates some of the negative experiences the patient and family members have when their loved one is critically ill and mechanically ventilated in an ICU setting.

2.4 CURRENT STANDARD OF CARE

According to Couchman *et al.* (2007), "Caring for the mechanically ventilated patient is at the core of a nurses' clinical practice in the ICU environment." As there are many nursing aspects that need considering when caring for a critically ill, ventilated patient, the amount of care necessary for these patients has increased over time (Couchman *et al.* 2007).

Watson describes nursing as a science of caring that involves showing true concerns for other individuals, and that caring in nursing is not just an emotion, concern, attitude or benevolent desire, but a moral ideal of nursing in order to protect, enhance and preserve the dignity of a human (Anderson *et al.,* 2015; Watson, 1988). This is similar to the definition given by ANA (2010), which describes caring as a process that fuses thought, feeling and action (ANA, 2010).

According to Couchman *et al*. (2007), the care of the mechanically ventilated patient is divided between the assessment and the management. The assessment focuses on the patient's safety, which not only includes the assessment of the patient but also the equipment used on these patients. The management of the ventilated patient, according to Couchman, focuses on the patient's comfort, which includes aspects such as patient positioning and hygiene. Patient comfort also includes the management of patient's stresses, such as communication, sleep disturbances and isolation, and the management of the patient's pain and sedation needs. Similarly, Coyer *et al.* (2007) used evidence in clinical practice to outline measures to aid in patient's safety and comfort.

When assessing the patient's safety in an ICU, according to Couchman *et al.* (2007), a systematic and comprehensive assessment framework needs to be utilised. One such framework is the Emergency Care Cycle. This framework consists of two

components, The Primary and Secondary survey. The primary survey is to assess the patient for any life-threatening events, and the secondary survey is to assess the functional status of each body system. There are other safety measures done in the ICU setting to ensure the safety of the patient, such as continuous monitoring and observations of the mechanically ventilated patient. Relating to the latter statement, the patient/nurse ratio should be 1:1, as recommended by Driscoll (2018), to ensure the ICU patient is closely monitored, and the response to any alarms are rapidly attended to by the ICU nurse.

The availability of emergency equipment also ensures the safety of the ICU patient; this is in case patients are accidentally extubated or the malfunction of a mechanical ventilator. Routine safety checks are necessary, such as checking intravenous infusions and checking the patient's equipment and alarm settings.

Other safety measures utilised by the nurses in the ICU to ensure patient's safety include, raising of the bed rails, which helps in preventing the risk of falls, monitoring patients' gaseous exchange through arterial blood gases and making informed decision of the progress of care of the ICU patient. The use of ventilator care bundles has also been utilised in ICUs in the USA to ensure the safety of the ventilated patient (Barlow, 2012; Coyer *et al.,* 2007; De Groot et al, 2011).

Comfort care is a nursing art that entails the process of comforting actions performed by a nurse for a patient (Morse, Bottorf, & Hutchinson, 1994). The promotion of comfort for the patient through focused nursing intervention is an integral component of expert nursing care in the Intensive Care Unit and nursing practice. Comfort care is central to the role of the Intensive Care nurses, and considered a holistic concept, which has a physical and psychological dimension, according to Coyer *et al.* (2007). Nurses should integrate physical touch in interacting with the patient, as this is viewed as comforting and calming, and ICU patients will perceive it as being helpful in dealing with stress within the ICU environment,

2.5 BARRIERS EXPERIENCED BY NURSES

Globally, in light of the changes in sedation practices, current practice has moved

towards a lighter level of sedation. There have been several studies conducted internationally on the experiences of nurses caring for mechanically ventilated in light of the changes in sedation practice.

Caring for critically ill mechanically ventilated patients admitted in the Intensive Care Unit often demands the use of sedative medications and analgesics for pain management. Use of sedatives are essential in the management of the ventilated patients to ensure the relief of discomfort experienced by them. This can be associated with intubation and ventilation, as well as preventing the patients from inflicting harm on themselves (Shinotsuka & Salluh, 2013).

Similarly, according to Strøm, Stylsvig and Toft (2011) and Hetland *et al.* (2018), several factors guide ICU nurses in the administration of sedatives, including the individual need of the patient, nurse's synthesis of clinical evidence, best practice applications and different personal and professional practice viewpoints. The individual sedation need of a patient was a challenge for many nurses. Furthermore, the nurses in this study emphasised on the need for additional resources to aid in improving their sedation administration practices, which included more and better communication tools, adequate staffing, adequate pain management with analgesics so as to minimise the degree of pain experienced by the patient and decrease the rate of developing chronic pain post ICU (Hetland *et al.,* 2018). Recently, the American Association of Critical Care Nurses (2014) carried out a study on assessing pain in the critically ill adult and their findings showed that most patients with adequate pain control needed less sedation while being mechanically ventilated.

In an Australian study, by Tingsvik *et al.* (2013), evidence in this study suggested deeply sedated patients had a high tendency of an increased stay in the hospital, which resulted in an increased risk of developing complications such as ventilator-associated pneumonia. Furthermore, they developed prolonged levels of alteration of consciousness, prolonged mechanical ventilation, post-traumatic stress disorders and a high level of remembering both negative and unpleasant memories of the ICU; the latter resulted in anxiety and sleep deprivation even after discharge. Contrarily, lighter levels of sedation reduce the risk of developing post-traumatic stress

disorders and increases the risk of patients inflicting self-harm, such as removal of catheters, tubes, and arterial lines (Tingsvik *et al.,* 2013).

Leakner, Egerod and Hansen (2015) discovered that non-sedated patients, despite being critically ill, interacted and expressed their needs and wishes to the nurses although still dependent of care and on technological equipment to support vital body organs and improve their functions. Furthermore, the demanding aspect related to the nurses being constantly aware of the expressions of the patient's condition, all the patients' needs as well meeting these needs, comforting, caring and managing the patient in relation to the nurse's knowledge of the severity of the condition and organ dysfunction, which is a life-threatening situation. The demanding and yet rewarding aspect of the care was reflected in caring for the patient.

Globally, various researchers have reported impaired communication as one of the major challenges mechanically ventilated patients face in various countries. Happ *et al.* (2011) conducted a study in the USA, and their findings illustrate that approximately 2.7million patients, admitted yearly in the ICU, experience the inability to communicate verbally because of the endotracheal tube inserted for mechanical ventilation.

A qualitative study carried out in Denmark, by Holm and Dreyer (2017), aimed at exploring communication between adult non-sedated mechanically ventilated patients and nurses in the ICU. Findings showed that both the nurses and patients felt frustrated and had negative feelings while trying to understand each other, due to the patients' unsatisfied needs and wishes, and the nurses being irritated because of the inability to interpret the patient's message; as a result, the patients felt even more undignified and humiliated because of being voiceless. Furthermore, the nurses found it challenging to care for these patients in light of the change in sedation practices, because these patients were often conscious and awake with a need for communication. Supportively, findings in an American study, by Happ *et al.* (2011), showed that patients often experienced a high degree of fear, anxiety, stress, loneliness and frustration, which was due to impaired verbal communication Happ *et al*. (2011).

Delirium, identified in various studies, is one of the difficulties experienced by nurses caring for the mechanically ventilated patients. Delirium is a term used to describe the severe state of confusion, which is due to the patient's inability to clearly think and understand the happenings in their environment. Globally there has been an increased rate of patient's developing delirium in the Intensive Care Units, attributed to prolonged mechanical ventilation, physical restraints and over sedation of the mechanically ventilated patients.

Previously, various studies revealed that more than 50% of patients mechanically ventilated exhibited a higher risk of experiencing delirium compared to those not mechanically ventilated (Shehabi *et al.,* 2010). Interestingly, according to Yang *et al.* (2017) and Mehta *et al.* (2015), delirium is common in more than 54% of the patients mechanically ventilated and on protocolised sedation plus daily interruption; only 4% of the patients never had features of delirium. Thus, delirious patients have worse outcomes, which include longer duration of mechanical ventilation and hospital stay.

According to LeBlanc *et al*. (2018), nurses viewed caring for patients with delirium in the Intensive Care Unit as a complex process; they experienced it as mentally and emotionally exhausting caring for mechanically ventilated patients who are delirious and agitated because they strive to keep the patients safe, and provide person-centred care for the patients, and their families.

Contrarily, a multivariable analysis, along with several studies, discovered the use of physical restraint to be one of the factors most strongly associated with an increased risk of developing delirium among mechanically ventilated patients (Yang et al., 2017.

Critically ill patients admitted into the Intensive Care Unit all need an array of invasive procedures and medical apparatus, such as mechanical ventilation, haemodialysis, central venous catheters and intra-aortic balloon pumps. Notwithstanding the necessity for these interventions, patients' experience a great degree of pain and discomfort due to these, thus leading to restlessness and agitation, possibly worsened by other factors such as sleep deprivation, delirium and

their underlying illness. Consequently, the nurses revert to using restraints, which is the use of physical or chemical means to control agitated and unwanted behaviour to prevent self-harm and early self-extubation (Hofso & Coyer, 2007; Langley, Schmollgruber & Egan, 2011).

Physical restraint is any manual method, physical or mechanical device or equipment attached to the patient's body, which hinders the patient's movement. Consequently, patients feel restricted. Furthermore, restraint was described in most ICUs reviewed for this study as essential to facilitate tolerance of invasive monitoring and therapy, thus preventing life-threatening complications (Hofso & Coyer, 2007; San, Sari & Gence *et al.,* 2009)).

A prospective study carried out in Europe, by Benbenbishty, Adam and Endacott (2010), aimed at exploring the incidence of physical restraints in adult Intensive Care Units in Europe. Thirty-four adult general ICUs participated in the study, and data collected from 669 patients' revealed details of physical restraint in 566 of them. Findings showed that frequently the use of physical restraint was more in sedated patients, mechanically ventilated patients, for patients in larger units with lower daytime nurse patient ration than 1:1, restless patients, delirium due to confusion, disorientation and drowsy patients. Findings from further studies also documented that generally, the use of physical restraint was for patient's safety due to the increased risk of self-extubation and risk of removal of all the invasive and monitoring devices (Benbenbishty, Adam & Endacott, 2010; Langley, Schmollgruber & Egan, 2011).

In contrast, a qualitative phenomenology by Choe, Kang and Park (2015), in Korea, aimed at exploring and understanding moral distress from the perspectives of and as experienced by Intensive Care nurses. A purposive sampling of fourteen Intensive Care nurses were used and findings showed that nurses felt guilty and unsure when using physical restraint even when considered necessary, they felt they were violating the fundamental human rights of the patient.

Furthermore, Jiang *et al.* (2015) used a mixed methodology to find out the perceptions and practice of physical restraint in China. Their findings revealed that

more than 68% of the ICUs reported less than 50% of the nurses initiated physical restraint without a written medical order; it was evident in the findings that staff shortages and increased workloads contributed to restraining of patients. Correspondingly, De Jonghe *et al's* (2013) findings are congruent with the findings of Jiang *et al.* (2015), which revealed nurses primarily made the decision for physical restraint. Similarly, San et al's (2009) findings in Turkey illustrated that nurses often applied physical restraint without the physician's order, and 59.5% of the nurses applied physical restraint without proper documentation. Interestingly, the most common reason for use of physical restraints (86.8%) was to maintain placement of medical devices.

2.6 SUMMARY

Caring in nursing entails monitoring and showing concern for one another. Intensive Care nurses are expected to provide specialised, individualised and holistic care aimed at providing comfort for the mechanically ventilated patients because of their critical and life-threatening health condition, and ultimately, positive patient outcomes.

The Intensive Care nurses who are caring for the mechanically ventilated patients must be understanding, show concern and sympathy, and be empathic and visualise herself, the patient and family as one unit aiming to achieve the same goal of ensuring the patient returns to full functional health. Patients and nurses experience various barriers, one of which was communication impairment, which affected the patients and the nurses, making it difficult for them to understand each other; hence, quality of care depreciated leading to frustration for both the nurse and the patient.

Sedation, as expressed in the literature, has many consequences, which include prolonged ventilation, prolonged ICU stay and delirium, amongst others. Consequently, a few of the participants used physical restraint to avert some of the consequences attributed to sedation, but most times physical restraint is uncomfortable and impedes the fundamental human rights of the patients, thus pushing the nurses into unethical practices.

The studies reviewed in the literature revealed little worldwide exploration into Intensive Care nurses' experiences of caring for mechanically ventilated patients, as there are few studies in developed countries and none in South Africa. As expressed in this study, nurses experienced many barriers caring for these patients, ranging from communication impairment, language barrier and others. Due to increased workload, nurses experienced burnout and often ignored their duty of caring and often left the patient unattended, waiting for the technology to signal them of the patients' deterioration; thus nurses fully depend on the technology for the patients' care and become very frustrated when the technology malfunctions.

Once there is a full understanding of the experiences of the nurses caring for mechanically ventilated patients, the enablers and facilitators of caring for such patients will be understood properly, and measures to improve the quality of caregiving to these patients will be provided.

The next chapter will discuss the research design and methods used in the study.

CHAPTER THREE

RESEARCH DESIGN AND METHODS

3.1 INTRODUCTION

This chapter gives a detailed account of the research methods and designs used in the study to achieve the study objectives. The research methods consist of the research design, study setting, target population, sample, sampling method, and data collection process. This chapter describes the data collection instrument and interview guide used in the data collection, methods of data analysis, ethical considerations, measures of trustworthiness of the data, and the method that facilitated the emergence of themes, which substantiated the opinions established in the study.

The study explored the experiences of Intensive Care nurses practicing in the ICUs concerning care provided for mechanically ventilated patients, with the intention of making recommendations for clinical practice and education of such nurses.

3.2 RESEARCH DESIGN

A research design is a general scheme or plan for addressing and obtaining answers to a research question, including specifications for enhancing the study's integrity (Polit & Beck, 2017). A research design is a plan, which assists the researcher in planning and implementing the study in order to achieve the goals and objectives of the research.

For the purpose of this study, a qualitative, exploratory and descriptive research design explored the experiences of nurses caring for critically ill mechanically ventilated patients in the Intensive Care Unit.

3.2.1 Qualitative

Using a qualitative design in this study was because it explores meaning, describes

and provides an in-depth understanding of life's experiences. Gray, Grove and Sutherland (2017) described a qualitative research design as a systematic and subjective way of describing individuals' experiences and giving them a meaning. Descriptive qualitative research therefore helped the researcher to have a good understanding of the participants' original thoughts and feelings about the issue, not the researchers 'own views (Cresswell, 2014). This will help the researcher to obtain a rich description of the experience of nurses caring for mechanically ventilated patients in an academic hospital used for this study.

3.2.2 Descriptive

A descriptive design allows for an in-depth or thorough understanding of the phenomenon under study and does not give room for the manipulation of one variable, as the collection of information is from the viewpoint of the participants without any form of manipulation (Burns & Grove, 2017).

Descriptive qualitative research design is most appropriate for the purpose of this study because it gives a complete picture of individual's detailed experiences and offers a structured rigorous approach. Secondly, because the main aim of the study was for nurses to describe and explain their experiences of caring for mechanically ventilated patients as it occurred, without any form of manipulation from the researcher.

3.2.3 Exploratory

Exploratory refers to a design that focuses on exploring the phenomenon under study and increases (the knowledge of the researcher about the area of study (Polit & Beck, 2013). De Vos *et al*. (2011) further described an exploratory research designas a design, which seeks to get a better understanding of a phenomenon, thus it assists the researcher to have an insight to become familiar with a situation, people or phenomenon in order to identify a problem. The conducting of an exploratory study is to gain new insights and find out new ideas about a phenomenon or area of research. As this area of study or phenomenon is not well understood, the researcher utilised an exploratory design due to the limited

knowledge available. Several literature searches showed no extensive or in-depth study had been conducted on the topic in the South African context. In this study, the researcher explored the experience of Intensive Care nurses caring for mechanically ventilated patients, utilising an in-depth face-to-face interview, thus participants asked to narrate their experiences of caring for mechanically ventilated patients.

3.3 RESEARCH SETTING

The research setting was two adult ICUs (General ICU and Trauma ICU) in a 1,088-bed capacity university-affiliated public sector hospital in Johannesburg. The selection of these two units was because the severity of illness and length of stay was comparable to the other excluded units. These units are level I ICUs (SASA, 2013), which provide highly specialised services for medical, surgical, emergency and trauma patients from a wide range of specialties in the hospital. These ICUs are academic units, which provide a high level of specialised care for patients with more than one organ failure. The nurse to patient ratio is one nurse to one patient over a period of 24 hours in both units.

3.4 POPULATION

A research population is a collection of individuals or objects that are the focus of a scientific inquiryThe population for this study consisted of specialised and experienced Intensive Care nurses practicing in two adult ICUs of academic hospital in Gauteng.

A preliminary audit undertaken in February 2018 from the unit allocation list indicated there were thirty one (Specialised and ICU nurse with more than 3 years' experience working in the two ICUs currently in the one academic hospital in GautengIntensive Care nurses practicing in these units.

3.5 SAMPLE AND SAMPLING

Holloway and Wheeler (2010) described sampling as a purposive selection of an

element of the whole population in order to gain knowledge of the entire population. This study used a purposive sampling method for sample selection. A purposive sample of experienced Intensive Care nurses, who met the inclusion criteria, was recruited from the (N=31) nurses working in the ICUs of one university-affiliated public hospital in Johannesburg, Gauteng Province.

The criteria for inclusion in this study was:

- ICU nurses registered by the South African Nursing Council with an additional qualification in Intensive Care nursing (either a diploma or masters in intensive care) that had been working in an ICU for more than 3 years.
- ICU nurses registered by the South African Nursing Council without any additional qualification whom had worked in an ICU for more than 3 years.

Exclusion criteria were:

- Registered specialised and experienced ICU nurses whom didn't have 3 years of working experience in the two ICUs.
- Registered nurses from other categories were not included such as: enrolled nurses and axillary nurses.
- All other health care professionals whom were not registered nurses were not included in this study.

The specialised and experienced ICU nurses had to have three years of clinical experience in order to be included in the study. The latter ICU nurses had a lot of experience. As was thus seen as the experts regarding this research topic. According to (Benner, Tanner & Chesla., 1996) specialised and experienced nurses with more than 3 years' experience working in the ICU have developed a level of competency in the ICU and were more aware of patients' needs regarding their long-term goals.

3.6 DATA COLLECTION

3.6.1 Data Collection Strategy

The primary method of data collection in this study was unstructured interviews, commonly used in qualitative research due to them being less regulated than structured interviews .This allows flexibility for the researcher to explore unexpected issues raised by participants, as well as covering topics in the interview guide (Green & Thorogood, 2014). The use of unstructured interviews allows the researcher to develop and decide on the topics to be explored (Holloway & Wheeler, 2010).

For this study, the development of an interview guide was to facilitate the interviews (Appendix D). The interview guide contained one open-ended question and a list of approximately six topic areas for exploration The interviewer hoped to gain information from the participants who know best about the phenonium under study. The researcher could use the participants knowledge or experience obtained from the interviews to explore the phenonium being studied The research interview guide question (Appendix: D) posed by the researcher aimed to solicit information from participants about the care for mechanically ventilated patients in ICU. Other aspects in the interview guide included shared personal stories, level of sedation, and the presence of family members during routine nursing care and effect of mechanical ventilation on family members. The one open-ended question on the interview guide and the uses of probes allowed the researcher to achieve depth and detail during the interview.

In qualitative studies, the researcher serves as the data collection instrument which Creswell (2009) stated originated with the principle of observer, note taker, interviewer and interpreter of the data collected. The researcher is an experienced nurse practitioner in this field of study, and the study site is affiliated to the university where the researcher is currently registered as a postgraduate master's student.

3.6.2 Data Collection Process

Participants were purposively selected to be interviewed under data saturation occurred. Ten (n=10) participated that was purposively selected participated voluntary in this study.
Those participants who had expressed an interest in the study received an information letter (Appendix A), demographic form (Appendix E),consent form (Appendix B) and audiotaping (Appendix C) form. An appointment was made beforehand to conduct the unstructured interviews (Appendix D), with participants choosing the venue and time most suitable to them. The conducting of the interviews was in a private seminar room or office near the respective ICU.

Welcoming the participants in a friendly manner ensured a non-threatening environment. After making themselves comfortable, the researcher asked the participants' one open-ended question on the interview guide:

> *With your current and previous experience in the care of mechanically ventilated patients in the ICU, please can you tell me what it feels like caring for these patients?*

After posing the opening question, the participants received time to reflect on their thoughts before they were ready to proceed. Participants were encouraged to speak freely at their own pace. Facial expressions and body language were cues used to indicate whether the participants wanted to verbalise disagree or were uncertain about any aspect in the discussion. Based on the cues given by participants, the interview guide enabled the introduction of follow up topics.

All the participants were encouraged to express their feelings and views and reflect on their own experiences of caring for these patients. Participants were encouraged to share their personal stories, which helped to stimulate their recollections and added depth to the data collection.

The unstructured interview maintained an informal conversation style throughout. An attentive listening skill was enhanced by maintaining eye contact and note taking

considered as necessary. Probes to maintain clarity used open-ended contributions such as, "*Can you tell me more about that?" "What do you mean when you say that?"* and *"Can you explain how that makes you feel?"* Summarising the most important points occurred at the end of the unstructured interview, and participants had the opportunity for final comments. The unstructured interviews lasted between 30 minutes to one hour. After 10 participants the researcher obtained data saturation and thus no more participants were invited to participant.

The researcher transcribed the digitally recorded interviews and checked them for accuracy against the recording. Demographic data collected included age, participants' years of experience in nursing and years of experience in Intensive Care nursing.

3.6.3 Pilot Testing

Pilot testing occurred two weeks before actual data collection with the purpose of avoiding poor interviewing style, inappropriate interactions and to recognise pitfalls (De Vos *et al.,* 2011). One participant was chosen to conduct pilot testing, in which the main question was piloted and some probing questions utilised. A colleague experienced in interviewing skills critically evaluated the transcript and audiotape. The intention was to ascertain if major changes were necessary for future interviews and should this be so, the data from the first initial interview would be discounted. A minimal amount of adjustment to the researchers' interviewing skills was required. But no changes to the data collection process was required. The information from the pilot test was used as part of the main study and thus was also analysed part of the main study.

3.7 DATA ANALYSIS

The selection of a thematic approach to analysis was to analyse the data in this study. The basis for the approach was the six-step phases of thematic analysis outlined by Clarke and Braun (2013). Thematic analysis identifies, analyses, and reports patterns (themes) within data, helping to organise a rich description of data

set. An inductive approach was employed where the identified themes were strongly linked to the data itself; there were no preconceived codes by the researcher.

Consequently, the researcher analysed each transcribed interview guided by the six-step phases of Clarke and Braun's (2013) method of data analysis consisting of:

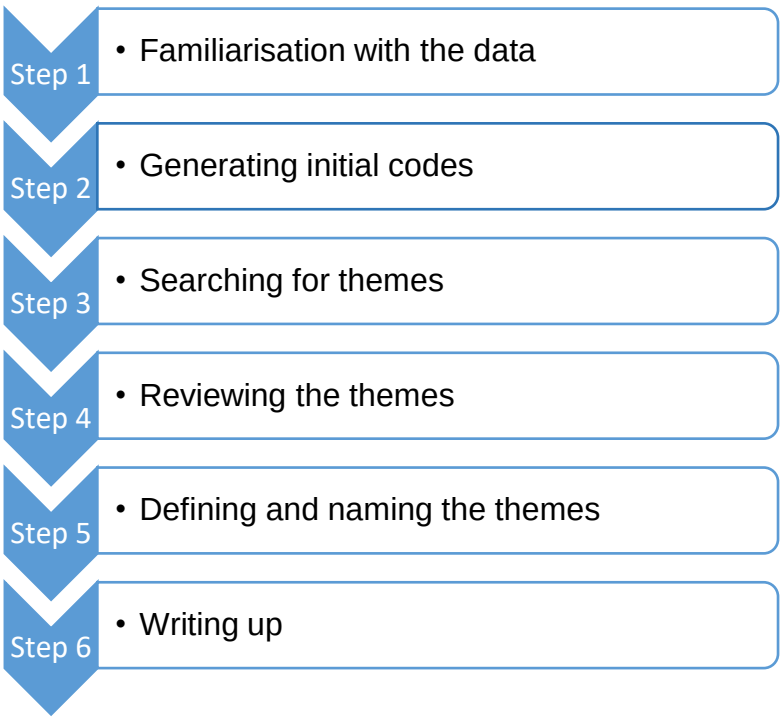


Figure 3.1: Braun and Clarke's method of data analysis

The next section briefly discusses each step.

- Step 1: Familiarisation with the data

This step required the researcher to be fully immersed and actively engaged in the data by firstly transcribing the interactions and then reading (and re-reading) the transcripts and/or listening to the recordings, noting initial ideas. It is important for the researcher to have a comprehensive understanding of the content of the interaction and to have familiarised herself with all aspects of the data. This step provided the foundation for the subsequent analysis. In this study the researcher familiarised herself with the data by firstly transcribing the interviews and then

reading (and re-reading) the transcripts and/or listening to the recordings. All initial ideas were written down by the researcher so that a full understanding of the content was understood. This was an important stage in the study as this laid the foundation for subsequent analysis by the researcher.

- Step 2: Generating codes

Once familiar with the data, the researcher then start coding the data and by taking note of the data given that was interesting and meaningful. These codes were more numerous and specific than themes but provide an indication of the context of the conversation.

- Step 3: Searching for themes

The third step in the process is the start of the interpretive analysis of the collated codes. The sorting of the relevant data extracts (combined or split) is according to overarching themes. The researchers thought process should allude to the relationship between codes, subthemes and themes.

- Step 4: Reviewing the themes

A deeper review of identified themes follows where the researcher needs to question whether to combine, refine, separate or discard initial themes. Data within themes should cohere together meaningfully, while there should be clear and identifiable distinctions between themes. This is usually done over two phases, where the themes need to be checked in relation to the coded extracts (phase 1) and then for the overall data set (phase 2). A thematic 'map' was designed in this step by the researcher.

- Step 5: Defining and naming the themes

This step involves 'refining and defining' the themes and potential subthemes within the data. Ongoing analysis is required to enhance the identified themes. The

researcher in this stage gave the themes names and each had a definition that captured the essence of each theme At this point, a unified story of the data had emerged from the themes.

- Step 6: Writing up

Finally, the researcher needs to transform his/her analysis into an interpretable piece of writing by using vivid and compelling extract examples that relate to the themes, research question, and literature. The report must relay the results of the analysis in a way that convinces the reader of the merit and validity of the analysis. It must not go beyond a mere description of the themes that portray an analysis supported with empirical evidence that addresses the research question.

3.8 MEASURES OF TRUSTWORTHINESS

The term trustworthiness refers to the degree of confidence qualitative researchers have in their data assessed using criteria of credibility, dependability, confirmability and transferability (Polit & Beck, 2013).

3.8.1 Credibility

De Vos *et al.* (2011) state that credibility is concerned with the truthfulness of the findings. For this study, an unstructured open ended question was used for the interviews, tape recordings and verbatim transcriptions assisted in ensuring credibility. Furthermore, member checking ensured credibility of the study, the researcher provided feedback to participants after interpretations emerged, and then obtained participants' responses regarding credibility of the collected data (Polit & Beck, 2013).

The sharing of transcribed data with participants was to ensure accuracy of transcriptions. Member checking was done and all participants agreed that the content of the transcripts was a true reflection of their views and experiences. The supervisor also reviewed the transcripts against the developed themes in order to assess whether the researcher's interpretations truly represented the realities of the

participants (Polit & Beck, 2013).

3.8.2 Dependability

Dependability relates to the reliability of the data over time and different conditions; it refers to the details and information of the study. Consequently, this allows others to reach the same conclusions by replicating the methods of a researcher (De Vos *et al.,* 2011). In this study, the researcher and supervisor discussed the transcriptions to confirm the authenticity and accuracy of the actual data as recorded during the interviews. The supervisor verified the methodology and methods of data collection and data analysis, which were clearly stipulated and transparent to enhance study dependability.

3.8.3 Confirmability

Confirmability refers to objectivity and potential for congruence between two or more independent people about the accuracy, relevance and meaning of data (Polit & Beck, 2013). Consequently, the researcher's supervisors reviewed the findings of this study in order to remove her own opinions, and to focus directly on the data (De Vos *et al.,* 2011).

Via an audit trail of the tape recordings and transcripts, the supervisors confirmed the link between the raw data, findings and interpretation. The researcher developed themes and sub-themes in agreement with the supervisor, who checked that transcripts resembled raw data (De Vos *et al.,* 2011).

3.8.4 Transferability

In qualitative research, transferability demonstrates the ability transfer or apply research findings to other settings by providing sufficient data in the final research report (Polit & Beck, 2013). The researcher provided detailed information on the selection of the participants, the data collection, analysis, and interpretation. Information from several sources in the literature review was also included in this study to enhance transferability and for the reader to decide on the applicability of

the findings (Green & Thorogood, 2014). Thick detailed descriptions on data collection and data analysis are available for a reader to decide on the possibility of transferability (De Vos *et al.,* 2011).

3.9 ETHICAL CONSIDERATIONS

Ethical issues in research are standards of ethical conduct to safeguard the study subjects and integrity of the research process (Polit & Beck 2013). The discussion of the ethical considerations is under the following headings: informed consent, permission to conduct research, confidentiality and anonymity, dissemination of findings and data management.

3.9.1 Informed Consent

A description of the process of obtaining informed consent is the procedures and mechanisms for the protection of human rights of the participants (Polit & Beck, 2013). The researcher ensured that informed consent (Appendix:B) was given to the participants before the interviews took place. All participants were also given an information letter. The research ensured that sufficient time to read the information letter was given to the participants in order for the them to understand the purpose of the study. A consent to allow for audio recording during the study's' interviews was also given to the participants at the same time they gave informed consent (Appendix:C). Participants' participation in the study was voluntary and they could decline to answer any question as well as discontinue participation in the study at any time. All participants had the opportunity to ask questions of the researcher, and all received a copy of the information letter to keep in their possession should they wish to contact the researcher in the future. The University of the Witwatersrand gave permission that if the participant participated in the interview that was enough evidence that they consented to participate in the study.

3.9.2 Permission to Conduct Research

The Committee for Research on Human Subjects (Medical) of the University of the Witwatersrand (Appendix:F) granted ethical clearance to conduct the research.

Permission to conduct the study was obtained in writing from the Hospital's Chief Executive Officer and Director of Nursing Services (Appendix G), and verbal permission was obtained from the nurse unit managers of the respective ICUs. The Postgraduate Research Committee in the School of Therapeutic Sciences at the Faculty of Health Sciences granted permission to conduct the study.

3.9.3 Confidentiality and Anonymity

Ensuring the confidentiality and anonymity of the participants was by using code numbers during interviews recording, data collection (Appendix D and E) and reporting. Participation in the study was voluntary, and participants could withdraw at any time without penalty.

3.9.4 Data Management and Security

The research supervisor ensured the safekeeping of all the research material by placing it in a locked private place at the university. A backup copy is available and kept on the computer, and accessed by a password known only to the researcher and supervisor. After six years, the stored data will be destroyed by shredding hard copy documents and permanently deleting all electronic data and interview recordings from flash drives and hard drives.

3.10 SUMMARY

This chapter described the research methods, which included the research design, setting, target population, sample and sampling, data collection method, data collection instrument, ethical considerations and trustworthiness of the study.

The following chapters present the findings of the study.

CHAPTER FOUR

FINDINGS OF THE STUDY

4.1 INTRODUCTION

This chapter outlines the findings of the study.

4.2 PARTICIPANT DEMOGRAPHICS

The participant's demographic data comprised of gender, years of experience in the designated ICU, speciality training and type of ICU (See *Appendix E*). Ten ICU nurses from the General ICU and Trauma ICU participated in the study. Table 4.1 provides a summary of the characteristics of the participants.

Table 4.1 Summary of the characteristics of ten (n = 10) participants

Characteristic	Frequency	Percentage
Gender		
- Male	2	20.0%
- Female	8	80.0%
Years of ICU experience		
- 1 to 5	1	10.0%
- 6 to 10	1	10.0%
- 11 to 15	2	20.0%
- 16 to 20	2	20.0%
- More than 20	4	40.0%
Highest level of qualification		
- Diploma	8	80.0%
- Bachelor's degree	-	-
- Master's degree	2	20.0%
- Doctoral degree	-	-
Type of ICU		
- General ICU	6	60.0%
- Trauma ICU	4	40.0%

Females formed the majority (80.0%; n = 8) of the study participants. Eight (n = 8; 80.0%) participants held an advanced diploma in Intensive Care nursing, and two (n = 2; 20.0%) had a master's degree in nursing. Four (n = 4; 40.0%) participants had more than 20 years of nursing experience in ICU. Two participants (n=2; 20%)

had 11 to 15 years of experience in ICU as well as the same amount for the year 16 to 20 years. Only one participant (n=1;10%) in the 1 to 5 years had less than 5 years' experience in ICU, while the same (n=1;10%) had between 6-10 years ICU nursing experience.

4.3 EMERGENT THEMES

This section focuses on the findings that emerged from participants' expressions of their experiences of care for mechanically ventilated patients in the ICU. The prevailing main issues included: comforting, holistic care, knowing the patient, caring for relatives, technology, prioritising care, nurse-patient interaction, physical care, support, barriers to caring. These 11 categories generated three emergent themes, which provide the fundamental structure of the findings of the study and included:

- Nurses' feelings and emotions
- Nurses' knowledge and experience
- Nurses' caring skills

Each of these themes will be presented and discussed in detail and substantiated by verbatim quotations from interview transcripts, in the context they were expressed, to support observations or conclusions drawn by the researcher and give them meaning. Following scientific qualitative research data analysis reported interview data, exact wording transcription by the researcher from the participants interview has be written in italics as written below.

Table 4.2: Overview of emergent themes and sub-themes

Themes	**Sub-themes**
4.3.1 Nurses' feelings and emotions	4.3.1.1 Comforting
	4.3.1.2 Holistic care
4.3.2 Nurses' knowledge	4.3.2.1 Knowing the patient
	4.3.2.2 Caring for relatives
	4.3.2.3 Technology
	4.3.2.4 Prioritising care

	4.3.2.5 Critical situations
4.3.3 Nurses' skills	4.3.3.1 Nurse-patient interaction
	4.3.3.2 Physical care
	4.3.3.3 Support
	4.3.3.4 Barriers to caring

4.3.1 Theme One: Nurses' Feelings

Expressions that characterises the theme 'nurses feelings' were comforting and holistic care. Comforting included measures such as touch empathy, dignity, time, reassurance and listening, and providing orientation information. Inherent. Holistic care were the care for the patient, family and healthcare team.

4.3.1.1 Comforting

In describing comforting, participants highlighted measures that acknowledge the vulnerability of the patient's situation and accepting their individuality, and making the patient feel comfortable through the provision of physical care and ensuring they are pain-free

Participants described comforting through the provision of comfort measures

"Pain medication…attend to their pain…adequate pain management for the mechanically ventilated patient."

Participant 2

"Pain medication… I think is seen through the vital signs… pain management."

Participant 3

"You will always asses the patient, and if there is pain, we give them pain medication as prescribed."

Participant 4

"Maybe we can just give some painkiller if they are really in pain."

Participant 9

Providing orientation information through mentioning your name (the specialist ICU nurse's name), place and time was a comforting measure while caring for the mechanically ventilated patient. One participant expressed:

"I for one always in the morning I will tell them my name.. I tell them today is Tuesday… Today is sunny…today is the 7th day of the month..I always ask them during the day what day it is today...When is your birthday… just to see how orientated they are."

Participant 4

The state of patients' condition, the interventions provided and the tubes in situ are sometimes intimidating. Participants described reassurance as an important measure to assure the patient of the plan of care and confidence in their recovery.

Participants expressed the need to reassure the patient continually:

"You keep encouraging the patient."

Participant 4

"It must be a continuous thing to reassure the patient."

Participant 9

Participants frequently expressed the relaxing importance of touch as a means to comfort and reach out to patients. Family members were encouraged to touch the patient, to give them a sense of belonging and love:

"They can touch the patient and comfort him to show that they still love him."

Participant 9

Participants expressed that apart from being a nurse, they are also a human being who feels the pain and discomfort of others. Hence, they expressed the need to

show empathy for the patient, understand their condition and see themselves in the position of the patients' family members:

"Have empathy and put yourself in the family situation; we also need to understand where they are coming from."

Participant 1

"I have cried with the patient, and I don't have shame in it... I have also cried with family members as well."

Participant 1

"You become empathic to the patient because you are attached to the patient."

Participant 9

"Some of the patients are emotionally depressed, so you as a nurse must have empathy and put yourself in family's situations we also need to understand where they are coming from."

Participant 9

"Understanding the condition of the patients and putting herself in the shoes of the family members is emotionally draining."

Participant 9

Participant 2 Thus one of the participants displayed empathy for the restrained patients as expressed below:

"*To restrain a patient is not a nice thing. We do it only for the safety of patients because being tied down and lying in one position is not nice."*

Participant 2

"You can imagine being in one position for two to three hours without being able to move, and you want to move, it's difficult. At the same time, you have a tube that you need to survive, and you don't understand why this tube is in you, and they tied you down."

Participant 2

Participants identified the need to ensure and protect the dignity of the mechanically ventilated patient as they provide care. The nurse must preserve the dignity and respect of the patient.

*"The patient needs to be respected in the sense that he mustn't lose respect and dignity while you are giving them care…..*And also, *don't overexpose the patient while bathing the patient."*

Participant 9

4.3.1.2 Holistic care

The sub-theme 'holistic care' is providing care for the individual patient. This includes extending care to the family, and working and supporting colleagues as well. Holistic care extends to total nursing care not only for the patient, but also for their family and significant others. It is also seen in teamwork or working as a team. Looking after the patients' psychological, spiritual, physical, social and cultural needs was a measure to provide holistic care to patients.

According to participants, the patient is an extension of the family and it is important for the patient to feel positive about the health progress.

"The patient is an extension of the family, so they work together."

Participant 10

"I believe that it is very important that the patient feels positive about his progress…and the patient can only feel positive if the patient gets that from the fact that he can trust his nurse, the family is happy with what's happening, there's got to be some sort of communication and some kind of relationship between the patient, the family and the nurse."

Participant 10

The family, according to some participants, is an essential part of the patient care in the ICU, as they know the patient better and therefore are able to share sensitive and accurate information.

"Family is not an obstruction, and the family is an essential part of patient care."

Participant 10

"Family is an integral part of the patient in the ICU, this generally makes the family a part of nursing care…the family knows the patient better than what you do, and we also obtain vital information about the patient from the family."

Participant 1

"The family is part and parcel of the patient …you are nursing a patient plus the family and significant other…you can't nurse a patient in isolation...So communication and involving the family is very important."

Participant 10

"I think it is very important for the family to know what is going on with the patient… And understand what you are doing."

Participant 10

4.3.2 Theme Two: Nurses' Knowledge

The theme 'nurses' knowledge' was expressed as gaining the fundamental attitude, technical competence, knowledge and professional experience to confidently influence patients to care positively and affect practice. Inherent to the theme, were the following clusters: 'knowing the patient,' 'caring for relatives,' 'technology,' 'prioritising care' and 'critical situations.' Participants regarded competence, knowledge and experience as a vital attribute of every nurse when providing care for mechanically ventilated patients.

4.3.2.1 Knowing patient

Due to the therapeutic relationship established during the patient's care, participants identified "knowing patient" as a vital attribute in intensive care nursing to care for patients in the ICU. Achieving this is through the constant presence of nurses at the patient's bedside to understand their needs and tailor nursing care as deemed appropriate.

Knowing the patient was described as follows:

"I believe the nurse is with the patient 24 hours, and the nurse should be at the bedside all the time… she can find a chair sit next to the patient and talk the patient and talk them through what is happening."

Participant 1

"You can be there 1:1 with your patient for a prolonged period trying to get them calm down."

Participant 3

4.3.2.2 Caring for relatives

Participants reported caring for relatives, as well as significant others, was central to gaining fundamental competence and knowledge to influence the patients care. Most patients are unable to make informed decisions owing to the disease process and interventions rendered. As a result, family and relatives are essential contributors to patients care. Participants highlighted the importance of responding to relatives' need for information, explaining various procedures and reassuring them when the need arose, reflected as follows:

"The critical thing is to inform the relatives of the patient and educate them."

Participant 3

"Even the relatives you need to inform them because they will be very anxious just to see the patient lying on the bed not doing anything and he got a breathing tube and all those things."

Participant 9

Sometimes, patient's relatives do not understand the need for specific interventions, as they might be seeing the ventilators for the first time. Participants expressed the need to explain to the families what is happening with the patient, the reason for mechanical ventilation, and why they are restrained and sedated.

"Some they don't understand because you find out they are seeing the ventilator for the first time. As a nurse, I have to explain to them that the patient needs the ventilator and then what the functions of a ventilator are If the patient is sedated…I will explain to them that the patient is sedated for safety because the patient is fighting with the machine."

Participant 2

"Even if they are restrained, we explain to them that we are not tying them down because of something else. Because we don't want them to remove the tube."

Participant 2

"You need to explain to them that this person is sick and needs these machines to sustain his life or make him better…explain this to the relatives ….give them chance to ask questions."

Participant 3

Due to the bond between the patient and the relatives, one participant expressed the need to reassure the relatives by explaining to them the lines and tubes connected to the patient and their functions, as this will aid in encouraging the relatives and making them feel comfortable in the strange ICU environment.

"If the family can identify all the lines, pipes and know what they are for.. I think it is reassuring for the family and if the family feels comfortable and reassured that is passed unto the patient...So their communication with their family member is one of reassurance."

Participant 10

4.3.2.3 Technology

Participants' expressed adequate knowledge and competence in the use of intensive care technologies, such as monitors and ventilators, as a means to enhance patient care. They talked about technology being an essential and beneficial part of intensive care.

Some participants expressed that technologies enhanced holistic care as shown below.

"I have really been able to give my patient the holistic care they need with the aid of technologies."

Participant 6

"For instance, the alarm settings when it beeps I know my patient needs my attention because there is something wrong, these equipment's help me to keep my patient safe because any abnormality in the vital signs will be signalling immediately."

Participant 6

"The use of technologies in this ICU have really advanced my skills and competencies in caring for my patients…..When you are in the ICU, and these machines are functional, you feel you are in control of the patient and fully responsible for their care, you feel like the boss."

Participant 7

While the use of technologies were beneficial, some participants felt it hindered their attempt to personally provide the human aspect of caring they had planned for their patients. They tend to ignore vital complaints from the patient due to their total dependence on the technologies.

"But the major issue is that most of the nurses have really been dependent on these technologies and have ignored the patient which I have experienced as very disheartening in fact heart breaking."

Participant 7

"I have been nursing these ventilated patients for years now, and these patients are fully dependent on these machines… so for the ICU nurse, technology is part and parcel of her, … I have learned to manage using these machines in caring for this patient."

Participant 6

4.3.2.4 Prioritising care

Prioritising care was of essence to participants, described in terms of apportioning and managing time during patient care and executing the care planned; for instance, the need to prioritise care for the patient according to the haemodynamic status of patients.

Some participants expressed situations where you need to place the life-threatening state and haemodynamic status over basic care needs, such as bed bath, turning of the patient, etc. Hence, they have to wait until the patient is stable before turning the patient, as expressed below:

"The risk of the patients are very great with respect to developing pressure sores, so you need to put the health condition and haemodynamic status of this patient into consideration before carrying out your routine nursing care to these patients like bathing, changing position and all that."

Participant 6

"For instance….you want to bath the patients……but you realise that this is not priority, so what is a priority for these patients is actually wait for this patient to be a bit little more stable as opposed just thinking about turning them."

Participant 6

"You are going to focus more on the physical care of the patients, so you have to wait a little bit till they are stable."

Participant 6

"There are times as an Intensive Care nurse that you should be hands-off and you should leave the patient as quietly as the patient needs."

Participant 10

4.3.2.5 Critical situations

Participants identified critical situations such as emergencies, dying patients, organ donation and sensitive communications as essential to the caring of mechanically

ventilated patients in the ICU. The busy and demanding nature of the ICU demands participants to make quick decisions in successions. Participants' expressed the need to be sensitive to these situations.

"Patients in ICU are individuals... The circumstance they come into the ICU is unique... This is often a life-threatening death like situation, so you have got to have a deep sensitivity for all that."

Participant 1

One of the participants expressed the pain she felt when accompanying a mother with her child for organ donation.

"I remember pushing a mother [declared brain dead] *to theatre for organ donation with her 4 years old daughter walking with me."*

Participant 1

"You have got to work towards improvement in that 12 hours…if you are sensitive to the patient's requirements...Whether the patient can communicate or not, whether the patient is conscious or not."

Participant 10

Patients are often unable to communicate effectively due to the disease process and intervention provided. One participant highlighted the need to be sensitive and find possible ways to communicate with the patient, as expressed in the following quote:

"The patient can't communicate…..nurse needs to find a way to communicate with the patient."

Participant 1

Ensuring a patient received nursing to a peaceful death, with dignity and pain free, is as important as seeing the patient nursed to an optimal level of health, as expressed by the participants in the study. Hence, participants believed it was

rewarding to make the end of life-related decisions for the patient when you see there is no good prognosis.

"*I also believe that there could be rewards when you make a decision that the patient is not going to recover and it's time to stop aggressive treatments because the patient has the right to die as well."*

Participant 10

"I believe it is nice to nurse the patient to health, it's also nice to know that the patient is having a good death so that patient is dying with dignity, he is not in pain, his not suffering through his death, that is just as important as making the patient better."

Participant 1

4.3.3 Theme Three: Nurses' Skills

Acquiring and demonstrating specific relevant nursing skills, both basic and advanced, was an integral component of patient care in the ICU. The theme cluster for 'Nurses' skills' was expressed as 'nurse-patient interaction,' 'physical care,' 'support' and 'barriers to caring.'

4.3.3.1 Nurse-patient interaction

Participants identified the establishing of therapeutic interaction between the nurse and the patient as vital in promoting holistic care, and achieved by explaining procedures to patients and understanding their basic needs.

Mechanically ventilated patients have difficulty expressing their needs and fears due to medical interventions. Consequently, they are unable to make informed decisions on their choice of care or ask vital questions. Participants identified the explaining of procedures to the patient as an essential part of nursing practice that enhances the nurse-patient relationship.

"The patient who understands… Explain whatever procedure you are going to do to them, they understand."

Participant 2

"The first thing I do is to explain to the patient why they are intubating… Why they need to be calm."

Participant 3

"Even when you are doing a suction procedure, some patients will tell you that is a very painful thing… Explain to the Patient… That it will be uncomfortable but please bear with it because you cannot cough it out, so explaining to the patient goes a very long way in helping that patient."

Participant 6

"As a nurse, you must explain any procedure you are doing unto the patient…very often you see…they are very anxious because the ET tube is uncomfortable …so you need to explain so you can gain co-operation from them."

Participant 9

Understanding the basic needs of mechanically ventilated patients was also important to participants as a means to foster nurse-patient interaction. Often, intubated patients are unable to communicate their needs therefore, the ability of the nurse to recognise and attend to their needs is vital in patient care.

"Most of them become very thirsty... I have noticed when they are intubated even putting ice, I know they cannot swallow but some try to swallow even a little bit of water in the NG tube… Majority of the time the experience that I have heard is that patients are thirsty…I wanted water… "

Participant 1

"You know they usually ask for water, give them answers like you can't get the water for now because of the ET [Endo-tracheal] *tube remember you are in the ICU."*

Participant 4

One participant expressed her individual experience during the admittance of a family member into the ICU. Being in the shoes of the relatives enabled her to understand the thirst needs of patients; she felt the need to ensure thirst needs of the patients are met as opposed to when she was nursing patients in the ICU. This participant expressed she did not understand family needs until she walked in their shoes.

"It was my brother-in-law. He was already trying to communicate, so he was trying to write something to use.. Like he is thirsty, he needs some water... Thinking that he was my family member so I would rather take a syringe of water to wet his lips, or take a gauze wet it put it in his lips and let him suck it…..but before then as a nurse working in the ICU I will say no you can't get water because you have an IV line so it should be okay"

Participant 6

Understanding the basic need for the patient to rest is essential; hence the participants expressed the need to minimise noise levels in the ICU environments to assist the patients to sleep.

"If they are sleeping, just let them sleep… don't disturb them, and you minimise any activity. .. attend to the alarms because they are a nuisance to the patients, it disrupts their sleep…because it can drive the patient crazy."

Participant 3

Additionally, another participant added the need to understand the patient's sensations:

"The patient has sensations…the patient will know that his shoulders are sore and that his bum is sore…they can't tell you, they can't communicate and if you are a caring nurse and thinking about your patient, you will know that nobody lies on their back for a long time, you don't go to bed and wake up in the same position."

Participant 10

4.3.3.2 Physical care

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Participants expressed the provision of physical care to patients, in the form of providing basic nursing care and initiating life-threatening treatments.

The need to provide quality basic care for the mechanically ventilated patients is vital in the ICU, because these patients are fully dependent on the nurse for their basic care needs and activities of daily living. Hence, basic nursing care is a fundamental component of the patients' care in the ICU.

Participants in this study expressed the need to provide basic care for the mechanically ventilated patients was of paramount importance, because this promoted patient comfort, e.g. preventing pressure sores, hence changing the patient's position as per patients' need is important.

"For the basic needs to be met, you need to bath this patient and make the patient comfortable…the patient must lie on clean sheets…change the position of the patient…also address the pressure part care."

Participant 9

"Caring for the basic needs of the patient …making sure their hygiene needs are taken care of."

Participant 9

"When they pass number 2 [stool] *clean the patient…they cannot say hey man I soiled myself and is not comfortable, clean the patient and change them."*

Participant 3

Participants mentioned some strategies utilised to prevent pressure injuries, which included the use of water-filled gloves to elevate ankles, elbows and heels, then pillows underneath their knees and feet just to create a natural floating area, as this aided in preventing pressure sores, as expressed below:

“For the pressure sores, we use to take some gloves to fill them with water try to elevate their heels so that there won’t be much pressure there, literally, put a pillow underneath their knee and then their feet and all there pressure areas to create a natural floating state on the pressure areas…then we take the gloves filled with water and put them on their elbows.”

Participant 6

“Turn the patient two to three hours, depending on their condition…make sure they are not lying on soaked linens.”

Participant 4

Some of the participants expressed suctioning as a basic nursing care procedure. Suctioning, however, is more of a competency practice because it entails the nurse using advanced skills in assessing the patient’s need for suctioning before undertaking the procedure.

“I need to do a comprehensive assessment of my patient, and I need to auscultate and understand if I need to suction, before I suction.”

Participant 6

“Before you suction you need to clean the mouth first, adhere to aseptic techniques.”

Participant 9

The need to provide basic care for the mechanically ventilated patient is very important because poor hygiene increases the risk of bacterial colonisation and infection reoccurrences. Basic care is an essential aspect of the nursing profession, which deals with the fundamental needs of all human beings for relieving, ease or wholeness arising from stressful healthcare situations for the patient. The participants expressed they ensured the basic hygiene needs of the patients throughout the period of hospitalisation.

4.3.3.3 Support

Participants identified support as essential in caring for patients and their relatives in the ICU. Participants described the support as a conscious approach where the nurse made use of experience, knowledge and expertise to assist patients emotionally and care for the patient and their relatives. Support was through giving hope, involving relatives in care, supportive services, spiritual care and advocacy.

Giving hope was highlighted as a critical skill for a nurse to maintain throughout the critical illness trajectory.

"When they come in, they will just stare at the patient, and you need to encourage them to say "talk to him" and you must tell them that the patient won't be able to respond to them."

Participant 9

"When they see a ventilator…you could see their reaction...their face just drop, they lose hope."

Participant 4

Participants viewed the involving of relatives in patient care as vital in providing support in the ICU. The family members are helpful, as described in the following extract:

"Initially, I wouldn't want anyone to be there once you are doing something with the patients…after working in the ICU for a while, I started to understand that the relatives are really a great support system in the ICU."

Participant 6

"They can assist you in turning the patient, watching the patient while you take a little break, help you to make the patient aware of their environment and self; for me the relatives are helpful."

Participant 6

Participants stated supportive services, such as a helping hand from colleagues, was a means to support patients and family.

"But we need to provide some kind of support for the families."

Participant 9

"Support from your colleague, if you have that it becomes a lot easier to do your work"

Participant 5

"I remembered I use to have a colleague who wouldn't like to assist anyone and if you think of an ICU you really need assistance in turning your patient, if the patient crashes you need the whole team to actually help you resuscitate them."

Participant 6

Attending to the spiritual needs of patients and families was also an important measure to support patient care.

"Family have every right to practice their rituals, like doing last rites, sprinkling Holy Water or chants, we must respect that"

Participant 1

"I have noticed it so much easier in ICU when the Priest comes to attend to the family."

Participant 2

Advocacy also provided support, achieved through speaking and working on behalf of the mechanically ventilated patient. Some participants expressed situations where they advocate for specific medication and interventions to help the patient.

"Advocate for these patients if they can't talk."

Participant 3

“Advocate for him…you can advocate for sedation.”

Participant 9

4.3.3.4 Barriers to caring

There were several factors identified as barriers to caring for mechanically ventilated patients in the ICU. Among these barriers to caring were a shortage of staff, lack of time, patients inability to communicate and stress in caring for dying patient.

The workload and the nature of care in the ICU, demands more staff members. Participants identified the shortage of staff as challenging and a personal struggle to provide holistic care, as expressed in the quotes below:

“The only challenge is just staff shortage…. “

Participant 4

“If you are short-staffed, you might find out that you will struggle to actually give holistic care to these patients.”

Participant 6

The layout, multi-tasking and busy nature demands quick decisions from nurses, in conjunction with the needs of other new patients and completing specific tasks within a specific time. Participants described the lack of time as a major barrier to care. Often they spend more time attending to the patients’ needs and are unable to complete delegated tasks; as expressed below:

“You got an hour, and you work 12 hours in total, you need to put in a lot of work ….ensuring the tube is secured….you know all the other things you are doing are increasing your workload…in an hour consider the other things you need to do, you end up spending much more time focussing on one thing ……there is need to suction…you haven’t giving medications…you haven’t done your ABG…you haven’t recorded most observations…there is just so much you need to do.”

Participant 5

Considering the nature of the treatment approach, mechanically ventilated patients are unable to communicate effectively. Some participants found this a major barrier to caring, as they were unable to deduce their demands and address them.

"The negative thing was that I think was that you couldn't necessarily have a proper conversation with your patient, you could still communicate,"

Participant 10

Supportively, participant 3 expressed the patient's inability to communicate as a bad experience.

"In terms of bad experience is patients communication, you are unable to communicate with the patient.. Patients become frustrated that they cannot verbally express whether they are in pain or they need to scratch themselves."

Participant 3

"They try to talk over the tube, but you cannot even read their lips."

Participant 3

Sometimes that they would be trying to communicate, some of them are still weak "With writing, you can't even read what whatever it is they are writing and whatever they are trying to write … some of them will try lip reading but find out they are still intubated so you can't even read their lips."

Participant 5

The most obvious means to communicate were lip-reading, using hand gestures to explain things and use of picture boards.

"The most common method of communication in the ICU is lip reading, using your hands and explain things slowly to the patient, teach them to learn to speak with their lips, speak short word not long things that's one thing you can do."

Participant 1

"*Pick a board and a pen let the patient write …we can also use picture boards."*

Participant 1

"Sometimes we try to make the patients write we find out that some write something you can't read and understand…because they are weak… "

Participant 2

"You use sign languages or this alphabet boards where patients could point out letters…we do give them piece of papers to write."

Participant 3

Additionally, participants emphasised communicating with the patient in the language they understand, and using the family to give you words in the patient's language for easy communication.

"You can use pictures… you can use sign…communicate in the language that the patient understands….write the language of the patient on the chart..."

Participant 9

"Use the family to give us words like are you comfortable."

Participant 9

"You can hold the alphabet in front of the patient, or you can hold words in front of the patient…we used to use the family to give us words and answers in the language patient is used to so that we could communicate with the patient in a familiar language."

Participant 10

Caring for the dying patient was a barrier to caring for a patient, especially when nurses cannot deal with the emotions of the family members.

"It is very difficult to care for a patient when the doctors have pulled out care …"

Participant 9

"Even when the doctors have pulled out care, you never withdraw your nursing care."

Participant 7

"…I do find it difficult at times, I am not trained to care for dying patients, we are trained to care for those whose lives can be maintained …but we learn to cope."

Participant 1

In light of these findings, it is evident that most of the participants recognised caring for the mechanically ventilated patient as integration of nurses' feelings, knowledge and skills. Such reasons given included recognition of the vulnerability of the sick person requiring nurses to demonstrate compassion, empathy and sensitivity when dealing with the whole person. Advanced knowledge and level of experience were emphasised by the participants as requisite for nurses to possess when caring for a patient in a high technological and sophisticated environment. Participants highlighted that knowing the patient was fundamental to caring for a sick patient. Inherent in caring for mechanically ventilated patients, these participants also emphasised requirements for a wide array of particular nursing skills in the achievement of a critical balance between safety needs and comfort of the patient and their loved ones. However, some of the participants also highlighted a few barriers when caring for mechanically ventilated patients, such as shortage of staff and time, patients' inability to communicate, use of physical restraints and lighter sedation practices. Controversies arose amongst the participants over the role of physical restraint use in sick patients, with some nurses supporting its use because of lighter sedation practices, whilst others considered it an unethical practice.

4.4 SUMMARY

This chapter presented the findings of the study. Three major themes emerged from the findings, and were presented and validated with extracts of participants' exact expressions for the purpose of clarity. The chapter presented a summary of the results, which formed the fundamental structure of experiences of nurses caring for mechanically ventilated patients in the ICU, regarding the care of mechanically ventilated patients as captured from the study findings.

The next chapter discusses the findings in relation to the relevant literature, including the study limitations, recommendations for nursing practice, education and further research and conclusion of the study.

CHAPTER FIVE

DISCUSSION OF FINDINGS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter provides a discussion of the findings of the study, and presents the justifications together with limitations. The chapter concludes with recommendations for nursing practice, education and future research, and the conclusion of the study.

5.2 DISCUSSION OF FINDINGS

This study provides evidence of the experiences of specialists Intensive care nurses caring for mechanically ventilated patients in the Intensive Care Unit of an academic hospital in Johannesburg, Gauteng province. The findings showed that participants emphasised caring for the mechanically ventilated patient as involving the integration of nurses' feelings, nurses' knowledge and nurses' skills. Consistent with earlier studies that have investigated nurses' experiences of caring, it was found that caring was composed of affective, cognitive, action and outcomes sub-processes (Barr & Bush, 1997). Similarly, Beeby (2000) highlighted that nurses' experiences of caring comprised three major themes, which were: being involved, sustaining and being frustrated. Being involved described having concern for the patient, sustaining within caring means the nurse providing support for a patient, while being frustrated resulted from a variety of issues that obstructed nurses caring (Beeby, 2000).

In the first theme of this study, it was highlighted that participants emphasised vulnerability in the mechanically ventilated patient situation. This vulnerability is related to the unpredictable nature of the critical illness. The participants considered compassionate, caring interventions as ensuring the patient was made as comfortable as possible and also, that they were pain-free. Couchman *et al*. (2007) emphasised effective pain management is essential to achieving patient comfort.

Other comfort measures described by the participants when caring for the mechanically ventilated patient included providing an orientation to time and place. This provides comfort as the patient is kept in touch with reality, and the risk of disorientation is averted. This corresponds with nurses achieving comfort through compassionate caring for the mechanically ventilated patient, where comfort is recognised as central to patients' (changed according to examiners comment added apostrophe) experience (Wensely *et al.,* 2017). The findings revealed that offering reassurances and attentive listening as an expression of comfort was highlighted by the participants. They emphasised the need for nurses to develop feelings and have empathy for patients in their current situation. Beeby (2000) emphasised that having feelings for the patient was dependent upon the relationships formed with the patient and their family; these occurred when a rapport and affinity was felt for the patient. Displaying empathy was highlighted by the participants in this current study as having feelings that demonstrate the ability to place self in the family situation and assist them to walk through the period of hospitalisation of their loved one. Further, it was also suggested that maintaining patients' dignity and protecting their rights was an important nursing action when caring for mechanically ventilated patients and their significant others. Protecting the rights of vulnerable patients is an integral tenet in the patient's bill of rights and this also forms part of a nurse's ethical practice (Elliott, Aitken & Chaboyer, 2012; Urden *et al.,* 2008).

The current study demonstrated caring for the whole person included physical, psychological and spiritual care for patients and their family or significant others. This was because the family is an integral part of the patient; as such, the patient cannot be separated from their loved ones and nursed in isolation. Consistent with this finding is the number of studies that have investigated caring in the ICU setting, whereby families visualised nurses as part of their family and nurses; the same studies accepted patients and families as one unit. Hence the provision of holistic care that is patient- and family-centred (Karlson & Forsberg, 2008; Karlson *et al.,* 2012; Wang *et al.*, 2009). Families appreciated the caring nature of the nurses and the way they cooperated with them in the care of their critically ill relatives. Findings in this current study also suggested the need to help the patient to feel positive about their outcome of care, as this would only be achieved when the patient feels the family is happy with their progress of care. Engstrom *et al.* (2013) demonstrated

that the patients' family and their nurse are viewed as one unit, and they work together as a team to achieve a positive outcome for the patient. This was because involving the family in the care of the patient increases the bond between the patient and family, and assists the nurse in obtaining vital information about the patient from the family, thereby providing reassurances and hope for recovery. Consequently, patients yearned for recovery back to their optimal level of health, and discharge (Engstrom *et al.,* 2013; Karlson & Forsberg, 2008).

This *second theme* of the study provides evidence that knowledge was defined as acquiring technical competence, knowledge and experience, which helped nurses to become confident when caring for mechanically ventilated patients. The findings from the study show that knowing the patient was emphasised by the participants as vital, when caring for mechanically ventilated patients. In the Intensive Care setting, nurses have several key information sources they use continuously to support knowing the patient. These key sources are: gathering data on patient's vital signs, haemodynamic and respiratory parameters. The inclusion of diagnostic tests and laboratory values are also a source that the specialist Intensive care nurse can gain information about a patient. (Beeby, 2000; Kelley, Docherty & Brandon, 2013; Tanner, Benner & Chesla, 1996.(Sentence divided in to three instead of 1 as suggested by examiner Consistent with this finding are a number of studies that have examined nurses' experiences when caring for mechanically ventilated patients, where it was found that nurses also obtain information from documentation, such as ICU charts and hospital records, and verbal information from other members of the health team and from family (Kelley, Docherty & Brandon, 2013; Laerkner, Egerod & Hansen, 2015; O'Connell & Landers, 2008).

In this study, participants highlighted the important role that family plays in the treatment and recovery of the patient. Studies have underlined the importance of including the family in the care of the patient; this is because of the unplanned, unpredictable nature of severe illness and admission of a loved one to ICU. Laerkner, Egerod and Hansen (2015) and Samuelson (2011) pointed out the physical and emotional distress in their studies as experienced by mechanically ventilated patients and their families. The current study demonstrated nurses' caring for the relatives by offering explanations on treatments and use of technologies and

updating them on the progress of their loved one throughout the critical illness trajectory. Mitchell *et al.* (2009) also found relatives were glad when nurses included them in the care of the mechanically ventilated patient.

The findings show that caring was considered too complex in the mechanically ventilated patient and a high-risk procedure when left to inexperienced nurses in ICU who could not be trusted with the practice as they tended to separate the patient from the technology, resulting in a fragmented type of care delivery (Wikstrom, Cederborg and Johanson, 2007). Clinical competence is a combination of skills, behaviours and knowledge demonstrated by performance within a practice situation and specific to the context in which it is demonstrated (Elliott, Aitken and Chaboyer, 2012). This corresponds with nurses achieving competence through experience (Benner, Tanner & Chesla, 2009). Studies have shown that less experienced nurses' preferred managing technology rather than physical, personal and psychological aspects of caring for mechanically ventilated patients (McGrath, 2008). The findings in this current study show that nurses viewed technology as part of the patient and an integral part of nurses' caring for mechanically ventilated patients. Consistent with this finding, studies that have investigated the use of technology in intensive care have underlined the importance of technical knowledge when caring for a mechanically ventilated patient. Wikstrom, Cederborg and Johnson (2007) and Kongsuan and Locson (2011) indicated that technological competency or mastery involves compassionate caring. Contrasting with this view, Almerud *et al.* (2008) reported that technology creates a distance between the patient and the nurses.

It was also suggested in this current study, that the use of technology is helpful when caring for mechanically ventilated patients, this allows the nurse time for other essential caring activities, such as suctioning or providing pressure care for the patient. However, technology was also considered not so helpful when it malfunctions. Haghenbeck (2005) emphasised that nurses experienced frustration and anger, and became surprised and shocked when technology malfunctioned. This increased the risk of patients becoming dehumanised and depersonalised as they are controlled by lifesaving technologies (McGarth, 2008).

The findings revealed there are often circumstances when nurses must prioritise their caring activities according to the patients' haemodynamic status. Participants expressed they need to monitor patients' haemodynamic parameters and wait for the patient to become more stable before proceeding with their basic caring activities, such as bathing or attending to other hygiene needs. Consistent with studies that have investigated nurses' perceptions of caring for mechanically ventilated patients, it was found that situations warrant a ‘hands off the patient’ approach to allow the body some time to recover (Almerud *et al.,* 2008; Beeby, 2000; Wang *et al.,* 2009; Wikstrom, Cederborg & Johanson, 2007). Coyer *et al*. (2007) emphasised the importance of normalising the daily routine of the patient as this helps in reducing the psychological stressors that mechanical ventilated patients experience.

It was suggested that under certain circumstances when caring for mechanically ventilated patients, nurses may need to deal with critical situations, such as organ donation and end-of-life care situations. Consistent with this finding are the number of studies that have investigated nurses' experience caring for patients under difficult circumstances, and it was found that less experienced nurses find it more difficult to cope with stressors arising from these situations (Coombs *et al.,* 2015; Langley *et al.,* 2014; Latour, Fulbrook & Albarran, 2009). Langley, Kisorio and Schmollgruber (2015) found that nurses experienced considerable moral distress, which was compounded in an environment where gender, professional and social status inhibited nurses' assertive 'voice' and influenced the healthcare system; this increases the risk of burnout among nurses practicing in Intensive Care settings.

In the *third theme* of the study, the participants highlighted that an array of nursing skills are requisite when caring for mechanically ventilated patients.The nurse and patient interaction was highlighted by participants as essentially therapeutic and requiring integration of communication. A therapeutic relationship was identified by the participants as essentially important and integral to the delivery of holistic care. The importance of giving information to patients was described as reducing anxiety, and also overcoming barriers to interaction in the unconscious or unresponsive patients (Coyer *et al.,* 2007; Samuelson, 2011). This study also highlighted the inability of the mechanically ventilated and intubated (presence of an endotracheal

tube) patient to verbalise their care needs and wishes. Amoah *et al.* (2019) supported the importance of therapeutic communication in reducing related environmental issues that pose barriers to effective communication.

The participants emphasised the importance of understanding the basic care needs of the patient, as this forms the fundamental care interventions required for the patient. Maslow found that all human beings have five levels of need to be satisfied; from the bottom up the needs are physiological, safety, love and belonging, esteem and self-actualisation (Mcleod.S.A.2020). The current study demonstrated basic care needs undertaken by nurses on behalf of the patient, such as bathing, combing hair and taking care of pressure areas. Burns and Day (2013) and Beeby (2000) highlighted that taking care of the basic needs is performed routinely at regular intervals when caring for a mechanically ventilated patient. Findings in this current study also suggested the importance of taking care of the thirst need, as mechanically ventilated patients often suffer from dry mouth. Consistent with studies that have explored nurses' ability to manage the thirst need of mechanically ventilated patients, wetting the lips or sucking ice helped to avert patient's experience of discomfort (Carraacal, 2015; Coyer *et al.,* 2008). In this study, suctioning was emphasised as part of the patient basic care. However, this is not correct, as current evidence suggests that suctioning is no longer a routine procedure (Elliott, Aitken & Chaboyer, 2012). Suctioning a patient according (Elliott, Aitken & Chaboyer, 2012) requires an in-depth assessment of the need to do endotracheal suctioning on the individual mechanically ventilated patient. Endotracheal suctioning is a high-risk invasive procedure that carries an increased risk of complications, such as physical discomfort, nosocomial infections and ventilator-associated pneumonia.

Finding in this study revealed that participants highlighted the importance of professional support when caring for mechanically ventilated patients. Expressions used by these participants to describe supportive care included providing information, giving hope, offering reassurances. Thus the emphasis was placed on reducing stress, allaying anxiety and preventing post-traumatic stress disorder (PTSD) in the long-term. Consistent with these finding is the number of studies that have investigated the mechanically ventilated patient development of complications

once discharged from the intensive care unit. The main complication that has become a concern is: Post-ICU syndrome. The latter statement regarding post ICU syndrome demonstrates the importance of professional support for patients and their family members in order to prevent immediate and long-term complications (Samuelson, 2011). Other studies have shown that the presence of relatives in the Intensive Care Unit assisted in the orientation of patients to time, place and person. The latter made the mechanically ventilated patient feel safe as well as encouraged them to focus on their recovery. (Cutler, Hayter & Ryan, 2013; Zetterlund et al., 2012). Participants in this current study agreed with these authors. Engstrom, Uusitalo and Engstrom (2011) whom also emphasised that relatives form a vital part of patients' lives; therefore, they should be involved in their relatives care. (Sentence changed and edited by editor)The mechanically ventilated patients' relatives need to be included in their care as they will be the ones needed in helping the patient in their recovery period. The current study also demonstrated a need for nurses to extend supportive behaviours to colleagues, as this made it easier to provide efficient caring for mechanically ventilated patients. Teamwork and interdisciplinary collaboration is recognised as a central tenet for Intensive Care nurses, as the care needs required for patients are complex and become complicated (Elliott, Aitken & Chaboyer, 2012).

This study illustrated that participants experienced caring for the dying patient as rewarding with respect to end-of life-related decisions taken for patients with poor prognosis, as well as knowing the patient received caring nursing for a peaceful and pain-free death. They further expressed that ensuring the patient was nursed to optimal health was equally rewarding.

The findings show that participants highlighted some difficulties and obstacles for nurses to overcome when caring for mechanically ventilated patients and their loved ones. A shortage of staff made it difficult to perform interventions or procedures that required an additional pair of hands, such as bathing or when turning an unstable patient. Cypress (2010) reported that nurses experienced extreme physical distress due to staff shortages, as this could result in inefficient delivery of patient care. In turn, this could lead to increased risk of irreversible complications, such as accidental removal of an endotracheal tube, for a critically ill patient. Lack of time to

complete assigned tasks when caring for a mechanically ventilated patient with other additional care needs created extreme stress and frustration for some nurses. Coyer *et al.* (2007) highlighted that standardising procedures in Intensive Care would help nurses to better organise their workload, which would reduce a feeling of failure, stress and frustrations.

The findings revealed that participants emphasised the patients' inability to communicate as the endotracheal tube required to institute mechanical ventilation bypasses the vocal cords. The suggestion of giving the patient a pen and paper with which to write was time consuming and not helpful, as the writing was illegible when the patient was receiving an analgesic, such as morphine for pain control. Holm and Dreyer (2015) stated that both nurses and patients became frustrated and developed negative feelings when trying to understand each other. The findings also showed that some of the participants found it difficult communicating with a non-responsive patient; other participants found it difficult to read lips when patients attempted to mouth words. A number of studies have investigated nurses' communication interactions with mechanically ventilated patients, and found that a number of augmentative or alternative communication (AAC) strategies are commonly used (Amoah, *et al.,* 2019; Happ *et al.,* 2011; Nielsen, Sereika & Happ, 2013). AAC is the use of aided and unaided alternative interventions designed to supplement or replace verbal communication, such as gestures, body language and sign language, and low-tech options such as pen and paper, picture boards, alphabet boards, as well as high tech options, such as speech and written output devices (Beukelman & Mirenda, 2013).

Some of the participants suggested that lighter sedation prescriptions created problems for nurses when caring for mechanically ventilated patients, because there was now an increase in the number of physically restrained patients observed as a substitute practice (Benbenshity, Adam & Endacott, 2010; Langley, Schmollgruber, Egan, 2011). Consistent with these finding are the number of studies which have investigated the use of physical restraints. Physical restraints help to prevent treatment interferences, promote patients' (grammer corrected and 2nd sentence revised as examiner requested). safety and reduce the risk of self-extubation. (REF) Strom, Stylvig and Toft (2011) and Tingsvik *et al.* (2013) found increasing evidence

that suggests deep sedation has negative outcomes for mechanically ventilated patients, as this resulted in increased stress, delirium, patients' expressing degrees of fear, prolonged intubation and ventilation time and increased ICU stay, leading to ventilator-associated pneumonia and delirium. Contrary to this, findings in this study revealed some of the participants preferred sedated patients as this allows them time to take care of other care activities, whereas more experienced participants were opposed to this practice. Choe, Kang and Park (2015) reported in their study that nurses felt they were violating the fundamental human rights of the patients and self-respect by restraining them. Jiang *et al.* (2015) highlighted that nurses often initiated physical restraints without a written medical order.

5.3 APPLICATION OF THEORY TO FINDINGS

When applying the Swanson's Theory of Caring to the findings, knowing the patient was identified as a critical aspect that specialised ICU nurses needed to show they are competent in. The development of an ongoing therapeutic relationship assist the specialised ICU nurse to show they care holistically for the mechanically ventilated patient. Despite differences in views about nurse-family relationships, most of the participants agreed that knowing everything about the patient was through meaningful interactions with the family, because this helped nurses to acquire personal facts about the patient's choices and wishes as a person. These findings are consistent with the theory of caring, which enabled nurses to have adequate knowledge of the patient, thus provide undivided attention to the patient by understanding their needs for caring interventions.

Being with the patient incorporated nurses' feelings and being emotionally present and supportive to the individual needs of the patient and their family (or significant others). Being with patients was evident through the participant's expressions of comforting actions for the patient and their family (or significant others), such as reassuring, listening and showing empathy for the patient situation.

Enabling involved doing for self and others what they are unable to do themselves, anticipating basic care needs, providing protection from harm and suffering, and ensuring the dignity of the patient and their family (or significant others) is preserved.

It also included informing the patient of procedures used in their management and providing support for both patients and their family as one unit. Participants expressed the need for meaningful nurse-patient interactions, which incorporated explaining and providing professional support for the patient and the family by giving hope, involving relatives in the care of the patient as this would help them to achieve a positive outcome, and in the event this was not possible, participants also viewed a good death for the patient and their family as a positive outcome.

5.4 SUMMARY OF THE STUDY

The main purpose of this study was to describe the experience of Intensive Care nurses caring for critically ill mechanically ventilated patients in Intensive Care Units of an academic hospital in Johannesburg.

The following objectives were set to achieve the purpose of this study:

- To describe the experiences of registered ICU nurses caring for mechanically ventilated patients in two ICUs of an academic hospital in Gauteng.
- To explore what barriers and enablers affect the experiences of the ICU nurses, in caring of mechanically ventilated patients in two ICUs of an academic hospital in Gauteng.

The objectives of the study were met using a descriptive qualitative research design, which aided in gaining an understanding of the experiences of nurses caring for mechanically ventilated patients in an academic hospital in Johannesburg. A purposive sampling method collected a sample of registered Intensive Care nurses working in the General and Trauma Intensive Care Units of an academic hospital in Johannesburg, Gauteng Province, which was the study setting.

Data collection was done using in-depth interviews, which was to obtain the information as verbalised by the participants. Data saturation occurred after 10 interviews, were conducted and verbatim transcription of the audiotaped interviews was done. The audiotaped transcribed data were analysed using Braun and Clark's

(2013) thematic analysis. The application of Lincoln and Guba's (1985) method of trustworthiness, as cited in Polit and Beck (2012), which includes credibility, dependability, confirmability and transferability ensured the trustworthiness of the study.

5.5 LIMITATIONS

In this study, the researcher acknowledged the following limitations:

As this study used a qualitative design only (n=10) participants participated in this study. This cannot be seen as a generalising of all specialised and experienced ICU nurses whom have had experiences caring for mechanically ventilated patients

This study sample was small (n = 10) and conducted in only two Intensive Care Units in a single hospital in one region in South Africa.

At times, it was difficult for some participants to get to planned interviews due to an unexpected increased workload or pressure in the Intensive Care Unit. (workload on some days appointments were made had to be cancelled and rescheduled which prolonged the time for data collection to occur. Some participants didn't get to partake as they were going on leave.

A purposive sampling method chose the study participants; hence, those who agreed to participate could hold certain viewpoints on the topic and this may have influenced their responses.

5.6 RECOMMENDATIONS

The findings of this study provide an insight into the perceptions of Intensive Care nurses regarding their experiences of caring for mechanically ventilated patients in ICU. The findings demonstrated that caring for mechanically ventilated patients comprised of three components - nurses' feelings, nurses' knowledge and nurses' skills. These findings have implications regarding caring for nursing practice, education and further research.

5.6.1 Nursing Practice

The findings of this study have highlighted some challenges as experienced by nurses when caring for mechanically ventilated patients. These relate to best practice recommendations in medical treatment options, such as lighter sedation, which has led to increased use of physical restraints as a non-chemical substitute for sedation practices; it has also raised ethical challenges for some nurses when caring for mechanically ventilated patients.

The multidisciplinary team needs to be informed by the Specialised ICU nurse, on the difficulties in nursing a patient that is mechanically ventilated using light sedation.

Nurses have some variations in their views regarding the use of physical restraints. The current and widespread use of physical restraints is a controversial concern globally, because of the physical and psychological, both short- and long-term, consequences for patients. It is thus imperative that Intensive Care nurses receive training in this regard. The implementation of alternative non-restraining strategies would be beneficial.

5.6.2 Nursing Education

Members of nursing education and key stakeholders will receive the findings of this study to highlight the need for training. Training will enhance the focus of nurses within the clinical area, and it is imperative that continuous professional development in terms of the current best practice recommendations in clinical practice occurs.

Nurse educators need to collaborate with nurses currently working in clinical practice; this will facilitate collaborative approaches and innovative solutions to the challenges faced by clinical nurses and patients.

Findings in this study further revealed that the nurses often used physical restraints to prevent treatment interference. Hence there is a need to educate the intensive care nurses on the importance of providing a 1:1 patient- staff ratio, as this would

aid in reducing the use of restraints in the ICU.

Communication was a significant barrier, as expressed in the study, in providing quality nursing care for these patients. Nurses need educating in understanding, initiating and utilising appropriate communication skills for these patients, aimed at improving a better understanding between the nurse and the patient. Thus, the achievement of positive patient outcomes could be achieved.

5.6.3 Further Research

The conducting of the study was in one hospital, in one single province, and this hinders generalisation of the findings.

Repeating the study on a broader basis, such as in the private sector, could validate or refute the findings.

The study focused on highly experienced and knowledgeable Specialised ICU nurses who had experience in caring for the mechanically ventilated patient, and excluded non specialised nurses working in the ICUs. It is possible to replicate this study by including non-specialised nurses whom are working in the ICUs nursing patients that are mechanically ventilated.

Additional research is required in terms of the mechanically ventilated patients' perceptions and experiences of care in Intensive Care Units. A separate study could obtain the perspectives from the family of the mechanically ventilated patient.

Research could be conducted in terms of nurses' experiences of caring for critically ill non-sedated ventilated patients in Intensive Care Units. This could be as an intervention study (using two arms -experimental and control), whereby a non-sedation protocol could explore and compare the experiences of nurses caring for non-sedated patients requiring mechanical ventilation.

5.7 CONCLUSION

This study explored the nurses' experiences of caring for mechanically ventilated patients in the Intensive Care Unit. The study demonstrated that nurses considered caring to be three integral components, namely nurses' feelings, nurses' knowledge and nurses' skills for effective delivery.

The importance of nurses’ feelings was evident in the delivery of compassionate interventions that would ensure comfort in vulnerable patient situations. Technical knowledge, knowledge and professional experience were a prerequisite for caring in the "high tech" ICU environment. Nurses' skills (advanced and basic) are vital in maintaining and sustaining nurse-patient interactions, which are inherently therapeutic. The findings strengthened understanding nurses' experiences of caring.

However, there were some obstacles found relating to the implementation of current best practice treatment directives that pose challenges for nurses' caring. Included among these were light sedation and consequent increased use of physical restraints in the care of mechanically ventilated patients, and the recommendations are for clinical practice, education and further research.

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APPENDIX A

STUDY INFORMATION DOCUMENT
THE NURSES' EXPERIENCE IN CARING FOR MECHANICALLY VENTILATED PATIENTS IN THE INTENSIVE CARE UNIT OF AN ACADEMIC HOSPITAL IN GAUTENG

Dear Colleague,

I am Nkeiruka Judith Mbachu, a registered postgraduate student in the Department of Nursing Education at the University of the Witwatersrand. I am doing research on the experiences of nurses caring for mechanically ventilated patients in the Intensive Care Unit. Research is a process used to make a scientific enquiry and seek new knowledge, which enables the use of facts and arrival at new conclusions. In this study, I want to learn more about the experiences of nurses while caring for patients mechanically ventilated. This is a study that involves research into the experiences of nurses during their course of care to patients mechanically ventilated, and is being done because there is a gap in the literature about such caring in Africa.

I am inviting you to take part in my research study. Your involvement in this study will entail or require you to sign a consent form, which affirms your willingness to participate in the study. Questions posed in the interview will be about your experiences of caring for mechanically ventilated patients. With your consent, your interview will be audiotaped. The anticipation is that this study will start August 2018 and end December 2018. The conducting of the interview will be in a quiet place outside the Intensive Care Unit of the academic hospital used for this study. I anticipate the interview process will take 40 minutes to 1 hour to complete.

There is a risk for psychological stress involved in this study, because interviewing nurses on their experiences can provoke bad memories. The researcher will ensure the provision of psychological support should any of the participants experience psychological stress during the interview, as a psychological counsellor will be available.

I appreciate there is no direct benefit for your participation in this study, but I hope this study when completed, will describe the experiences of nurses caring for mechanically ventilated patients and add to the body of knowledge of the existing literature regarding this topic.

Participation in this study is voluntary and refusal to participate will not affect the position you are currently occupying in this institution; you may discontinue participation at any time

without any penalty or loss of any benefit to which you are entitled. You are not required to provide any reason for your decision to withdraw from the study and any data collected from you will be destroyed, except if you specifically consented to its retention.

There will be reimbursement of “out of pocket” expenses, but there is no payment or cost associated with participation in the study.

All personal information will be treated in the strictest of confidence, and will only be available to the principal investigator and her supervisors. However, exceptions are:

1. The disclosing of personal information if required by law
2. The Human Rights Ethics Committee of the university may require personal data in order to respond to a formal complaint or for a compliance audit
3. If results are published this may lead to a cohort, or more rarely, individual identification.

All the data collected during the course of this study will be retained securely for two years if a scientific publication arises from the study and six years if there is no publication and then destroyed

If you require additional information, you are free to contact me on my email at 1592923@students.wits.ac.za or telephonically on 078 374 2069.

You can contact my supervisors should you require additional information: Professor Shelley Schmollgruber at shelley.schmollgruber@wits.ac.za, or Ms. Vivien Herbert at Viv.Herbert2@wits.ac.za, phone number 011 488 4804

I hope the completed study will describe the experience of nurses caring for mechanically ventilated patients in Intensive Care Units. After completion, the results of the output will be available should you wish to have a copy.

The Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg (“Committee”), approved this study. A principal function of this Committee is to safeguard the rights and dignity of all human subjects who agree to participate in a research project and the integrity of the research.

If you have any concern about the study and the manner in which it is conducted please contact the Chairperson of this Committee, Professor Clement Penny, on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the

Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za.

Thank you for reading the information sheet.

19th of June 2018

APPENDIX B

THE NURSES' EXPERIENCE OF CARING FOR MECHANICALLY VENTILATED PATIENT IN THE INTENSIVE CARE UNIT OF AN ACADEMIC HOSPITAL IN GAUTENG

CONSENT FORM FOR PARTICIPATION IN THE STUDY

I, ……..(Name) give my consent to be incorporated in this research study.

I have read the study information document and understood the content. I have been given the opportunity to ask questions that are of concern to me regarding the procedures in the study and my consent to be part of the study.

I hereby declare my voluntary participation in the study.

Date ……... Signature ……

APPENDIX C

CONSENT FOR AUDIO-TAPE RECORDING DURING THE STUDY INTERVIEW

I……. (Name), having been well informed on the purpose of audio-taping this interview, hereby give my consent to have the interview audio-taped for the study titled “The nurses’ experience in caring for mechanical ventilated patients In the ICU of an academic hospital In Johannesburg, Gauteng Province.”

Date ……. Signature ……..……..

APPENDIX D

THE NURSES' EXPERIENCE IN CARING FOR MECHANICALLY VENTILATED PATIENTS IN THE INTENSIVE CARE UNIT OF AN ACADEMIC HOSPITAL IN GAUTENG

INDIVIDUAL INTERVIEW GUIDELINES

UNSTRUCTURED QUESTION

"With your current and previous experiences in the care of mechanically ventilated patients, please can you tell me what is it like caring for critically ill patients on a mechanical ventilator in the ICU?

INFORMATION TO BE ELICITED

- Relate your experiences of caring for patients on mechanical ventilation.
- Share personal stories to stimulate your recollections and to provide rich data (people/equipment) used in the care of the patient
- Tell me more about mechanical ventilation and how the level of sedation can be accessed
- What is your opinion of family members being present during routine nursing care to their loved ones on a ventilator
- Does mechanical ventilation have any effect on the family members of patients on a ventilator
- Is there anything else participants want to share?

Thank you for your time.

You will receive the proceeds of this discussion for validation after transcription of this interview of your experiences of caring for patients on a mechanical ventilator.

APPENDIX E

THE NURSES' EXPERIENCE IN CARING FOR MECHANICALLY VENTILATED PATIENTS IN THE INTENSIVE CARE UNIT OF AN ACADEMIC HOSPITAL IN GAUTENG

SECTION A: DEMOGRAPHIC DATA

Please read each item below and place an X at the correct answer or fill in the correct response where required.

1. What is your gender?

Male	
Female	

2. How long have you been working in an Intensive Care Unit?

3. As a registered nurse, what position do you hold in the Intensive Care Unit?

Professional nurse	
Unit manager	
Shift leader	
Clinical facilitator/mentor	

4. As a registered nurse, do you hold an additional qualification with SANC?

Yes	
No	

5. If the answer to question 5 is yes, indicate which qualification(s):

_____

_____

APPENDIX F

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

R14/49 Nkeiruka Judith Mbachu et al

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M180531

NAME: (Principal Investigator)	Nkeiruka Judith Mbachu et al
DEPARTMENT:	Nursing Education - School of Therapeutics Charlotte Maxeke Johannesburg Academic Hospital
PROJECT TITLE:	The nurse's experience in caring for mechanically ventilated patients in the intensive care unit of an academic hospital in Gauteng
DATE CONSIDERED:	25/05/2018
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Prof Shelley Schmollgruber
APPROVED BY:	Professor CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	13/08/2018

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on the Third Floor, Faculty of Health Sciences, Phillip Tobias Building, 29 Princess of Wales Terrace, Parktown, 2193, University of the Witwatersrand. I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report**. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in **May** and will therefore be due in the month of **May** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX G

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

CHARLOTTE MAXEKE JOHANNESBURG ACADEMIC HOSPITAL

Enquiries:
Ms. G. Ngwenya
Office of the Nursing Director
Tell: (011): 488-4558
Fax: (011): 488-3786
20 August 2018

Mrs. Judith Nkeiruka
Department of Nursing Education
University of Witwatersrand
NHRD REF: GP_201807_011

Dear. Judith Nkeiruka

RE: **"The nurses experience of caring for mechanically ventilated patients in the intensive care unit of an Academic Hospital in Gauteng"**

Permission is granted for you to conduct the above recruitment activities as described in your request provided:

1. Charlotte Maxeke Johannesburg Academic hospital will not in anyway incur or inherit costs as a result of the said study.
2. Your study shall not disrupt services at the study sites.
3. Strict confidentiality shall be observed at all times.
4. Informed consent shall be solicited from patients participating in your study.

Please liaise with the Head of Department and Unit Manager or Sister in Charge to agree on the dates and time that would suit all parties.

Kindly forward this office with the results of your study on completion of the research.

Supported / ~~not supported~~
Ms. M.M Pule
Nursing Director
Date: 20/8/2018

Approved / not approved
Ms. G. Bogoshi
Chief Executive Officer
21.08.2018

APPENDIX H

Gill Smithies

Proofreading & Language Editing Services

59, Lewis Drive, Amanzimtoti, 4126, Kwazulu Natal

Cell: 071 352 5410 E-mail: moramist@vodamail.co.za

Work Certificate

To	Ms. V Herbert
Address	Dept. of Nursing Research, University of Witwatersrand.
Date	02/11/2020
Subject	Research Report: THE NURSES' EXPERIENCE IN CARING FOR MECHANICALLY VENTILATED PATIENTS IN THE INTENSIVE CARE UNIT OF AN ACADEMIC HOSPITAL IN GAUTENG, by J.N. Mbachu
Ref	GS/VH/03

I, Gill Smithies, certify that I have proofed the following for language, grammar and style,

Research Report: The nurses' experience in caring for mechanically ventilated patients in the Intensive Care Unit of an academic hospital in Gauteng, by J. N. Mbachu,

to the standard as required by Wits Dept. of Nursing Education.

Gill Smithies