NURSES' COMMUNICATION WITH MECHANICALLY VENTILATED PATIENTS IN THE INTENSIVE CARE UNITS

by

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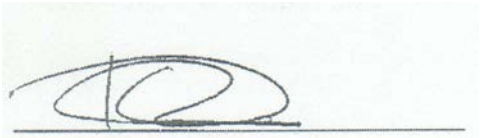
DECLARATION

I declare that **NURSES' COMMUNICATION WITH MECHANICALLY VENTILATED PATIENTS IN THE INTENSIVE CARE UNITS** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that the work has been not submitted before for any other degree at any other institution/



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ABSTRACT

Critically ill patients experience overwhelming communication problems; caused by intubation and cognitive, sensory or language deficits that distance the patients from communicating their needs and wants from nurses and loved ones. The purpose of this study was to explore communication patterns and strategies with the aim of implementing intervention strategies for nurse/patient communication in the intensive care units. The American Association of Critical Care Nurses' Synergy Model for Patient Care was used to guide the study. A mixed method approach using quasi-experimental design combining quantitative and qualitative data collections and analysis was used. Concurrent data collection for quantitative and qualitative data was used. Auditing of patient's files, protocols, family counselling conference and in-service books and a survey for nurses was used for quantitative data. Qualitative data collection was through interviewing nurses and nurse managers.

Lack of documentation and use of other communication strategies were the key findings of the study. In accordance with the model used for the study clinical judgment and moral distress were found to be common among nurses. Lack of collaboration between nurses and other health care workers was also attributed to poor communication with mechanically ventilated patients. Conclusions derived from the study are that nurses need to be supported through informal and formal training on documentation and use of communication methods available.

Key words:
Botswana; intensive care; nurse-patient communication; nurse-patient communication interactions; Synergy Model for Patient Care, ventilated patients.

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Dedication

This thesis is dedicated to the memory of my late father, Mr Bolekane Nthobatsanag and my beloved mother, Keakabetse Senna Nthobatsang whose wish was to see me educated and independent.

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AAC	Augmentative and Alternative Communication devices
AACN	American Association of Critical Care Nurses
AIDS	Acquired Immune Deficiency Syndrome
CARNA	College and Association of Registered Nurses of Alberta
CDC	Centre for Disease Control
ETT	Endotracheal Tube
HIV	Human Immunodeficiency Virus
ICN	International Council of Nurses
ICUs	Intensive Care Units
IPMS	Integrated Patient Management System
MoH	Ministry of Health
USA	United States of America

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CHAPTER 1

ORIENTATION OF THE STUDY

1.1 INTRODUCTION

There is an increase in the incidence of morbidity rate in Botswana because of road traffic accident and Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) related illnesses (Republic of Botswana 2008:4). The number of road and traffic accident in Botswana has steadily increased over the years (Motor Vehicle Accident Fund Report 2010:8). According to the Botswana Central Statistics 39% (7 639) were victims of trauma related to road traffic accident (Republic of Botswana 2007:9). Most of these patients sustained traumatic injuries that need intensive care and rehabilitation.

Besides motor vehicle accidents, other life threatening conditions such as ischemic heart disease, cardiovascular disease, tuberculosis, lower respiration infections, and diarrheal diseases, to name few if not managed early result into complications which warrant patient to be mechanically ventilated (Bhagat 2008:1).

In intensive care units (ICUs) critically ill patients constitute the primary focus of health care professionals. Communication with these patients then becomes paramount (Williams 2005:6). A dearth of literature in Africa, and in particular Botswana on communication with non-speaking patients suggests that communication with critically ill patients may be limited or not at all happening. Critically ill patients experience overwhelming communication problems; caused by intubation and cognitive, sensory or language deficits that distance the patients from communicating their needs and wants from nurses and loved ones (Happ, Tuite, Dobbin, DiVirgillio-Thomas & Kitutu 2004:210). Mechanical ventilation and use of paralytic and sedative agents impair communication between patients and others.

Communication is an essential component of the nurse therapeutic role which cannot be delegated to anyone else for it to have a lasting effect over time. Patients in the ICU

are often sedated and ventilated. The situation may challenge nurses from employing any form of communication (Happ 2001:247). Communication with the mechanically ventilated patients would have a double effect where both the families and the patients will be satisfied with the care given through provision of information and explaining procedures even though there may be no response (Carroll 2007:1165). When patients are communicated with both before and during the ventilation, there is usually less confusion and more cooperation from the patients and their families (Carroll 2007:1165). Previous studies (Alasad & Ahmad 2005:356; Happ, Garrett, Thomas, Tate, George, Houze, Radtke & Sereika 2011:e28) on communication with mechanically ventilated patients have emphasised compassionate and direct communication skills as they will not only help the patient to cope with thedifficult situation, but it will strengthen nurse-patient relationships and thus confers therapeutic benefit to the patients.

1.2 BACKGROUND

Numbers of patients admitted in ICUs are increasing in Botswana especially with the HIV and AIDS epidemic and high prevalence of road traffic accidents, leading to increased incidents of mortality and morbidity rates (Motor Vehicle Accident Fund Report 2010:8). The ICU patients have life-threatening situations because of severe respiratory impairment. These patients are often unconscious at the time of admission, and are unable to maintain ventilation spontaneously; resulting in being intubated for ventilator support and/or sedated. In subsequent years, these patients were treated for long term ventilation with other conditions such as neurological conditions and the treatment has made remarkable improvement in the life expectancy of many patients with respiratory problems (Prigent, Samuel, Lous, Abinum, Zerah-Lancne & Lejaille 2003:114). In Botswana, treatment of respiratory failure using ventilator is a new treatment that started around 1980s (Republic of Botswana 2007:10).

Mechanically ventilated patients are periodically non-vocal because the upper airway passage is blocked by the endotracheal tube or tracheal cuff. The blockade affects voice production. One way of enhancing speech production is through decuffing of the cannula to allow exhaled air through the upper airway to enable the individual to breathe. However, evidence from literature shows that patients still experience poor voice production as natural voice become decreased and breathing increases, resulting in reduced loudness and longer pause (Laakso 2011:14).

The admission of patients in these units usually occurs as an emergency and as such patients are usually not prepared for admission in this area. Nurses are challenged to develop skills and specialisation in all areas of work. In light of scientific development, the International Council of Nurses (ICN) (2007:1) acknowledges the need for nurses to adapt and expand their knowledge to meet societal changes. Although ICN's position statement (ICN 2007:1) specifies that the scope of nursing is not limited to specific tasks, functions or responsibilities, it includes offering direct care and evaluating its impact and advocating for positive patients outcomes. Since the scope of practice is dynamic, because of developments in knowledge and technology, it is necessary to have periodic reviews to enable practice to be consistent with current health needs and supported for improved patient outcome. At the same time, it is noted that nurses are responsible to further their education, to expand their roles in various settings of nursing practice, patient care and for improvement of patient outcomes (ICN 2007:2). However, from the researcher's observation, the nursing curricula for both Diploma in General Nursing and Bachelor of Nursing Science do not emphasise nurse-patient communication with ventilated patients. This situation is made worse by the fact that there are very few intensive care nurses in Botswana.

1.2.1 Communication

Communication among health care providers is one of the most important factors associated with quality of care and patient safety, especially in ICUs. Communication is an integral part of nursing practice because nurses communicate with patients not only for therapeutic reasons such as providing reassurance, discussing feelings and emotions, but also for sharing information and for advice and counseling. Communication reflects our social worlds and helps us to construct it (Alasad & Ahmad 2005:356). The dignity of mechanically ventilated patients needs to be respected through communication. Communication is a vehicle through which rapport between nurses and patients is developed and maintained (Happ et al 2011:e28).

Communication is described as interaction in which a positive patient's action yields a positive nurse's reaction and vice versa. Sayler and Stuart (1985:22), Hall (1996:293) and Ashworth (1984:35) defines communication as the exchanging information between two persons that could be through verbal or nonverbal behaviors such as lip reading,

signs, gestures and pen and paper. From all the studies quoted here, it is clear that communication is vital to human beings and these include those who are mechanically ventilated. The purpose of this study is to promote communication among the mechanically ventilated patients.

1.2.1.1 Communication in the ICU

Evidence from literature show that verbal communication or face-to-face communication is the preferred mode of communication in the ICUs (Moss, Xiao & Zubaidah 2002:S74). Nurses in the ICU do not usually communicate with patients because of the nature of the ICU environment leading to communication breakdown (Happ et al 2011:e28). However, high quality communication is important to facilitate patient-centred care (Slatore, Hensen, Ganzini, Press, Osborne, Chesnutt & Mularski 2012:410). The importance of communication in the ICUs requires that nurses who work with these patients should be well equipped with the knowledge of communication.

There are various strategies that may be used to assist nurses to communicate effectively in the ICU. One teaching strategy used with practicing nurses that has proved useful is interactive workshops. In one study that used a one-day interactive continuing education workshop; designed to improve interactions among multiprofessional ICU clinicians and families, effective nurse-patient communication was associated with improved patient outcomes. In another study, that used systematic review of data on the impact of communication on various health outcomes gathered from a series of randomised controlled trial, these analytic studies revealed that effective communication correlated with improved patient outcomes (Happ et al 2011:e28). Moreover, this study identified elements of effective communication with favourable impact on reducing the levels of anxiety when patients were encouraged to ask questions and to share in decision making. In addition to favourably affecting a patient's emotional health, effective communication was associated with improvements in symptom (Hales & Hawryluck 2008:249).

Evidence suggests that training communication skills through interactive approach can also be effective. Krimshtein, Luhrs, Puntillo, Cortez, Livote, Penrod and Nelson (2011:1325), in New York-New Jersey region effected 1-day educational intervention in five acute care hospitals, focusing on communication skills for nurses. In order to

facilitate understating, role-play was used to allow participants to practice newly learned skills; as well as encouraging participants to freely discuss their impressions of the exercise or explore difficulties that they may encounter during the workshops. The workshops were well received by nurses, despite some discomfort with role-playing. Also self-reported communication skills showed improvement after the workshops with nurses (Sargeant, McLeod & Murray 2011:265). Exploration of the nurses' perceptions about communication knowledge and skills, barriers encountered while communicating with ventilated patients before and after communication, and skills drawn from seminars is limited in both developed and developing countries.

1.3 STATEMENT OF THE RESEARCH PROBLEM

Problems associated with the inability to speak during critical illness are well documented in literature (Happ et al 2011:e28; Magnus & Turkington 2006:168). The actual process of nurse patient communication in the ICUs has not been well studied or systematically evaluated. Lack of this knowledge makes it impossible for the development of appropriate and evidence-based standards for communication with non-speaking critically ill patients, especially the mechanically intubated patients.

Nurse-patient communication is important as the continuity of care may seriously be compromised when failing to communicate with ventilated patients in the ICU. Hofhuis, Spronk, Van Stel, Schrijvers, Rommes and Bakker (2008:300) have indicated that patients perceive that when nurses provide them with information and explanation on nursing activities and treatment, their anxiety and stress levels are reduced. Moreover, patients appreciate nurses involving them and their family members in decision-making (McKinley, Nagy, Stein-Parbury, Bramwell & Hudson 2002:27). Studies on nurse-patient interaction have shown that nurses communicate minimally with ventilated patients and do not assess these patients for communication needs (Ashworth 1984:35; Sayler & Stuart 1985:22; Hall 1996:295). Several studies have been conducted on nurse-patient interactions with ventilated patients internationally with the aim to improve patient care (Alasad & Ahmad 2005:356; Patak, Gawlinski, Fung, Doering & Berg; 2004:308, Happ et al 2011:e28). In light of these findings, organisations such as the Joint Commission in USA (2010:803) recommended communication standards that nurses should use while communicating with patients. These standards are important during care of ventilated patients in order to improve their outcomes in the ICUs.

The researcher has observed that patients who are mechanically ventilated are not directly spoken to. Communication is through family members and most of the time the needs of mechanically ventilated patients are assumed by the health care providers. The ICU nurses generally receive little or no formal training in communication techniques, and they have limited access or support for alternative communication methods and strategies while working in the ICU.

During the literature search for studies on communicating with mechanically ventilated patients, the researcher found no studies relevant to this topic done in Botswana and the whole of Africa. It is within this premise that such a study would close the gap as it will be carried out within the African context.

1.4 STUDY SIGNIFICANCE

The ability to communicate well with patients and their relatives is a fundamental clinical skill in the intensive care unit, and is central to good quality care in nursing practice. Equipping registered nurses with communication skills will help them overcome communication barriers with ventilated patients, improve patient safety, reduce complaints and lessen work-related stress and frustration.

Effective communication with mechanically ventilated patients has both practical and theoretical implications. The nurses would be able to improve the quality of their care and that would have a ripple effect on patients and the health care system in general. Documenting the findings would further add to best practice manuals that both the ministries of Health and international organisations would use. It is also evident that such a study from an African context would add to the scanty body of knowledge and bridge the current gap in information.

Currently, there are no standards of care in the ICUs in Botswana regarding communication with critically ill patients, especially the mechanically ventilated, who are the focus of the present study. The solicited data will enhance evidence-based discourse in the field of communication. The results of this thesis will provide valuable data for policy formulation and future health care planning for health care in the ICUs. It

will offer rich insights into the benefits of adequate communication for mechanically ventilated patients and their families.

The results of this study would also make a significant practical contribution in the implementation of appropriate strategies used in communicating with the non-speaking patients. The American Association of Critical Care Nurses [AACN] Synergy Model of patient care adopted for this study will give further insight into the importance of nurse-patient communication in the ICUs.

Since there is pronounced dearth of literature in Africa, and especially in Botswana on communication with mechanically ventilated patients, this study closes that gap. Efforts to improve communication should be built on the strengths and weakness of existing practices and this study has served that purpose.

Finally, the findings of this study will provide the basis for the formulation of future research questions that can be explored in other African countries. Particularly, research in Botswana ICUs one year after the incorporation of this study in the mainstream of care, would benefit the health care administrators, medical doctors, nurses, and patients alike.

1.5 PURPOSE OF THE STUDY

The purpose of this study is to observe, describe and explore nurses' communication with mechanically ventilated patients in the intensive care units (ICUs).

1.6 RESEARCH OBJECTIVES

Research objectives borne out of the purpose of the study and the research problem are to

- conduct an audit of the practices, facilities and existing policies on nurses communicating with ventilated patients and on in-service education books in Princess Marina and Nyangabwe Referral hospitals in Botswana

- evaluate existing knowledge and skills for assessing communication abilities and strategies that nurses use to communicate with ventilated patients
- discuss nurses' experiences and perceptions before and during the intervention when communicating with patients in the ICUs in the two referral hospital ICUs in Botswana

1.7 RESEARCH QUESTIONS

- Are there any existing policies on communicating with ventilated patients in the two referral hospitals in Botswana?
- What in-service training on communication skills is offered for the ICU nurses is in place?
- How do nurses assess ventilated patients for communication ability?
- Which communication strategies and methods do nurses use when communicating with ventilated patients?
- What information do nurses give to ventilated patients?
- What existing knowledge and skills do nurses have regarding communicating with ventilated patients in Botswana?
- What are nurses' perceptions of communication with ventilated patients?
- What needs and barriers do they experience when communicating with ventilated patients?
- What are nurses' experiences and perceptions about communication training?

1.8 CONCEPTUAL FRAMEWORK

The conceptual framework for this study will be guided by the AACN Synergy Model for patient care because the patient is always the focal point and centre of nursing practice (Curley 1989:66). The basic tenets of the AACN Synergy Model for patient care are the patient and nurse characteristics. This means that the needs and characteristics of patients are influenced and determined by the nurses' competencies to perform their role effectively and efficiently (Hardin & Kaplow 2005:73). This model is readily adaptable to acute care and to situations where competencies and skills of nurses need to be practical in the context of their patients' characteristics.

When there is perfect match between the nurses' and patients' interaction, a creative synergy emerges to maximise desirable patients' outcomes. This model clearly identifies needs of patients and describe how these can be met using a particular competency and skills within the environment in which nurses work. It includes how nursing can reflect knowledge, skills experience and attitudes to meet patients' needs (Ecklund & Stamps 2002:60). The model is extended to describe the various aspects of nurse-patient, nurse-nurse and nurse and other health care team members in various care settings (Curley 2004:2). In this model, optimal outcomes are evaluated on the bases of those that are derived from the patients, the nurse and the health care system.

Synergy Model of patient care has been contextualised for this study as follows:

- Ventilated patients are biological psycho-social and spiritual entities and so they must be treated as a whole (body, mind spirit).
- Ventilated patients can contribute in the nurse-patient relationships, and patients can be described by a number of characteristics; all of which are connected and contribute to each other. These cannot be looked at in isolation.
- The goal of nursing is to restore a patient to an optimal level of wellness as defined by the patient's needs for communication.
- The nurse creates an environment for the care of the patient and the environment of care can also affect what the nurse can do such as failure to know how to communicate with ventilated patients or lack of resources that the nurse can use to facilitate effective communication with the patient.
- The nurse may work to optimise outcomes of patients through communication
- The nurse brings his or her background to each situation, including various levels of education/knowledge and skills and experience while nursing ventilated patients.

The model describes eight nurse characteristics that are embedded in everyday nursing practice and eight patients' characteristics (see table 1.1). However, for this study the focus will be on the eight characteristics of the nurse's competencies that include: clinical judgment, advocacy/moral agency, caring practice, collaboration, systemic thinking, and responses to diversity, facilitation of learning and clinical inquiry.

Nurses create the environment in which patient care takes place as the environment will either impede or enable what the nurse is able to accomplish (AACN Certification Corporation 2010:1). The environmental changes may be regarded as a function of the experience of the caregiver, the patient's condition and the setting (Muenzaen, Greenber & Pirro 2004:10). Nurses bring their life experiences for knowledge, skills, understanding, moral and professional situation in which they are involved (Curley 1998:64).

The patient's characteristics, nurse's competencies and outcomes that emanate from both the patient's and nurse's characteristics are listed table 1.1.

Table 1.1 Patient and nurses characteristics described in the Synergy Model for Patient Care

Patient's characteristics	Nurse' competencies	Outcomes		
		Patient	Nurse	System
• Resiliency • Vulnerability • Stability • Complexity • Resource • Availability • Participation in care • Participation in decision making • Predictability	• Clinical judgment, advocacy/moral agency, caring practice, collaboration, systemic thinking, responses to diversity, facilitation of learning and clinical inquiry	• Degree of patient satisfaction with care • Level of trust • Functional change • Behavioral change • Comfort • Quality care	• Management of physiological change • Presence or absence of complications • The extent to which care which objectives are met	• Recidivism • Cost and resources • Utilisations

(Source: Curley 1998:64)

Patients and nurses characteristics vary according to the3 levels: minimal, moderate and high levels.

1.8.1 Application of the model to patient care during nurse-patient interaction

In intensive care settings, mechanically ventilated patients are highly vulnerable, complex, and unstable because of the compromised situation, which is even exacerbated by being ventilated and experiencing communication difficulty. Nurses are with these patients for 24 hours, thus they need to demonstrate good professional characteristics such as clinical judgment, caring practice, and collaboration with other systems while providing care to these patients. Clinical judgment involves clinical reasoning to make decisions that are critical while performing skills based on nurses experiences (Hardin & Kaplow 2005:55). The nurses' demonstration of competent knowledge and skills would enable them to understand the patients' vulnerability status and be able to assist them to maintain optimal health or create trust from the patient.

The nurse needs to demonstrate clinical judgment, caring practice and systemic thinking in order to assist ventilated patients by identifying the patient's communication needs depending on the nurse's competency level and experience (Curley 2004:2). The nurse would be in a better position to synthesise the information while making critical decisions in order to meet the patients' needs. The nurse can perform appropriate intervention if she has some critical thinking ability, observational skills and intuition and with understanding of patients 'responses and how they can communicate with ventilated patients. The nurse's frequent presence by the patient's bedside, helps the nurse to play a unique and important role in identifying communication needs. The nurse may use her competencies in collaboration and responses to diversity by involving family members or other health care team members such as speech therapist to assist the patient to be understood while attempting to verbalise her needs (Curley 2004:5). The nurse's ability to use clinical judgment is the most reliable predictor of identifying patients' communication needs and help them immediately before they get frustrated (Curley 2004:5).

Nurses may demonstrate competency as facilitators of learning as they will be orientating and giving information on treatment or progress to ventilated patients. Again, the nurses will be assessing the patient's ability to communicate (Kaplow 2003:27). The nurse will be assisted to focus on the patient's communication needs and be trained on how to communicate with the ventilated patient in order to help solve the patient's difficulty in communication (AACN 2003:5). The nurse will be assisted to

exhibit clinical judgment by selecting appropriate communication strategy/method basing on the patient's need to communicate (Kaplow 2003:27). Furthermore, she would be able to demonstrate competency in advocacy/moral agency by considering family members to assist her to understand the patient's communication so that she can incorporate family members into the plan of care (Kaplow 2003:27). Critically ill and ventilated patients are vulnerable but resilient. They depend on the nurse's advocacy/moral agency to act on their behalf in collaboration with other health care providers such as speech pathologist (Hardin & Kaplow 2005:64). Unless the nurses have competencies and skills in communicating with ventilated patients, such nurses will not be able to adequately and effectively care for the patients. Nurses, as care givers, need training in order to be able to have the highest level of professional nurse competency necessary while communicating with ventilated patients.

1.9 DEFINITION OF KEY CONCEPTS

Communication is the process of sharing information, thoughts and feelings between people through speaking, writing or body language (Garrett, Happ, Costello & Fried-Oken 2007:17).

Effective communication involves information transmitted in the context it is received and understood by someone in a way it was intended with the aim to change behavior and acquire information (Caroll 2007:1169).

Mechanical ventilation is a life-saving procedure in which air is introduced mechanically into and out of the lungs to assist or control breathing in patients who cannot maintain their respiration spontaneously. It can be achieved through a tracheostomy or via an endotracheal airway and thus applying pressure on the vocal cords and hence impede speech (Hoit, Lohmeier, Hixon, Banzett & Brown 2003:1512).

Registered nurses are nurses who had obtained diploma or degree in nursing education, registered by the Nursing and Midwifery Council (Potter & Perry 2009:166).

Nurse leaders are registered nurses who supervisor nurses in the ICU (Sherman & Pross 2010:1).

Mechanically ventilated patients are patients who are intubated and their respiration is supported through mechanical ventilator (Garrett et al 2007:17).

Communication needs are indicators that portray a need for the ventilated patient to be assisted to communicate (Garrett et al 2007:17).

Communication methods are communication strategies used to assist the ventilated patient to communicate (Garrett et al 2007:30).

Information giving is the information or explanation that the nurse provides the ventilated patients with using scenarios (Garrett et al 2007:35).

Augmentative and alternative communication (AAC) devices are any kind of device that the nurse may use to assist the patient to communicate (Garrett et al 2007:28).

Communication skills are strategies that the nurse may use to part with information in order for the ventilated patient to receive (Happ, Brooke, Baumann, Sawicki, Tate, George, Amber & Barnoto 2010:170).

Methods are communication strategies used to assist the ventilated patient to communicate (Garrett et al 2007:17).

Communication strategies refer to practices that the nurses may use to facilitate interaction with ventilated patients such as good listening skills and being patient. This is because these patients experience communication difficulties (Happ, Sigart, Tate, Hoffman & Arnold et al 2007:361).

1.10 RESEARCH DESIGN AND METHODS

1.10.1 Research design

A mixed methods design, using quasi-experimental model was applied to answer the research questions (Creswell & Clark 2007:77). This type of design is the most frequently used for studies having two phases. The design involved collecting quantitative data before the intervention and qualitative data before and during the

intervention (Creswell & Clark 2007:77). The design is likened to clinical trial and has the advantage of convenience and practicability. Its disadvantage is that since the units are not randomly assigned to experimental and control groups, selection bias can never be excluded completely resulting in reduced internal validity (Burns & Grove 2009:319).

A retrospective descriptive and explorative research design with a quantitative approach was used primarily to auditing patients' records, procedure manual and in-service education records as well as interviewing nurses for knowledge and skills when communicating with ventilated patients from the two ICUs of the referral hospitals in Botswana. The patients' records are considered as primary source of data (Polit & Beck 2010:358). Audit will assist the researcher to determine the quality of services provided in an accurate way (Marquis & Huston 2009:423).

The initial qualitative phase for this study used individual interviews with nurse leaders and nurses to further explore nurses' knowledge and skills as well as nurses' barriers and needs for communicating with ventilated patients in order to validate the quantitative data. The information from these findings was used to develop the intervention for this study. In the present study only 10 of the same respondents were used for the intervention. The second qualitative phase used exploratory design with the intention to audit the situation and discover new ideas. In this study the researcher collected data from the patients' files and interviewed the nurses to identify communication issues. Also, the researcher collected data from nurses during the intervention in order to assess nurses' understanding of the mechanisms of the intervention and their experiences with the intervention.

1.10.2 Study setting

The study was conducted in Botswana (see figure 1.1). The actual place of data collection was in the Botswana's two referral hospitals at Nyangabwe in Francistown (North of Botswana), and Princess Marina in Gaborone (South of the country). The two referral hospitals receive patients referred to them from the Northern and Southern regions respectively. These two ICUs were chosen because of their sizes and high admission rates. Their ICUs admit patients of all age groups, that is, from children to the elderly.

Figure 1.1 Map of Botswana showing location of the two study sites

(Source: http://www.lonelyplanet.com/maps/africa/botswana/)

1.11 POPULATION AND SAMPLE

There were 872 patients' files that were reviewed. Out of this, 635 were from Princess Marina Hospital and 237 were from Nyangabwe Hospital. One book for in-service education was reviewed. Forty-one hospital policies on communication with mechanically ventilated patients were also reviewed.

Registered nurses and nurse leaders working in the two ICUs of the two referral hospitals, irrespective of years of experience and gender were the target population of this study. The participants had been deployed in the ICUs from January 2011 to December 2012.

Thirty registered nurses in Princess Marina Hospital completed the questionnaire survey and twenty-two registered nurses completed the survey in Nyangabgwe hospital. Three nurse leaders in Princess Marina Hospital were interviewed and five nurse leaders were interviewed in Nyangabgwe.

1.11.1 Sampling

The files of former ventilated patients were sampled conveniently from the Department of Medical Records. Files were identified using patients' medical record numbers obtained from the hospital Integrated Patient Management System (IPMS) database. The researcher used both convenient and purposive sampling in this study. Convenient sampling is a type of nonprobability sampling in which the researcher samples participants simply because they are a convenient source of data for the researcher (Battaglia 2008:524). This type of probability is different from purposive sampling because of it lacks expert judgment but its advantage is that it's cost effective because the data is obtained with ease (Battaglia 2008:524). The researcher had decided to use both convenient and purposive sampling in order to use her expert knowledge and judgment to produce a representative sample across-section of the study population.

The researcher and the research assistant purposively selected policy manuals and in-service records from both the hospital and the unit, and those manuals were audited to identify the policy manuals, protocols and patients' records that documented information on communication between nurses and patients. A total of 354 patients (Princess Marina Hospital and 330 Nyagwabwe Hospital) were estimated to be admitted from January 2011 to June 2012. The data collectors identified the patients' files and screen them for the inclusion criteria. The sample size for patients' files was not determined before data collection as the researcher had planned to depend on exclusion and inclusion criteria. There were 279 patients' files that met inclusion criteria to make the sample size 159 as the researcher identified that nurses were able to communicate nonverbally with patients.

Twenty-five nurses were estimated to be deployed at Princess Marina Hospital ICU, and 20 nurses at Nyangwabwe hospital ICU every year, with 50% of these nurses remaining in the unit the following year as nurses are rotated among wards yearly in these hospitals. The estimated number of nurses who had worked during the index period January 2011 to December 2012 was 35 for Princess Marina Hospital and 26 for Nyangwabwe Hospital ICUs. A purposive sampling framework with the intent of maximum variation in age and sex was used. However, nurses were randomly selected to participate in the intervention. The researcher sampled the intended 10 nurses from each hospital as this sample size had been used before and found to be manageable

for communication intervention study in the ICU (Happ et al 2011:e28). A pragmatic reason for limiting the number of nurses to 10 from each ICU in this study includes the limited time and variable methodological issues in the ICUs. Nurse leaders were sampled conveniently into the study.

1.11.1.1 Inclusion criteria

The Inclusion criteria for this study were:

- The records of patients treated in the ICU for at least 24 hours.
- Patients whose Glasgow Coma Scale (GCS) was 9/15 and above because they would have communicated nonverbally with nurses and aged 18 years or older.
- Nurses who had worked in the ICU or who were working during the time of data collection, irrespective of age or years of experience of working in the ICU.

1.11.1.2 Exclusion criteria

Criteria for exclusion included the following:

- The record of patients who were unconscious, reported signs of dementia and mental illness were excluded as they may not have communicated nonverbally with the nurses.
- The nurses who were not willing to participate in the study were not recruited.

1.12 DATA COLLECTION PROCEDURES

The study was carried out in two intermingled phases to meet the objectives of the research. According to the AACN Synergy Model for Patient Care, as used in this study, emphasis was on the nurses' competencies such as clinical judgment and ability to make correct decision in order to improve nurse-patient interactions.

1.12.1 Phase 1: Quantitative design from the system and ICU nurses

A retrospective descriptive and explanatory research design with a quantitative approach was used primarily to audit patients' records, procedure manuals and in-

service education records on communication with ventilated patients (Annexure K). The audit tool was developed from literature review and communication with colleagues with experience in communication with ICU patients. Also, quasi-experimental design using pre and posttest technique was used to interview the nurses using questionnaire to evaluate their knowledge and skills when communicating with ventilated patients from the two ICUs of the referral hospitals in Botswana (Annexure M).

The two tools used in the study were developed from the literature review and consultation with doctoral prepared colleagues with experience in tool development. One of the colleagues had specialised in intensive care. The files meeting inclusion criteria were selected conveniently by the two data collectors, with Masters' degree in intensive care and had conducted several interviews in the past.

1.12.2 Phase 2: Qualitative design from nurse leaders and ICU nurses

A semi-structured open-ended interview schedule (Annexure N) was used to conduct interviews with eight nurse leaders in the two study sites, and twenty nurses working in the two study ICU sites. The interviews were audio recorded with the participants' permission. The researcher also kept some field notes to augment the transcription from recorded data. The interviews were conducted by the researcher and two trained data collectors who had a Master's degree preparation in nursing and were experienced data collectors. The process of this phase will further be explained in chapter 3.

1.12.3 Phase 3: Intervention

The information from phases 1 and 2 was used to develop the intervention for this study. The same group of nurses was used for the intervention in this study. An interactive workshop was used for the intervention. Workshops had been found to be a valuable educational intervention for building capacity and confidence in ICU communication skills and discussion among nurses' involvement (Hales & Hawryluck 2008:249). The researcher's intention to conduct communication training was largely limited to didactic instructional materials for communication skills. Also the researcher planned to use scenarios for the nurses to explain and give information on treatment and orientating the patient to all spheres. The intervention also included assisting nurses to assess patients for communication ability and used AAC devices to

encourage and facilitate communication with ventilated patients (Garrett et al 2007:47). Evidence suggests that an interactive approach can be effective in communication skills training for intensive care nurses (Hales & Hawryluck 2008:249). The researcher developed scenarios for communications strategies based on literature review and findings from the previous phases.

1.13 PILOT TESTING

Five patients' files were enrolled for pilot testing from recently discharged patients from the ICU to identify or detect any problems inherent in the instruments or to determine how effective the instruments would be in collecting data (Polit & Beck 2010:345). The patients' files, which formed part of the pilot study were not enrolled in the main study. Interview guides were pretested on two nurses to evaluate their consistency or ambiguity, then make amendments as necessary before actual data collection.

The interview guide was amended to include relevant questions in line with the conceptual framework. For the audit tools, information on where data would be collected from was not initially included, but was then amended and included after pilot testing.

1.14 DATA ANALYSIS

Quantitative data were analysed using Statistical Package for Social Sciences (SPSS) version 20 as well as Microsoft Excel to generate figures and graphs. Descriptive statistics were used to summarise demographic data from patients' records, nurses and nurse leaders 'demographic data. Descriptive statistics allowed the researcher to examine with clear understanding the phenomenon under investigation (Burns & Grove 2009:461).

Data from interviews were analysed using qualitative thematic content analysis according to Bernard (1995:230). The analysis enables meanings, contents and consequences or intentions to describe and delimit categories (Graneheim & Lundman 2004:105; Bernard 1995:230). The overall aim of the analysis is to produce detailed systematic recording of the themes and issues addressed in the data. The focus of the

analysis will be the interpretation of underlying content behind the obvious surface content (Bernard 1995:230).

The interview text was analysed in several steps, starting with naïve reading of texts. The other step included structural and detailed qualitative content analysis of the texts. The texts were divided into meaning units, statement that relate to the same central meaning and objectives of the study. The meaning units were condensed and abstracted and labeled with codes, which were compared for similarities and differences to develop categories. The categories were then organised in higher-order headings according to the Synergy Model of Patient care nurses' competencies. Table 1.2 gives a brief summary of the research design and methods used in the phases.

Table 1.2 Summary of the research design and methods according to the phases

Phases and design	Research objective	Population and sample	Data collection	Validity and reliability/ trustworthiness	Data analysis
Phase1: Quantitative design A retrospective descriptive and explorative research design with a quantitative approach	**Objective 1:** To conduct an audit of the facilities for the availability of existing policies on nurses communicating with ventilated patients and policies that govern the in-service education on this issue in Princess Marina hospital in Botswana. **Objective 2:** To evaluate existing knowledge and skill for assessing communication abilities and strategies that nurses used/are using to communicate with ventilated patients before and during communication seminars in the two referral hospitals' ICUs in Botswana.	(1) The records of the hospitals' in-service education records and policies or standards (2) The retrospective records of patients treated in the ICUs: January 2011 to December 2012	Instrument developed for this study according to literature and data from phase 1	Pilot test of the instrument. Content validity though literature review, Face validity; use of statistician	• Statistical Package for Social Sciences (SPSS) version 20, Microsoft Excel to generate figures and graphs • Descriptive statistics
Phase 2: Qualitative Research design:	**Objective 3:** To conduct quasi- experimental intervention that will evaluate the existing knowledge and	Registered Nurses who has worked in the ICU and those working in the	In-depth individual interviews with nurses pre, and	Audiotapes and Field notes, member checking and intervention logs	• Guided by qualitative analysis by Burnard (2005) to elicit common themes. Audiotapes of

Phases and design	Research objective	Population and sample	Data collection	Validity and reliability/ trustworthiness	Data analysis
Discussion and evaluation phase; quasi-experimental design; pretest, posttest and retest after 2 months (nurses)	skills and needs and nurse' experiences and perceptions during the intervention in the two referral hospital ICUs in Botswana. **Objective 4:** To conduct individual semi-structured interviews with nurses and nurse leaders to identify nurses' needs and barriers for communicating with ventilated patients in the two referral hospitals.	ICUduring this study in the two referral hospitals in Botswana=50 out of these nurses 10 nurses from each site participated in the intervention. Nurse leaders = 8	during were Interviewed and nurse leaders from each ICU)		the interviews • Transcripts will be analysed line-by-line using coding to categories and further categorised according the nurses' characteristics of the Synergy Model of Patient Care

1.15 ESTABLISHING RIGOUR FOR QUALITATIVE STUDIES

1.15.1 Techniques used to gather qualitative data

Rigour during qualitative research included consideration of issues of credibility, transferability, dependability and confirmability. Credibility was established through several process and procedures throughout the study. Creditability is demonstrated by reporting the findings without bias. The researcher used member checking and reflexivity (Creswell 2007:210). The researcher positioned herself within the study because of her experience working in ICUs and teaching student critical care nursing. Although the researcher entered the field with personal expertise on the nurse-patient communication, she had considered the literature and consulted expert in the area (Lincoln & Guba 1955:114). The researcher's experience in data collection helped her during recruitment of patients' files and the ICU nurses. The researcher invested more time during data collection through visitation of the two referral hospitals to establish rapport with nurses. Again, the researcher used in-depth individual interviews. Field notes, intervention logs and audiotapes were used to enable the researcher to understand in depth, the complex nature of communication between nurses and ventilated patients.

According to Lincoln and Guba (1985:114), transferability is the extent to which other people can see similarities in the findings that may be related to other settings. In this study transferabilitywas measured by the study aim, objectives, research design as had been used by other similar studies, also involvement of peer checks by supervisors and through code-recode procedure during qualitative analysis of audiotapes and interview transcripts. Lincoln and Guba (1985:114), also describes confirmability as the objectivity or neutrality by ensuring data relevance from two independent data. Confirmability was ensured through audit trial following the guide developed in the study. The researcher used record keeping procedures such as field notes, interview transcripts from individuals (Lincoln & Guba 1985:213). Also confirmability was addressed by using an independent review of the tapes and recording of themes by an experienced qualitative nurse researcher. The focus of the independent review helped the researcher to focus on discovering omissions of comments and to verify placement of phrases into categories. All differences were discussed to reach consensus of the final coding. Detailed discussion will be given in chapter 3.

1.15.2 Techniques used to gather quantitative data

Validity and reliability were ensured through pilot testing and through the proposal review by ethics committees of the Department of Health Studies at the University of South Africa; the review committee of the University of Botswana; the Ministry of Health (MoH), Botswana and the two referral hospitals of Nyangabwe and Princess Marina. The design of the study and the sample size for the nurses has been determined following guidance from comparable studies (Happ et al 2010:170; Happ et al 2011:e28).

1.16 ETHICAL CONSIDERATIONS

The approval of the study was sought from UNISA, The University of Botswana, the Ministry of Health (MoH, Botswana and Princess Marina and Nyangwabwe Referral Hospital Ethics committees. Subsequent to approval, the hospital Nursing Superintendents and the Unit Matrons of the two referral hospital ICUs were contacted and informed about the study and its purpose (Annexures A, B, C, D & E). In the ICUs, the Unit Matrons introduced the researcher to the nurses and the purpose for visit. Each nurse was approached individually and invited to a conference room to ensure privacy. They were given the information sheets that explained the purpose, methods, possible risks and benefits and the importance of participating in the study to read over at least 24 hours. If they wished, they were informed about the project. Nurses consented in writing by signing a consent form.

Confidentiality was maintained during and after data collection. The nurses, who consented to participate, were informed that the information would be kept confidential. The signed consent forms were kept in a different file, from that of completed questionnaires in order to prevent identifying nurses' names with the completed questionnaires. The nurses were informed that the signed consent forms were used as evidence that they have consented for participation (Annexure I). The researcher asked the nurses not to write their names on the questionnaires, instead codes were used on these questionnaires. Patients' medical records numbers were used to locate their files according to study numbers in a separate secure file for both print and electronic version. Completed questionnaires were kept in locked drawers to ensure limited

access to information. The researcher used a number system for coding of questionnaires to enter data into Microsoft Excel and SPSS into different files and also data were accessed through a password.

Nurses were assured that anonymity would be maintained throughout the study. They were informed that the information was going to be disseminated during seminars, conferences or as content for articles in such a way that no one will identify who was interviewed. Nurses were informed that participation was voluntary and it was obtained without any form of coercion or undue influence or promise for any special kind of remuneration. Also the nurses were informed that theycould withdraw at any time without giving reason and that there would be no penalty or sanction for withdrawal. They were informed that no one will have access to the data and that the researcher will keep data in a computer access by password protection.

1.17 METHODOLOGICAL AND THEORETICAL LIMITATIONS

Regarding the methodological limitations the researcher recognises that:

- The study was conducted in Botswana and in only two ICUs; and so the findings may not be generalised to nurse-patient communication in other ICUs.
- The scope and setting of this study determine the sample size for the nurses who were recruited for this study. Because of a small number of nurses working in the study sites, the sample could not be representative of the ICU population and this limits the credibility to generalise the findings for this study. The use of purposive sampling for patients' files and the nurses might increase the risk for bias.

For the theoretical limitation, although AACN Synergy Model for Patient Care was established for intensive care certification, it can be used in research in all settings (Hardin & Hussey 2003:73). However, this model has been documented on few studies on nurse-patient interaction and in particular to the ICU internationally or locally. The researcher decided to use this model because all patients have similar needs and experiences, and these needs are across a wide range or continuums from health to illness. The more compromised the patients are, the more severe or complex are their needs. Nursing care is driven by these patients' needs that require an integration of

knowledge, skills, experience and attitudes of the nurses. When nurses' competencies stem from patients' needs; the nurses' characteristics and those of patient synergise, optimal patient outcomes can result. Thus, the researcher feels this model is appropriate for this study despite that it will be used for the first time in this area for research.

1.18 ORGANISATION OF THE CHAPTERS

The study is organised according to chapters as described below:

Chapter 1: Orientation of the study

This chapter presents an overview of the whole study. The background of the study is highlighted by describing intensive care experience of being ventilated, communication in general, and communication in the ICU. Also, the statement of the problem, significance of the study, the research purpose, objectives and research questions have been described. These are followed by the presentation of the summary of the research design and methods, conceptual framework, definitions of concepts, pilot study establishing rigour in qualitative research, ethical considerations and methodological and theoretical limitations and conclusion.

Chapter 2: Literature review

This chapter presents relevant published studies related to nurse-patient communication with ventilated patients and the views of the other scholars in relation to the topic. The researcher used researcher literature with methods applicable to this study. The literature guided the development of questionnaires and audit guide used for data collections.

Chapter 3: Methodology

The chapter describes the research design and methods utilised during the study. The following as described in this chapter, the study setting, population, sampling methods and data collection procedure and data analysis plan used. The ethical considerations relevant during the study, study limitations and conclusion of the chapter are also presented.

Chapter 4: The study intervention

This chapter presents the description of the intervention for the study, which was the communication skills workshops with the nurses as material used during the workshops. The excerpts from the nurses' perceptions about the communication skill training are also presented as the findings during the intervention of this study. The chapter ends with the conclusion.

Chapter 5: Study findings

The chapter takes the reader through the findings of the study that are presented through verbal texts, tables, graphs and participants' direct excerpts. The chapter ends with an overview of the conclusion from the findings.

Chapter 6: Discussion of findings

This chapter presents further analysis and discussion of the findings raised in chapter 5. The discussion interconnects the literature review with the findings for the study.

Chapter 7: Conclusions, limitations and recommendations

The chapter contains conclusions from analysis of the findings, implications for nursing practice, nursing research and nursing education and the recommendations and the conclusion of the thesis.

1.19 CONCLUSION

This chapter summarised the key features of the proposed study. The orientation of the study, which included the introduction, and background have been discussed. The conceptual framework that guided the study was also discussed. The methods and design that will answer the purpose and objectives of this study were also given as well as the organisation of the chapters.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

According to Polit and Beck (2010:213), a literature review is an evaluative report of information that is found on the literature search that is related to one's topic of study. The same authors postulate that the review should be able to describe, summarise, evaluate and clarify this literature. Again, it gives the researcher the theoretical perspective of the research and determines the nature of the study. During the process of research the researcher had to determine irrelevant literature and should critically look at the one that is pertinent to her/his search and irrelevant studies be discarded. Literature review also should reflect a theoretical base for the study. In a broad-spectrum, According to Polit and Beck (2010:218), the literature review should be able to:

- Provide the context of the research
- Justify the research
- Ensure the research has not been conducted before or if it is repeated it should be marked a replication study
- Enable the researcher to learn from the previous theory on the subject
- Indicate how the subject has been previously studied
- Show where the research fits into the existing body of knowledge
- Highlight flaws in the previous research
- demonstrate how the subject has been studied previously
- Outline gaps in the previous research
- Show that the work is adding to the understanding and knowledge of the fields
- Help refine, reinforce or change the topic

The literature reviewed in this chapter is interconnected with other literature reviewed and presented in the findings' chapter. The purpose of this study is to describe and explore existing knowledge, skills, perceptions, needs and barriers from the

perspectives of ICU nurses in order to guide the development of the practice guidelines that enhance effective communication of nurses with ventilated patients. The purpose of this literature review was to situate this study with regard to communication with mechanically ventilated patients in the intensive ICUs. An electronic literature search was used to search for information on nurse-patient communication in databases PubMed Cumulative Index of Nursing and Allied Health literature [CINAHL], Ebscohost, Proquest Central (Proquest), psychoINFO (OVID). The search was limited to publications in English, the patient group (mechanically ventilated adults in ICU), nursing and medical journals. Key words included: nurse-patient interaction, patient communication, nurse-patient relationships, nurse-patient communication, communication related interaction, intensive care, ICU, mechanical ventilation, patients, related, research, ventilated, and critical care. MeSH terms were used to describe the context of the articles. The Boolean terms and or were used to refine the search.

There is a broad literature available on of studies that have been carried out on “communication” and “communication interactions” in developed countries about intensive care and mechanically ventilated patients. The chapter will be discussed under communication during mechanical ventilation, communication barriers between patients and nurses, the nature of nurse-patient interaction in the ICU, potential approaches to improve nurse-patient interaction, patients’ experiences in the ICU and strategies to facilitate nurse-patient interactions in ICU.

2.2 COMMUNICATION DURING MECHANICAL VENTILATION

Reports from patients allude to the fact that lack of communication during ventilation is very stressful. Patients in ICUS are mostly treated with mechanical ventilation because they are unable to maintain spontaneous ventilation. These patients are generally fragile, critically ill with limited cognitive and motor skills. Despite the fact that this mode of treatment has benefits, it also causes communication difficulties (Laakso, Hoartelius & Idvall 2009:153). In a case study by Laakso et al (2009:153) that investigated issues related to communication issues under ventilation in the ICU and home mechanical ventilation from two individuals, the patient and the nurses; they reported that patients want to understand what is happening while on the ventilator. The patients wish to express their communication needs despite the stressful situation related to ventilations. In the same study Laaksoo and colleagues suggested that communication during

ventilation can be frustrating for both the nurse and the patients. The ICU nurses may be challenged to employ communication behaviors important to meet the communication needs the ventilated patients. In this study the sample size was too small to general the findings to the ICU patients and nurses.

Difficulty in communication frustrates the nurses and patients as well as family members (Carroll 2007:1165). In an interpretive phenomenological study that Carroll (2007:1165) explored the experiences of non-vocal ventilated patient's communication in a rehabilitation setting; patients indicated that being unable to communicate made them lose their personhood and dignity. In the same study patients associated communication difficulty with emotional stress such as anger. The patients related inability to communicate to physical restrain and thus they become helpless and hopeless. Evidence indicates that there are several factors that contribute to ineffective communication between nurses and patients in the ICUs (Laakso et al 2009:153). To some patients, non-attentiveness to patient's needs due to lack of skill in communicating with intubated patients may be interpreted as devaluing by patients (Carroll 2007:1165). Patients and family satisfaction in ICUs may be achieved through communication when patients are provided with information regarding their treatment and progress. Research had shown that communication difficulties with ventilated patients create confusion for some patients (Carroll 2007:1165). Confusion during communication between nurses and patients may be minimised if appropriate communication supports are used to explain the treatment regimen and illness and why they could not communicate. The limitation of this study is that it used phenomenological approach using interviews of patients in single are habilitation setting.

In another study, Statore, Hansen, Ganzini, Press, Osbornne, Chesnutt and Mularski (2012:410), claimed that communication between nurses and patients occurs mostly through biopsychological information conversation. This implies that during physical activities nurses were not communicating with the patients. Although the patients were recognised as human beings, Statore and colleagues found that patients had few communication exchanges which could result in not being treated as human. This study used ethnographic observational method of 315 hours in a single setting. The nurses in this study were found to have inadequate communication interactions in sharing power, responsibility and therapeutic alliance. In the same study Statore and colleagues claim

that communication occurred mostly when nurses translated some information to the physicians about the patient and to the patient family and yet the nurse were unwilling to communicate with patients and the family members. In the same study, it is evident that there was nurse-physician collaboration about the patient even though they did not see themselves as counterparts to physicians in decision making regarding the patient's condition. Statore et al (2012:410) claim that nurses did not perceive communicating with the patient on as their role. Although Statore et al's (2012:410) study used observational study on six patients with end-stage liver disease, the nurses also could have changed their behavior when they realised that they were observed. The sample size was small and homogenous of this study makes it difficult to generalise the finding to intensive care patients is. At the same time, communication is a complex phenomenon that needs to be studied using several tools for triangulation.

It is worth noting that compassionate and direct communication skills will not only help the patient to cope with a difficult situation, but it will strengthen nurse-patient relationships and thus confers therapeutic benefit to the patients (Happ et al 2011:e28). According to Happ et al's (2010:170) study that investigated communication interactions using clinical trial in medical and cardiothoracic surgical ICU, using videotaping 10 nurses while communicating with 30 critically ill patients; it was found that nurses portrayed positive communication behavior after communication training and used AAC devices. The nurses initiated communication in 88.2% of the communication exchanges. Experienced nurses (73.7%) were found to be mostly communicating successfully with patients however; the communication exchanges were found to be partially understood or sometimes ignored and the patient were not assisted. This is one of the studies in nurse-patients interactions that used videotaped while observing the interactions and used randomisation of the sample. Nonetheless, videotaping may increase the Hawthorne effect as the nurses may be aware that they are being observed throughout the day. Also most the nurses in this study had many years working in an intensive care setting. The study was conducted in developed countries where patients are affluent and speak to nurses without any fear.

Although several studies have been documented internationally on communication, studies on the intensive care experience on patients discharged from ICU on nurse-patient communication are still limited (Happ et al 2011:e28). Therefore by conducting

a systematic review of literature on patients' experiences after ICU and nurse-patient interaction the researchers will be able to understand the complexity of these topics.

2.3 COMMUNICATION BARRIERS BETWEEN PATIENTS AND NURSES

Ventilated patients have compromised communication ability related to endotracheal intubation (ETT) and thus they are unable to communicate their feelings, thoughts and wishes clearly to others (Samuelson 2009:49). Samuelson's study used prospective cohort in 2 general ICUs with 250 ventilated patients and followed these patients after two months. Although 54% of patients did not remember ETT, the patients reported ETT-related discomfort such as hoarseness, sore throat and difficulty communicating. The author appreciate that one of the limitations of this study was that they were quantitatively focused. The quality of the study would have been enhanced by exploring patient's experiences using a qualitative approach.

The patient's cognitive level as a barrier to communication is documented by Finke, Light and Kitko (2008:2102) who report that nurses tend to communicate more with patients who are awake and conscious because of their degree of responsiveness. A notable finding was that as patients recover the nurses become familiar with communication methods that the patients prefer (Nilsen, Sereika & Happ 2012:5).

In a systematic review, of studies prior to 2006, that involved communication between nurses and patients with complex communication needs, Finke et al (2008:2102) observe that communication tend to be nurse-controlled and task-oriented as nurses provide physical needs, resulting in minimal and ineffective interactions between nurses and patients. Other barriers included perceptions related to lack of knowledge on the use of AAC devices, lack of training and lack of access to communication tools emerged as the cause of communication difficulty. Language impairment was also reported as a barrier to communication between nurses and patients (Finke et al 2008:2102).

Some of the critically ill patients in ICUs may have communication difficulty related to poor vision and hearing problems. Experts in communication in intensive care suggest that patients should be assessed for hearing and vision acuity as well as need for support, such as assisting them with glasses or hearing aids, in order to support effective nurse-patient communication (Cerantola & Happ 2012:489). The same

authors advocate for continuous assessment of elderly patients' communication needs and that their needs should be personalised. The study used two cases of elderly patients aged between 77 and 82 years of age. The sample in this study is a homogenous sample and thus the findings cannot be generalized to patients in the ICU.

One important finding in this review is that nurses' heavy workload, attention to monitoring technology or physical care are considered to be other barriers for communication between nurses and ventilated patients (Coyer, Wheeler, Wetzig & Couchman 2007:71). Coyer and colleagues' reviewed published studies related to nursing issues on the care of the mechanically ventilated patients in the ICU. However, it is equally important to note that Coyer and colleagues used evidence from studies conducted more than two decades back.

2.4 THE NATURE OF NURSE-PATIENT INTERACTION IN THE ICU

In a recent study that investigated nurse-patient interaction in ICUs as noted in section 2.3 above, Happ et al (2011:e28) reported that the frequency of communication between nurses and non-speaking ICU patients was low, mostly with incomplete communication exchanges per minute. In the same study, communication exchanges were found to be brief and mostly task oriented. Communication was directed mainly towards physical care such as when the nurse assesses the patients and provision of care to meet patients' needs. Successful communication exchanges between patients were demonstrated even though more than one-quarter of the nurse-patient communication exchange were abandoned or ignored if there was a difficulty in understanding the patient (Happ et al 2011:e28).

The ICU nurses use multiple methods of communication. The nurses mostly use a range of low technology communication methods such as yes and no gestures, head nod, lip reading, sign language, pen and paper and mouthing (Merilainen, Kyngas & Ala-Kokko 2012:78). Squeesing hands, alphabet boards, picture charts and facial expression are also mentioned as low technology communication methods (Khalaila, Zbidat, Anwar, Bayya, Linton & Sviri 2011:470). These communication methods limit the patients' opportunity to communicate their needs in detail, and few of these interactions were initiated by patients (Happ et al 2011:e28) and this type of practice

does not promote mutual relationships between nurses and patients as communication tends to be one-sided.

2.4.1 Potential approaches to improve nurse-patient interactions

Recognition of communication difficulty associated with ETT and some barriers to communication should lead to thorough assessment of communication ability to facilitate effective communication in the ICU. Radtke, Baumann, Garrett and Happ (2011:791) suggest that individualised assessment for cognitive and motor skills is important in order to meet patients' communication needs. It is worth noting that patients in ICUs have fluctuating situation. In the case reports reviewed, three patients presented differently: one presented with fluctuating cognitive and impaired motor function, the other with fluctuating cognitive and moderate compromised functions and the last one had intact cognitive and motor skills (Radtke et al 2011:791). Patients' care was personalised through individual assessment and communication barriers and preferred communication methods were identified. The premise of nursing is that effective communication is essential for patients' assessment, nonetheless it is important to note that the methodological limitation in case reports used does not jeopardise the scope of the review because the intended review was on nurse-patient interactions.

Nurses need to assess patients not only for cognitive and motor skills but for all the barriers that may impede their communication. Assessment of patients' language could help identify those patients who speak or understand a foreign language and effective communication can be facilitated using appropriate alternative communication method such as picture boards (Cerantola & Happ 2012:490).

2.5 STRATEGIES TO FACILITATE NURSE-PATIENT INTERACTIONS IN THE ICU

A recent hermeneutic observational study suggested that nurses can use caring communication strategies such as encouraging and friendly words, remaining close to the patient when the patient attempts to communicate, being reassuring and providing security and keeping the patient company (Karlsson, Forsberg & Bergbom 2012:197). All these communication strategies may ameliorate negative emotions. The same study also reported that non-caring communication portrayed by nurses such as being absent

from the patient's bedside and leaving the patient alone. The study was conducted in a single site and 8 patients participated in the study. The authors did not appreciate the limitation of this study.

Some of the caring communications reported by Karlsson et al (2012:197) were supported by Nilsen et al (2012:5) as they suggested that longer duration of nurse-patient communication may help facilitate patient interactions. By talking with patients using different strategies, the nurses may mitigate the negative feelings that patients experience. In a study of grounded theory by Laster (2011:2649) that investigated older adults' perceptions of feeling safe in the intensive it was found that older patients perceived that if nurses could avail themselves, all patients would be able to initiate interactions with all the nurses working in the ICU. However, because of some barriers as indicated in section 2.4, the nurses may abandon ventilated patients especially those who are unresponsive.

Effective communication between nurses and patients can be facilitated by assessing patients' vision and hearing acuity. Happ et al (2011:e28) advocated for patients assessment for the use glasses or hearing aids prior to admission to the ICU in order to facilitate communication. Another strategy that has been found useful is paying attention to nonverbal cues and using eye contact when communicating with patients (Coyer et al 2007:71). Lack of eye contact and speaking too fast are considered negative communication behaviors (Happ et al 2011:e28).

2.5.1 Communication methods

The use of multiple methods of communication is advocated for with ventilated patients. However, shifting from one method to the other is time consuming (Happ et al 2011:e28). In a qualitative secondary analysis of a clinical trial that tested communication material using AAC devices with family members of patient admitted in the ICU, Boyles, Tate and Happ (2011:e28) claim that when ventilated patients are capable of communicating, they can use methods such as communication boards which are specific enough to reflect their needs to prevent frustration and stress. Although Boyles and colleagues' study was on family interactions with ventilated patients, the strategies could be used for nurse-patient interactions. Patients could use preferred familiar methods that enable them to be involved in their own care. When patients are

involved in decision making, they feel accepted and this may reduce anxiety and agitation and a feeling of depersonalisation because of the effect of nurse-patient interactions (Papathanassogloiu 2010:118).

The other method that could be useful in facilitating the nurse-patient communication includes the use of AAC devices such a pen and paper or alphabet boards. It is evident that the AAC devices are helpful in facilitating communication between nurses and patients (Broyles et al 2012:e24). These devices have been made available for use in website for free and their introduction in ICUs and they could ensure effective communication between ventilated patients and nurses and thus meeting patient satisfaction (Cerantola & Happ 2012:490).

2.5.2 Training nurses on communication skills

The other important strategy that can be used to facilitate nurse-patient communication is to train nurses on how communicate with ventilated patients. According to a seminal study by Happ et al (2010:170) which tested the efficacy of training and provision of communication materials on nurse-patient communication in the intensive care setting, it was reported that training of nurses improved communication between nurses and patients. This study has been supported by a recent study by Otuzoglu and Karahan (2013:1) as they claim that 77.8% of patient appreciated when the health care staff use illustrated materials to facilitate communication. Otuzoglu and Karahan's (2013:1) study used semi-experimental methods but in a single setting with 90 patients post open heart surgery. The sample for this study is homogeneous and thus cannot be generalised to other intensive care population. Both studies by Happ, Sereika, Garrett and Taje (2008:801) and Otuzoglu and Karahan (2013:1) did not report documentation of nurse-patient communication.

2.6 CONCEPTUAL FRAMEWORK FOR THE STUDY

Conceptual framework for this study will be guided by the AACN Synergy Model for patient care because the patient is always the focal point and a centre of nursing practice (Curley 1998:69).

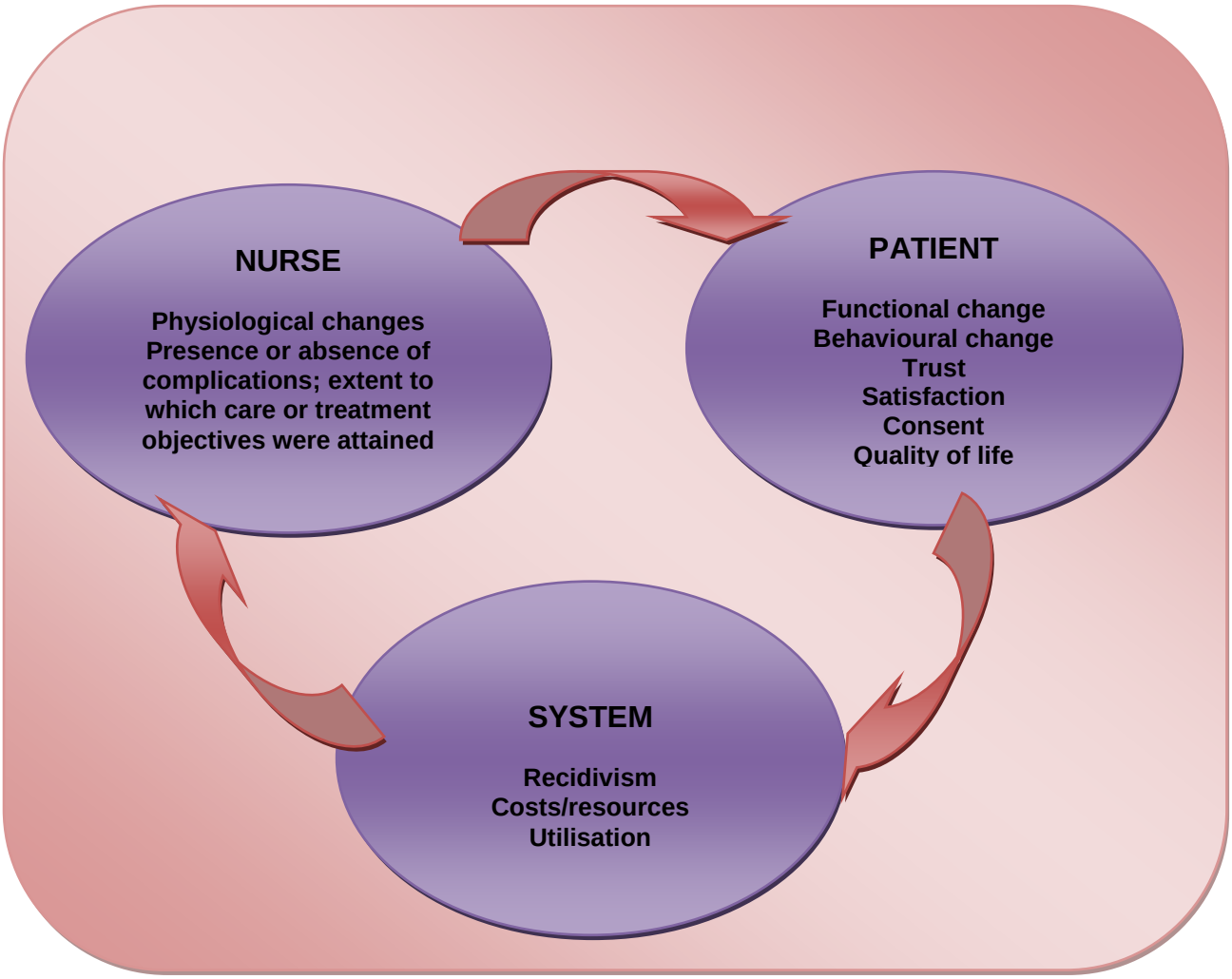

Figure 2.1 American Association of Critical Nurses (AACN) Synergy Model

(Source: Curley 1998:69)

2.6.1 Assumptions underlying the AACN Synergy Model for Patient Care

The first assumption underlying the AACN Synergy Model of Patient Care is that each patient is a whole person that is, body, mind and spirit. This assumption means that the

patient is more than just the physiological needs that led to his/her hospitalisation in the critical care unit. Care of this patient does not only emphasise on the physiological need but as well as the psychological needs (mind) and spiritual needs (Hardin & Kaplow 2005:71). The inclusion of the psychosocial care as one of the central aspect of the model makes it to place emphasis on communicating with ventilated patients. Using this model was a useful guide in assessing nurses' abilities in overcoming constraint they encounter when communicating with ventilated patients.

The second assumption of the model is that the patient contributes to providing a context for the nurse-patient relationship. There cannot be any communication without the nurses establishing relationship with patients. The key to care in any relationship is in the form of a synergy that occurs between the nurse and the patient during communication in the intensive care unit. According to this model, nursing practice is based on eight patient characteristics that cover the health-illness continuum (Curley 2004:2; Kaplow & Reed 2008:17). The patient characteristics include: resilience, vulnerability, stability, complexity, resource availability, participation in care, participation in decision making and predictability.

2.6.2 Nurses' competencies

The model describes 8 nurse competencies that are embedded in everyday nursing practice. The nurse's competencies are important for professional practice and they include: clinical judgment, advocacy/moral agency, caring practice, collaboration, systemic thinking, responses to diversity, facilitation of learning and clinical inquiry.

There is perfect match between patient characteristics and nurse' competencies in the nurses and patients interactions. A creative and synergy emerges that maximises desirable patient's outcomes (Curley 1989:65). Optimal outcomes are evaluated on the bases of those that are derived from the patients, the nurse and the health care system. This model clearly identify needs of patients and to describe how these can be met using a particular competency and skills within the environment in which nurses work. The model is extended to describe the various aspects of nurse-patient, nurse-nurse and nurse and other health care team members as described in various care settings (Curley 2004:2). According to Hardin and Kaplow (2005:77), the framework of the

AACN Synergy Model for Patient Care premises are that the patients' needs are optimised when the nurses' characteristics meet the patient's need. There are three types of outcomes described by this model: those from the patients, nurses and health care systems as shown in figure 2.1.

It is worth noting that sometimes some of the competencies can be applicable is a given clinical settings to ensure that synergy occurs. However, for this study, the entire nurse's competencies are essential for the contemporary nursing practices related to the nurse-patient communication. According to AACN Synergy Model for Patient Care, nursing care reflects an integration of knowledge; skills experiences and attitudes need to meet the needs of the patients. Thus the continuums of the nurse competencies are derived from the patient's needs and the patient characteristics and nurses' competencies are described in Table 2.1 below. There are levels of expertise ranging from competent 1 to expert 5 that the nurse can demonstrate while communicating with ventilated patients.

2.6.3 Definition of patient characteristics and nurses competencies

The AACN synergy model acknowledges the primary importance of nursing care based on the needs of the patients and their families. The fundamental principle of the synergy model is that patients' characteristics drive the nurse competencies (Collavo 2010:1). Patients characteristics and nurses competencies are defined according to the model in table 2.1.

Table 2.1 Definition of patient characteristics and nurses' competencies according to the AACN Synergy Model

Patient characteristics	Nurse's competencies
Stability: The patient's ability to maintain steady state equilibrium. Responses to therapies and nursing interventions can affect the stability of the patient.	*Clinical judgment:* The clinical reasoning used by nurse, which includes clinical decision-making, critical thinking, and a global grasp of the situation, coupled with nursing skills acquired through a process of integrating formal and experiential knowledge, and evidence-based guidelines. The integration of knowledge brings about the clinical decisions made during the course of care the nurse provides to the patient.

Patient characteristics	**Nurse's competencies**
Complexity: The intricate entanglement of two or more systems. The system refers to either physiological or emotional state of the body, family dynamics or environmental interactions with the patient. The more the systems involved the more complex are the patterns displayed by the patient.	*Advocacy/moral agency:* The nurse' ability to working on another's behalf of the patient or family when the patient or family is not capable of advocating for himself or herself. The nurse serves as a moral agent in identifying and helping to resolve ethical and clinical concerns within the clinical setting.
Vulnerability: The level of susceptibility to actual or potential stressors that may adversely affect patient outcomes. Vulnerability can be affected by the patient's physiological makeup or health behaviors exhibited by the patient.	*Caring practices:* The constellation of nursing activities that are responsive to the uniqueness of the patient and family and that create a compassionate and therapeutic environment, with the aim of promoting comfort and preventing suffering. These caring behaviors include, but are not limited to, compassion vigilance, engagement, and responsiveness to patient and family.
Resiliency: The patient's capacity to return to a restorative level of functioning using compensatory coping mechanisms. The level of resiliency assessed in the patient is often dependent upon their ability to bounce back quickly after an insult. This ability can be influenced by many factors, including age, comorbidity, and compensatory mechanisms that are intact.	*Collaboration:* The ability of the nurses to working with others, (e.g. patients, families and health care providers) in a way that promotes and encourages each person's contributions toward achieving optimal and realistic patient goals. Collaboration involves intra-and inter-disciplinary work with all colleagues.
Predictability: A summative characteristic that allows one to expect a certain trajectory of illness.	*Systems thinking:* The body of knowledge and tools that the nurse possesses to appreciate the care environment from a perspective that recognises the holistic interrelationship that exists within and across health care systems. The nurses' ability to understand how his/her decision can affect the whole. The nurse uses a global perspective in clinical decision making and has the ability to negotiate the needs of the patient and family thought the health care system.
Resource availability: The extent of resources (e.g., technical, fiscal, personal, psychological, social or supportive in nature) which the patient, family, and community bring to the situation. The more resources that a person brings to the health care situation, the greater the potential for a positive outcome	*Response to diversity:* The sensitivity to recognise, appreciate, and incorporate differences into the provision of care. Nurses need to recognise the individuality of each patient while observing for patterns that respond to nursing interventions. Individuality can be observed in the patient's cultural differences, spiritual beliefs, gender, race, ethnicity, disability, family configuration, lifestyle, socioeconomic status, age values, and beliefs surrounding alternative/ complimentary medicine.

Patient characteristics	Nurse's competencies
Participation in care: the extent to which the patient and family engages in aspects of care. The patient or family participation can be influenced by educational background, resource available and cultural background.	*Clinical inquiry/evaluator:* The ongoing process of questioning and evaluating practice, providing informed practice and innovating through research and experiential learning. The nurse engages in clinical knowledge development to promote the best patient outcomes. Clinical inquiry involves movement from novice to expert. The nurse improves the individualised standards and guidelines to meet the need of the patient.
Participation in decision making: The level of engagement of the patient and family in comprehending the information provided by the health care providers and acting on the information to execute informed decisions. Engagement of the patient and families in clinical decision can be influenced by the patient' or family's knowledge level, capacity to make decision given the injury, cultural background and level of inner strength during the crisis.	*Facilitation of learning:* The nurse's ability to facilitate patient, family, nursing staff, physicians learning through formal and informal methods. The nurses provide the patient and family with information depending on the patient and family strength and weaknesses. Educations should be design according to the level of education in order to ensure informed decisions. Creative methods should be used to ensure that the patient and family understand the situation.

(Source: Brewer, Wojner-Alexandrov, Triola, Pacini, Cine, Rust & Kerfoot 2007:158)

2.6.4 Application of Synergy Model of Patient Care using the nurse's competencies during nurse-patient interactions

A indicated above, the nursing care reflects an integration of knowledge, skills, experience and attitudes needed to meet the needs of patients and families. Thus, continuums of nurse characteristics are derived from patient needs. The intensive care nurses provide care as an expert by coordinating care with all involved such as the multidisciplinary team in order to achieve best practice (Curley 1989:66). It's the nurse's responsibility to recognise the patient and family as equal partners and should incorporate their contribution in the care plan (Yellen 2007:7). The intensive care nurse collaborates with all members of the health care team, patient and family in order to achieve optimal patient outcomes. The nurses is expected to navigate complex health care system by their mastery of system thinking and use strategies that meet the needs of patients, family and other health care team members (Curly 1989:66). The nurses' competencies as they merge with patient's characteristics to produce synergy during nurse-patient interactions are discussed in detail in the following section with the inclusion of the levels of expertise ranging from competent (1) to expert (5):

2.6.4.1 Clinical judgment

Clinical reasoning, involves clinical decision-making, critical thinking as well as global grasp of the situation that is coupled with nursing skills acquired through a process of integrating formal and informal experiential knowledge and evidence-based guidelines. In intensive care units the nurses' demonstration of competent knowledge and skills would enables them to understand the patients' vulnerability status and be able to assist them to maintain optimal health or create trust from the patients. The nurse can use clinical judgment to be able to assist ventilated patients by identifying their communication needs and this will depend on how well the nurse apply the skill, knowledge and experience as well as their attitude (Curley 1998:64). The ability to use clinical judgment will enable the nurse to be in a better position to synthesis the information while making critical decision in order to meet patients need. The nurse can be able to perform better interventions if they have critical thinking ability, skills observations and intuition and with understanding of patients' responses and how they can communicate with ventilate patients (Curley 1998:65). Also because the nurse are by the patients' bedsides for 24 hours, they can play an unique and important role in identifying the patient's communication needs as well as involving family member when necessary. The nurse can use clinical judgment the most reliable predictor of identifying the patients' communication needs and help them immediately before they get frustrated.

The clinical judgment would be supplemented by the nurses' knowledge of communication strategies, methods and the information that the patients want to know when on the ventilator. The nurse will be in a better position to prioritise nursing care that will identify teachable moments to provide the patient with information such as during suctioning. It is worth noting that the nurse is able to assist the ventilated patients by identifying the patient's communication needs depending on the nurse' competency level and experiences (Curley 2004:2).

Table 2.2 Levels of clinical judgment

Level 1	Level 3	Level 5
The nurse collects basic-level data; follows algorithms, decision trees and protocols with all populations and is uncomfortable deviating from them; matches formal knowledge with clinical events to make decisions; questions the limits of one's ability to make clinical decisions and delegates the decision-making to other clinicians; includes extraneous detail	The nurse collects and interprets complex patient data; makes clinical judgments based on an immediate grasp of the whole picture for common or routine patient populations; recognises patterns and trends that may predict the direction of illness; recognises limits and seeks appropriate help; focuses on key elements of case, while shorting out extraneous details	The nurse synthesises and interprets multiple, sometimes conflicting, sources of data; makes judgment based on an immediate grasp of the whole picture, unless working with new patient populations; uses past experiences to anticipate problems; helps patient and family see the "big picture"; recognises the limits of clinical judgment and seeks multidisciplinary collaboration and consultation with comfort; recognises and responds to the dynamic situation

(Source: Brewer, Wojner-Alexandrov, Triola, Pacini, Cine, Rust & Kerfoot 2007:158)

2.6.4.2 Advocacy/moral agent

Critically and ventilated patients are vulnerable and unstable and as such they depend on the nurses' ability to act on their behalf with dignity and respect (Hardin & Kaplow 2005:64). The nurse would support the patient's resiliency when they displayed their competency level by encouraging other nurses to communicate with the patients and using communication methods of the patient's choice rather than the nurse choosing the methods for the patients. The ventilated patients are nonvocal and thus rely on nurse to meet their communication needs. Advocacy involves the nurse' ability to work on behalf of the patient and family in representing their concerns because the nurse would be able to recognise that the patients are unable to participate in their own care. They will also be able to notice that patients have limited participation in making clinical decisions (Curley 1998:65). During nurse-patient interactions, advocacy would involve the ability of the nurse manager to work on behalf of other nursing members. They would be able to achieve through making other nurses to serve as a moral agent in identifying and resolving ethical and clinical concerns, within and outside the clinical setting such as requesting the speech therapist to assist the intensive care nurses with communication strategies that nurses do not know (Curley 1998:65). For patients with a language

barrier they are vulnerable because they would not be able to communicate, the nurse would be able to use moral agency by asking help from other nurse who would able to understand the patient's language (Freying, Kesten & Heath 2008:23).

As the nurse advances in the levels of advocacy, he/she will move to level of advocating for family members' involvement in communicating with ventilated patients. During visiting hours the nurse would be able to make connection between the family members and the patients by individualising the patients' communication needs such as assisting family members to communicate with the patient (Smith 2000:41). The nurse who is an expert with advocacy and moral agency would be able to identify that ventilated patients and their family members are not able to participate in care or fail to make decision for themselves, the nurse's ability to use advocacy would make her to motivate and encourage patients and family members not to rely on the nurses but to participate in the care and make clinical decision as well as to use available resources (Freying et al 2008:24). The synergy between the resources availability with advocacy and moral agency can be demonstrated by how the nurse can influence the securing of available communication methods and AAC devices that would be used in the unit to facilitate communication between ventilated patients and intensive care nurses.

Table 2.3 Levels of advocacy/moral agency

Level 1	**Level 3**	**Level 5**
The nurse works on behalf of patient; conduct self-assesses according to his/her personal values; be aware of ethical conflicts/issues that may surface in clinical setting; makes ethical/moral decisions based on rules; represents patients when they cannot represent self; be aware of patients' rights.	The nurse works on behalf of patient and family; considers patient's values and incorporates them in care, even when differing from his/her personal values; supports colleagues in ethical and clinical issues; demonstrates, gives information and talks with patient's family, allowing them to speak/represent themselves when possible; be aware of patient and family rights.	The works on behalf of patient, family and community; advocates from patient/family perspective, whether similar to or different from his/her personal values; advocates ethical conflict and issues from patient/family perspective; suspends rules patient and family drive moral decision-making; empowers the patient and family to speak for/represent themselves; achieves mutuality within patient/professional relationships.

(Source: Brewer, Wojner-Alexandrov, Triola, Pacini, Cine, Rust & Kerfoot 2007:158)

2.6.4.3 Caring practices

The caring practices are the nursing activities created through compassionate, supportive and in a therapeutic environment for patients and staff, with the aim of promoting comfort, healing and preventing unnecessary suffering (Hardin & Kaplow 2005:77). The caring practices include, but are not limited to, vigilance, engagement and responsiveness of caregivers, including family and health care personnel. During the nurse –patient interactions, the nurse will ensure that he/she does not only performs the activities but will be present by the patient's bedside in order to be able to recognise their communication needs immediately. The nurse would be able to recognise that the patient is unstable and vulnerable because of communication difficulty (Hardin & Kaplow 2005:77).

Caring practices involves nurses communicating with patients during provision of care and talking to the ventilated patient would be a sign of respect and that the ventilated patient would be considered as a human being with unique needs (Smith 2000:44). Caring also involves being listened to and the nurse's ability to paying attention to what the patient says would merge with nurse' ability to provide safety to the ventilated patient who is unstable, complex and are susceptible to stressors (Smith 2000:44, Curley 1989:65).The nurse's ability to assess the patient for communication ability would be an indication toward promoting comfort of the patient during nurse-patient interaction as the nurse would assist the ventilated patient to use communication methods that will promote the patient's resiliency (Beukelman, Garrett & Yorkston 2007:17).

The nurse would be able to support the patient's resiliency by being supportive when the patient attempt to communicate, as evidenced by the nurse being patience by asking the patient what she/he is saying or repeating the patient's words (Happ et al (2011:e30). Caring practices also involves the nurse's compassionate and understanding to both the patients and other nurses in order to optimise patient outcomes and the nurse can perform these activities depending on the level of caring (Yellin 2007:9). Caring also involves the ability of the nurse to be a pivotal person in bringing change in the unit by sharing with other during report giving and by documenting the patients preferred communication methods (Cox 2003:232).

Table 2.4 Levels of caring practices

Level 1	Level 3	Level 5
The nurse focuses on the usual and customary needs of the patient; no anticipation of future needs; bases care on standards and protocols; maintains a safe physical environment; acknowledges death as a potential outcome	The nurse responds to subtle patient and family changes; engages with the patient as a unique patient in a compassionate manner; recognises and tailors caring practices to the individuality of patient and family; domesticates the patient's and family's environment; recognises that death may be an acceptable outcome	The nurses has astute awareness and anticipates patient and family changes and needs; fully engaged with and sensing how to stand alongside the patient, family and community; caring practices follow the patient and family lead; anticipates hazards and avoids them, and promotes safety throughout patient's and family's transitions along the health care continuum; orchestrates the process that ensures patient's/family's comfort and concerns surrounding issues of death and dying are met

(Source: Brewer, Wojner-Alexandrov, Triola, Pacini, Cine, Rust & Kerfoot 2007:158)

2.6.4.4 Collaboration

Collaboration involves the ability of the nurse to work with others (e.g. patients, families, health care providers), in a way that encourages each person's contributions toward achieving realistic patient/family goals. It involves intra- and inter-disciplinary work with colleagues and community. In intensive care unit, the nurse had to collaborate with other to evaluate variety of communication methods or strategies to meet the communication needs of patients (Hardin & Hussey 2003:73). The nurse after acquiring information on nurse-patient interactions will teach other nurses the importance of communicating with ventilated patients. For patients that the nurses are unable to assist to meet the communication needs, the nurses can collaborate with other health care providers such as a speech therapist to help to patient to communicate.

A collaborative approach is important in the care of ventilated patients because the ICU nurses are challenged to understand what the patient wants to convey (Happ et al 2004:214). In some instances, the ability of the nurse to use the competency of

collaboration can be demonstrated by the nurse's effective persuasive and negotiation skills when she/he motivates and encourage other health care providers to communicate with ventilated patients (Curley 1998:64). Collaboration also involves informing other about the patients' communication needs and what the nurses had done to meet the patient's need. These can be achieved during change of shift as nurses inform other about the patient's communication methods or how the patient was assisted to communicate. Further, collaboration include documenting on the patient's medical records the ventilated patients' communication needs for the purpose of monitoring and continuity of care (Yellen 2007:7).

Table 2.5 Levels of collaboration

Level 1	Level 3	Level 5
The nurse' s willingness to be taught, coached and/or mentored; participates in team meetings and discussions regarding patient care and/or practice issues; open to various team members' contributions.	The nurse seeks opportunities to be taught, coached and/or mentored; elicits others' advice and perspectives; initiates and participates in team meetings and discussions regarding patient care and/or practice issues; recognises and suggests various team members' participation.	The nurses seeks opportunities to teach, coach and mentor and to be taught, coached and mentored; facilitates active involvement and complementary contributions of others in team meetings and discussions regarding patient care and/or practice issues; involves/recruits diverse resources when appropriate to optimise patient outcomes.

(Source: Brewer, Wojner-Alexandrov, Triola, Pacini, Cine, Rust & Kerfoot 2007:158)

2.6.4.5 Systems thinking

The systems thinking are body of knowledge and tools that allow the nurse to manage whatever environmental and system resources exist for the patient/family and staff, the health care outside health care systems. Systems thinking is a method of understanding the world from the perspective of organisational structures, patterns and events inherent in an issue rather than just the understand how decision can impact on the whole system. For instance teaching or encouraging other nurses to communicate with ventilated patients involves system thinking (Hardin & Kaplow 2005:83). The ability of the nurse to use the competency of system thinking would take place despite the problem related to recidivism in the unit regarding the importance of communicating with

ventilated patients (Smith 2000:44). The nurse will accomplish this competency by motivating and monitoring other nurses to communicate with patients. Again, they can sharing with others the patient's communication methods and needs in order to provide continuity of care (Yellen 2007:7).

According to Curley (2004:2) systems thinking are a body of knowledge and tools that empower the nurse to manage system and environmental resources for the benefit of the patient, family and health personal within or across health care systems. In order to meet the needs of family and patients, the nurses would develop, integrate and apply variety of communication strategies and methods. These strategies would be important in establishing sound systems thinking (Hardin & Hussey 2003:73).

Table 2.6 Levels of systems thinking

Level 1	**Level 2**	**Level 3**
Uses a limited array of strategies; limited outlook - sees the pieces or components; does not recognise negotiation as an alternative; sees patient and family within the isolated environment of the unit; sees self as key resource.	Develops strategies based on needs and strengths of patient/family; able to make connections within components; sees opportunity to negotiate, but may not have strategies; developing a view of the patient/family transition process; recognises how to obtain resources beyond self.	Develops, integrates and applies a variety of strategies that are driven by the needs and strengths of the patient/family; global or holistic outlook - sees the whole rather than the pieces; knows when and how to negotiate and navigate through the system on behalf of patients and families; anticipates needs of patients and families as they move through the health care system; utilises untapped and alternative resources as necessary.

(Source: Brewer, Wojner-Alexandrov, Triola, Pacini, Cine, Rust & Kerfoot 2007:158)

2.6.4.6 Response to diversity

American Association of Critical Care Nurses [AACN] (2010:5) describes response to diversity as the nurses' ability to recognise, appreciate and incorporate unfamiliar condition and processes into the provision of effective care. It is important for the nurse to be: sensitive to recognise the individuality of each patient while observing the patient's response to the nursing intervention (Hardin & Kaplow 2003:27). The nurses'

response to diversity would involve the ability to take into cognisance the patient's cultural, spiritual beliefs, family configuration, socioeconomic status, gender, race, ethnicity, lifestyle and values and beliefs of health care system, appreciating that people come from a multicultural background (Smith 2000:44). The ability of the nurse to be sensitive in recognising and appreciating patient's background as well as and incorporating the differences in ventilated patients while providing care (Hardin & Kaplow 2005:83). The nurse can demonstrate competency for response to diversity by bringing his/her educational background, knowledge, skills and experience while communicating with ventilated patients (Hardin & Kaplow 2005:83).

The 2010, Joint Commission for the National Committee on quality assurance and the National Quality Forum suggested the importance of considering cultural competences standard for hospitals and health care organisation that include race, ethnicity and language barrier. On the same note, a set of cultural competences for nursing practice had been developed in order to address diversity in the workplace as there is increase in variable of diversity as well as with ventilated patient (Hardin & Kaplow 2005:83). By appreciating other nurse' cultural differences, the nurse would be able to involve other nurses and physician in the care of ventilated patient with communication difficulty. One of the standard of care that emphasis the need for the nurse to be able to understand his/her own cultural values and beliefs as well as his/her educational background involves the ability for the nurse to provide appropriate and effective care to ventilated patients and family taking into account that they too bring in the situation their values and wishes. (Smith 2000:44). The nurse must support the ventilated patients' preference for communication methods and avoid choosing communication methods to patient that the nurse feel comfortable with and advocate for the individualised patients care (Happ et al 2004:214).

Table 2.7 Levels of response to diversity

Level 1	Level 2	Level 3
The nurse assesses cultural diversity; provides care based on own belief system; learns the culture of the health care environment.	The nurse inquires about cultural differences and considers their impact on care; accommodates personal and professional differences in the plan of care; helps patient/family understand the culture of the health care system.	The nurse responds to, anticipates and integrates cultural differences into patient/family care; appreciates and incorporates differences, including alternative therapies, into care; tailors health care culture, to the extent possible, to meet the diverse needs and strengths of the patient/family.

(Source: Brewer, Wojner-Alexandrov, Triola, Pacini, Cine, Rust & Kerfoot 2007:158)

2.6.4.7 Clinical inquiry

Clinical inquiry is a an ongoing process of questioning, observing, smelling, sensing, intuitively, listening and integrating information and evaluating practice as well of using innovative strategies identified in research and during experiential learning in order to inform practice with the aim to improve patient outcomes(Hardin & Hussey 2003:73). The nurse's clinical inquiry competency occurs when questions regarding the ventilated patients focus on why the patient is unable to communicate verbally and depth of uncovering the patient's values and wishes to communicate their needs. Clinical inquiry is important in nurse-patient interaction for collecting information to support practice and improves patient outcomes as practice based on evidence (Hardin & Kaplow 2005:75). The nurse can use clinical inquiry at different levels. For a nurse at a lower competency level, he/she would use available guidelines in caring for ventilated patients such as using standards the emphasis giving and explaining information to the patients while an expert nurse use evidence based guidelines, experiential learning to evaluate, revise policies, procedures and protocols to promote communicating with ventilated patients (Yellen 2007:7).

Literature has consistently demonstrated that giving information and explanation to ventilated help reduce their anxiety and stress level (McKinley et al 2002:27). By

engaging in clinical inquiry, the nurse would be promoting lifelong learning and evidence based practice while at the same time acquiring knowledge and skills needed to address nurse-patient communication. The nurse would be use clinical inquiry to adequately assess the ventilated patients for vulnerability and are unable to participate in their own care.

Nurses skilled in using clinical inquiry would have an opportunity to be aware of potential communication methods she/he can use to assist ventilated patients as well as appreciate that the ventilated patients have communication difficulty associated with negative effects. The nurse would be able to appreciate that they can find information that they can use to help ventilated patients to communicate without being frustrated level (McKinley et al 2002:27).

Through clinical inquiry, the nurse would be able to understand that communicating between health care team providers such as with other nurses, physician, speech therapist and social worker would be important to maximise success in communicating with ventilated patients. The nurse can apply clinical inquiry at different competency level depending on their experience and knowledge.

Table 2.8 Levels of clinical inquiry

Level 1	**Level 3**	**Level 5**
The nurse follows standards and guidelines; implements clinical changes and research-based practices developed by others. The nurse recognises the need for further learning to improve patient care. The nurse recognises obvious changing patient situation (e.g., deterioration, crisis); needs and seeks help to identify patient problem.	The questions appropriateness of policies and guidelines. The nurse questions current practice; seeks advice, resources or information to improve patient care. The nurse begins to compare and contrast possible alternatives.	The nurse improves, deviates from or individualises standards and guidelines for particular patient situations or populations. The nurse questions and/or evaluates current practice based on patients' responses, review of the literature, research and education/learning. The nurse acquires knowledge and skills needed to address questions arising in practice and improve patient care; (the domains of clinical judgment and clinical inquiry converge at the expert level; they cannot be separated).

(Source: Brewer, Wojner-Alexandrov, Triola, Pacini, Cine, Rust & Kerfoot 2007:158)

2.6.4.8 Facilitation of learning

According to the American Association of Critical Care Nurses [AACN], Certification Corporation (2003:1), facilitation of learning involves the ability to facilitate learning for patients and patient's families, nursing staff, other members of the health care team and community. It also includes both formal and informal facilitation of learning. ICU is a teachable moment for patients because the patient experience stressful events in ICU environment (Ayllon, Alvarez & Gonzalen 2007:159). The synergistic relationships that occur by linking vulnerability with facilitation of learning demonstrated how the nurse can influence effective communication with the ventilated patient. Although the ventilated patients are vulnerable but they are resilient and they are likely to remember the information provided as they had alluded for explanation of procedure and progress of the condition while in the ICU (Guentner, Hoffman, Happ, Kim, Dabbs, Mendelsohn & Chelluri 2006:65). The nurses can establish therapeutic relationship as she is by the patient's bedside for the greatest length of time. The nurse can facilitate patient and family learning regarding the patient's communication difficulty. For instance, the nurse would explain to the patient why he/she is unable to talk and share with the patients the best methods to use to facilitate communication.

The nurse would demonstrate competency as a facilitator of learning by orientating and giving information on treatment or progress to ventilated patients. Again, the nurses would be able to assess the patient's ability to communicate and teach the ventilated patient other communication methods such as alphabetic board to use (Kaplow 2003:27). The nurse would be assisted to focus on the patient's communication needs and be provided with education on how to communicate with the ventilated patient in order to help solve the patient's difficulty in (Curley 2004:2). The nurse would consider the complexity and stability of the patient as they constantly assess the patient's responses and provide individualised care to meet patient' communication needs (Yellen 2007:7). The nurse would be able involve other nurses and other health care providers in the care of the patient according to the communication plan they developed. The nurse's ability of the nurse to facilitate for learning would be demonstrated by the nurse's ability encourage and motivate other nurse to share during report giving and by documenting the patients preferred communication methods.

Table 2.9 Levels of facilitation of learning

Level 1	Level 2	Level 3
The nurse follows planned educational programmes; The nurse sees patient and patient's family education as a separate task from delivery of care. The nurse provides data without seeking to assess patient's readiness or understanding; The nurse has limited knowledge of the totality of the educational needs; focuses on a nurse's perspective. The nurse sees the patient as a passive recipient.	The nurses adapts planned educational programmes The nurse begins to recognise and integrate different ways of teaching into delivery of care. The nurse incorporates patient's understanding into practice. The nurse sees the overlapping of educational plans from different health care providers' perspectives. The nurse begins to see the patient as having input into goals and begins to see individualism.	The nurse creatively modifies or develops patient/family education programmes integrates patient/family education throughout delivery of care. The nurse evaluates patient's understanding by observing behavior changes related to learning; is able to collaborate and incorporate all health care providers' and educational plans into the patient/family educational programmes; sets patient-driven goals for education; sees patient/family as having choices and consequences that are negotiated in relation to education.

(Source: Brewer, Wojner-Alexandrov, Triola, Pacini, Cine, Rust & Kerfoot 2007:158)

2.7 CONCLUSION

This chapter provided a review of literature. There are a several factors that nurses and patients perceived as limiting their communication in ICU and these include intubation and mechanical ventilation, severity of patients' illness, and inability to use alternative communication, preoccupation with technology and technical care and nurses' lack of appropriate communication skills. Studies in this review show that experience in ICU is unpleasant and frightening. It is evident that mechanically ventilated patients experience communication difficulties. The patients are not given sufficient information about their conditions and procedures and treatment resulting in anxiety, helplessness, hallucination nightmares pain and discomforts which were associated with technology in ICUs.

In this review, there were strengths in relation to nurse-patient interaction in ICUs that may be used for clinical application. There were also gaps that call for future research in all the areas covered in this review, for example the need for an observational study on nurse-patient interactions with a large sample size. Most of the studies in this review

used a prospective qualitative approach, and not one study used random controlled trial, and three studies used a systematic approach. In addition, most of these studies used small samples size and single site.

The studies in this review were carried out in Australia, Italy, Cyprus, Sweden, United Kingdom and the United States of America (USA). These countries have affluent societies in which the health care system is probably not patriarchal and thus patients are free to communicate their rights. Not one study on nurse-patient communication in ICU was found that was conducted on patients' experiences after intensive care in Africa. Furthermore, studies that have investigated communication in ICUs have suggested factors that could ameliorate the problems during nurse-patient interactions except for one study that documented that nurse-patient interaction have no effect on psychological outcomes.

In the last three decades, numerous studies have focused on the psychological needs of mechanically ventilated patients in ICU by asking patients what they perceived could have ameliorated the negative psychological outcomes, such as difficulty in communication with health care providers. Research in this area has moved attention to patients' needs by attempting to understand and improve ways of communication between mechanically ventilated patients and health professionals. Most recently, some of the studies have addressed types of effective interventions for improving nurse-patient interactions such as seeking information from staff that are sensitive to patients' needs and the use of alternative communication techniques; however, there are limited studies in this area.

Mechanically ventilated patients may experience psychological problems associated with communication difficulties, critical illness and treatment in ICU. The psychological problems may be related to factors associated with the nurses or patients' situations. Studies reviewed have been largely limited to assessing nurse-patient interaction, or investigated negative or positive communication behaviors. There are a number of studies that attempted to demonstrate how mechanical ventilation causes difficult y in communication by asking patients about their experience when they were ventilated.

On the basis of these findings, investigators advocate for in-service training on communication skills so that nurses can communicate effectively and understand

patients while they attempt to communicate. Patients have indicated that they are satisfied when they are given information. It would therefore be of interest to learn whether the nurses' communication skills are improved by education.

Nurses may document the different communication methods as well as the information they shared with the patients when providing care to mechanically ventilated patients in order to enhance communication between patients and other health care providers. However, in all the studies in reviewed, the researchers have not indicated if nurses documented the communication methods that they used despite the fact that most of the studies used observational approach. The small body of literature has indicated that few nurses do not specify the communication methods they use and that some of the methods such as picture boards and natural speech alternative and AAC devices are not documented in any clinical records.

Application of the model presents an opportunity to build a common ground for nurses in their efforts to promote communication with mechanically ventilated patients as it would be in synergy with the patients' needs. The role of a nurse in promoting care which includes communication is well articulated in the model. Once the common ground is found among nurses, patients' documentation systems will be aligned around the eight nurses' characteristics. Furthermore, the model would be appropriate in providing in-service education for nurses working with mechanically ventilated patients as espoused in its application.

CHAPTER 3

RESEARCH DESIGN AND METHODS

3.1 INTRODUCTION

As discussed in the previous chapter, other studies have shown that there is a need for studies on nurse-patient interactions in intensive care, especially those that use mixed methods research. The purpose of this study is twofold: to describe and explore existing knowledge, skills, perceptions, needs and barriers from the perspectives of ICU nurses, and to develop the practice guidelines that enhance effective communication of nurses with ventilated patients.

This chapter presents detailed account of the approach taken in the present study, its background and theoretical position in relation to the mixed methods used to elucidate the perspectives of ICU nurses about communication with mechanically ventilated patients. The chapter describes the research methods, recruitment strategy, sampling strategy and selection criteria. Data collection, data analysis, ethical considerations, the processes used to achieve rigour and trustworthiness and explanation of the methodological issues and conclusion of the research methods are also discussed in this chapter.

3.2 JUSTIFICATION FOR RESEARCH METHODOLOGY UNDERPINNING THIS STUDY

In the present study mixed methods approach was used to integrate qualitative and quantitative data collection and analysis. Several sources of data collection were triangulated to increase validity and credibility of the study, as well as follow the research process to provide rigour for data collection.

Mixed method**s** research involves a combination of the paradigms of quantitative and qualitative methods, approaches and techniques into a single study (Onwuegbuzie &

Teddlie 2003:351). According to Creswell and Clark (2007:77), mixed method is the approach that a researcher uses to collect, analyse and integrate both quantitative and qualitative data in a single study during sustained process of enquiry. Although there is argument for using the mixed methods approach as a standalone paradigm (Symond & Gorard 2010:121), the two approaches complement each other since quantitative approach is seen as being objective compared to the subjectivity of the qualitative approach. The understanding is that by triangulating these approaches, they offset the weaknesses of each approach. Symond and Gorard (2010:121) claim that qualitative approach emphasises open-ended questions with greater emphasis on validity and trustworthiness that relies on people's subjective experiences, understandings of perceptions, beliefs and values whereas, quantitative approach stresses numbers and the reliability of the instruments used for data collection and generalisability. Quantitative approach seems to restrict people's views because of the techniques used for data collection as it uses closed ended questions. Qualitative approach acknowledges that human being is complex in nature as they are influenced many factors. In this study mixed methods approach was the obvious choice because of the complexity of communication in the ICUs and the fact that the researcher wanted to look at different aspects of communication according to the study framework (Farquhar, Ewing & Booth 2012:748).

One of the strengths of using mixed methods includes simultaneous data collection, and this also helps in gaining the perspective from different types of data (Johnson & Christensen 2012:234). Data collection in mixed methods requires timing, that is, the researcher should decide whether to collect data concurrently or sequentially (Greene 2008:7). Sequential data collection is when data are collected at different times, and concurrent collection is when the two types of data are collected at the same time during one phase of data collection (Johnson & Christensen 2012:234). The same authors assert that the data may have equal priority and the integration of the two data only occurs during data analysis.

There are some factors that the researcher should consider when choosing to use mixed methods and these include: the availability of study participants, financial limitation, and the nature of the study. To maximise the amount of data collected based on the limited time frame; this study used concurrent data collection for phase 1 with equal emphasis placed on both qualitative and quantitative and sequential data

collection was used for phase 3 as it was dependent on the findings of phase 1 and phase 2. The concurrent data collection from the same sample has greater cost reduction in terms of money and time because of its flexibility.

In the present study, the mixed methods approach was used to gain understanding of participants' perceptions, experiences, beliefs, needs and barriers of the study population from the real life world. The approach also allowed the researcher to gain insight into the way participants' experiences are shaped through interactions with patients. As indicated above, the conceptual framework that guides this study was based on Synergy Model of Patient Care. The model clearly delineates the nurses' competencies and because the participants are expected to function at different levels, the mixed methods approach was found to be the most suitable approach for understanding the phenomenon under study, and helps to convey the magnitude and dimensions of the nurses' experiences and perceptions.

Greene, Caracelli and Graham (1989:255) suggest five purposes for using mixed methods research.

- *Data triangulation:* refers to the using multiple source in order to measure the same phenomenon. Using multiple methods increases confidence in the conclusion arrived at and enhances validity of the study. In current study, triangulation of data sources was used which included (1) collecting data at different times (2) collecting data from more than one site, and (3) collecting data from different participants. According to Polit and Hungler 2004:344, this strategy allowed for completeness of investigating the phenomenon in order to make an accurate representation of reality under study, and to confirm the findings. Participants had different characteristics and had interacted with ventilated patients with different background.
- *Complementarity*: It is the use of different scopes that deeply investigate the same phenomenon and make conclusions from the study. Johnson and Christensen (2012:234) argue that using different aspects to investigate the phenomenon enhances and clarifies the findings from one method to the other, and allows for the researcher to understand different aspects of a phenomenon. In this study, nurses were interviewed using questionnaires as well as individual interviews.

- *Initiations:* It is a strategy that involves use of different methods, but unlike complimentarity it deviates from the normal by generating new understanding of the phenomenon of interest. In this study data were collected from file of previously ventilated patients treated in the ICU from January 2011 to December 2012 to identify validate the information provided in the by the nurses through questionnaires.
- *Development:* It involves 'using the results of one study to inform the development of other methods'. Data from the phases 1 and 2 was used to develop the intervention materials in this study.
- *Expansion*: This is when other methods are used to investigate different phenomena to increase the dimensions of the study. Combination of all strategies increases the validity of data collection. For instance, auditing of patients' records and protocols was used to assess phenomena in this study.

All these purposes have been applied in this study, and the different research methods are described in the following sections of this chapter.

3.3 JUSTIFICATION OF THE RESEARCH DESIGN

3.3.1 Quantitative research design

Quantitative research design is rooted in post positivism with the philosophy that reality can be discovered using the deductive approach in which ideas or concepts are deduced into variables (Polit & Beck 2010:314; Burns & Grove 2009:157). Quantitative descriptive and exploratory research was used in this study. As the name suggests, descriptive or exploratory research gives an accurate description or exploration of the phenomenon observed. In this study the descriptive or explorative quantitative research design's major emphasis was to determine the frequency with which thing occured. The main function of descriptive and exploratory research was through measurement of variables and statistical analysis. Variables were not manipulated, the researcher only described what actually existed and established the frequencies as they occurred and categorised the information according to her interpretations (Burns & Grove 2009:357; Walker 2005:573). The researcher observed, described, explored and documented various aspects of nurse-patient interactions. This design was selected because it

seemed mostly pertinent for obtaining empirical information that address the research questions for this study.

3.3.2 Qualitative research design

Qualitative research design in contrast to quantitative research design is rooted in the naturalistic paradigm in which multiple realities are subjectively described (Burns & Grove 2009:257; Polit & Beck 2010:246). In this study qualitative descriptive design was used in order to provide a rich description of the phenomenon from the participants' viewpoint. According to Sandelowski (2000:334), this design aims at providing a "comprehensive summary of events in the everyday terms of those events." In order to accomplish this, the researcher captures information in a natural setting in the ICU (Lincoln & Guba 1985:189). In this study the researcher used qualitative approach to capture the nurses' stories of their communication with ventilated patients in order to understand their experiences and perceptions. The main objective of explorative research is to identify key issues through interactive and inductive data collection and analysis (Creswell 2007:222). Qualitative research is considered pragmatic, interpretive and grounded in the lived experiences of people but the research should be sensitive to the social context in which data are collected (Polit & Beck 2010:246). In order to produce qualitative data the researcher should take cognisance of the flexibility in sampling and data collection. Although the research may have a sample size, the researcher may decide to end data collection when data saturation occurs (Burns & Grove 2009:243). In this study the researcher adopted data saturation method because of the complexity of communication.

3.3.3 Quasi-experimental design

An explanatory mixed methods design using quasi-experimental model, adopting before and during the intervention design was applied to answer the research questions (Creswell & Clark 2007:77). Quasi-experimental design examines cause and effect relationship between independent and dependent variables just like experimental design but it lacks randomisation of samples to groups (Burns & Grove 2009:319).

This type of design is the most frequently used type of design appropriate for studies having two phases. The design of this study involved collecting quantitative data before

the intervention and qualitative data before and during the intervention (Creswell & Clark 2007:77). Quasi-experimental design is likened to clinical trial. It has the advantage of convenience and practicability. The authors assert that although this design test the effect of an intervention, quasi-experimental design's disadvantage is that since the units are not randomly assigned to experimental and control groups, selection bias can never be excluded completely resulting in reduced internal validity resulting in decreased generalisability of the study findings (Burns & Grove 2009:319).

The purpose of using descriptive and explanatory mixed methods study was to obtain statistical quantitative results from nurses and then follow up with a few individuals to probe or explain those results in depth (Polit & Beck 2010:340). In the first quantitative phase, the hypothesis addressed the relationship of what the nurses had documented in the patients' files with what the nurses stated on how they communicate with ventilated patients in the questionnaires. The qualitative phase was used to describe in-depth how the nurses communicate with ventilated patients by interviewing nurses and nurse leaders, in order to better understand the quantitative results from the first phase (Polit & Beck 2010:340). Also quasi-experimental design was used in this study to identify any change in the way nurses communicated after the intervention (Burns & Grove 2009:320). However, the 10 nurses from each hospital were interviewed before the intervention and two weeks during the intervention because of time constraint to complete this thesis.

3.4 JUSTIFICATION FOR DATA COLLECTION METHODS

Data were collected in three phases as discussed below:

3.4.1 Phase 1: Quantitative design from the systems and ICU nurses

In this study a retrospective data collection was conducted through by auditing 159 files of previously ventilated patients. Fifty (N=50) nurses completed self-administered questionnaires. Data collection procedures will discussed in detail later in this chapter.

3.4.2 Phase 2: Qualitative design from nurses and nurse leaders

Data were collected using semi-structured, in-depth interviews with ICU nurses and nurse leaders. A total of 28 face to face interviews were conducted. Ten registered nurses from each hospital and 8 nurse leaders were individually interviewed to further explore nurses' knowledge and skills, perceptions as well as nurses' barriers and needs for communicating with ventilated patients in order to validate the quantitative data.

3.4.3 Phase 3: Intervention

The information from the findings of the previous phases and information from literature was used to develop the intervention for this study. During this phase 10 ICU nurses were interviewed using semi-structured, in-depth interviews. Participants in this phase were the sample of the same ICU nurses that were interviewed in phase 2. During the intervention, the nurses were individually interviewed in order to assess their understanding of the mechanisms of the intervention and their experiences.

Interviews are described as an interactive process in which ideas, feelings, perceptions thoughts and beliefs are shared (Polit & Beck 2010:333). The types of interview are unstructured, semis-structured or structured. Phenomenological and ethnographic studies use mostly use unstructured interviews and semi-structured interviews. Interviews involve development of an interview guide by the researcher in order to motivate participants to express their ideas and thought about the topic of research (Polit & Beck 2010:333). Interviews are described as a journey by the interviewee and the interviewer (Mininchiello, Sullivan, Greenwood & Axford 2004:215). In qualitative research, participants are able to express their ideas and thoughts freely.

The researcher intended to recognise the participants' understanding of the nurse-patient interactions in the ICU as it surfaces as they reflected on what they say to patients. Through dialogue with the researcher, the participants will be able to account for their actions, which may be established through interpersonal relations with the researcher (Mininchiello et al 2004:215). Establishing rapport with participants is important to break barriers between the researcher and respondents. Good rapport is crucial to safeguard respect and trust on the researcher in order for the respondents to openly and freely share their experiences (Mininchiello et al 2004:215). If people feel

vulnerable or anticipate the likelihood of negative results, they may not express their feeling openly (Mininchiello et al 2004:233).

In this study the researcher was known at the first hospital because of her acquaintance with the nurses in a previous study, and had educational and professional connections in the same unit. However, the researcher maintained neutrality during the study for potential ethical issues. Establishing rapport for this study was easy in this unit compared to the ICU of the second hospital and at the Medical Records Departments for both hospitals because participants did not know the researcher. For the purpose of establishing rapport and trust, the researcher introduced herself and her background to facilitate discussion during the interviews and retrieving data from the patients' files. The procedure of data collection will be discussed in detail in section 3.6.

3.5 JUSTIFICATION FOR DATA ANALYSIS TECHNIQUES

Data analysis is an ongoing process that involves making sense of the data collected (Polit & Beck 2010:321). The raw data are transformed in order to answer the research question. There are various ways of data analysis in mixed methods research. According to Sandelowski (2000:300), qualitative and quantitative data in mixed methods research can be linked into one data set or combined data to create one data set. Concurring with Sandelowski (2000:300) on mixed method data analysis, Driscoll, Appiah-Yeboah, Salib and Rupert (2007:19) assert that quantifying of qualitative codes that occurs and analysing these data using statistical softwares programme such as NVivo. Another way to quantify the data can be achieved by enumerating numbers of themes (Onwuegbuzie & Teddlie 2003:351). Although a number of researchers had demonstrated that there are benefits to transform qualitative data into quantitative data, in this study the researcher used the strategy of analysing data obtained qualitatively and quantitatively separately in order to protect the possible of data, the depth and flexibility of data collection from distortion. In addition to using this strategy in this study during data analysis, the researcher intended to provide more insight into the meaning of data collected because of the multidimensional qualities of qualitative research (Bazeley 2004:141).

Data from interviews were analysed using qualitative thematic content analysis, according to Bernard (1995:230), as it focuses on identifying themes arising from data

and across participants (Bernard 1995:230). The analysis enables meanings, contents and consequences or intentions to describe and delimit categories (Graneheim & Lundman 2004:105; Bernard 1995:2307). The overall aim of the analysis is to produce detailed systematic recording of the themes and issues addressed in the data. The focus of the analysis will be the interpretation of underlying content behind the obvious surface content (Bernard 1995:230). In order to understanding the participants' experiences as they emerged in the data, the researcher used this inductive analysis to code data according to themes.

3.6 RESEARCH METHODS

3.6.1 Setting

The study was conducted in two referral hospitals located in two cities in Botswana to allow the researcher to obtain diverse information from referral hospitals in the country. The study sites were two Referral Hospital ICUs one that receives patients from the Southern and the other from the northern part of the country. These ICUs were selected because of the number of patients treated and the size of the units. Although these units are considered large for Botswana, the findings of this study were not focused on produce generalisability but to elicit nurse; perceptions and experiences.

The hospitals admit both children and adults patients with different conditions such as medical, surgical, cardiovascular, oncology, trauma, obstetrics and gynaecology, just to mention a few. The researcher acknowledged the small sample size of both ICU nurses and patients in one hospital and therefore used two hospital ICUs. Further, in order to increase the sample size to a reasonable number, the index time of nurses deployed and patients admitted in both the ICUs were extended to two years from January 2011 to December 2012.

3.6.2 Recruitment strategies

Recruitment involves a dialogue between the investigator and potential participants. This process involves having the researcher provides information to potential participants about what their participation will entail and generating their interest in

participating in the study with the ultimate aim of recruiting a sufficient sample size that meets the study's inclusion criteria (Keith 2001:11).

After ethical clearance from the Higher Degrees Committee of the Department of Health Sciences, University of South Africa (Unisa) (Annexure A) (Annexure A), the proposal was submitted to the University of Botswana (Annexure B) and Princess Marina Hospital Ethics Committee (Annexure D). Upon approval by the University of Botswana, the proposal was submitted to the MoH, Botswana Ethics Committee (Annexure C). Both hospitals could not allow for data collection before the approval of MoH Ethics Committee despite the fact that one granted permission for ethical clearance before the approval of MoH Human Research and Ethics Committee.

Following approval of the MoH as stated above, the study was conducted first at one Referral hospital ICU. As indicated above, data collection was conducted concurrently. The researcher approached the ICU and Medical Record Departments management and presented the purpose of the study. In both units, the matron (Chief executive officer for nurses) introduced the researcher to the nurses and informed them of the purpose of the study. In the Medical Record Departments, the manager at three to two officers from both hospitals to assist by retrieving the patients' files from shelves. Ethical issues for use of medical files are discussed in detail in other section of this chapter.

Recruitment of nurses and nurse leaders was performed after ethical approval as indicated above. The researcher invited each participant to an office to explain the purpose of the study and provide them with information sheet to read over 24 hours. Ethical considerations for participants are discussed later in section 3.8.

3.6.3 Sampling strategy

Sampling is a process of selecting a representative portion of the population in quantitative studies to enhance generisability of the findings (Polit & Beck 2010:313). Sampling methods include probability and non-probability. In non-probability sampling participants are selected purposively or conveniently. According to Mininchielolo et al (2004:195), purposive sampling involves the researcher deciding about the participants that will be able to provide information wanted by the researcher. The researcher samples only from the identified participants. The advantage of this sampling procedure

is that the researcher samples only from certain individuals that will have information needed or when the study population is extremely small making it expensive to collect data from the general population. However, the disadvantage of this sampling method is that the researcher may beunable to gather information from the most suitable participants and thus making the sample not representative for generalisation (Mininchiello et al 2004:195).

The researcher used mixed purposeful strategy for sampling in order to gather in-depth information. Probability sampling, on the other hand, involves random assignment of elements into a sample (Polit & Beck 2010:351). Probability sampling methods include simple random, cluster, stratified and systematic sampling. Each member has an equal chance to be included in the sample in simple random (Polit & Beck 2010 351). Because of the small number of nurses in the two ICUs, the research could not use random sampling.

3.6.3.1 Sampling in phase 1

Purposive sampling strategy was used to guide the recruitment of the ICU nurses, nurse leaders and patients' files. According to Polit and Beck (2010:333), convenient and purposive sampling enable the researcher to embark on collecting detailed information that provide insight and in-depth understanding of the phenomenon under investigation. As indicated before the researcher' plan was not to generalise the findings of this study but to detect and understand the nurse-patient interaction in the ICU. The researcher used experience and prior knowledge of the ICU patient population and nurses (Lincoln & Guba 1985:222).

The researcher and the research assistants screened all files of previously ventilated patients according the inclusion and exclusion criteria.

Inclusion criteria

- The records of patients treated in the ICU for at least 24 hours.
- Patients whose Glasgow Coma Scale (GCS) was 9/15 and above because they would have communicated nonverbally with the nurses.
- Patients aged 18 years and above.

- Nurses who had worked in the ICU or were working during the time of data collection irrespective of age or years of experience working in the ICU.

Exclusion criteria

- The record of patients who were unconscious, had reported signs of dementia and mental illness as they may not have communicated nonverbally with the nurses.
- The nurses who were not willing to participate in the study were not recruited.

Files of patients admitted in the ICU from January 2011 to December 2012 were retrieved by the officer from the Department of Medical Records using the patients' medical numbers. The researcher and the research assistants retrieved the information from the files that met the inclusion criteria using the audit guide (Annexure K). This audit guide training of RAs will be described later in this chapter. A total of 367 files were retrieved and 159 met the inclusion criteria from both hospitals.

Purposive sampling was also used with the ICU nurses and nurse leaders were also recruited purposively and conveniently. Fifty-two nurses were recruited to participate in the study and 50 nurses consented to participate and completed the questionnaire developed for this study (Annexure M). This instrument will be described in the following section of this chapter.

3.6.3.2 The research instruments and data collection in phase 1

Data collection from the nurses was collected by using the questionnaire and the audit guide was used to collect data from the patients' files. Questionnaire and audit guide are types of checklist that consist of series of questions and responses based on the same topic (Polit & Beck 2010:332; Burns & Grove 2009:257).

In this study as indicated before, a questionnaire was developed comprising 41 items derived from the literature and experts in the ICU. According to Polit and Hungler (2004:344), questionnaire can be relatively easy to understand and efficient to complete by the participants, however, one of the disadvantages of a questionnaire include low return rates and incompleteness. The questionnaire items comprised of nurses'

demographic data, information provided by the nurses, communication methods used in the ICU, availability of assistive and augmentative communication methods in the unit, orientation of the patient to the environment, documentation of information relating to nurse-patient communication in the ICU and the items were developed according the Synergy model of patient care used in this study. The information collected through the both checklist were to validate each other.

The audit guide comprised information on the demographic data, the availability of data on what nurses use to assist patient to communicate, the availability of data assessment of patient's communication ability, hearing and sight, assess met for level of consciousness, the availability of data communication methods used, the availability of data on information provided, the availability of data on collaborating with other professions to assist with nurse-patient interactions.

Another audit guide (Annexure L) for the procedure manuals or protocols, the in-service books and family conference books comprised data on what nurses use to assist patients to communicate, the availability of data assessment of patient's communication ability, hearing and sight, assess met for level of consciousness, the availability of data communication methods used, the availability of data on information provided, the availability of data on collaborating with other professions to assist with nurse-patient interactions.

3.6.3.3 Pilot study in phase 1

The audit guides for the patient's file and other systems were amended for information on availability of information for hearing and vision to capture if there was any information recorded or not. The questionnaires for nurses and the audit guide were pilot tested to identify and detect any problems inherent in the instruments and to determine the effectiveness of the instruments before data collection (Polit & Beck 2009:336). As indicated before, that the instruments were developed from literature and experts, this was the initial stage as experts and supervisors assisted in the development of the instruments. During the process, the researcher was able to amend some of the items. The University of Botswana Ethics Committee's comments assisted in refining the audit guide as their comments were incorporated in the guide in order to make it clearer for use by other data collectors. Further, the five patients' files from

patients discharged in January and February 2013 were selected for pilot testing the audit guide. Five nurses working in the surgical ward high dependency cubicles were recruited for pilot testing of the questionnaire.

3.6.3.4 Sampling in phase 2

As stated before, sampling is a process of selecting representative proportion of the population in quantitative studies to enhance generisability of the findings (Polit & Beck 2010:313). Again the researcher had planned to describe nurses' experiences and perceptions during nurse-patient interactions in the ICU. Sampling methods include probability and non-probability. During phase 2, data were collected qualitatively using interviews. All the nurses' codes, corresponding to the names of the nurses from each hospital ICU (30 for Hospital 1 and 20 for Hospital 2) were written on small pieces of paper. The small pieces were folded and placed in a box and an independent person picked one piece of paper at a time, ten times to select the nurses for the intervention and the interviews during the intervention. This method was used to enable each nurse to have an equal chance to be selected (Polit & Beck 2010:351).

Also during this phase, nurse leaders were recruited purposively and conveniently as they were few and the researcher wanted to collect in-depth information on nurses' experiences and perception of nurse-patient communication in the ICU from the supervisors. Convenient purposive sampling as indicated above was used in this study.

3.6.3.5 The research instrument in phase 2 and phase 3

The researcher and the RAs collected data by interviewing 10 nurses from each hospital and 8 nurse leaders from both hospitals. Semi-structured interview guide (Annexure M) was used to encourage nurses to express their thoughts and ideas to ensure that the key concepts are covered. The interview guide was developed from literature review and input from experts and supervisors. Bernard (1995:350) asserts that "semi-structured interviews useful tools for obtaining specific details about a topic." The nurses in ICU are accustomed to busy schedules and using semi-structured interview was an advantage to the researcher because the nurses had limited time for the interviews.

Probing was also used during the interviews to clarify participants' answers and to obtain more information. According to Bernard (1995:350), the research can use probing as a technique to stimulate an informant to give more information while at the same time avoiding to infuse own ideas in the conversation in order to reflect more on the data. The same further assert that this technique is the key to get more information especially from informants who are inarticulate (Bernard 1995:350). Probing was used in this study because the researcher wanted the nurses to recall their experiences in depth while they were communicating with ventilated patients. The researcher simply asked the participants to elaborate more on their responses. Ten nurses were interviewed during phases 2 and from these 10 nurses 6 were interviewed in phase 3 using the same semi-structured interview guide. Guest, Bunce & Johnson (2006:59) state that data saturation has "become the gold standard by which purposive sample are determined in health research", therefore 32 interviews were completed from both hospital ICUs. The same authors urge that data saturation of 12 can be considered enough in qualitative research. These nurses had consented for all the phases and ethical issues during these phases are discussed in later sections of this chapter.

3.6.4 Training of the research assistants

Two RAs were recruited to assist during data collection from the patients' files and interview sessions. The RAs' educational preparation was a master's degree in nursing. The ethics committees of the MoH, Botswana and from both hospitals had requested the curriculum vitae of both RAs to ensure that they were qualified nurses as they were handling confidential information of patients and nurses. In order to ensure standardisation during data collection, a two-day training session was conducted on the data collection processes for the RA (Polit & Beck 2010:214). The RAs were given information on how to use the instruments and to conduct interviews, for example, how to avoid bias and to allow weak patients rest periods during the interview despite that they were not given an opportunity to conduct the interviews. This RA was involved in the pilot testing of the instruments in order to appreciate the instruments and be familiar with data collection processes as well as for rehearsal, feedback until he/she have mastered the instruments and data collection process (Mininchiello et al 2004:229).

3.6.5 Phase 3: Intervention

The intervention took the form of communication skills seminars with the researcher assisting nurses using scenarios to provide patients with information on nursing activities and treatment. During the sessions the researcher also used AAC devices to communicate with patients. The AAC devices are communication strategies and methods used to convey messages to the patients and help them understand what is happening; the strategies include the natural and expressive forms of communication (Garrett et al 2007:17). The patients' care scenarios and the AAC devices are discussed in chapter 5.Three workshops consisting of two sessions each were conducted with the nurses. These sessions comprised: (1) role plays, and (2) group discussions on the topic covered during session 1, with emphasis on information sharing, and experiential learning, and practising with each other what they had learnt during the workshops.

The nurses were also encouraged to practise with mechanically ventilated patients as they were providing care. The sessions were conducted concurrently with the nurses practising on patients for one hour each day over six weeks, immediately after the handover report so as to include morning and evening shift nurses. The nurses attended the seminars in groups of two or four. Details of the intervention phase are discussed in chapter 5.

3.6 DATA COLLECTION PROCEDURE

Data were collected from March 2013 to July 2013. Data were collected from two referral hospitals from patients' files, nurses and nurse leaders. Each participant was recruited in the room in the ICU in both hospitals. The researcher briefed the participant about the purpose of the study, and explanation for the process of interview and duration session and gave them the information sheet to read over night. The participants were given an information sheet to read over at least 24 hours (Annexure H).

For phase 1, following completion of the informed consent, the nurses were given the questionnaire to complete (Annexure I). They were allowed to complete it immediately in a private room or take it home to return and return it when they come during the

following shift. As indicate above, the questionnaire comprised of demographic data and series of questions related nurse-patient interactions in the ICU. Participants were asked not to write their names and were informed that only codes will be used on the questionnaires.

During phases 2 and 3, before each interview session, the participants were provided with a verbal summary of the purpose of the study. The participants were assured of confidentiality and anonymity and that the information would not affect their academic and professional endeavor in anyway. They were informed that they were free to withdraw from participating in the study at any time without giving any reason for withdrawal. The participants were not forced in any way to participate in the study. Participants were also provided with a consent form to sign for hospital 1 Annexture I and Annexure F for hospital 2. Two sets of consent forms were used according to each Ethics Committee' request. Participants were also requested to be audio-taped and they were requested to indicate to the researchers when they were ready to be interviewed.

Data were collected by the researcher and one RA at a time, using in-depth semi-structured interviews (Annexture N) with the nurses and nurse leaders. All interviews were conducted with the individual participant and the researchers in the room in the ICU in order to provide a neutral environment. The interviews were audio-taped after permission was obtained from participants, and the RA captured nonverbal cues. The interviews lasted between 45 to 60 minutes. The nurses and nurse leaders were allowed to express their perceptions and experiences freely, and the researcher used probing throughout the interviews. At the end of each session, the participants were asked to if they wished to say anything in the form of comments or questions.

Following completion or submission of the questions and at completion of the interview session, the researcher thanked each participant for their time and further assured them of confidentiality of information shared. Data collection ended when 32 interviews were conducted with nurses and nurse leaders. The number was considered adequate as data saturation was reached (Guest et al 2006:59).

3.6.1 The researcher' field notes

The researcher kept field notes as a way to capture all that was happening during data collection (Polit & Hungler 1993:347). The researchers captured the whole process of data collection including the researcher' feeling actions observed and events during interviews such as participants' nonverbal cues. The researcher had personal reflection on the nurses' perceptions regarding communicating with ventilated patients. Also through her influenced as a researcher, and her experience as an intensive care nurse and as a lecturer in this area. Field notes were important because they raise the researcher's awareness issues raised during data collection such as recruitment of participants, personal feelings about the interviews, responses during the interview sessions. At the end of every day the researcher went through the field notes in order to strategise the events for the following day. This was crucial during the intervention phase for planning. For instance there were coactions when one nurse would be off duty for the following session of the seminar.

3.7 DATA ANALYSIS

The purpose of this study is to describe and explore existing knowledge, skills, perceptions, needs and barriers from the perspectives of ICU nurses in order to guide the development of the practice guidelines that enhance effective communication of nurses with ventilated patients as discussed before in chapter 1. Data analysis was done in twofold: First data collected from using quantitative methods were analysed using Statistical Package for Social Sciences (SPSS) version 10 as well as Microsoft Excel to generate figures and graphs. Descriptive statistics were used to summarise demographic data from patients' records, nurses and nurse leaders 'demographic data. Categorical variables were analysed using percentages for nurses' questionnaires. Descriptive statistics allowed the researcher to examine with clear understanding the phenomenon under investigation (Burns & Grove 2009:461).

Secondly, the audio-taped interviews and field notes made by the researcher provided the means to explore the data in detail. Data for interviews were transcribed per verbatim by an experienced transcriber. Data were analysed using qualitative thematic content analysis according to Bernard (1995:350). The analysis enables meanings, contents and consequences or intentions to describe and delimit categories (Graneheim

& Lundman 2004:105; Bernard 1995:350). The overall aim of the analysis is to produce detailed systematic recording of the themes and issues addressed in the data. The focus of the analysis was the interpretation of underlying content behind the obvious surface content (Bernard 1995:350).

The interview texts were analysed in several steps, starting with naïve reading and re-reading of the texts several times. The researcher followed the Bernard (1995:350) strategy that required repeated engagement with the data as a means to understand nurses' perceptions of communicating with conscious ventilated patients. The researcher read the transcripts while listening to the audio-tape to understand the nurses' stories of the description of their experiences in depth as they occur and also reflect on the participants' comments.

The other step included structural and detailed qualitative content analysis of the texts. Patterns and themes that emerged from the data were highlighted in colours. cThe texts were divided into meaning units, statement that relate to the same central meaning and objectives of the study and these were written next to a particular part of the identified theme (Lincoln & Guba 1985:171). The meanings units were condensed and abstracted and labeled with codes, which were compared for similarities and differences to develop categories. The categories organised in higher–order headings according to the Synergy Model of Patient Care nurses' competencies. Participants' themes were linked to the conceptual framework in order to validate the themes. The transcripts and code were given to an independent researcher and supervisors for further review and comparison before consensus were reached.

Three major themes from the nurses' interviews and nine sub-themes and seven themes from the nurse manager's interviews and 20 subthemes emerged to make the overall picture of the participants' perceptions, experiences, needs and barriers regarding communication with conscious ventilated patients. The researcher presented the themes and subthemes with some excerpts from the participants' transcripts.

3.8 ETHICAL CONSIDERATIONS

3.8.1 Permission to conduct research

In order to safeguard patients' rights and do no harm, and do good (beneficence) to patients, and observe other principles important to protect human participants were observed (Burns & Grove 2009:346). The approval for the study was sought from several ethics committees before commencement of data collection. The initial ethical clearance was sought from the Higher Degrees Committee of the Department of Health Sciences, Unisa (Annexure A). Upon approval by the UNISA Ethics Committee, the ethical approval was sought through to the University of Botswana Ethics Committee (Annexure B) and hospital one Ethics Committee (Annexure D) simultaneously. From the University of Botswana Ethics Committee, issues raised were on the audit guide used for data collection from patients' files and this was corrected with the assistance of the expert tool developer and supervisors and the approval was granted. Due to the issues of data collection from the patients' files, Princes Marina Hospital Ethics Committee requested a letter of waiver to use patients' files (Annexure J). Both ethics committees approved that the researcher should to conduct the study as requested. Data collection could not be started at Hospital 1 before the approval of the MoH despite the fact that this hospital had given ethical clearance before the approval by MoH, Botswana. Again, ethics approval was sought from Hospital 2 Ethics Committee only after approval by the MoH Human Research and Ethics Committee (Annexure E).

3.8.2 Confidentiality

Confidentiality was maintained carefully during and after data collection. Confidentiality is concerned with the respect for people's privacy and this involves not revealing the participants' identity to anyone other than the researchers and all involved in the study such as supervisors (Polit & Beck 2010:342). This also embraces information collected from participants. In this study the nurses, who consented for participation, were informed that all the information would be kept confidential. To prevent identification of information to participants, the signed consent forms were kept in a different file, not with completed questionnaires. The nurses were informed that the signed consent forms were used as evidence that they have consented to participate. Nurses were assured that anonymity would be maintained throughout the study. The researcher

requested the participants not to write their names on the questionnaires, instead codes were used on these questionnaires.

Only the researcher and the RAs retrieved data from the patients' files. Patients' medical records numbers were used to locate their files according to study numbers and they were saved in separate secure files for both print and electronic version. Data retrieved from patients; files were only information that appeared in the audit guide (Annexure L). Completed questionnaires and audit guides were kept in locked drawers to ensure limited access to information. The researcher used a number system for coding these checklists to enter data into Microsoft Excel or SPSS into different files and also data were accessed through a password.

During interviews, confidentiality and protection of invasion of privacy were maintained throughout the study. Recruitment and interview sessions were conducted in private rooms, with only the researcher and the potential participant or the participants. The participants were informed that the information would be disseminated during seminars, conferences or articles in such a way that no one would identify who was interviewed.

3.8.3 Informed consent

The researcher was obliged to provide prospective participants with sufficient information to make informed decision to participate in the study (Brink & Woods 2007:231). According to Polit and Beck (2010:231), informed consent involves agreement made by the participant to participate in the study after being informed about the purpose, benefits, risks and the process of data collection and confidentiality. Polit and Beck (2010:321) assert that informed consent is part of autonomy as the participants are supposed to make informed choice without being coerced to participate in the study. For this study, nurses were informed that participation was voluntary and it was obtained without any form of coercion or undue influence or promise for any special kind of remuneration. Also the nurses were informed that they can withdraw at any time without giving reason and that there will be no penalty or sanction for withdrawal. Participants were provided with a consent form to write and the consent form was witnessed by any nurse in the unit without necessarily having seen the participant signing the consent form. They were informed that noone would have access to the

data and that the researcher would keep data in a computer access by password protection.

3.9 RIGOUR AND TRUSTWORTHINESS

Rigour involves scholarly measures taken to ensure reliability and validity of instruments used for data collection.

3.9.1 Reliability of the instruments in phase 1

Polit and Beck (2010:345) describe reliability as a degree of consistency or dependability of the instrument to measure what is intended. Reliability involves the ability to produce similar results when used repeatedly regardless of time and place where the instrument is used (Burns & Grove 2009:335). Kimberlin and Winterstein (2008:227) assert that an instruments has true scores which is the score received to indicate an accurate measurement of the instrument and erro scores that the researcher has to prevent at all items. Kimberlin and Winterstein (2008:227) summarise reliability as measure that is used to evaluate stability of instrument measured at different times to same people to determine correlation and strength association as well as measure of equivalence of the sets of items used in the same instrument. Kimberlin and Winterstein (2008:227) call it internal consistency and when different observers score the findings they measure as they occur using the same instrument they call that measure interrater reliability.

Both the questionnaire and the audit guide were evaluated more than once, during development and after pilot testing. In order to estimate consistency of rating from the two raters, interrater reliability test was done with the assistant of the statistician. The audit guide was checked for interrater reliability and the reliability was relatively satisfaction with Cohen's kappa of 0.78. The audit guide was not statistically checked for its reliability. The questionnaire used a Likert scale of 5: strongly disagree being 1, disagree being 2, neither agree or disagree 3, agree being 4 and strongly agree being 5. The construct reliability was measured for internal consistency using Cronbach alpha to measure inter correlation of items with the number of items in this scale and its scores was 0.79 (Polit & Beck 2010:442). Although a good sale should measure above 0.80, this instrument was found reliable.

3.9.2 Validity of the instruments in phase 1

Validity refers to the extent to which the instrument measures what it claims to measure (Burns & Grove 2009:383). The same authors assert that validity involves measuring the appropriateness, usefulness and meaningfulness of specific suggestion in the instrument. Burns and Grove (2009:383) describe validity to include; content, i.e. instrument able to provide how well scores correlates with other measures of the same construct according to the theory that it is related to. In this study the instruments were developed according to the Synergy Model of Patient Care as it is used to guide this study. Face validity is measured by the experts' judgments as no statistical test was used to test it. The instruments were refined by experts in ICU, supervisors and experts in instruments development.

3.9.3 Trustworthiness

Lincoln and Guba (1985:300) describe trustworthiness as the value, applicability, neutrality and consistency of an inquiry). It is essential for the study to have trustworthiness established so as to consider methodologically appropriate and worthy to attention.

Trustworthiness is achieved through strategies that demonstrate credibility, transferability, dependability and confirmabiliy (Lincoln & Guba 1995:300).

3.9.3.1 Credibility

Credibility in this study was ensured by investing more time during data collection through visitation of the two referral hospitals to establish rapport with nurses. The researcher's experience as intensive care nurse and her academic development assisted in conceptualising this study. Again, the researcher used in-depth individual interviews to probe participants; experiences and perceptions linked with communication with ventilated patients in the ICU. Semi-structured interviews used to ensure that all topics regarding nurse-patient interaction were included. Also, field notes and audio-tapes were used to enable the researcher to understand in-depth, the complex nature of communication between nurses and ventilated patients. The

researcher used member check during data analysis by giving transcripts to an independent researcher and supervisors to check the authenticity of data (Creswell & Clark 2007:91).

3.9.3.2 Confirmability

Confirmability was ensured through audit trial. The researcher used record keeping such as field notes, interview transcripts from individuals (Lincoln & Guba 1985:300). The same authors describe conformability as some degree to which the research findings are depicted from the study and not from the researcher's biases. The researcher used relevant literature in order to ensure that the reader can conceptualise the researcher's background for take up this study. Confirmability was addressed by using an independent reviewer of the audio-tapes and recording of themes by an experienced and independent qualitative nurse researchers such as supervisors. The focus of the member checking helped the researcher to focus on discovering omissions of comments and to verify placement of phrases into categories.

3.9.3.3 Transferability

Sandelowski (2000:300) describes transferability as the extent to which other people can see similarities in the findings of the study. In this study, transferability was ensured through the, research design because mixed method had been used in other similar studies. The researcher provided adequate information on the study process for replication such as the study purpose, objectives, recruitment and sampling strategies data collection procedures and data analysis. The research also used member check through by supervisors and through code-recode procedure during analysis of the interview transcripts.

3.9.3.4 Dependability

Dependability is described by Sandelowski (2000:300) as a criterion used to judge the accuracy, completeness and accessibility of the research process. The supervisors and copy editor for this researcher were used as auditors of the reviewed documents produced during the study. The supervisors also reviewed transcripts for analysis and an independent qualitative researcher was also used to review the transcripts.

3.10 STUDY METHODOLOGICAL AND THEORETICAL LIMITATIONS

Regarding the methodological limitations the researcher recognises that the study was conducted in Botswana and in two ICUs only. The researcher used convenient and purposive sampling techniques in this study. As indicated before the focus of this study was not for generalising the findings but to understand nurses- patient interactions in the ICU, in Africa and in particular Botswana. By using convenient and purposive sampling to recruit patients 'files in this study might have increased the risk for biasness in this study.

The scope and setting of this study determine the sample size for the nurses who were recruited for this study. The researcher appreciated that it was impossible to recruit adequate sample from the ICUs in Botswana. In an attempt to achieve a reasonable sample size, two biggest CUs from the country's referral hospitals were used. And yet again, randomisation of previously admitted patients could not be appropriate as some of patients treated in these ICUs were unconscious. The researcher decided to use the study setting the sampling strategy was based on her experience as a researcher and as a clinician in one of the units. The sample is not a representative of the population and this limit the credibility to generalise the findings for this study.

The researcher was known in one of the research settings and some measures such as emphasis on voluntary participation and the decision to withdraw from participation were stressed during recruitment and not one participant was coerced to take part in the study. The participants participated voluntarily in the study.

Although the hospital documents the demographic data of patients on the IPMS Database, no information appeared on the nursing activities on patients on this database therefore the researcher relied on retrieving data from the hard copies of patients' files. One most challenge worth noting was during retrieval of patients' records in one hospital. The files in this hospital were not stored in shelves but were stacked in boxes; making it difficult to identify files by the officers assigned for this task. Again in both hospitals some files were empty, that is**,** it was only the cover without nurses' notes inside.

The other methodological issues were those pertaining to the theoretical limitation. Although AACN Synergy Model for Patient Care was established for intensive care certification it can be used in research in all settings (Hardin & Hussey 2003:73). However, this model is documented in few studies on nurse-patient interaction and in particular to the ICU internationally or locally. The researcher decided to use this model because ventilated patients have similar needs and experiences and these needs are across a wide range or continuums from health to illness. The more compromised the patients are, the more severe or complex are their needs. Nursing care is driven by these patients' needs that require an integration of knowledge, skills, experience and attitudes of the nurses. When nurses' competencies stem from patients' needs; the nurses' characteristics and those of patient synergise, then optimal patient outcomes can result. Thus, the researcher feels this model is appropriate for this study despite that it will be used for the first time in this area for research.

3.11 CONCLUSION

This chapter described the methodological underpinning this study, which is mixed methods research. Both quantitative and qualitative research designs are discussed with emphasis on how they were used to answer the research questions.

The sampling strategy and selection criteria for participants, the instruments used for data collection and the pilot are described. The intervention for this study is discussed in detail together with data collection procedure and data analysis techniques.

At the end of the chapter, rigour and trustworthiness of this research process and the methodological issues encountered are described.

CHAPTER 4

ANALYSIS AND INTERPRETATION OF PHASE 1 AND PHASE 2 RESULTS

4.1 INTRODUCTION

In this chapter, quantitative data results for phase 1 are presented according to the phases. For phase 1, quantitative data for the following sections are discussed including data analysis on audit of previously admitted ventilated patients' files and data analysis on the survey of the nurses-working in the two referral hospital ICUs. Also in this chapter the findings from qualitative analysis for phase 2 on nurses and nurse manager's interviews are discussed. The study aimed at answering the following question:

- Is there any existing policies about communicating with ventilated patients in two referral hospitals in Botswana?
- Is there any in-service training on communication skills offered for the ICU nurses?
- How do nurses assess ventilated patients for communication ability?
- Which communication strategies and methods do nurses use when communicating with ventilated patients?
- What information do nurses give to ventilated patients?
- What existing knowledge and skills do nurses have regarding communicating with ventilated patients in Botswana?
- What are nurses' perceptions of communication with ventilated patients?
- What needs and barriers do they experience when communicating with ventilated patients?
- What are nurses' experiences and perceptions about communication training?

The section that follows presents data analysis for audit of previously admitted ventilated patients' files.

4.2 PHASE 1: QUANTITATIVE ANALYSIS

The qualitative phase included audit for the patients' files in which data were collected using an audit guide developed for this study (Annexure K). The details of the audit guide are discussed in section 4.2.1 below.

4.2.1 Data analysis for audit of the patients' files

Data were analysed for availability of information from the patient's files.

4.2.1.1 General availability of information on the audit guide

The records of previously admitted ventilated patients in intensive care units in both referral hospitals were analysed to determine the documentation of the nurse-patient interactions. There were 159 patients' files, which were studied by the researcher and the research assistants from the two study hospitals. Data were organised into demographics; availability of the patient's communication ability assessed by the nurses, availability of information on communication strategies/methods used by the nurses to assist with communication; availability of information on assisted communication devices used by the nurses; availability of information by the nurses to the patients that included information regarding availability of explanation of treatment by the nurses to the patient; availability on information on orientating the patient; availability of information the nurses assessed the patient on barriers to participate in communication and availability of information on nurses collaboration with other health care team members. Some of these had an item referred to as "other (specify)."

4.2.1.2 Demographic data of participants

Demographic data of the participants included: date and time of admission in the ICU, date and time of intubation and extubation, if tracheostomy was performed, date and time of tracheostomy insertion, and date and time of patient's discharged from the ICU. Table 4.1 indicates that overall percentages.

A total of 159 files of patients who were treated in ICU were audited. Most (60.4%; n=96) of the patients were males and 39.6% (n=63) of the patients were females. The

average age was 35 years old (age range of 2−92 years). The overall mortality rate in the ICU was 5.7%. Sixty-two percent of the files showed that the patients were discharged from the ICU to the general wards. However, it was found that some of the patients' files indicated those who were readmitted in the ICU and these files were not reassessed for more information because they were already included in the sample. Most (62.3%; n=99) of the patients' diagnosis operative and only 37.7% (n=60) were non operative. Of these patients, many (42.7%; n=68) of the patients'' diagnosis was trauma related, 12.6% (n=20) of the patients' diagnosis was cardiovascular related, 25.8% (n=41) respiratory and other diagnosis composed of 18.9% (n=30) table 4.1.

Table 4.1 Demographic and clinical characteristics of patients

Characteristics	**(N=159)**
Male, n (%) Female, n (%)	96 (60.4.) 63 (39.6)
Age (yrs), median (IQR)	35.5 (26.3–78.3)
Medical diagnosis, n (%)	
Operative	99 (62.3)
Non-operative	60 (37.7)
Cardiovascular	20 (12.6)
Respiratory	41 (25.8)
Trauma	68 (42.7)
Other	30 (18.9)
ICU length of stay in days , median (IQR)	5.1 (3.1–7.5)
Length on mechanical ventilator (days), Median (IQR)	5 (2.3–6.1)
ICU outcomes alive, n (%)	102 (64.2)

4.2.1.3 Assessment for use of sedation and analgesic

The files were also studied for the type of sedatives and analgesic used. The files revealed that the majority of patients (94.3%; n=150) were given midazolam as a sedative especially during the first 12−24 hours of admission in the ICU, 45.2%, (n=72) of patient were given fentanyl as a sedative drug. Ninety-nine patients (62.3%) were given morphine sulfate, which is narcotic analgesic and 36.5% (n=58) were given paracetamol orally. However, these patients were not assessed for sedation level. All patients' files (N=159; 100%) revealed that the patients were assessed for level of consciousness using Glasgow Coma Scale (GCS). The researcher followed the

inclusion criteria of GCS of above 10/15 without failure to study the files for nurse-patient communication with these patients.

4.2.1.4 Nurses' assessment for patients' ability to communicate

Assessment of the patients' communication ability also could help in minimising the nurses' frustration in case the patient fails to use the method that the nurse has selected for the patient (Happ 2001:247).

Table 4.4 reveals that the assessment of patients' ability to communicate was well recorded in many (91.8%; n=146) of the patients' files. However, the information on assessment for patient's use of gestures/symbols was recorded in 45.9% (n=73) of files. The least recorded findings on the nurses' assessment was the patients' preferred language and lip reading with only 3.1% (n=5) for each. The information on nurses' assessment for the patient's hearing was insufficiently recorded (90.6%; n=144) and patient's vision was not recorded in 61% (n=79) of the files. The information on patient's literacy, that is, ability to write and patient's ability to use pictures were not recorded in 100%; (n=159) of patients' files. The ability for the patient to use lip reading was recorded in only 3.1% (n=5) of the patients' file, ability to mouth words in only 6.3 (n=10) of the files, use of gestures or symbols in many file (45.9%; n=73) of the file and the use of Yes/No in 22% (n=35) of the patients' files.

Table 4.2 Availability of information for assessment of patient's communication ability

	Number of recordings	Recorded		Not recorded		TOTAL
	N	n	%	n	%	%
Availability of information on assessment for communication ability	159	146	91.8	13	8.2	100.0
Availability of information on assessment for preferred language	159	5	3.1	154	96.9	100.0
Availability of information on assessment for hearing	159	10	6.3	149	93.7	100.0
Availability of information on assessment for vision	159	62	39.0	97	61.0	100.0
Availability of information on assessment for literacy	159	0	0.0	159	100.0	100.0
Availability of information on assessment for ability to write	159	0	0.0	159	100.0	100.0
Availability of information on assessment for ability to lip read	159	5	3.1	154	96.9	100.0
Availability of information on assessment to use pictures	159	0	0.0	159	100.0	100.0
Availability of information on assessment to use mouth words	159	10	6.3	149	93.7	100.0
Availability of information on assessment to use gestures/symbols	159	73	45.9	86	54.1	100.0
Availability of information on assessment to use Yes/No	159	35	22.0	124	78.0	100.0

4.2.1.5 Availability of communication methods used by the nurses

In this study, communication methods refer to "strategies used by the nurses to assist ventilated patients to communicate" (Garrett et al 2007:17). Table 4.3 reveals the audit of patients' files for the communication methods used by the nurses when communicating with ventilated patients. Use of Yes/No and lip reading was recorded in only 3.1% of the files for each. Further analysis shows that the information for nurses' use of head nod or shakes as the communication method was recorded in only 6.3% of the files). Many files 59.1% (n=94) showed that nurses communicated verbally with patients. Only 5% (n=8) of the files revealed that patients responded to nurses'

command while 20.8% (n=33) of the files revealed that the patients followed nurses' commands. From 15.1% (n=24) of patients' files the nurses documented that they communicated nonverbally and this included the use of painful stimuli on patients and the patients responded by opening eyes. In all (100%; n=159) of the files, other communication methods such as mouthing words and gestures/symbols that the nurses could have used were not recorded as revealed in table 4.4.

Table 4.3 Communication methods used by the nurse

	Number of recordings	Recorded		Not recorded		TOTAL
	N	n	%	n	%	%
Availability of information for using mouthing words	159	0	0	159	100.0	100.0
Availability of information for using Yes/No	159	5	3.1	154	96.9	100.0
Availability of information for using head nods/shakes	159	10	6.3	149	93.7	100.0
Availability of information for using lip reading	159	5	3.1	154	96.9	100.0
Availability of information for using symbols/gestures	159	0	0	159	100.0	100.0
Availability of information for communicating verbally	159	94	59.1	65	40.9	100.0
Availability of information for communicating nonverbally	159	34	21.4	125	78.6	100.0
Availability of information for communicating using commands	159	26	16.4	133	83.6	100.0
Availability of information for communicating verbally and using commands	159	33	20.8	126	79.2	100.0

4.2.1.6 Availability of information on communication strategies used

Table 4.4 shows that nothing (0%; n=159) was reordered in the patients' files for the communication strategies that the nurses used in the ICU such as speaking slowly and pause and wait for the patients.

Table 4.4 Availability of information on communication strategies used

	Number of recordings	Recorded		Not recorded		TOTAL
	N	n	%	n	%	%
Availability of information on nurses calling patient by name	159	0	0.0	159	100.0	100.0
Availability of information that nurses speak slowly	159	0	0.0	159	100.0	100.0
Availability of information that nurses say one word, pause and wait	159	0	0.0	159	100.0	100.0
Availability of information that nurses pause between sentences	159	0	0.0	159	100.0	100.0
Availability of information that nurses wait for the patient to respond	159	0	0	159	100.0	100.0
Availability of information that nurses listen attentively	159	0	0.0	159	100.0	100.0
Other strategies used	159	0	0.0	159	100.0	100.0

4.2.1.7 Availability of information on the use of AAC devices

Augmentative and alternative communication (AAC) is any kind of device that the nurse may use to assist the patient to communicate (Garrett et al 2007:17). Table 4.5 reveals that nothing (0%; n=159) was recorded on use of the AAC devices commonly used to facilitate communication with ventilated patients.

Table 4.5 Availability of information on AAC devices used

	Number of recordings	Recorded		Not recorded		TOTAL
	N	n	%	n	%	%
Availability of information for using pen and paper	159	0	0.0	159	100.0	100.0
Availability of information for using picture board	159	0	0.0	159	100.0	100.0
Availability of information for using alphabet board	159	0	0.0	159	100.0	100.0
Availability of information for using Phrases/word board	159	0	0.0	159	100.0	100.0
Availability of information for using others	159	0	0.0	159	100.0	100.0

4.2.1.8 Availability of information on explanation and information on treatment to patients

According to Happ (2001:247), ventilated patients in ICUs wish that the nurses could provide them with information regarding treatment. Table 4.6 reveals that the information on explanation of the procedures was recorded in only 3.1% (n=5) of the patients' files 3.1% (n=5) of the patients files and the information on what the patients attempted to said something to the nurses was recorded in also in 3.1% (n=5) of the patients' files. No recordings were made on any information giving and explanation to the ventilated patients.

Table 4.6 Availability of information and explanation provided to patients

	Number of recordings	Recorded		Not recorded		TOTAL
	N	n	%	n	%	%
Availability of information on nurse's explanation on the ventilator	159	0	0.0	159	100.0	100.0
Availability of information on nurse's explanations on why the patient was on a ventilator or tracheostomy	159	0	0.0	159	100.0	100.0
Availability of information regarding weaning from the ventilator	159	0	0.0	159	100.0	100.0
Availability of information on nurse's explanation on the ventilator tubings	159	0	0.0	159	100.0	100.0
Availability of information on nurse's explanation of procedure performed	159	5	3.1	154	96.9	100.0
Availability of information on what the patient said	159	5	3.1	154	96.9	100.0
Availability of information about experiencing discomfort from ETT	159	0	0.0	159	100.0	100.0

4.2.1.9 Availability of information for a need to orientate the patient

The ICU can be hostile to the critically ill patients because of its strange environmental factors including noise and sleep deprivation caused by lights. It is, therefore, necessary for the nurses to orientate these patients (Wenham & Pittard 2009:178). Out of 159 patients' files, information on nurses' orientation of the patients to the unit was recorded in 6.3% (n=10) of the files, the nurses' orientation of self to the patients was recorded in

only 6.3% (n=10) of the patients' files and orientating of the patient to date and time was recorded in only 6.3% (n=10) of the files (table 4.7).

Table 4.7 Availability of information on orientation

	Number of recordings	Recorded		Not recorded		TOTAL
	N	n	%	n	%	%
Availability of information on nurses orientating patients to unit	159	10	6.3	149	93.7	100.0
Availability of information on nurses orientating patients to person	159	10	6.3	149	93.7	100.0
Availability of information on nurses orientating patients to time/date	159	10	6.3	149	93.7	100.0

4.2.1.10 Nurses assessment for communication barriers

Communication is a two-way process between the sender and the recipient of information for its effectiveness to occur (Lunenburg 2010:11); therefore for the patient to be able to participate during an interaction they must be conscious and nor sedated. Table 4.8 reveals that out of 159 patients' files 96.9% (n=154) of the files showed that the patients' level of level of consciousness was recorded. The patients' sedation level was recorded in 87.4% (n=139) of the files. The patients' cognitive level was recorded in 69.2% (n=110) of the files and the patients' visual acuity and motor level were recorded in 57.2% (n=91) and in 62.3% (n=99) of patients; files respectively.

Table 4.8 Assessment for communication barriers

	Number of recordings	Recorded		Not recorded		TOTAL
	N	n	%	n	%	%
Availability of information on nurses' assessment for patient' level of consciousness	159	154	96.9	5	3.1	100.0
Availability of information on nurses' assessment for patient's level of sedation	159	139	87.4	20	12.6	100.0
Availability of information on nurses' assessment for patient's cognitive level	159	110	69.2	49	30.8	100.0
Availability of information on nurses' assessment for patient's visual acuity	159	91	57.2	68	42.8	100.0
Availability of information on nurses' assessment of patient's motor level	159	99	62.3	60	37.7	100.0

4.2.1.11 Availability of information on nurses' collaboration with other health care team members

Table 4.9 reveals that documentation on patients' files with regard to nurses' collaboration with other nurses, and nurses with speech therapy skills was scanty, with each recorded in 3.1% (n=5) of the patients' files. Collaboration between nurses and doctors was recorded in 27% (n=43) of the files. Collaboration with nurses and family member was recorded in 18.9 (n=30) of the files and only in 3.1% (n=5) of files the nurses had recorded the collaboration between nurses and the patients' friend.

Table 4.9 Availability of information on nurses' collaboration with other health care team members

	Number of recordings	Recorded		Not recorded		TOTAL
	N	n	%	n	%	%
Availability of information on nurses collaboration with other nurses	159	5	3.1	154	96.9	100.0
Availability of information on nurses collaboration with speech therapist	159	5	3.1	154	96.9	100.0
Availability of information on nurses collaboration with doctor	159	43	27.0	116	73.0	100.0
Availability of information on nurses collaboration with family	159	30	18.9	129	81.1	100.0
Availability of information on nurses collaboration with patient's friend	159	5	3.1	154	96.9	100.0

4.3 Data analysis and interpretation of the review of the system

4.3.1 Introduction

Besides patients' files, the procedure manuals or protocols, in-service books, family conference books were investigated for information related to nurse-patient communication and documentation of this information.

4.3.2 Availability of policy manuals that incorporate nurse-patient communication

Thirty-three (33) procedure manuals were analysed to find information on nurse-patient communication and also on collaboration between the nurses and other health care provider in the units. Out of 33 procedure manuals, documentation was found in 24.2% (n=8) procedure manuals. One manual: C*ritical Care Documentation,* clearly indicated that the nurses should document all patients' assessment, care provided and the patient's progress. In the same manual, it was indicated that the nurses should write notes in the patients' file immediately after performing the procedures.

4.3.3 Policy manuals with explanation of procedures

Out of 33 procedure manuals, 36.4% (n=12) of the procedure manuals have information that stated that the nurses should explain the procedures to the patients. In one procedure manual; *Ventilator Support*, it was written that the nurses should make an effort to explain the procedure to the patient whether the patient is conscious or unconscious so that they know what is happening. Of the 33 procedure manuals, 1% (n=2) of the procedure manuals, contained information on informing the patient about the procedure. Nine percent (n=3) of the procedure manuals contained information that the nurses should obtain content for the procedure. Out of the 33 procedure manuals only 3% (n=1) of them, c*ounseling*, contained information that the nurses should encouraged the patient to ask questions and that they should give patient feedback. The information that indicated that the nurse should reassure the patient throughout the procedure appeared in 9.1% (n=3) of the procedure manuals; ventilator support, peritoneal dialysis and counseling. Only one (3%) of the procedure manuals showed that the nurse should document what they communicated with the doctor.

4.3.4 Availability of information on nurse-patient communication during family counseling conferences

Four hundred and twenty-three (423) family counseling sessions were conducted between 2010 and 2011. All the counseling sessions were conducted by the doctors and nurses, but the nurses' role during these sessions was to record the information that the doctor shared with the family members.

4.3.5 Availability of information on communication in the in-service books

In one hospital ICU, there was no in-service and from the other hospital, there was no information from the in-service book that was related to nurse-patient communication in the ICU.

4.4 PHASE 1: DATA ANALYSIS AND INTERPRETATION OF THE NURSES' SURVEY (QUANTITATIVE)

4.4.1 Introduction

In the present section, quantitative data from analysis of phase 1 on the survey of the nurses' working in Princess Marina and Nyangabgwe Referral hospital ICUs are presented.

4.4.2 Nurses' demographic information

4.4.2.1 Nurses' ages

There were 50 nurses that consented to be interviewed using the same instruments (Annexure N). The majority (58%; n=29) of the nurses' ages were between 31–40 years, 26% (n=13) were between 23-30 years, and 16% (n=8) were aged between 41 and 50 years (figure 4.1).

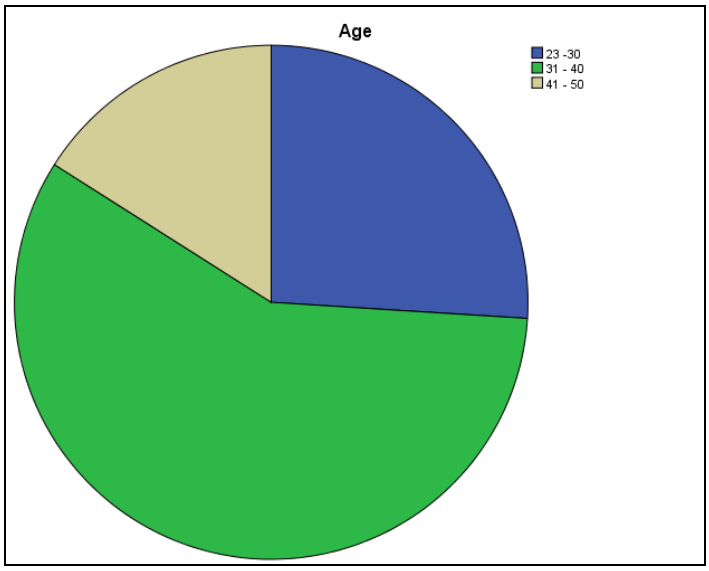

Figure 4.1 Age distribution of participants

4.4.2.2 Nurses' gender

Of the 50 nurses, 18% (n=9) were male and 64% (n=32) were females.

4.4.2.3 Nurses' qualifications

Out of the 50 nurses, the majority (86%; n=43) had obtained Diploma in general nursing while 14% (n=7) of the nurses had obtained Bachelor's degree (figure 4.2).

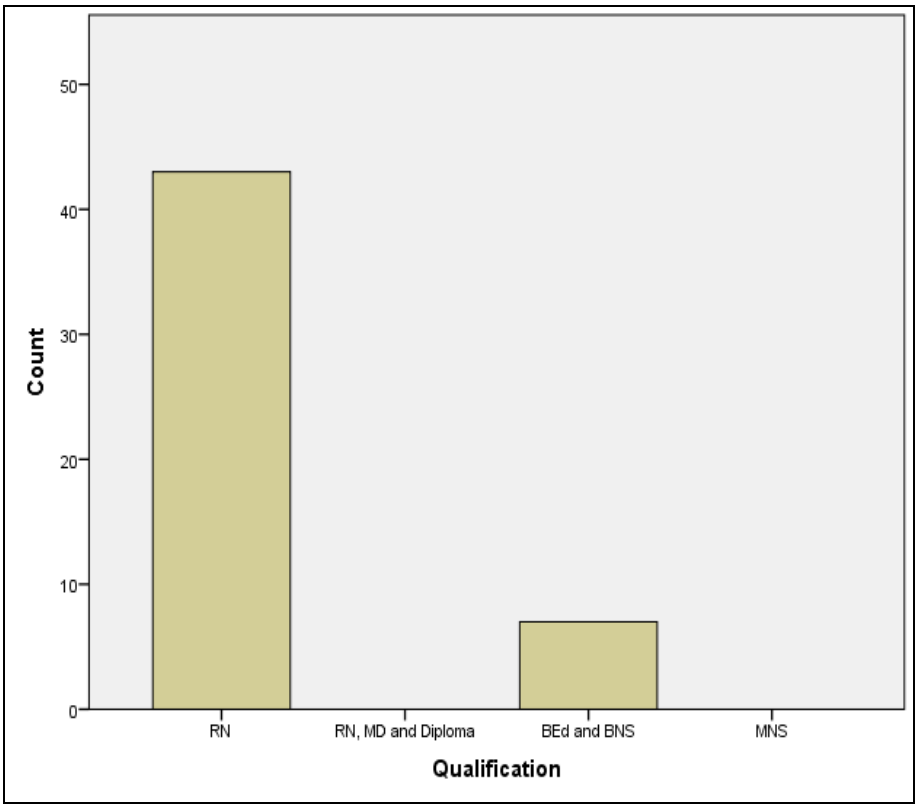

Figure 4.2 Nurses' qualifications

4.4.2.4 Years of experience working in the ICU

Most nurses working in the ICU had little experience working in this unit. The bars in Figure 4.3 are skewed towards ages 1 to 3 years of experience working in the ICU.

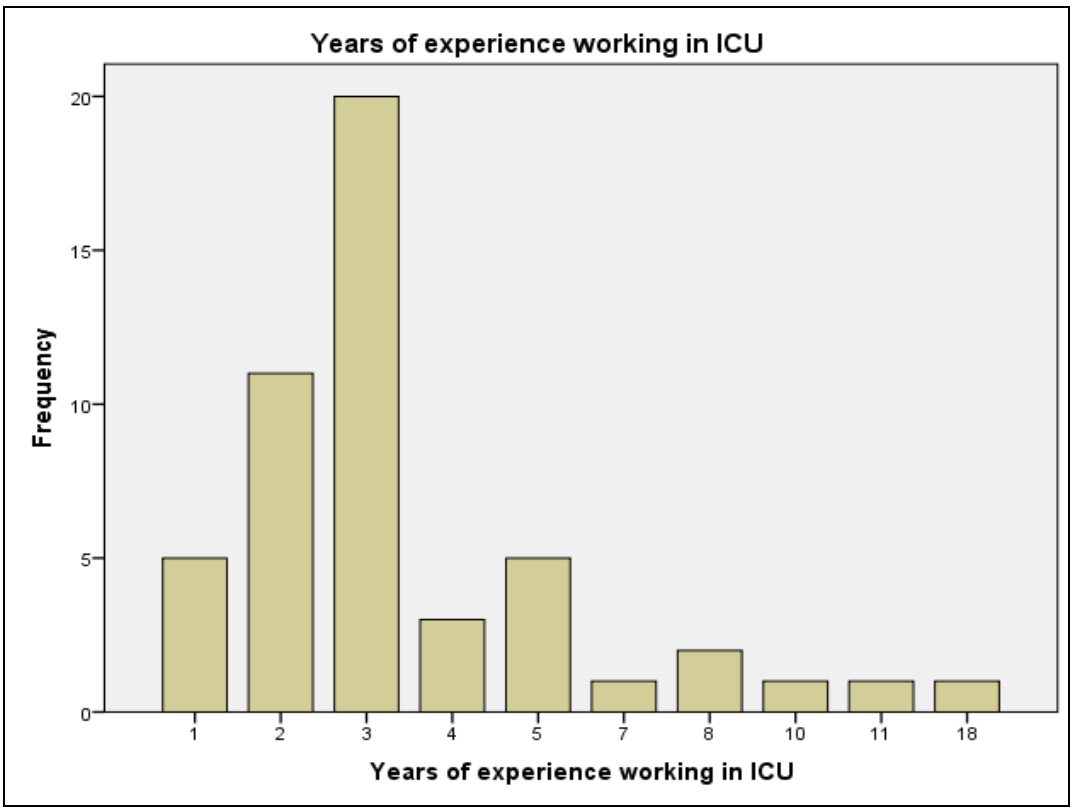

Figure 4.3 Years of experience as RN

Table 4.10 reveals that many (40%; n=20) of the nurses working in the ICUs had three years experiences followed by nurses with 2 years of experience (22%; n=10).

Table 4.10 Years of experience as RN

Years of experience	Frequency (n)	Percent (%)
1	5	10.0
2	11	22.0
3	20	40.0
4	3	6.0
5	5	10.0
7	1	2.0
8	2	4.0
10	1	2.0
11	1	2.0
18	1	2.0
Total	**50**	**100.0**

Further analysis of data on years of experience working in the ICU reveals that the majority (56%; n=28) of the nurses had performance standards at level 2 and six nurses had performance standards at level 3 (table 4.11).

Table 4.11 Years of experience working in ICU grouped according to AACN nurse' competency levels

Level of performance standards	Frequency (n)	Percent (%)
Level 1	16	32.0
Level 3	28	56.0
Level 5	6	12.0
Total	**50**	**100.0**

4.4.3 Information giving and explanation on mechanical ventilation

Intensive care patients' anxiety is associated with the nurses' failure to provide them with relevant information and one study had reported one of the salutary experiences that could allay the anxiety of these patients includes information giving and explanation on mechanical ventilation and patient's progress (McKinley et al 2002:27). Nurses in this study completed a questionnaire that used a five point Likert scale of 1 to 5; 1 meaning strongly disagree and 5 meaning strongly agree regarding the information that the nurses gave to the patients about mechanical ventilation.

Table 4.12 reveals that out of 50 nurses, only 4% (n=2) of the nurses indicated that they strongly agree that they inform the patients that they are connected to a mechanical ventilator while 14% (n=7) indicated they agree that they inform the patients that they are connected to a ventilator. Twenty-eight percent (n=14) nurses indicated that they neither agree nor disagree to inform the patients about mechanical ventilator. Of the 50 nurses, 8 nurses (16%) strongly disagree that they inform patients that they are connected to the mechanical ventilator and 38% (N=19) disagree that they inform patients that they are connected to the mechanical ventilator. Generally, the majority of the nurses indicated that they agree that they do not inform patients that they are connected to the mechanical ventilator.

Interestingly, none of the nurses (0%; n=0) strongly agrees that they teach the patients about mechanical ventilation tubes. Out of these nurses, very few (n=2; 4%) indicated

that they agree that they teach the patients about mechanical ventilation tubes. Only three nurses (6%) neither agree nor disagree that they teach the patients about mechanical ventilation tubes. Many (44%; n=22) of the nurses indicated that they strongly disagree and 46% (n=23) disagree that they teach the patients about mechanical ventilation tubes.

A small percentage (4%; n=2) indicated that they strongly agree that they inform the patients that they have a tube in their throat to help them to breathe. Out of these nurses, 20% (n=10) of the nurses indicated that they agree that they inform the patients that they have a tube in their throat to help them to breathe. However, the majority (50%; n=25) of the nurses indicated that they neither agree nor disagree that they inform the patients that they have a tube in their throat to help them to breathe. Few (n=8; 16%) nurses indicated that they disagree and 10% (n=5) of the nurses strongly disagree that they inform the patients that they have a tube in their throat to help them to breathe.

None of the nurses (0%) and only two (4%) indicated that they strongly agree and agree respectively that they encourage the patient that they are doing well or that they are helping them to get better. Only one (2%) of the nurses neither agree nor disagree that they encourage the patient that they are doing well or that they are helping them to get better. The majority 46% (n=23) and 48% (n=24) of the nurses disagree and strongly disagree respectively that they encourage the patient that they are doing well or that they are helping them to get better.

Few (10%; n=5) nurses indicated that they strongly agree and 8% (n=16) indicated that they agree that they inform the patient that they cannot speak when the tube is in place. Only two (4%) of the nurses neither agree nor disagree that they inform the patient that they cannot speak when the tube is in place. Twenty (20%) of the nurses disagree and a good number (30%; n=15) strongly disagree that they inform the patient that they cannot speak when the tube is in place.

Also in Table 4.12 few nurses (6%; n=3) indicated that they strongly agree and a good number agree (38%; n=19) that they show patients the location of tubes or tracheostomy. Of all the 50 nurses, 32% (n=16) of nurses neither agree nor disagree that they show patients the location of tubes or tracheostomy. Seven nurses (14%)

indicated that they strongly disagree and 10% (n=5) of the nurses indicated that they disagree that they show patients the location of tubes or tracheostomy.

Very few patients (8%; n=4) indicated that they strongly agree and half of the nurses (50%; n=25) indicated that they agree that they inform the patients that when the patients start to breathe normally they will be taken out of the machine. None (0%) of the nurses neither agrees nor disagrees that they inform the patients that when they start to breathe normally they will be taken out of the machine. Very few (4%; n=2) of the nurses indicated that they disagree that they inform the patients that when they start to breathe normally they will be taken out of the machine. Thirty-eight percent (n=19) indicated that they strongly disagree that they inform the patients that when they start to breathe normally they will be taken out of the machine.

Table 4.12 Information giving and explanation of mechanical ventilation

	Strongly agree	**Agree**	**Neither agree/ disagree**	**Disagree**	**Strongly disagree**
	n (%)	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Informs patient about ventilation	2 (4)	7 (14)	14 (28)	19 (38)	8 (16)
Teaches patient that he has tubes	0 (0)	2 (4)	3 (6)	22 (44)	23 (46)
Informs patient that a tube in throat helps them to breathe	2 (4)	10 (20)	25 (50)	8 (16)	5 (10)
Encourages patient that they are doing well	0 (0)	2 (4)	1 (2)	23 (46)	24 (48)
Informs patient that he cannot speak when tube is in place	5 (10)	8 (16)	2 (4)	20 (40)	15 (30)
Shows patient location of tubings	3 (6)	19 (38)	7 (14))	16 (32	5 (10)
Informs patient that he will be taken out of ventilator when he starts to breathe	4 (8)	25 (50)	0 (0)	19 (38)	2 (4)

4.4.4 Orientation to environment/persons

The ventilated patients had reported that their anxiety and stress levels could be reduced by being orientated to the ICU environment and the nurse (Magnus & Turkington 2006:167). Table 4.13 reveals that 14% (n=7) of the nurses indicated that they strongly agree that they introduced themselves to the patients and few (12%; n=6) nurses indicated that they agree that they introduced themselves to the patients. Of all

the 50 nurses, 10% (n=5) of the nurses neither agree nor disagree that they introduced themselves to the patients. Many nurses (34%; n=17) indicated that they strongly disagree and 30% (n=15) of the nurses indicated that they disagree that they introduced themselves to the patients.

Out of the 50 nurses, 12% (n=6) of them indicated that they strongly agree that they orientated the patients to the unit or environment and 12% (n=6) nurses indicated that they that they orientated the patients to the unit or environment. Of all the 50 nurses, 22% (n=11) of the nurses neither agree nor disagree that they orientated the patients to the unit or environment. Majority of the nurses (20%; n=10) indicated that they strongly disagree and 34% (n=17) of the nurses indicated that they disagree that they orientated the patients to the unit or environment.

Also, 10% (n=5) of the nurses indicated that they strongly agree that they orientated the patients to date and time. Only two nurses (4%) indicated that they orientated the patients to date and time. Of all the 50 nurses, 22% (n=11) neither agree nor disagree that they orientated the patients to date and time. Majority of the nurses (40%; n=20) indicated that they strongly disagree and 24% (n=12) indicated that they that they orientated the patients to date and time.

Table 4.13 Nurses' orientation of patients to ICU and persons

	Strongly agree	**Agree**	**Neither agree/disagree**	**Disagree**	**Strongly disagree**
	n (%)	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Introduces self to the patient	7 (14	6 (12)	5 (10)	17 (34))	15 (30)
Orientates the patient to unit/ environment	6 (12)	6 (12)	11 (22)	10 (20	17 (34)
Orientates the patient to date/time	5 (10)	2 (4)	11 (22)	20 (40)	12 (24)

4.4.5 Information giving on suctioning secretions

Many studies (Barbosa, Cardoso, Brasil & Scochi 2013:1369; Van de Leur, Zwaveling, Loef, Van der Schans 2003:433, Rolls & Elliot 2008:2010) have indicated that one of the stressors in the ICU occurs during tracheal suctioning and it is important that the nurses

should explain and give the ventilated patient some information related to this stressful procedure.

4.4.5.1 Remind the patients before suctioning the secretions

Table 4.14 reveals that out of 50 nurses, 18% (n=9) strongly agree that they remind patients that they are connected to a mechanical ventilator and its tubes before starting to suction secretions while only 12% (n=6) of the nurses agree that they remind patients. Twelve percent (n=6) nurses indicated that they neither agree nor disagree to inform the patients about mechanical ventilator and its tubes before starting to suction secretions. Out of the sample of 50 nurses, 15 nurses (30%) disagree that they remind the patients that they are connected to a mechanical ventilator and its tubes before starting to suction secretions while 28% (n=14) indicated they strongly disagree that they remind the patients. The results indicated that 48% (n=29) of the nurses do not remind the patients before suctioning

4.4.5.2 Being connected to mechanical ventilator

Eighteen percent (n=9) of the nurses and 12% (n=6) indicated that they either agree or strongly agree respectively that they inform the patients that when they are on a machine, they are unable to cough and thus secretions accumulate in the lungs. Only five (10%) of the nurses neither agree nor disagree that they inform the patients that when they are on a machine, they are unable to cough and thus secretions accumulate in the lungs. Eleven (22%) nurses disagree that they inform patients that when they are on a machine they are unable to cough and thus secretions accumulate in the lungs. Out of these nurses, 38% (n=19) of the nurses indicated that they strongly disagree that they inform patients that when they are on a machine they are unable to cough and thus secretions accumulate in the lungs.

4.4.5.3 Inability to cough when on a ventilator

Also Table 4.14 shows that, 16% (n=8) of the nurses indicated that they strongly agree and seven (14%) nurses indicated that they agree that they inform the patients that suctioning is to assist them to remove secretions in the lungs. None (0%) of the nurses

indicated that they neither agree nor disagree that they inform the patients that suctioning is to assist them to remove secretions from the lungs. A good number of the nurses (30%; n=15) indicated that they disagree that they inform the patients that suctioning is to assist them to remove secretions. Forty percent (n=20) of the nurses indicated that they strongly disagree that they inform the patients that suctioning assists them to remove secretions in the lungs.

Only four (8%) nurses indicated that they strongly agree, and seven (14%) of the nurses indicated that they agree that they inform the patient that suctioning is uncomfortable but it will take a short time. Few (10%; n=5) nurses neither agree nor that they agree that they inform the patient that suctioning is uncomfortable but it will take a short time. Only five (10%) nurses indicated that they neither agree nor disagree that they inform the patient that suctioning is uncomfortable but it will take a short time. Twenty percent (n=10) of the nurses indicated that they disagree that they inform the patient that suctioning is uncomfortable but it will take a short time, while 28% (n=14) of the nurses indicated that they strongly disagree that they inform the patient that suctioning is uncomfortable but it will take a short time.

Very few nurses (n=7; 14%) and 8 nurses (16%) indicated that they strongly agree and agree respectively that they inform the patient when they insert the suction tube in and out of the ETT. Only few (8%; n=4) of the nurses neither agree nor disagree that they inform the patient when they insert the suction tube in and out of the ETT. Eighteen percent (n=9) of the nurses disagree and a good number of nurses (n=22; 44%) indicated that they strongly disagree that they inform the patient when they insert the suction tube in and out the ETT.

Out of the 50 nurses, few nurses (n=8; 16%) and seven nurses (14%) indicated that they strongly agree and agree respectively that they inform the patient when they finish suctioning the secretions. None (0%; n=0) of the nurses neither agrees nor disagrees that they inform the patient when they finish suctioning the secretions. Of the 50 nurses, 30% (n=15) and 40% (n=20) of the nurses indicated that they strongly disagree that they inform the patient when they finish suctioning the secretions.

Table 4.14 Information giving on suctioning secretions

	Strongly agree	Agree	Neither agree/ disagree	Disagree	Strongly disagree
	n (%)	n (%)	n (%)	n (%)	n (%)
Reminds patient that they are connected to the ventilator and tubes before starting to suction secretions	9 (18)	6 (12)	6 (12)	15 (30)	14 (28)
informs patients that when they are on a machine, they are unable to cough and thus secretions accumulate in the lungs	9 (18)	6 (12)	5 (10)	11 (22)	19 (38)
Informs patient that suctioning is to assist with removing secretions in the lungs	8 (16)	7 (14)	0 (0)	15 (30)	20 (40)
Informs patients that suctioning is uncomfortable not will take short	4 (8)	7 (14)	5 (10)	20 (40)	14 (28)
Informs patient that a suction tube is inserted in and out of ETT	7 (14)	8 (16)	4 (8)	9 (18)	22 (44)
Informs patient when finishes suctioning	8 (16)	7 (14)	0 (0)	15 (30)	20 (40)

4.4.6 Nurses' assessment for communication barriers

For effective communication to take place between the nurse and the patient, the patient's vision and hearing must be good as these are some of the factors that could impair communication with critically ill patients (Happ et al 2011:e28). Therefore it is crucial that the nurses should assess the patients for communication ability.

Table 4.16 reveals that 14% (n=15) of the nurses indicated that they strongly agree that they assess patients for communication ability and (28%; n=14) nurses indicated that they agree that they assess patients for communication ability. Out of 50 nurses, 12% (n=6) nurses neither agree nor disagree that they assess patients for communication ability. Few of the nurses (18%; n=9) indicated that they disagree and 12% (n=6%) of the nurses indicated that they strongly disagree that they assess patients for communication ability.

Also Table 4.14 shows that, of the 50 nurses, few nurses (10%; n=5) indicated that they neither agree nor disagree that they assess patients for vision and hearing. Few (18%;

n=9) nurses indicated that they strongly agree while 12% (n=6%) of the nurses indicated that they agree that they assess patients for vision and hearing. Few nurses (22%; n=11) indicated that they strongly disagree that they assess patients for vision and hearing and a good number of 19 (38%) of the nurses indicated that they strongly disagree that they assess patients for vision and hearing.

Table 4.15 Nurses' assessment for communication barriers

	Strongly agree	**Agree**	**Neither agree/ disagree**	**Disagree**	**Strongly disagree**
	n (%)	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Assesses patients for communication ability	15 (30)	14 (28)	6 (12)	9 (18)	6 (12)
Assesses patients for vision and hearing	9 (18)	6 (12)	5 (10)	11 (22)	19 (38)

4.4.7 Communication strategies used by nurses

Effective communication in the ICU can be facilitated through the use of many communication strategies. In the present study communication strategies refer to practices that the nurses may use to facilitate interaction with ventilated patients such as good listening skills and being patient as these patients experience communication difficulties (Happ, Sereika, Garrett & Tate 2008:804). Table 4.16 reveals that out of 50 nurses, only two nurses (4%) and another 4% (n=2) of the nurses indicated that they strongly agree and agree respectively that they have communication plan for patients. Also few (n=4; 8%) of the nurses indicated that they neither agree nor disagree that they have communication plan for patients. Thirty-eight percent (n=19) of the nurses indicated that they disagree and 46% (n=23) of the nurses indicated that they strongly disagree that they have a communication plan for patients.

Out of 50 nurses, 10 nurses (20%) indicated that they strongly agree that they use trial and error to decide the best communication method for patients. Twenty-one (42%) of the nurses indicated that they use trial and error to decide the best communication method for patients. Few nurses (n=9; 18%) indicated that they neither agree nor disagree that they use trial and error to decide the best communication method for

patients. Only four nurses disagree and six (12%) nurses strongly disagree that they use trial and error to decide the best communication method for patients.

Few nurses (12%; n=6) indicated that they strongly agree that they use trial and error to decide the best communication method for patients. Out of these nurses, only three (6%) of the nurses indicated that they agree that they use trial and error to decide the best communication method for patients. Twenty percent (n=11) nurses indicated that they neither agree not disagree that they use trial and error to decide the best communication method for patients. Twenty-six percent (n=12) nurses indicated that they disagree and 34% (n=17) nurses disagree that they use trial and error to decide the best communication method for patients.

Out of 50 nurses, 12% (n=6) of the nurses indicated that they strongly agree and 18% (n=9) of the nurses indicated that they agree that they collaborate with patients on methods to use. Another 18% (n=9) of the nurses neither agree nor disagree that they collaborate with patient on methods to use. Again, 18% (n=9) of the nurses indicated that they disagree they collaborate with patient on methods to use and 34% (n=17) of the nurses indicated that they disagree they collaborate with patient on methods to use. Only three nurses (6%) indicated that they strongly agree that they touch patients when they speak to them. Many nurses (48%; n=24) indicated that they touch patients when they speak to them and 42% (n=21) indicated that they neither agree nor disagree that they touch patients when they speak to them. Only one nurse disagrees and another one nurse strongly disagrees that they touch patients when they speak to them.

Furthermore, table 4:16 shows that only 8% (n=4) of the nurses indicated that they strongly agree and 10% (n=5) of the nurses indicated that they agree that they collaborate with patients on how to respond when communicating with each other. Sixteen percent (n=8) of the nurses neither agree nor disagree that they collaborate with patients on how to respond when communicating with each other. Twenty-four percent (n=12) and 42% (n=21) of the nurses indicated that they disagree and strongly disagree respectively that they collaborate with patients on how to respond when communicating with each other. Out of 50 nurses, 22% (n=11) of the nurses indicated that they strongly agree and 70% (n=35) of the nurses indicated that they agree that they use signals to communicate, such as thumb up for yes, or head nod for yes. Only 4% (n=2) of the nurses neither agree nor disagree that they use signals to

communicate, such as thumb up for yes, or head nod for yes. None of the nurses indicated that they disagree and only 2% (n=2) of the nurses indicated that they strongly disagree that use signals to communicate, such as such as thumb up for yes, or head nod for yes.

Ten percent (n=5) of the nurses indicated that they strongly agree and 24% (n=12) of the nurses indicated that they agree that they use body movement such as pointing. A good percentage (42%; n=21) of the nurses neither agree nor disagree that use body movement such as pointing. Twenty percent (n=10) of the nurses agree and only 4% (n=2) of the nurses strongly disagree that they use body movement such as pointing.

Table 4.16 Communication strategies used by nurses

	Strongly agree	**Agree**	**Neither agree/ disagree**	**Disagree**	**Strongly disagree**
	n (%)	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Have communication plan for the patients	2 (4	2 (4)	4 (8)	19 (38)	23 (46)
Uses trial and error to decide communication methods	4 (8)	10 (20)	9 (18)	21 (42)	6 (12)
Initially decides/chooses communication methods for patients	6 (12)	3 (6)	11 (22)	13 (26)	17 (34)
Collaborates with the patients in communication methods	6 (12)	9 (18)	9 (18)	9 (18)	17 (34)
Touches the patients when speaking to them	3 (6)	24 (48)	21 (42)	1 (2)	1 (2)
Agrees with the patients on how to respond to each other	4 (8)	5 (10)	8 (16)	12 (24)	21 (42)
Uses signals to communicate	11 (22)	35 (70)	2 (4)	0 (0)	2 (4)
Uses body movements to communicate	5 (10)	12 (24	21 (42)	10 (20)	2 (4)
Speaks slowly and wait for the patient's response	5 (10)	12 (24)	7 (14)	11 (22)	15(30)
Repeats what the patient is attempting to say	7 (14)	12 (24)	9 (18)	15 (30)	7 (14)
Have time to listen patiently to what the patient says	6 (12)	12 (24)	7 (14)	15 (28)	10 (20)
Avoids interrupting the patient before s/he finishes what s/he wants to say	15 (30)	10 (20)	5 (10)	9 (18)	11 (22)

Furthermore, table 4.16 shows that 10%; (n=5) of the nurses indicated that they strongly agree and 12% (n=6) of the nurses indicated that they agree that they speak slowly and wait for the patient's response. Fourteen percent (n=7) of the nurses indicated that they neither agree nor disagree that they speak slowly and wait for the patient's response. Twenty-two percent (n=11) and 30% (n=15) of the nurses indicated that they strongly agree and strongly disagree respectively that they speak slowly and wait for the patient's response. Out of 50 nurses, 14% (n=7) of the nurses indicated that they strongly agree and 24% (n=12) of the nurses indicated that they agree that they repeat what the patient is attempting to say. Eighteen percent (n=9) of the nurses indicated that neither agree nor disagree that they repeat what the patient is attempting to say. Thirty percent (n=15) of the nurses indicated that they disagree and 14% (n=7) of the nurses indicated that they strongly disagree that they repeat what the patient is attempting to say.

Out of 50 nurses, 12% (n=6) indicated that they strongly agree that they have time to listen patiently to what the patient says. Twenty-four percent (n=12) of the nurses indicated that agree that they have time to listen patiently to what the patient says. Fourteen percent (n=7) of the nurses indicated that they neither agree nor disagree that they have time to listen patiently to what the patient says. Thirty percent (n=15) of the nurses indicated that they disagree that they have time to listen patiently to what the patient says. And 20% (n=10) of the nurses indicates that they strongly disagree that they have time to listen patiently to what the patient says.

Thirty percent (n=15) of the nurses indicated that they strongly agree and 10% (n=5) of the nurses indicated that they agree they avoid interrupting the patient before they finish what they want to say. Ten percent (n=5) of the nurses indicated that they neither agree nor disagree that they avoid interrupting the patient before they finish what they want to say. Eighteen percent (n=9) and 22% (n=11) of the nurses indicated that they disagree and strongly disagree respectively that they avoid interrupting the patient before they finish what they want to say.

4.4.8 AAC devices used by

Many studies had alluded to the need for training and usefulness of Assisted and Argumentative Communication (AAC) devices in ICU (Happ et al 2004:210; Patak,

Gawlinski, Fung, Doering, Berg & Hennerman 2006:182; Magnus & Turkington 2006:167). Table 4.18 reveals that out of 50 nurses, none of the nurses indicated that they strongly agree, agree and neither agree nor disagree that the AAC devices are available in the unit. Majority of the nurses (52%; n=26) and 48% (n=24) of the nurses indicated that they disagree and strongly disagree respectively that AAC devices are available in the unit. Twelve nurses (24%) indicated that they strongly agree and the majority (66%; n=33) of the nurses indicated that they agree that they used pen and paper to facilitate communication with ventilated patients.

Out of 50 nurses, none of them indicated that they strongly agree, agree and neither agree nor disagree that they use alphabet board, picture and phrases boards to facilitate communication with ventilated patients as they alluded to the fact that there are no available AAC devices in the unit. The majority of the nurses (52%; n=26) and 48% (n=24) of the nurses indicated that they disagree and strongly disagree that they use the alphabet, pictures or phrases boards to facilitate communication with patients. However, 10% (n=5) and 40% (n=20) of the nurses strongly agree and agree respectively that they used gestures to communicate with patients. Thirty-two percent (n=16) of the nurses indicated that they neither agree nor disagree that they use gestures to communicate with ventilated patients. Only seven nurses disagree and only two strong disagree that they use gestures to facilitate communication with patients.

Table 4.17 AAC devices used by nurses

	Strongly agree	**Agree**	**Neither agree/ disagree**	**Disagree**	**Strongly disagree**
	n (%)	**n (%)**	**n (%)**	**n (%)**	**n (%)**
There are available AAC devices in the unit	0 (0)	0 (0)	0 (0)	26 (52)	24 (48)
Uses pen and paper to facilitate communication	6 (12)	33 (66)	9 (18)	0 (0)	2 (4)
Uses alphabet boards to facilitate communication	0 (0)	0 (0)	0 (0)	26 (52)	24 (48)
Uses picture boards to facilitate communication	0 (0)	0 (0)	0 (0)	26 (52)	24 (48)
Uses word phrases boards to facilitate communication	0 (0)	0 (0)	0 (0)	26 (52)	24 (48)
Uses gestures to communicate with patients	5 (10	20 (40)	16 (32)	7 (14)	2 (4)

4.4.9 Documentation and collaboration

Multidisciplinary collaboration in the ICU has shown that it can improve patient's safety and ultimately patients' outcomes and a number of studies have looked into the importance of nurse patient collaboration (Despins 2009: 85; Rose 2011:). Because of the complex nature of the ICU environment, ventilated patients are exposed to several complexities of care from interprofessional team that work towards helping the patient to be out of danger. The nature of environment requires effective collaborations among all professional in order to achieve optimal patient outcomes (Rose 2011:5). Table 4:19 reveals that out of 50 nurses, few nurses (6%; n=3) strongly agree that they recorded information on orientating the patients and 22% (n=11) of the nurses indicated they agree that they record the information on orientating the patients. Twenty-two percent (n=11) of the nurses indicated that they neither agree nor disagree that they record the information on orientating the patients. Of the 50 nurses, few nurses (6%; n=3) indicated that they strongly disagree while 44% (n=22) indicated that they disagree that they record the information on orientating the patients.

Out of 50 nurses, 22% of the nurses (n=11) indicated that they strongly agree that they record the information that they give to patients regarding orientation to mechanical ventilation and also 22% (n=11) of the nurses indicated that they agree that they record the information that they give to patients regarding orientation to mechanical ventilation. Eighteen percent (n=9) of the nurses indicated that they neither agree nor disagree that they record the information that they give to patients regarding orientation to mechanical ventilation. Of the 50 nurses, only few (6%; n=3) strongly disagree while and 32% (n=16) disagree that they record the information that they give to patients regarding orientation to mechanical ventilation.

Sixteen percent (n=8) of the nurses indicated that they strongly agree that they record the information that they give to patients when performing suctioning secretions. Out of these nurses, 22% (n=11) of the nurses indicated that they agree that they record the information that they give to patients when performing suctioning secretions. Sixteen percent (n=8) of the nurses indicated that they neither agree nor disagree that they record the information that they give to patients when performing suctioning secretions. Twenty-six percent (n=13) of the nurses indicated that they strongly disagree and 20%

(n=10) of the nurses disagree that they record the information they give to patients when performing suctioning secretions.

Twenty-two percent (n=11) of the nurses indicated that they strongly agree and 18% (n=9) of the nurses indicated that they agree that they record the information on communication strategies that they use to facilitate communication with patient. Twenty-eight percent (n=14) of the nurses neither agree nor disagree that they record the information on communication strategies they use to facilitate communication with patients. Twenty-two percent (n=11) of the nurses indicated that they disagree and 10% (n=5) strongly disagree that they record the information on communication strategies they use to facilitate communication with patients. Ten percent (n=5) of the nurses indicated that they strongly agree and only 8% (n=4) of the nurses agree that they inform colleagues about the patient's communication methods during change of shifts. Twenty-eight percent (n=14) of the nurses neither agree nor disagree that they inform colleagues about the patient's communication methods during change of shifts and 24% (n=12) of the nurses disagree and 18% (n=9) strongly disagree that they inform colleagues about the patient's communication methods during change of shifts.

Table 4.18 Nurses' recordings about communication and collaboration with others

	Strongly agree	**Agree**	**Neither agree/disagree**	**Disagree**	**Strongly disagree**
	n (%)	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Record information on orientating the patient	3 (6)	11 (22)	11 (22)	3 (6)	22 (44)
Record information about orientation on mechanical ventilation	11 (22)	11 (22)	9 (18)	3 (6)	16 (32)
Record information during suctioning secretions	8(16)	11 (22)	8 (16)	13 (26)	10 (20)
Record communication strategies used to facilitate communication	11(22)	9(18)	14 (28)	11 (22)	5 (10)
Inform colleagues about the patient's communication method/strategies during change of shifts	5 (10)	8 (16)	5 (10)	8 (16)	8 (16)
Collaborate with Dr or speech therapist or other team member except nurses	5 (10)	2 (4)	11 (22)	20 (40)	12 (24)

4.5 PHASE 2: QUALITATIVE ANALYSIS AND PRESENTATION OF NURSES AND NURSE LEADERS' INTERVIEWS

4.5.1 Introduction

In this section of chapter 4, the interpretation of the qualitative data interpretation from the nurses and the nurse manager's interviews areseparately presented according to themes that emerged during data analysis. The analysis and interpretation of the findings from the ICU nurses is presented under section 4.5.2 and the analysis and interpretation of findings of the ICU nurse managers' interviews under section 4.5.3.

4.5.2 Findings from the ICU nurses' interviews

The analysis for the qualitative data was carried out according to the headings used in the interview guidelines. The guidelines were communication experience in the ICU; communication strategies and information giving as shown in (Annexure N).Three major themes emerged from the interviews with nurses and each of the themes had subthemes as indicated in table 4.19.

Table 4.19 Themes and sub-themes uncovered from the nurses' interviews

	THEMES	Sub-Themes
1.	Essential to quality patient care but not always done	a. Time consuming b. Limited training on communication with mechanically ventilated patients c. Shortage of nurses d. Minimal information giving and explanation to patients
2.	Work-related stress	a. Frustration with communicating with non-responsive patients b. Emotionally draining
3.	Communication as a multi-faceted phenomenon	a. Difficulties in assessing for communication b. Barriers to communication c. Use of communication strategies on trial and error

4.5.2.1 Essential to quality patient care but not always done

All the participating nurses acknowledged that it is essential to communicate with mechanically ventilated patients. This recognition does not always translate into it being done because of time constraints, limited training and shortage of staff.

4.5.2.1.1 Time consuming

Participants reported that nurses' time with patients is taken up by procedures that need to be carefully monitored. Such procedures according to nurses then take their time and concentration and therefore diminish their communication time with patients. Some of the quotes that showed that time constraints were a deterrent to communication are listed below:

A female nurse aged 45 with more than five years' experience said this:

> *"In the ICU we are always so engaged with work that communication is the least of our concern. I concentrate on making them (patients) comfortable, but I rarely communicate with them, since there is never time for a simple chat."*

A female nurse aged 25 years with just one year experience had this to say:

> *"I know from training that communication is important, but not in the ICU, there is just no time. All the time you have to be watching whether the machines are working and filling in numerous forms. There is just no time for talking."*

A male nurse aged 44 years with more than five years' experience in ICU had this to say:

> *"Communication with these patients is very important, but it takes time to talk with patients who may not even respond to you, I believe it is a waste of time and time is really very limited in the ICU, we are task oriented, we do not have to wait to talk slowly to these patients."*

A male nurse aged 35 years with six years of ICU experience:

> *"In the ICU our priority is to save lives, we get so occupied with that to an extent of forgetting that this are people and not animals and need to be talked to even if they are sedated, but that is the nature of the ICU work, we do forget to communicate with them, so it is not always done."*

4.5.2.1.2 Limited training on communicating with mechanically ventilated patients

Participants lamented that there is general communication teaching in the basic nursing but there is never a focus on mechanically ventilated patients. The majority of the nurses preferred patients that are sedated because they have control over them.

Quotes from some of the participants are:

A female nurse aged 23 years with two years of experience in the ICU:

> *"Training of nursing should include communication strategies such as use of sign language. One of our current patients is deaf and I have been talking to her explaining what I am doing only to learn from a family member that she was born deaf, I ignored her because I do not know sign language."*

A female nurse aged 45 years with 15 years of experience in ICU):

> *"There is need for more intensive training on communication in the ICU, we only orientate the new nurses when they come but we are not educators, someone must be responsible for training them. Even the old staff like myself, nobody trained me I learnt in the job and I still do not know other strategies of communication."*

4.5.2.1.3 Shortage of staff in the ICU

Participants realised that it is important for nurses to communicate with ventilated patients, but decried the fact that ICU is also busy and short staffed and this does not always allow for communication. Three quotes below reflect the nurses' experience on shortage of nurses as a barrier to communication.

A male curse aged 34 years with six years of ICU experience:

> *"Communication is very important for the patients, even just to explain to them about the procedures that we do to them is problematic, we just don't do it because we are always rushing."*

A female nurse, 45 years old with three years of ICU experience:

> "*Communication is secondary when working in the ICU, because we are always busy and short staffed" (Smiles) this is why we do this (interviews) after hours because during working hours it cannot work. Patients need our attention, and we are expected to record everything that we do to our patients and nurses are few."*

A female nurse aged 27 years old with two years' experience:

> *"I personally think someone must be employed for communication with these patients, we do not have time to sit and talk to people, especially those who could not even understand what we are saying. We are so few sometimes in this unit."*

4.5.2.2 Work-related stress

Nurse participants reported work related stress in working with ICU patients. Reasons for stress related to difficulty in communicating with mechanically ventilated patients because of difficulty in communicating.

One quote that summarised most of the nurses' feelings is:

A female nurse aged 39 years with six years ICU experience had this to say:

> *"Working in the ICU is very stressful and communication with patients who are non-responsive is even more stressful."*

4.5.2.2.1 Frustration with communicating with non-responsive patients

Participants espoused frustration regarding communication with non-responsive patients, and most of the time communication is not done. Some of the quotes from participants are as follows:

A female nurse aged 51 with nine years ICU experience had this to say:

> *"Communication with mechanically ventilated patients is frustrating and difficult, it needs patience and time and with limited training on use of other communication strategies, communication with them is stressful and frustrating."*

4.5.2.2.2 Emotionally draining

Some of the participants who reported to be always trying to communicate with mechanically ventilated patients reported that it is not easy to communicate with them and described it as emotionally draining. Participants reported that a nurse has to try all sorts of strategies to go through to patients and at times it can be very draining and tedious. Some of the quotes from participants are as follows:

A female nurse aged 51 years with nine years' experience in ICU:

> *"I usually try to mouth words and use gestures all the time and it is very tedious and not enjoyable at all."*

A male nurse aged 43 years with six years' experience had this to say:

> *"I always feel sorry for them (ventilated patients) and I try to communicate even just saying things to them knowing that they may not respond, but it is not easy, it makes you tired and feeling useless."*

4.5.2.3 Communication as a multi-faceted phenomenon

Study participants alluded to the fact that communication is a multi-faceted phenomenon that needs to be understood by those communicating and those that are being communicated to. There are difficulties associated with assessing patients for communication and identified barriers to communication.

4.5.2.3.1 Difficulties in assessing patients for communication

Participants agreed that it is essential for them to assess patients for communication so that they could give the best care to patients.

A female nurse aged 42 years with seven years ICU experience:

> *"We really need to assess these patients for communication ability because at times we give them pen and paper only to realise that they cannot read and write."*

A female nurse aged 38 years with six years' experience in ICU:

> *"It is essential that we assess the patients physically as we once nursed a deaf patient who could not respond to us and we did not know until a relative came and explained."*

A male nurse aged 50 with 20 years ICU experience

> *"Assessing patients for communication ability will assist nurses to provide quality care because they will know the patients limitations and strengths on communication."*

4.5.2.3.2 Barriers to communication

Nurses identified the following as barriers to communication in intensive care: lack of training, sedating patients, and the short period of stay by patients.

A male nurse aged 43 years with six years' experience had this to say:

> *"Immediately the patient's gains consciousness they are discharged to the general wards, before we establish enough rapport to communicate with them."*

A female nurse 30 with two years ICU experience:

> *"We are not trained in communication strategies, and that for me is the greatest barrier."*

Nurses identified the following as barriers to communication in intensive care: lack of training, and because patients are being sedated and the short period of stay of patients.

A male nurse 43 years with six years' experience had this to say:

> *"Immediately the patient's gains consciousness they are discharged to the general wards, before we establish enough rapport to communicate with them."*

A male nurse 30 years with two years ICU experience:

> *"We are not trained in communication strategies, and that for me is the greatest barrier."*

Although many nurses' perceptions related to barriers for communicating with ventilated patients centered on lack of training, there were some nurses' statements that were related to cultural influences for communicating with critically ill patients. According to

the nurses, in Setswana culture, critically ill patients are isolated from other family members and friend to minimise disturbing them. However, the nurse stated these with some attitude.

> *"But frankly speaking, these patients are critically ill, there is no need for us to communicate with them that much. Even in our Setswana culture they are isolated from friends and even close family members are restricted and only few come into contact with them to give them food or bath. So that's why possible we avoid talking too much to them … I don't know …"*

> *"Yes, we were taught to communicate with patient besides being busy, I won't call not communicating with them because there are barriers. It is somewhat cultural influence. Even in our culture, not many people go into the critically ill patient's room …"*

> The perception is that critically ill patients need rest; explanation of procedure or activities is a waste of time because they would not understand or remember.

> *"To be honest talking to them is a waste of time…it's nothing related to barriers. These patients are critically ill so they need rest. Even at homes people coming in the room of a critically ill patient communicate minimally with voices lowered."*

4.5.2.4 Use of trial and error using communication strategies

Communication strategies that nurses reported to be using verbal, use of gestures and AAC devices as shown in table 4.20.

Table 4.20 Communication strategies

Communication strategies	Communication types
Verbal	a. Name calling b. Yes or NO c. Simple commands
Gestures	a. Signals b. Mouthing c. Head nods
AAC devices	a. Pen and paper

4.5.2.5 Minimal information giving and explanation

Two of the ten participants reported communicating with mechanically ventilated patients in order to give information on procedures being done on them.

A female nurse aged 39 with seven years ICU experience:

> "*mmmmhhh (laughing), I tell patients what I am going to do. For patients who are on the Nasogastric tube, when I feed them, I tell them that I was going to feed them through a tube and further tell them that I am going to pour the food into the tube to get into the his stomach, but I can't do everything like that to someone who is unconscious."*

Other nurses do not explain anything to patients while providing care to them.

A male nurse aged 46 years with 10 years ICU experience:

> *"When we are doing some procedures like when we are inserting an NG tube on a patient, patient is on the ventilator, but still at times a patient can understand, but sometimes we don't explain … we don't. We don't talk much to the patients ..."*

A female nurse aged 38 years with six years ICU experience:

> "*For patients who could not read or write or use signs, the nurses briefly tell the patient what they will do and not involve the patient that much."*

4.6 ANALYSIS AND INTERPRETATION OF FINDINGS OF THE ICU NURSE MANAGERS' INTERVIEWS

The qualitative data for interviews with nurse managers were analysed according to the headings used in the interview guidelines. The guidelines were communication experience in the ICU; communication strategies and information giving as shown in Annexures P, R and T.

Three major themes emerged from the interviews with nurse managers and each of the themes had subthemes as indicated in table 4.21.

Table 4.21 Themes and sub-themes uncovered in nurse managers' interviews

	Themes	Sub-themes
1.	Importance of nurse - patients communication in ICU	a. Vulnerability of critically ill patients b. ICU patients are vulnerable c. Perceptions about the importance of communication in
2	Communication methods used by the nurses	a. Nurses communicate verbally with ventilated patients b. Nurses use pen and paper to facilitate communication c. Nurses use gestures/symbols d. Nurse managers' perceptions about AAC devices
3.	Challenges facing nurse managers	a. Minimal communication b. Lack of training on communication c. perception about barriers or constraint to communication
	Acts of moral distress	a. Stress related to minimal communication with ventilated patients b. Lack of knowledge on how to motivate nurses c. Hopelessness
3.	Dealing with moral distress	a. Continued efforts to encourage b. Perception about the support they give staff
4	Organisational factors that impinge on successful communication	a. Lacks of nurses trained in intensive care b. Lack of collaboration on issues of patient communication c. Availability of policies/standards on communicating with patients

	Themes	Sub-themes
5	Lack of collaboration on issues of patients communication	a. Lack of communication among health team members b. Perceptions about nurses' collaborating with other nurses. c. Availability of policies/protocols on communication d. Importance of documenting communication

4.6.1 Perceptions about the importance of nurse-patients communication

This theme emerged from the interviews with nurse managers and under this theme three subthemes emerged, which included communication as a key role of the nurses as they are supposed to gain the patient's trust and actively engage them in their care. Other themes are the vulnerability of the ICU patients and patients as human beings.

4.6.1.1 Communication as a key role of the ICU nurses

The nurse managers agreed that it is the nurses' responsibility to communicate with ventilated patients. The nurses' roles include explanation of what they do and they believe that these patients have a need for communication.

A male nurse manager 56 years old 15 years managerial experience:

> "W*e all know that this patients despite their ventilators they really need someone to talk to because you can be surprised that most of the time when relatives to come to visit they smile. Nurse should ask relatives too to talk to the patients. Yes we encourage the relatives to talk by just saying 'go near; don't be afraid, go near him and talk to him, he hears you.' This helps to relieve anxiety and stress to patients and family."*

Two female nurse managers aged 43 and 44 years with 5 years managerial experience had this to say:

> *"Somewhat: .... for the patient so that the patient may know why he is there. Why something is done even removed. That the tube will be removed and not just take it for granted but the patient has to know."*

To concur with the other nurse manager, another female nurse manager aged 48 years and 10 years managerial experience stated that:

> *"… also want them to continue maybe asking them (patients) if they have pain. Yes and also even asking whether they feeling better or not because when they gain consciousness at least they would appreciate you cared …"*

4.6.1.2 The ICU patients are vulnerable

Communication is an integral part of our social interactions and is imperative to establish relationships. The nurse managers indicated that ventilated patients are human beings and vulnerable as such the nurses should communicate with them despite the fact that they have communication difficulties.

A female nurse manager aged 46 years with seven years of experience had this to say:

> "*It important to talk to ventilated patients whether they are conscious or not because even in our homes when we have someone who does not hear or speak; we still communicate with them; so we need to try to communicate with these patients too."*

A female nurse manager aged 52 years with five years of experience stated that:

> "*Whether the patient feels better or not, we need to communicate with them because as they gain consciousness at least they can see and nod when you talk to them."*

Although the nurse managers indicated that communicating with a ventilated patient may be difficult because of failure to understand the patients, many of them stated that the nurses are expected to communicate with ventilated patients despite the fact that the patients are vulnerable as they are critically ill.

A female nurse manager aged 49 years with three years managerial experience:

> *"Most patients are just lying there though not communicating so we know that they are vulnerable because they are in a critical condition."*

> *"Although the patients are in a critical condition they are able to hear."*

4.6.2 Common communication strategies used by the nurses

From the analysis one theme that was uncovered was common communication strategies used by the nurses as they communicated with ventilated patients.

4.6.2.1 Nurses communicate verbally with patient

The nurses' managers 'explained that the nurses mostly used verbal communication to assess the patient's communication ability.

One female nurse manager aged 46 and five years managerial experience had this to say:

> *"Usually what we do is maybe we will call the patient repeatedly and the patient will maybe if he is coming up out of sedation will just open the eyes and we will just say the patient was trying to open eyes his opening spontaneously he is moving the hand but unless."*

This nurse manager was supported by another male nurse manager (47 years and 5 years of managerial experience) who had this to say:

> *"... maybe calling them by names aah…aahh that is the most common way of communicating with them."*

4.6.2.2 Nurses use pen and paper to communicate with patients

The nurse managers indicated that the nurses facilitate communication with ventilated patient by using common communication methods such as pen and paper:

"*The patients who are … who are on tracheostomy, usually we write we give them some paper to write … those who are able to write, we give them a piece of paper we write, so that the patient can write . You write what you are going to do to the patient, and then you give to the patient. Sometimes you even read to the patient."*

4.6.2.3 Nurses use gestures/symbols

One nurse manager stated that nurses use sign and symbols to communicate with patients:

"For patients who could not read or write or use signs the briefly tell the patient what they will do and not involve the patient …"

"Besides talking, we used writing, sometimes they use signs, but sometimes it's very difficult to understand when they are using signs such as thumps or bring a cup towards your moth for water."

4.6.2.4 Nurse managers' perceptions about AAC

The nurse managers felt they needed some devices that can assist nurses in facilitating communicating with ventilated patients.

One female nurse manager, aged 45 years with more than five years' experience said this:

"They need alphabet boards or pictures to assist in cases when patient cannot write … Yah we need them as I believe they can helped. We do not have them."

The other nurse manager, a female aged 50 years with more than 8 years' experience said this:

"Aah I think we need something to help our nurses in case of patient who are weak, those who cannot handle pens. Aah ... I don't know what."

4.6.3 Challenges facing nurse managers

Two themes that emerged under the main theme of challenges facing the nurse include minimal communication by the nurses and lack of training on communication skills.

4.6.3.1 Minimal communication by the nurses

The importance of communication was emphasised as basic to nursing care by the participants. However, the nurse managers acknowledged that, even though it is essential to basic quality care it is rarely done.

A female nurse manager aged 50 years with four years managerial experience:

"Most of us do communicate with the patients."

"They (nurses) communicate by talking to them (patients) maybe calling them by name, aahh aahh that is the most common way of communicating with them."

"I *usually observe them when we are doing the rounds usually that is when I see them calling them by names."*

A male nurse manager aged 55 years with five years managerial experience:

"Nurses do not always communicate with patients because of the nature of the ICU and the kind of patients that are received in the ICU. Most of them are heavily sedated and unconscious, so communication is very problematic."

Some of the nurses observed that effective communication is dependent on the choice of patients. The nurse managers indicated that the nurses communicate better with

patients on tracheostomy. The nurse leaders stated that some nurses use different communication methods.

A female nurse manager 56 years with 15 years of managerial experience:

> *"Nurses usually use different communication methods when communicating with patients who are on tracheostomy, we write or we give them some paper to write on or the nurse writes what she is going to do to the patient, then she gives the paper to the patient. Sometimes the nurse even read; to the patient after the patient has written something."*

Although the nurse manager's appreciated that the nurses communicate with ventilated patients, some of them indicated that the ICU nurses communicate minimally with ventilated patients.

A female nurse manager aged 56 years with 10 years managerial experience:

> "*Like I said, although sometimes they do communicate to ventilated patients when we encourage them. But after some time, they perform every procedure without saying anything. It doesn't matter how easy and simple the procedure is. Yes, it is because they tend to forget. I don't know why but we need to emphasise on the importance of communicating with patients."*

A female nurse manager aged 55 years with four years managerial experience:

> *"Aaah, it's really rare for our nurses to communicate with ventilated patients despite the fact that we always tell them to do so. I do not know what we should do to motivate them."*

A female nurse manager aged 46 years with 8 years managerial experience:

> *"We are trying to encourage them to talk to patients but it seems they forget. Our nurse will rather talk among themselves than talk to ventilated*

patients. They discuss their social life while busy providing care to their patients."

4.6.3.2 Lack of training on communication skills

Many nurse managers indicated the need for training on communication skills to reinforce what they were taught during their nursing education.

A female nurse manager aged 56 years with 10 years managerial experience had this to say:

> *"I hope if there could be some seminar on communication skills, just the training of all the staff and be given a chance to practice the skills can make a difference. Yes maybe they need some sort of reinforcement as they did this in school. They can but I think we will also lack some training."*

The other male nurse manager aged 56 years with 15 years of managerial experience in support of communication training had this to say:

> *"I think some sort of the training on this part (communication) is also needed. We use trial and error to meet patient's need."*

A female nurse manager aged 49 years with three years managerial experience:

> *"aah aah it's not time. I think they get frustrated to communicate with these patients because they do know what to do, they do not have communication skills."*

4.6.4 Act of moral distress

An act of distress mostly occurs whennurse leaders are faced with a stressful situation related to the role as managers (Edmonson 2010:55). The two subthemes uncovered in the analysis under the acts of moral distress included reaction towards minimal

communication, lack of nurses' training in intensive care as a contributing factor and hopelessness.

4.6.4.1 Stress related to minimal communication

Reaction to a given situation depends on one's interpersonal values and conflicts as they go through a feeling of frustration (Edmonson 2010:55). In this study it was evident that nurse managers were disappointed because the nurses' communicated with ventilated patients minimally or sometimes not at all despite the fact that they reminded them over and again. Many nurse managers acknowledged that when the nurses fail to understand the patients they end up giving up. However, nurses do not give up easily; they make an effort before leaving the patient.

A female nurse manager 56 years old with 10 years managerial experience had this to say:

> *"… sometimes they (nurses) use signs or gestures but in some cases, it's very difficult to understand patients. Nurses end up giving up … me too, end up not even getting what the patient is saying. But we try hard to understand, but at times you fail to get what the patient is trying to say."*

A female nurse manager 49 years old with three years managerial experience:

> *"Besides writing, sometimes they use signs, but sometimes it's very difficult to understand when they are using signs and most of the times they end up not even getting what the patient is saying despite trying hard. They end up giving up … because of frustration."*

A female nurse manager 50 years old with four years managerial experience:

> *"We end up just doing the procedure on the patient when you are not even sure whether the patient has consented or not …"*

4.6.4.2 Hopelessness on how to motivate nurses to communicate with ventilated patient

The nurse managers indicated that they encounter problems to motivate the nurses to communicate with ventilated patients despite their continued effort to encourage them. However, they believed that the nurses need to maintain a professional standard of behaviour in communicating with ventilated patient. The nurse managers seemed to have lost hope.

A female nurse manager aged 55 years with years managerial experience had this to say:

> *"I don't know, I don't know how we can improve on the issue of communicating with ventilated patients, despite the fact that we are talking to them (nurses). I don't know whether they are just thinking of a patient as somebody who is just there. I don't know whether to use the word like an object, you see, but I just do my job to motivate them as communication is central in nursing. I don't know how best we can do it to motivate them to speak with patients. Sometime I lose hope because it seems there is no improvement."*

Besides not know what to do, the nurse managers appreciated that most nurses are in Y generations which seem to be difficult to handle.

A female nurse manager aged 55 years with four years managerial experience had this to say:

> *"Ah these nurses are youth of today … they do not think like us (nurse managers). They get bored easily and like sitting down a lot."*

A female nurse manager aged 51 years with six years managerial experience stated that:

> *"It's the Y Gen … they are a difficult handle and they do not behave like us (nurse managers) … if they don't like something they keep quiet and not do what we advise them to do at the same time I will say they are respectful."*

4.6.4.3 Lack of nurses trained in intensive care

Most of the managers suggested that lack of training in intensive care contributes to the nurses being not able to communicate with ventilated patients.

A female nurse manager 49 years with 3 years of managerial experience had this to say:

> *"We have two trained ICU nurses and sometimes you will find that though they would be on duty, as we have one Zimbabwean and one Motswana, you will find that the Motswana one will be manager of the whole hospital then and only the Zimbabwe one will be on night duty. This mean there will be no ICU trained nurse on duty."*

A female 53 years and 12 years managerial experience:

> *"We do not have ICU trained nurses, out of 18 nurses only 2 are ICU trained. The general nurses are attached tone parson in a shift if they are lucky to have her that day … and one ICU trained nurse is at managerial level. Most of the time she is not in the unit."*

A female nurse manager 46 years with seven years managerial experience:

> "*Yah, one of the excuses that the nurses give although maybe it can be contributing factor for not communicating with patients, but you know, almost all of our nurses here are not ICU trained they are just learning on the job. We only have two nurses out of all."*

4.6.5 Moral courage

The nurse managers who participated in the study mentioned the continued efforts that they use to support nurses to communicate with patients**.** They also acknowledged that nurses' communication with mechanically ventilated patients is minimal. Lack of motivating strategies to promote communication was also mentioned.

4.6.5.1 Continued efforts to encourage the nurses

The nurse managers reported that they continually make efforts to encourage the nurses to communicate with ventilated patients. However, in many cases, their efforts do not help as nurses tend to forget in the process.

A female nurse manager 56 years old with 10 years managerial experience:

> *"Usually when nurses have been with the patient for a long time the nurses tend to forget that the patient is able to hear something. I don't know whether it is because we do not emphasis communication that much in the ICU as the nurses tend to give up on the patient who they do not understand."*

A female nurse manager aged 46 years with seven years managerial experience:

> *"Sometimes during morning meetings we encourage nurses that they should communicate with patients. We also advise then to talk to the family members when they visit. So we do our best."*

A female nurse manager 49 years old and three years managerial experience:

> "*I always tell the nurses that when they are touching the patient, they should always talk to them because it doesn't mean that the patient cannot hear."*

4.6.5.2 Nurse manager's perception about the support they give staff

The nurse managers indicated that perhaps what they do by encouraging nurses individually to communicate with patients is not enough.

A female nurse manager 55 years with four years managerial experience had this to say:

"Possibly it is because we don't do it openly to say they talk to the patient, talk to the patient … though sometimes if you are the unit as a manager you will have to say 'communicate with the patient,' when they (nurses) are doing something on the patient."

A female nurse manager 53 years with12 year's managerial experience had this to say:

"Although we usually have in-service training in house, we had never included communication."

4.6.6 Lack of collaboration on issues of patient communication

Many studies have indicated that ICU nurses need to collaborate with other health team members (Hemsley, Sigafoos, Balandin, Forbes, Taylor & Green 2001:827; Magnus & Turkington 2006:178; Leathart 1994:93). Subthemes that emerged under the major theme were: lack of communication about patient communication issues.

4.6.6.1 Lack of communication about patient communication issues

The nurse managers indicated that in many occasions they do not collaborate with other health professionals.

A female nurse manager aged 52 years with five years managerial experience:

"ahh most of the time we don't involve other health professionals to understand the patients."

Only one nurse manager indicated that they sometimes consult with other health team members to assist them if they do not understand the patients. The nurse manager view was communication barriers prompted them to consult colleagues who could understand the patient.

A female nurse manager aged 49 years with three years managerial experience:

> *"Oh yes, we had a Chinese patient who was admitted here, that one was trying to communicate, but the problem was with the language we couldn't understand what he is saying, we ended up calling one Chinese nurse who was working in theatre who came and assisted us and luckily he understood what the patient was saying."*

4.6.6.2 Nurse Managers' perception about communication with colleagues regarding patients' communication ability

Many nurse managers explained how some nurses communicate among themselves during change of shift about patient communication. However, the nurses' views are that the nurses do not talk much about communication issues as they give reports in a hurry.

A female nurse manager aged 55 years old with five years managerial experience:

> *"During change of shift report we kind of share with colleagues how the patient communicated or responded. Usually we tell others that when we called the patient repeatedly the patient opened their eyes. The patient who may be coming out of sedation will just open their eyes. So we tell them (nurses) coming on shift that."*

A female nurse manager aged 46 years and seven years of managerial experience:

> *"Yes, we will just say the patient was trying to open eyes spontaneously, he is moving the left hand but aaaah … we do tell other."*

A female nurse manager aged 56 years and 15 years managerial experience:

> *"We tell others , let say the patient was just there (in the unit) for observations, we say the patient today is communicating or is just quit or maybe he is going down or what but really the communication part is mostly the scanty."*

A female nurse manager, 50 years old and four years managerial experience:

> *"We do encourage the nurse although most of the time, I don't know whether I can say when we take the report, we are just in a hurry as others want to go out. We do not dwell much on how the patients communicate."*

The nurse manager explained that the speech therapist was consult by doctors for one tracheostomy patients to assist with him. They thought it was the doctor's responsibility to consult other health care provider with regard to communication.

Female nurse manager, 56 years old and 10 years managerial experience:

> *"aaah I remember one tracheostomyy patient, the speech therapist was consulted to assist nurses … but that's the doctor 's responsibility to consult them not us. They (doctors) can consult."*

> *"In one hospital there was no speech therapist to consult but the nurses did not feel they can consult them but only doctor if need arise they can consult."*

Female nurse manager, 53 years old and 12 years managerial experience:

> *"We do not have speech therapist in our hospital, I haven't thought of using him for speech in these patients. Any way doctors are supposed to make a consult them (speech therapists)."*

4.6.6.3 Availability of policies/standards on communicating with patients

The nurse managers indicated that there are policy manuals and protocol in the unit for nurses to use when providing care that incorporated communication with ventilated patients but they do not inform nurses about them.

One female nurse manager aged 46 and 5 years managerial experience had this to say:

> *"We have policy manual and if something is written it has to be communicated to people. As managers us we are going to make the policy, isn't it then we have to disseminate the information to other aaahh staff members and that once you develop something you want it to be put into practice."*

However, the nurse managers indicated that they do not include protocol and procedure manual in their orientation of new nurses in the unit.

A female nurse manager, 56 years with 15 years managerial experience had this to say:

> *"I think it is and I will have to check our orientation schedule that this one the programme maybe we will just put it as a topic so that at least."*

In support of not including communication during orientation of new staff, one male nurse manager aged 50 years and over five yearsmanagerial experience had this to say:

> *"but yet we are doing little on the part of talking to the patients I think it is very important that we should find a space for including communicating with the patients in our orientation programme and we should include it as one of the topics."*

However, some of the nurse managers' perceptions regarding procedure manual/protocols revealed nurses lack of clinical judgment that may compromise patients' quality care. Many nurse managers did not know that nurses use policy manual/protocol to provide quality care. They do not motivate the nurses to use them because they believe nurses know they are available because the nurses participated in their development.

One female nurse manager, 47 years and 5 years of managerial experience had this to say:

> *"The protocols and manuals! Aah, some of them (nurses) they know. I am not very sure all of them know but they know that we have protocols here (ICU) and some of them (nurse) they have been involved in developing the protocols … so I take it they know."*

The other female nurse manager aged 52 years and more than 10 years managerial experience stated that:

> *"… but maybe time and again when we do some presentations in the unit, some of the things that we need to do regarding protocols are just to remind each other that we should read them. Maybe when the nurse suction the patient, we (manager) can show the nurses the protocol on suctioning to remind them. Otherwise it is not very common that they all see the importance in the protocols."*

4.6.6.4 Importance of documentation on communication issues

The nurse mangers felt that documentation is important as a future reference form of appraising nurses. And that documentation should be considered as a collaboration tool with other team health care members.

Female nurse manager, 56 years old and 15 years managerial experience stated that:

> "*Yes the documentation part of communication issues will be really required because like us managers, we are having some of our objectives to do such as audits of the patients' files. So we need to ensure that our staff dothe* records properly. The information is needed in the *patient's files (nodding the* head) *to communicate with other."*

Some agreed that the nurses can communicate among themselves on the type of communication method that the patient uses. However, some nurses stated that other nurses will not to have to reassess the patient for communication ability and this will

prevent frustrating patients and the nurse. The nurses appreciated that documentation will ensure continuity of care.

The other female nurse manager aged 52 years and more than 10 years managerial experience stated that:

> *"Yah, if nurses document, others will use the same information tom talk to the patient and patients will be happy."*

A male nurse manager, 50 years and five years managerial experience had this to say:

> "*You see, of we could record the communication type, then the next nurse on duty will know how to communicate with the patient … and thus continuity of patient care will be ensured."*

The data from the nurses managers reveals that nurse manager have positive attitude towards communicating with ventilated patients. They feel that documentation will be able to minimise time that the nurse take when assessing patients for communication and thus ensure continuity of care if nurses could document the nurse-patient communication. The findings answer out research question that the researcher wanted to finding from the nurses.

4.7 CONCLUSION

The findings of this study reveal that there is minimal communication between nurses and ventilated patients mainly owing to the fact that some nurses are not keen on communicating with ventilated patients due to two major reasons: (i) Difficulty in communicating with ventilated patients happen because these patients cannot express themselves clearly, and (ii) some nurses are not interested in making an effort to communicate with ventilated patients as they (nurses) lack competencies in communication skills. Most nurses are not intensive care or critical care nurses.

Further, the findings suggest that nurses are not given the guidelines on how to communicate with ventilated patients, a fact that would not be very useful even if they were given the manuals to read as they are too busy with other nursing roles in the unit.

The findings revealed that nurse managers make an effort to encourage nurses to communicate with ventilated patients but the nurses are reluctant; which results in nurse managers becoming stressed and hopeless, then subsequently experience moral distress. The findings of this study suggest that nurse manager also lack competencies in leadership.

CHAPTER 5

INTERVENTION

5.1 INTRODUCTION

In this chapter the researcher describes the intervention that was implemented to improve nurse-patient interaction in both referral hospitals ICUs that supported the research process. A Quiz-experimental research design was chosen as a preferred method to effect change in how nurses communicated with ventilated patients. It was evident in phases 1 and 2 that communication between the nurses and patients with regard to explanation and information giving to ventilated patients was inadequate because the few (12%) of the nurses indicated that they strongly agree that they teach patients that when they are on a ventilator, they are unable to cough and thus secretions accumulate in the lungs, just as example of what the nurses stated. The findings were discussed with the nurse managers and the nurses and the intention for a seminar with the nurses.

5.2 DESCRIPTION OF INTERVENTION

The intervention also included a series of communication skills seminars with the ICU nurses who were interviewed during the qualitative phase 1. Ten nurses from each hospital attended the seminars. The nurses attended the seminars in groups of two or four for a period of one hour daily or twice a week depending on availability of the participants during a shift. Most of the sessions were conducted during at 12:00 hours to accommodate for morning and evening shifts nurses.

These sessions comprised role plays and group discussions on the topic covered during session 1, with emphasis on information sharing, and experiential learning, and practising with each other what they had learnt during the workshops. The duration of the sessions was a total of six hours and also the researcher supported each nurse at least twice after each session while practising on mechanically ventilated patients. Again, nurses were also encouraged to practice with mechanically ventilated patients as they were providing care. The sessions were conducted concurrently with nurses practising on patients for one hour

each day over three weeks, immediately after handover report so as to include morning and evening shift nurses. The sessions are discussed in detail under workshop sessions in section 5.3.2.

5.3 PREPARATION FOR COMMUNICATION SKILLS WORKSHOPS

Seminars were planned prior to conducting them, and this involved the preparation of learning materials, venue for the workshops, and training of the simulator.

5.3.1 Material for the seminars

The necessary materials used during the seminars were prepared with involvement of the nurse managers and the nurses. The researcher showed the nurse managers the materials for the seminar that she had prepared in advanced for their input. Not many changes were made on the AAC devices, except that the nurses and the nurse mangers took part in the development of picture board (Album). Files for the material for the workshops were created to contain all the necessary materials for each nurse to use during the seminars, for example the scenarios for patient care activities, an algorithm for assessing the patients' ability to communicate (Williams 1992:222) (Annexure O) and different communication methods.

In order to demonstrate nurse-patient communication skills to the nurses, simulation with a volunteer was used. The volunteer, who was not a nurse, and was coached to role-play the mechanically ventilated patient. This person did not have knowledge of how health care providers communicated with mechanically ventilated patients. To simulate a patient, an endotracheal tube was cut off and just the proximal part was placed in the volunteer's mouth and tied with a bandage to prevent him from talking; the researcher acted as a nurse communicating with a patient. The volunteer was coached for three weeks; three times a week for one hour on the simulation of the scenarios, the use of AAC devices, including the natural and expressive communication devices, and on the use of the algorithm for assessing patients' ability to communicate, before choosing the devices the patients preferred.

5.3.2 Workshop sessions

There were two (2) sessions for the workshops

5.3.2.1 First session

The objective for the first session was to allow the ICU nurses to appreciate communication difficulties with ventilated patients. It consisted of the role- play with a volunteer, demonstrating to the nurses using the scenarios that included: an algorithm, scenario on mechanical ventilation via the endotracheal tube pen and paper and natural strategies. The scenarios were translated into Setswana for patients who could not understand English (Annexure Q, S & U).

The researcher started by explaining the intervention to the participants and sought for cooperation throughout the seminars and edged everyone to attend all sessions. Nurses were enthusiastic throughout the project. During the sessions, the RA kept the field notes.

Time was allowed for the participants to ask questions and to seek clarification at the end of a role-play. The researcher started by introducing the session followed by a role-play. After the role-play, the participants performed return demonstration between themselves; one acting as a nurse and the other participant acting as the ventilated patient. The researcher asked the participants to express how they felt during the return demonstration. Most of the participants indicated that they had been taking communication with ventilated patients for granted and that communicating with these type of patients need time as the nurses need to exercise patience. Interestingly the participants appreciated the communication difficulties experienced by the patients. During these sessions, the participants' experience made them to appreciate using communication strategies such as being patient and pausing in between sentences and to repeat what they could not understand or to verify what the patient stated.

With regard to assessment for communication ability, the researcher demonstrated on the patient simulator how to assess patients for communication ability using an algorithm. The patient simulator would shift from being conscious or unconscious. The researcher demonstrated to the nurses that they need to support the unconscious patients until they

regained consciousness. If conscious, the researcher assessed for level of understanding using the algorithm such as for language, assess for ability to read or write, ability to mouth words, fine motor skills intact or gross motor skills, collaborated to choose preferred communication method(s) such as pen and paper and communication boards such as flash cards or picture board.

5.3.2.2 Second session

The objective of the second session was for the ICU nurses to own the experience and to practise it. The second session was a discussion of the nurses' experiences when they were communicating with patients as they were providing care during their routine care, They shared their experiences with colleagues, made suggestions for improvement, and encouraged each other and to commutate with conscious and unconscious ventilated patients. The nurse indicated the challenges of communicating with patients and they suggested for more time to practice the scenarios in order to be competent in using the AAC and communication skills. The nurses lamented for the support from management by ensuring availability of AAC devices in the unit. The nurse' comments were similar to the findings from other studies on nurses' perceptions regarding communication trainings (Radtke, Tate & Happ 2012:16). The nurses encouraged each other to record communications issues in the patients' files in order to educate those who were not attending the workshops. They wished the seminars could have involved all the nurses in the units. They wished the material for the seminars could be covered during the orientation of new nurses. The discussion provided an important opportunity for the nurses to capitalise on their strengths, improved on their weaknesses, helped consolidation and mastery of communication skills. The contents of the seminars are summarised acceding to the lesson plan in table 5.1.

The nurses practised with patients in order to ensure that they mastered the communication skills learned during the workshops. Each nurse was observed and supported on a one-to-one basis on three occasions before attending the next workshop. They were encouraged to communicate with patients, and again to share their experiences when interacting with patients with others as well as documenting patients' preferred AAC devices on the patient's medical records. During discussions time the nurses shared with one another the communication information they recorded in the patient' files.

Table 5.1 A lesson plan for the communication skills workshops

	Workshop 1		**Workshop 2**		**Workshop 3**	
Duration	**Session 1**	**Session 2**	**Session 1**	**Session 2**	**Session 1**	**Session 2**
5 min	Introduction		Introduction		Introduction	
20 min	Role plays on an algorithm, scenario on mechanical ventilation via the endotracheal tube (Annexure P), pen and paper and natural strategies	Sharing experiences	Role plays on scenario for suctioning procedure (Annexure R), alphabet board, word phrase, and natural strategies	Sharing experiences	Role plays on scenario on creating tracheostomy (Annexure T), photo album, picture board and natural strategies	Sharing experiences
10 min	Nurses' questions and comments on the role play	Nurses practicing on each other	Nurses' questions and comments on the role play	Nurses practicing on each other	Nurses' questions and comments on the role play	Nurses practicing on each other
20 min	Return demonstration by nurses		Return demonstration by nurses		Return demonstration by nurses	
5 min	Summary		Summary		Summary	

5.3.3 Content for seminars

The content of the seminars was grouped so that all relevant information was covered during the course of three seminars. It was presented in sequence so that skills could be developed. The content consisted of: 1) ways to interact with the patient and orient them to the ICU environment; 2) the assessment of a patient using the algorithm; 3) using scenarios, based on a chapter by Garrett et al (2007:17) which were translated into Setswana, to briefly give information and an explanation of treatment and procedures to patients and 4) facilitation of communication with patients using multiple AAC devices and strategies. The following scenarios were used by the nurses: (1) scenario on mechanical ventilation via the endotracheal tube (Annexure P), (2) scenario for suctioning procedure (Annexure R), and (3) scenario on creating tracheostomy (Annexure T).

5.3.4 AAC devices

Nurses employed multiple strategies when communicating with ventilated patients as the intensive care patients' condition changes over time. After using an algorithm to assess patients' ability to communicate, a nurse collaborated with the patient to facilitate effective communication by using natural and expressive communication methods and strategies that the patient preferred. The communication aids used were the low technology devices such as pen and paper, language phrases, word and alphabet boards and photo albums.

In terms of natural communication strategies and signals, the nurse identified natural signals, starting with the standard gestures that the patient preferred to use, for instance thumb up or head nodding for yes, and head shake or thump in the first for no.

Table 5.2 Low technology AAC used during the seminars

Pen and paper:	Patients who had motor skills but could not mouth words, wrote what they wanted to convey using a pen which was attached to the bed-table and a Notebook, when communication was initiated.
Word phrases:	The nurse assisted patients to identify or point to phrases that the patient wanted to use. They both used nonverbal communication methods, for example gestures, touch, yes/no eye blinks, in order to augment and validate what they were conveying to each other. Some of the phrases were: *I need suction, I need to sleep, too much noise, turn me, I am in pain,* *I can't breathe, turn off lights, I am cold, can't speak, what happened?* *I want my mother, pray for me. There words were laminated in one chart for nurses to use.*
Photo boards*:*	Patients used pictures to convey the message if they could not read or write. Pictures of people acting as patients were arranged in three small albums, for example pictures of a patient being positioned in bed, being suctioned, or communicating with the nurse. The nurse opened the album, and allowed the patient to point at the picture that represented what she or he wanted to communicate. Other pictures were obtained from http://www.vidatak.com/. And were laminated to be used by the nurses and ventilated patients.
Word board:	Words were arranged and written alphabetically and were used in conjunction with nonverbal communication methods as the patient pointed at or the nurse stated a word on the board. Examples of words: *Afraid, again, alphabet, alone, ask, awake* *Bath, bed, book, breathe, bring, brother, bye* *Call, can, can't, come, clock, clear* *Do, doctor, don't, done, dry, different, difficult*. A list of common words were selected and laminated in a chart.
Alphabet board:	The alphabet was printed on a laminated paper in a table form, with each column starting with a vowel so that the patients could remember how they were arranged. The patient spelled the word by pointing at the letters. The nurse wrote the letters to which the patient pointed whom then to verified the word by using natural signals.

5.4 NURSES' RESPONSE ONTHE SEMINARS

During the intervention, the researcher asked the nurses how they felt about the seminars. The nurses were asked as they were practising among themselves and as they were providing care to patients. The researcher used field notes to capture the nurses' responses during the seminars. Generally, the 10 nurses were happy with the

seminars and they were cooperative and motivated to learn the strategies as suggested by the researcher. They did not interpret the process as research but as an initiation towards improving patient care. Some of the nurses wanted to incorporate the nurse-patient communication in their performance initiative objectives for the year.

One participant stated:

> *"I had been struggling to come up with objectives for the performance improvement. I am going to include communicating with ventilated patients as my objective."*

Although the nurses felt challenged because of time constraints and the type of patients they nurse, they accepted the seminars and wished to share what they learned with other nurses in the unit and nursing students visiting the units.

One participant noted:

> *"The seminars were an eye opener to some of us who did not know anything about communicating with patients. I was challenged before this seminar on communicating with ventilated patients. Although time was limited to know much, we will do our best."*

The nurses felt this type of seminars should be conducted with all the ICU nurses and the seminars should be included during new nurses' orientation into the ICU. The nurses felt that those who orientate new nurses should not consider that nurses will automatically communicate with ventilated patients.

One of the participant's comments was:

> *"During our orientation, emphasis on communication was not done. I believe they took for granted that all nurse can communicate with ventilated patients without difficulties."*

Some of the nurses wished the management could support them by ensuring that the AAC devices are available in the wards and the promised to keep the AAC used during

the seminars in the unit for every nurse to use them when communicating with ventilated patients. However, they were challenged by yearly rotation of nurses in the unit.

One participant indicated that:

> *"We will ensure that these AAC are available in the unit by keeping them safe as long as I am still in this unit."*

One participant added:

> *"I like these devices despite that they can be time consuming, but we will ensure that they are in the unit and keep them in the conference room."*

The seminar changed the nurses' practice as evidenced by most of the nurses who attended the seminars communicating with ventilated patients and using the AAC. Their collaboration with patients had improved as evidenced by not choosing the communication methods to patients. One nurse asked the researcher to assist them while they were using alphabet board that the patient had chosen to use but the patients could not use it. The nurses appreciated the researcher's initiative for the seminars.

One participant stated:

> *"Most of us here (ICU) are not ICU trained, so if people like you come and empower us, we get motivated. Do not forget that this was just an introduction; keep coming to encourage us to communicate with ventilated patients."*

It was evident that nurses after the seminars were able to communicate with ventilated patients using scenarios and AAC devices. The nurse manager had indicated that they did not know how they can motivate the nurses to communicate with patients. It is evident that seminars helped in motivating the nurses because they were involved as they shared through experiential learning.

5.5 LEAVING THE FIELD

After all the nurses had completed the seminar sessions, the researcher thanked them during a general meeting attended by all nurses for morning and evening shifts. m The researcher had informed the nurses that during the visit in the unit, the researcher would be observing those nurses that practice what they learned during the seminars. The nurses were informed that the nurses who will be found putting into practice what was learnt would be giving a token of appreciated and they will be used as magnet champion in this unit to motivate nurse to communicate effectively with ventilated patients. Two nurses in each unit who had considered the seminars very seriously were identified with the help of the nurse managers. These nurses were given money and appointed as champions publicly for nurse-patient communication during the general meeting. All the nurses from both ICUs appreciated the researcher' initiative, through theirrepresentativesthat they had selected to talk on their behalf. The researcher was humbled by the nurses' appreciation of the programme especially that at the beginning of the seminars, because she was haunted by her insecurity and doubts of whether the nurses will accept the programme. The researcher felt that there was a need for further clinical research to evaluate this study and to empower the nurses in the ICUs with the aim to improve patients' outcomes.

5.6 CONCLUSION

In both units, the patients were extubated immediately when their breathing pattern improved. These made nurses not to practise using the AAC devices that much. However, the scenarios for orientating the patients on mechanical ventilation and during suctioning of secretion were used and most of the nurses had grasped all the information without necessarily referring to the scenarios. Recording the communication issues also improved, and nurses shared with other nurses at change of shift how they communicated with patients. The nurses were generally happy about the seminars and they promised to continue communicating with ventilated patients. The nurses allured for the support of the management by providing the units with AAC devices and to motivate the nurses to communicate with ventilated patients.

CHAPTER 6

DISCUSSION OF FINDINGS

6.1 INTRODUCTION

The previous chapter dealt with the intervention that aimed to change nurses' attitudes towards nurse-patient interaction in the ICUs. This chapter further explores and synthesises the major findings of the study. These are based on the Synergy Model for Patient Care as a conceptual framework used in this study.

6.2 MAJOR FINDINGS OF THE STUDY

All the nurses' competencies for the AACN Synergy Model for Patient Care are important for caring for the ventilated patient. In this study the following competencies were reflected in the findings: clinical judgment, caring practice, collaboration, advocacy and moral urgency and facilitating learning. Kaplow and Hardin (2007:8) stated that the AACN Synergy Model competencies are interrelated, which makes it difficult to discuss them without encroaching on the others, this observation was true even for this study.

6.2.1 Clinical judgments

According to AACN Synergy Model for Patient Care, clinical judgments are defined as clinical reasoning and clinical decision making, critical thinking and a global' gasp of the situation (Hardin & Kaplow 2005:84). In order for nurses to make critical judgments certain mechanisms should be in place such as availability of protocols (Hanneman 2004:70). Availability of protocols ensures smooth communication between health care professionals, which enables provision of quality care. Although study sites had some protocols that nurses had to follow when providing care, most of the times they were not followed. Protocols in health care systems are also aligned with good practice measures that bring about better patient outcomes. Many studies (Hanneman 2004:70; Hardin & Kaplow 2005:84; Wyson & Driver 2009:24) allude to the fact that failure to use hospital protocols, especially in the ICUs, leads to poor care being rendered to patients. The

studies further allude to the fact that nurses need to have strong clinical judgment in order to make correct decisions to meet the needs of the ventilated patients.

In every practice setting, the expectation is that nurse managers should have a high level of technical competency as they have acquired proficiency level and act as champions of effective systems by judging nurses' needs. However, in this study nurse managers were unable to make decisions on how to motivate the nurses to continue communicating with ventilated patients. The researcher understands that examination of communication skills retrospectively by interviewing nurses could have been uncomfortable experience as the nurses needed to respond to what they did with all the differences in the patients they cared for.

6.2.1.1 Lack of documentation

Potter and Perry (2009:235) describe documentation as anything written either on paper or electronically generated that describes the status of a client or the care or services provided to that patient. There was minimal data in the patients' files on communication used and whether there were any AAC devices used with ventilated patients. In this study, paper recording was used by the nurses to document nursing actions. The paper recordings mostly included procedures done on the patients such as suctioning and medication administration. Minimally, things that was basic to care such as orientating patients to the unit, and explaining the ventilation procedure to patients. Even though the IPMS has been introduced in the study sites since 2011, there were not being fully utilised.

Quality nursing documentation is expected in nursing practice in every area of care or service delivery (Tucker, Brandling & Fox 2009:30). One procedure manual in the study portrayed that nurses should document the activities carried out as well as document care provided. Although this was a general procedure manual that covered all activities that the nurses provided, there was no specific manual on communication with ventilated patients. This according to the researcher may limit use of AAC communication strategies. Documentation is important in nursing practice because the logic in audit is that "If it's not recorded, it' did not happen. According to College and Association of Registered Nurses of Alberta [CARNA] (2012:14) nurses should consider documentation is as an integral part of nursing practice. Incorporating communication

in the nursing standards would ensure that patients are being treated with humanness and respect (Casey & Wallis 2011:35).

6.2.2 Caring practices

According to AACN Synergy Model for Patient Care, caring practice is defined as "nursing activities that create a compassionate, supportive, therapeutic environment with the aim to promoting comfort and this include vigilance, engagement and responsiveness of caregivers" (AACN Certification Corporation 2003:1).

The nurses in the present study had limited communication skills for communicating with ventilated patients. In most cases, it is important that the nurses must consider the cultural differences in nurse-patient interaction as some cultural differences can be both obvious and hidden. For instance people from the same country differ with religious beliefs and practices, dietary habits, daily routine communication need and personal care needs (Hardin 2005:91).

The findings of this study reveal that there is lack of nurses' competencies for caring practice. Results showed that many (56%; n=28) of the nurses were working at level 3 of the competencies, and that the nurses and nurse mangers indicated that a majority of the nurses were not intensive care prepared nurses compared to ICUs internationally. The latter are mostly staffed with specialty trained and certified nurses. Therefore, this might bias the findings as it is not easy to pair nurses with a particular level of competency as described by the Synergy Model for Patient Care in this study. It is worth noting that even in some of the ICUs matching nurses' competencies to patients' needs may be limited because of change in staffing patterns at a given shift.

One important aspect in nursing critically ill patients is the nurses' ability to be aware of the patient's needs to communicate. It is evident that the nurses in this study communicated minimally with patients. The findings of this study are not different from previous studies on nurse patient communication including those, which were conducted more than two decades and the recent ones (Ashworth 1980:10; Hall 1996:293; Happ et al 2011:e28). In a study by Hupcey (2000:361) patients portrayed nurses as caring if they avail themselves and were able to communicate with them. Many explanations to this include the cultural influence that the nurses alluded to in this

study. According to the nurses in this study, some of the ventilated patients are critically ill and sedated and as such they need time to be left to rest. Hence the nurses believed that communicating with these patients will prevent patients to have peaceful rest. However, there are many questions that may be raised from the findings; such as did culture influence the nurses' lack of communication with patients? Or is it the patient's acuity and sedation that act as a barrier for nurses to communicate with patients or did the nurses in this study identified the needs of ventilated patients for communication or they took for granted that patients could not communicate? Contrary to the findings of this study, Rowe and Fletcher (2008:51) claim that frequent communication and explanation given to the patient is one of the effective methods that aid in sedation in the ICU. Rowe and Fletcher (2008:51) further suggest that whether patients are sedated or unconscious, communicating with them remains important.

6.2.2.1 Lack of orientation of patients

Nursing is a caring profession, therefore, nurses should be eager to reduce stress in ventilated patients through orientating them to the unit they found themselves in. Studies have depicted an ICU environment as being stressful to both patients and nurses (Cochran & Ganong 1989:1038; Papathanassoglou Karanikola, Kalafati, Giannakopoulou, Lemonidou & Albarran 2012:e41). The stresses emanate from the unfamiliar surroundings, worrisome sights and sensations, sleep deprivations and activities (Lush & Lash 2005:25). In order to reduce stress in the ICU, orientation should be done as a standard procedure for all patients admitted in the ICU. In this study 26% of the nurses introduced themselves to the patients and 14% of the nurses orientated the patient to time and date. This finding, therefore, shows that only a limited number of nurses make an effort in orientating the patients to self and the environment.

6.2.2.2 Lack of communication

Knowledge of communication skills provides tools for nurses to guide patients during their stay in the ICU in order to relieve anxiety and stress among patients. Carroll (2007:1165) reports that communication is one indicators of a caring nurse; therefore it is important for nurses to communicate with mechanically ventilated patients in an unhurried manner.

In this study it was evident that the nurses appreciated bedside communication with ventilated patients. Although the nurses did not consider the importance of communicating with unconscious patients, after the seminars they appreciated that communication can be used to meet patients' psychological needs. Studies have showed that patients recall communication in the ICU when they are sedated and unconscious (Carroll 2007:1165, Patak et al 2004:308; Rundshagen, Schenabel, Wegner & Schulteam 2002:38). One of the characteristics of the ventilated patient is being vulnerable and this places them at high risk for prolonged ICU stay and poor psychological outcomes.

It is crucial that nurses must be trained on nurse-patient communication because the poor nurse-patient communication is related to the inability of the nurse to identify the physiological symptoms of the patients (Campbell & Happ 2010:64). The findings by Campbell and Happ (2010:64) suggest that caring for the patients' physiological needs in exclusion of communication does not guarantee quality care.

6.2.2.3 Cultural sensitive care

Some of the participants in the study described the insensitive clinical practices related to cultural influence. The participants in this study indicated that their culture does not support communicating with critically ill patients. The participants undoubtedly know the importance of communicating with patients from their educational background; but their cultural influence seemed to have more impact on nurse- patient communication in the ICU. Cultural influence and generational differences served as a barrier to communicating with mechanically ventilated patients (Campinha-Bacote 2010:1). For nurses to be able to communicate with ventilated patients, it is essential that they remove barriers to communication after self-reflection (Campinha-Bacote 2010:1). However, there is a differing view that supports promotion of sleep in the ICU by ensuring that there is quietness in the ICUs. Parthasarathy and Tobin (2012:61) had argued that there is significant increase in sleep deprivation in critically ill patients caused by nurses' talking. The complexity of intensive care also contributes to limited communication between the nurses and ventilated patients as indicated by the nurses and the nurse managers in this study.

6.2.3 Collaboration

The findings reveal that there was inadequate collaboration among nurses and poor collaboration among health care providers in the ICUs. According to the AACN Synergy Model for Patient Care, collaboration is defined as working with other in a way that promotes each person's contribution towards achieving optimal goals.

6.2.3.1 Lack of collaboration among nurses and other health care team members

The findings revealed that nurses did not collaborate with other health professionals on issues relating to communicating with ventilated patients. A collaboration with other health care team members such as doctors and speech therapist or psychologist can make an impact on meeting communication needs of ventilated patients from team work effort (Wysong & Driver 2009:24).

Decision-making considered from an interdisciplinary team can bring best nursing outcomes (Rose, Blackwood, Egerod, Haugdah, Hofhuis, Isfort, Kydonaki, Schubert, Sperlinga, Spronk, Storli, McAuley & Schultz 2011:1). Effective collaboration between nurses and patients and nurse to nurse or with other health care professionals need open and coordinated communication with protocols incorporating communications in order to improve quality patient care (Flin & Cuthbertson 2011:1683). Studies on interdisciplinary communication show that if protocols are not available collaboration in communication may be inconsistent and disjointed and this means communication in all aspect of care including explanation and giving information to vulnerable ventilated patients (Fuss, Bryan, Hitchings, Fox, Kinneman, Skumanich & Young 1998:1, Reader et al 2007:347).

Communication that involves collaborative and interdisciplinary practice in intensive care is crucial in promoting clinical excellence and improving the quality of care of critically ill patients (Tucker et al 2009:30). Although poor communication can lead to tragic consequences, a review of the literature also shows that effective communication with patients and among other health care professional in the ICU can lead to the following positive outcomes that could benefit the nurses in the two hospital ICUs including: Improved information flow during change of shifts, more effective

interventions because the patients will be able to participate in their care and understood or assisted to communicate their need, improved safety as ventilated patients' communication need will be incorporated in their care , enhanced morale because nurse managers reported moral distress as nurses end up giving up communicating with ventilated patients and subsequently increased patient and decreased lengths of stay (Fuss et al 1998:1).

Efforts to improve health care safety and quality are often jeopardised by the communication and collaboration barriers that exist between clinical staff. Although every organisation is unique, the barriers to effective communication that organisations are faced with have a negative impact on quality care. Effective communication among staff encourages effective teamwork and promotes continuity and clarity within the patient care team. At its best, good communication encourages collaboration, fosters teamwork, and helps prevent errors especially during care of vulnerable ventilated patients who lack control and are dependent of all health care professionals for recovery.

In this situation, the importance of collaborative and interdisciplinary practice that integrates communicating with ventilated patients could offer an interactive and practical approach that may promote and improve the quality of care for these critically ill (Dawnson 2007:502). The findings suggest that in general the health care providers in this study work in isolation from each other on issues related to communicating with ventilated patients.

6.2.4 Advocacy/moral agency

Advocacy is one of the important and distinctive roles in the domain of nursing practice. It is defined as "working on another's behalf and representing the concern of the patient/family and nursing staff. It also involves serving as a moral agent in identifying and helping to resolve ethical and clinical concerns within and outside the clinical setting" (AACN Certification Corporation 2003:1).

6.2.4.1 Failure to act on behalf of the patients

Advocacy is the central role of a nursing practice in the ICU. If nurses are to be effective patient advocates, they need to ensure that patient's preferences are incorporated into treatment plans. Although the findings reveal that the nurses used lip-read, they stated that they used it on trial and error and this resulted in causing increased frustration on the patients as the message was often misinterpreted, and attempts to write also failed because of fatigue and the recumbent position. It is worth observing that in this study, the nurses did not assess patients' vision and hearing, which could have exacerbated the situation.

6.2.4.2 Nurse managers experienced moral distress

The study suggests that since nurse managers experience sustained moral distress, this could implicate cost that could cascade to junior nursing members resulting in absenteeism, low morale issues, conflicts and poor productivity in the organization, together with emotional exhaustion in the ICU nurses and nurse manager (Coles 2010:26). The nurse managers in this study had alluded to lack of trained nurses in the ICU contributed to nurses' reluctant in communicating with ventilated patients. Although the study implies that the nurse managers lacked autonomy to make decisions in their units, but this is a problem that need to be addressed as moral distress is linked to burnout, job-related stress to these nurse manager and poor quality patient care in the units (Papathanassoglou et al (2012:e41). The study is supported by the other studies in the USA that argued that unskilled manpower may contribute to moral distress (Rice, Rady, Mamrick, Verheijde & Pendergast 2008:360; McClendon & Buckener 2007:199).

The other challenging situation in this study is that there were no communication resources such as the AAC and these had been linked to moral distress in the ICU (Papathanassoglou et al 2012:e41). Interestingly, the nurse managers did not give the nurses the guidelines or protocols that contained communicating with ventilated patients, a fact that would not be very useful even if they were given the manuals to read as they are too busy with other nursing activities worsened by shortage of nurses in the ICUs. As a result, it is very difficult for nurse managers from such cultures to speak up if they see something wrong.

Culture differences can also hinder nonverbal communication. For example, some cultures ascribe specific meaning to eye contact, certain facial expressions, touch, tone of voice, and nods of the head (Matsumoto 2006:219). Matsumoto (2006:219) defines culture "as a shared system of socially transmitted behavior that describes, defines, and guide people' way of life, communicated from one generation to the next." Therefore other cultures are more technologically inclined (Greene 2005:34). People differ because of culture differences related to generations. In this sample, the majority of nurses' aged between 31 and 40 years and thus the Y generation. According to Matsumoto, some of the myths described for this group includes the belief for that loyalist is not given but earned and as such they need managers who understand how diverse they are. This Y generation believes in a challenging work that is done in a quickest way if not they lose interest faster (Matsumoto 2006:219). Again, one of the myths about the Y generation is that they are unable to read nonverbal cues which ventilated patients mostly use (Bauerlein 2013:1). The Y generation nurses would be required to be more endurance in order to meet the communicate need with ventilated patients. These characteristics are not found in the baby boomers, which comprised of the nurse managers, and the findings revealed that the Y generation group caused stress to the nurse managers who do not understand how to motivate them.

The nurse manager described this generation as respectful but difficult because they have a sense of entitlement. The findings are supported by Lower (2008:80) as they urged that this generation ay challenge the health care system. Although none of the nurse managers described this as moral agency, it is evident in this study that the nurse managers were challenged by this group and they failed to come up with solutions for the situation. However, more studies are needed on the nurse managers' moral distress and Y generation in the critical care setting.

Communication especially in the ICU requires time and patience. The Y generation might benefit by using high technology for communication in the ICU such as mobile phone and computers. However, since these are not always available in the health care setting in developing countries, worsened by the economic shutdown, the nurse managers need to engage young nurses with affordable resources if they want them to communicate with patients. For ventilated patients who can afford multimedia should be encouraged to use them.

The other alternative to rescue the situation is that there is a need for continuous active in-service education in the referral hospitals to support the nurse managers and ICU nurses and the nurse in whole hospital. Communication skills seminars with nurses proved helpful from the nurses' comments especially that they were helped with communication devices that they used to reduce frustration the nurses incurred before while communicating with some ventilated patients. Also provision of AAC devices for nurse to use to communicate with ventilated patients. Further research on nurse managers' moral distress in the ICU needs to be investigated in Africa and in particular Botswana

6.2.5 Facilitation of learning

Facilitation of learning is defined as expert nurse's ability to facilitate patient learning by integrating patient education throughout delivery of care (AACN 2003:1). In this study nurses were found to lack this competency because they failed to give information and explanation on the ventilation and suctioning. Patients need to be educated as to why they are connected to mechanical ventilation and suctions as these are both involve unpleasant activities that may cause stress on patients (McKinley et al 2002:27).

6.2.5.1 Lack of information giving and explanation on ventilation and suctioning

The nurses in this study lacked this competency before the intervention as shown by their failure to give information to patients on mechanical ventilation and when suctioning the patients' secretions. Talking to ventilated patients will ensure their safety and security (Bench & Day 2010: 487). However, ventilated patients had indicated a high level of frustration when they failed to communicate and this experience had been related to health care providers (Patak et al 2004:308). There are many contradicting statements in literature regarding patients' recall of information given. Rotondi, Chelluri, Sirio, Mendelsohn, Schulz, Belle (2002:74) and Van de Leur, Va der Schans, Loef, Deelman, Geertzen and Zwaveling (2004:R469) claim that ventilated patients recall being restricted by tubes and lines, experiencing discomfort associated with ETT and having trouble speaking. However, Samuelson, Lundberg and Fridlund (2007:671) in their study urged that nurses can contribute to stress reduction and discomfort through constantly reassurance, carefully explanation of the interventions and communicating

effectively with ventilated patients. However, in this study ventilated patients were not interviewed to evaluate their perceptions regarding communication in the ICU.

Information giving to the ICU patients may serve many purposes as it enables the individuals to understand what is happening around them such as why they are unable to communicate because ventilated patients had indicated that they wish to be informed about why they are unable to communicate (Hemsley et al 2001:827). Failure to understand the situation the patients found themselves in; makes them vulnerable. Information giving is a form of cognitive control that allows the persons to actively participate in decision makingand in their care and influence their knowledge level. The majority of the nurses in this study indicated that they strongly disagree and disagree that they inform patients on any information related to mechanical ventilation and suctioning.

Although literature points out that it is difficult to extenuate what exactly helps an individual to cope with information giving and the support that he might be receiving, one study by Kiesler and Auerbach (2006:319) claims that generally patients who receive information and participate in treatment decisions end up with positive outcomes. However, it also worth noting that for effective communication to take place, the nurse must be a good listener and capable of using nonverbal communication skills such as gestures and strategies (Kacperek 1997:275). The other important quality that supports being an effective communicator is personal responsibility and retrospection. Individually, nurses are responsible professional that could use their capability to listen to their patients as this could strengthen their moral capacity and thus able to pay attention to the communication needs of patients. For the nurse to be competent in caring practice they must change the attitudes over time and this could be achieved by providing them with necessary resources to facilitate communication with their patients. Facilitation of learning is one of the important competencies of the AACN Synergy Model for Patient Care.

6.2.5.2 Poor communication methods and strategies

It is important that the nurse should assess the patient's communication methods/strategies in order minimise the patient's frustration in situation when the nurse decide to select the communication method for the patient. In a study by Happ et al

(2011:e36) the positive nurse behavior that was poorly performed included asking targeted yes/no (0%), and the same study claim that nurses portrayed good positive behavior such as good eye contact and use. Majority of the nurses disagree that they used communication strategies such as pausing between sentences or exercised patience while communicating with ventilated patients. Although some of our study findings was based on what the nurses had documented on these variables, Happ et al's (2011:e36) study did not report what the nurses documented. On the other hand, our findings suggest that the nurses did not use communications strategies while communicating with ventilated patient. The findings of this study suggest a need to pay attention to the concordance between what the nurses had documented and the care provided.

6.2.6 System thinking

Systems thinking are one competency that encompasses the body of knowledge and tools necessary to allow the nurse to manage the system resources for patients. The expert nurse must be able to anticipate the patients' needs on a continuum of care must act to find the resources to meet the patients' needs (AACN Certification Corporation 2003:1). In this study the findings indicated that there was unavailable resources and lack of AAC devices in both units.

6.2.6.1 Unavailability of resources

The other barrier to communicate effectively with ventilated patients cited by the nurse was lack of AAC devices in the ICU. The AAC devices had been reported to improve communication in the ICU (Garrett et al 2007:17). Although the nurses in this study commonly communicated verbally with ventilated patients and few of them used some of the communication strategies such as exercising patience when communicating with ventilated patients, they were limited by the unavailability of the AAC devices in their units. The most commonly used device was pen and paper and these findings are not different from a recent study by Happ et al (2011:e28). Although pen and paper was used, there was no systematic way of using this such as with the aid of a notebook and a pen that patients could hold with ease as they are frail and weak but rather, the nurses used pieces of paper to facilitate communicating with ventilated patients.

The AAC devices can offer a mass of options for nurses to use with ventilated patients in order to meet the communication needs (Costello, Patak & Pritchard 2010:289). For instance in this study, after the intervention, the nurses used word phrases for patients who could not be understood when mouthing words or they used alphabet boards with patients with literacy skills. According to Fried-Oken, Howard and Stewart (1991:43), the patients with non-speaking condition such as ventilated patients preferred to use alphabet boards to communicate their need. In this study nurses appreciated the introduction of the AAC devices in the units. They felt that these devices would make an impact on the communication difficulties that they experienced before the seminars for not reaching out to patients. These devices helped them to meet the communication needs of ventilated patients as they used to give up easily when they could not communicate effectively with them.

6.2.6 2 Lack of Augmentative and alternative communication (AAC) *devices*

The findings of this study, from both the audit and interviews of the nurses and managers, indicated that there were no communication devices such as alphabetic boards or picture boards in both units. This might have contributed to nurses being unable to facilitate communication with ventilatedpatients. Communication studies in Africa are scanty and most of the AAC devices used in the ICU had not been documented. However, literature from America had showed that patients prefer alphabet board because of it user-friendliness with ventilated patients and this helpful in reducing frustration because of inability to communicate (Patak et al 2006:182). Generally, the nurses and nurse managers might have overlooked the importance of using these devices to facilitate communication with ventilated patients. The findings of the study, therefore, provided the researcher with the direction and content of the communication skills seminars.

From the findings the researcher was able to identify the description of the content of communication methods, strategies and AAC devices that the nurses need to know. The researcher could not think of high technological communication devices because of financial constraints. Yet these devices are important in ICU as many patients admitted and treated in the ICUs have computer literacy. This is the fastest and efficient method of communication that nurses can use. There is a need for studies on high technological devices that facilitate communication in Botswana ICUs. In support of this

the nurses in this study had stated one of the challenges for communicating with patients as lack of time, which could be worsened if the nurses use face to face communication (Moss et al 2002:S70).

6.3 IMPROVED NURSES' ATTITUDES AFTER COMMUNICATION TRAINING

Although evaluation of communication training in this study was qualitatively done, the findings are supported by Fallowfield, Jenkins, Farewell, Saul, Duffy and Eves (2002:650) in UK because nurses' perceptions about communication with ventilated patients showed some change after training. The nurses appreciated the seminars because they felt after gaining the knowledge they could assist patients by reducing anxiety and stress. This study was in line with Happ et al's (2010:170) study that used the communication skills training which showed that communication skills could improve nurse-patient interactions used communication intervention.

The nurses in this study were motivated and willing to continue with what they learned during communication seminars, and this indicated that nurses need training in communication skills. imilarly, Happ et al's (2011:e28) study suggested that nurses need training in communication as their communication with ventilated patients improved following training. A follow up study is needed to find out if the competencies in communication skills improved after the workshops with the nurses.

6.4 CONCLUSION

This chapter discussed the findings of the study under the Synergy model for patient care. Nurses' competencies were used to guide the discussion. The next chapter will give a summary of the entire study; provide limitations and implications for practice, education and future research.

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

Communication among health care providers is one of the most important factors associated with quality of care and patient safety, especially in ICUs. Communication is fundamental to nursing practice because nurses communicate with patients for therapeutic reasons and for sharing information. Communication mirrors our social worlds and assists in its creation (Alasad & Ahmad 2005:356). Communication is a means towards which healthy relationships are formed between patients and nurses. It is therefore imperative that communication in the ICUs should be maintained and enhanced through use of AAC devices. When communicating with mechanically ventilated patients, their dignity and worth are uplifted (Happ et al 2011:e38).

The purpose of this study was to describe and explore existing knowledge, skills, perceptions, needs and barriers on communication with mechanically ventilated patients in the ICUs from the perspectives of ICU nurses and nurse managers working with mechanically ventilated patients. In order to meet this purpose the research answered the following questions:

- What policies exist on communication with mechanically ventilated patients in Botswana?
- How do nurses assess ventilated patients for communication ability?
- What are the existing knowledge, skills, perceptions, needs and barriers of nurses when communicating with ventilated patients in the two referral hospital ICUs in Botswana?
- What are the nurses' experiences and perceptions before and during the intervention?

The study was based on the AACCN Synergy Model for patient care as proposed by Curley (1998:66). The framework was found to be appropriate for elucidating the needs

of nurses in the ICU and for assessing their communication skills with mechanically ventilated patients.

7.2 RECOMMENDATIONS

Based on the scientific evidence obtained from this study the following recommendations for nursing practice, education and research are made.

7.2.1 Nursing practice

7.2.1.1 Emphasis on the documenting nurse-patient communication

Nurses are compelled by law to document all nursing activities and this includes documenting the communication information between the nurses and the patients. The Government of Botswana through the MoH is committed for improvement of quality of health care services (Centre for Disease Control [CDC] 2012:1). In order to make change in all areas of health care efficient, accurate documentation of nursing activities should be emphasised by nurse managers. Emphasis should be made on the importance of documenting nurse-patient communication and it should not be considered as an extra activity but as part of nursing responsibilities. Good documentation of all activities is evidence that care is carried out. Nurses should be proactive in ensuring that nurse-patient communication is done by all health care providers.

Procedure manuals in all health care facilities have to be effectively used. In situations where they are not available they should be developed and instituted. Such manuals assist even the newly appointed personnel as they explain procedures done to patients. Use of manuals has been associated with good quality patient care (Happ et al 2011:e28). The regulating body should incorporate nurse-patient communication documentation as a requirement for licensure. The nurse manager should advocate for documentation of nurse-patient communication interactions.

Collaboration between and among health care providers ensures continuity of care especially for patients who are unable to communicate their needs (Muller, Bezuidenhout & Jooste 2006:500). All nurses working in the ICUs should be equipped

with the necessary knowledge**,** skills and attitude towards nurse-patient communication. Practical workshops on communication skills between nurses and mechanically ventilated patients should be instituted as they will have a positive impact on the ICU nurses caring for these patients. The workshops should involve doctors and Speech therapist to enhance interdisciplinary collaboration on issues of communicating with ventilated patients. Also, reinforcement on documentation should be done frequently and on a regular basis to cover audit of records, quantity reviews, analysis of documents and patients satisfaction surveys in the ICUs (Muller et al 2006:508).

7.2.1.2 Revision and alignment of protocols to include communication

The units have good protocols or procedure manuals that incorporated nurse-patient communication. Nurse-patient communication should be integrated in all procedure manuals. Also details of pertinent information should be elaborated in these manuals such as all important information that is important for the patient to know during suction or explanation of mechanical ventilation.

7.2.1.3 Use of an algorithm for assessing communication ability and protocol

An algorithm or protocol for assessment of patients should be used in order to minimise frustrating patients and nurses by choosing the communication methods and strategies for patient rather than choosing the methods for patient. The chart in the form of a clinical algorithm as illustrated (Annexure O) should guide the nurse to select appropriate communication methods and low technology AAC devices suitable for the patients. Through assessment, as patients' complexity increases, the nurse should be able to identify the low technology AAC that are not helpful. The nurse managers should influence policy makers or management to make other AAC devices such as high technology ones. The study suggests that patients were assessed for communication ability without the use of a protocol as there was unavailability of appropriate guidelines. Therefore, nurse managers should advocate for availability of an algorithm in the unit at all times.

7.2.1.4 Monitoring for protocols implementation

The quality of the nurse-patient communication provided is deeply compromised if the nurse managers do not ensure that it is implemented. Most managers overlooked the importance of motivating the nurses to use the protocols. The nurses were not monitored for using the available protocols or standard of care related to communication. Many nurses did not use the protocol and standards of care. The two referral hospitals should base their guidelines on well-established international and regional guidelines so that they can ensure uniformity of practice. In order for documentation to be improved, the ICU nurses should update themselves with policies and legal requirements of documentation nursing activities through workshops and self–directed learning. They should be encouraged to follow those standards or procedure manuals that exist if change towards quality care is to be appreciated.

7.2.1.5 Development of guidelines on communication in ICU

Policy implementation is a complex process that is influenced by multiple factors such as at departmental unit and individual level practices. Good management involves advocating for the availability of resources which are important for policy implementation and management and these include communication materials, human, technological and collaboration locally, nationally and internationally (Muller et al 2006:508). There a need for a development of guidelines on nurse-patient communication in the ICU.

7.2.2 Nursing education

During general nursing education, it is important that educators should incorporate and inculcate nurse-patient communication skills in the nursing process so that the nurses should be able to appreciate the need to plan for communicating with ventilated patients. Also, the nurse-patient communication documentation should be emphasised in all aspect of care during nursing education. The findings suggest remodeling of undergraduate and graduate nursing curriculum to reinforce and incorporate documentation of nurse-patient interactions. The nursing students should be motivated to have a culture that they would keep for life without changing their attitudes towards documentation when they work as qualified nurses. Although this is something that is difficult to maintain, this calls for an effort towards paradigm shift in nursing education

for this to happen. There should be collaboration between service and education and introduction of clinical instructors who had dual work employment between the education and service as they spend most of the time in the clinical area to assist students and newly hired nurses.

It is evident from the findings that some of the general nurses are not competent on nurse-patient communication skills. The number of nurses trained at critical care and intensive care givers should be increased at graduate and postgraduate degrees. Also communication training conducted in this study showed positive results thus a need for nurses' education on communication skills in critical care. These communication skills workshops may help nurses to realize their attitudes towards communicating with ventilated patients (Gauntlett & Laws. 2008:121).

7.2.3 Nursing research

As indicated in the previous chapter, the findings of this study offer opportunity for further studies in nurse-patient communication and documentation. The study has identified poor documentation in nurses-patient communication, which could result is legal litigation and poor patient outcomes. Although the study did not investigate the psychological outcomes of patients, there is a need for studies on investigating ventilated patients' outcomes after communication skills interventions with the nurses.

Because the study used quasi-experimental design, and the researcher was unable to make a follow-up after some months because of time constraints, a follow-up study should be conducted to find out if the nurses continued to use the AAC the researcher developed for the units as well as to find out if communication is reinforced in these units. Clinical research is inadequate in Africa and in particular Botswana because of the challenges related to it especially in complex phenomenon such nurse-patient communication interactions. However, it's through this type of research that research could influence change because of being evidence based (McKinley 2007:288). Clinical studies of this type should be conducted in Botswana to promote positive patient outcomes.

More studies on nurse-patient communication interactions should be conducted in Africa in order to investigate if culture has any influence on nurse-patient

communication interactions. This study did not investigate moral distress, but from the analysis it was evident that some nurse managers reported moral distress related to more nurses not trained in ICU practices and the difference in generations between the some nurse managers and some nurses. This study also offers an opportunity for studies on nurse manager's moral distress in association with the Y generation because in a recent study by Browing (2013:143); that investigated moral distress nurses caring for patient at end of life, it was found that moral distress is associated with age.

7.4 LIMITATIONS OF THE STUDY

The study was guided by the Synergy Model for Patients Care, which entails that there should be a fusion between patients' characteristics and nurses' competencies (Curley 1999:66). The current study focused only on the nurses' competencies and this is a limitation for the study as a proper merge between the two cannot be solidified. There is a need for a study that could attempt to combine nurses' competencies with patients' characteristics.

The use of convenient sampling because of the limited number of nurses working in the ICU could have biased the findings of the study. A study with a bigger nurses sample size should be conducted. The researcher was also known to some of the participants and they might have provided answers that they thought will please the researcher.

The study further relied on the audit of the patients' files to evaluate the availability of information on communicating with mechanically ventilated patients. The researcher experienced difficulty in accessing some of the files, and some of them had limited information or no information at all, resulting in some files not audited. Electronic documentation of nurses' activities should be intensified in the two referral hospitals.

7.5 CONTRIBUTION OF THE STUDY

The study showed poor documentation of nurse-patient communication and minimal communication between nurses and ventilated patients. The study findings offer opportunity for improvement on documentation and nurse-patient communication interactions in the intensive care because it does not necessarily mean that nurses do not communicate with ventilated patients in Africa. The findings identified in this study

showed that nurses and nurse managers lacked competencies on clinical judgment, facilitation of learning, caring practices, systems thinking and collaboration in ICUs in Botswana. This study could influence policy makers in relation to educating nurse managers who work without leadership and management knowledge and skills, but only are using years of experience to be managers. The findings of this study, therefore, could be used to educate nurse managers on leadership and management in Botswana. The study supports that there are very few nurses trained in ICU and critical care in Botswana. Therefore, the findings serve the interest of nurses working in ICUs without the requisite training. It is possible that if the government could train more nurses for intensive care or critical care, this could result in the government achieving its goal of improving quality care and patients' satisfaction. The findings of this study could be used to amelioration moral distress in nurses and nurse managers and thus improving nurses' performance.

7.6 CONCLUSION

Communication with ventilated patients can be challenging to nurses working in the ICU. This thesis increased the knowledge related to nurse communication with ventilated patients. The results can be used: to raise awareness in nurse-patient interactions; development of nurse-patient interaction workshops with nurses with the aim to facilitate communication between nurses and ventilated patients; as well as to define areas for future research. This thesis demonstrates that nurses do not record information related to communication issues, even where communication was used.

Nurse-patient interaction in the ICU has recently been a topic of interest to some researchers, but not to a large extent in Africa, and this has given rise to dearth of publication in the area. The AAC devices are considered a critical technique for assisting patients with communication problems. However, research in this area has not received as much attention as it should in Africa and Botswana in particular.

The researcher believes that with some of the technological devices that were developed for this study, the nurses will utilise them and keep them safe for future use in the intensive care units. In order to answer many questions that may arise from this thesis, future studies that will promote nurse-patient communication are important for future research, and have been discussed under the recommendations section above.

The findings of this study showed that the application of Synergy Model is compatible with communication in intensive care units. Although this study focused on nurses' competencies, the findings suggest that the themes that emerged can merge well with patients' characteristics with regard to nurse-patient communication.

There is a need for communication skills training because after the communication skills seminars with the nurses, it is evident that the nurse-patient communication could be improved.

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UNISA university of south africa

UNIVERSITY OF SOUTH AFRICA
Health Studies Higher Degrees Committee
College of Human Sciences
ETHICAL CLEARANCE CERTIFICATE

HSHDC/137/2013

Date:	6 February 2013	Student No:	4992-054-5
Project Title:	Developing communication strategies for patients receiving mechanical ventilation in Botswana intensive care units.		
Researcher:	Kefalotse Sylvia Dithole		
Degree:	D Litt et Phil	Code:	DPCHS04

Supervisor: Prof MM Moleki
Qualification: D Litt et Phil
Joint Supervisor: Prof GB Thupayagale-Tshweneagae

DECISION OF COMMITTEE

Approved [√] **Conditionally Approved** [ ]

Prof L Roets
CHAIRPERSON: HEALTH STUDIES HIGHER DEGREES COMMITTEE

Dr MM Moleki
ACTING ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES

Annexure F

ORD No. IRB/……..

INFORMED CONSENT FORM

PROJECT TITLE: **DEVELOPING STRATEGIES FOR IMPROVING COMMUNICATION BETWEEN NURSES AND VENTILATED PATIENTS IN BOTSWANA**

Principal Investigator Kefalotse Dithole
Phone number(s): 355 4650 / 74643469

What you should know about this research study:

- We give you this informed consent document so that you may read about the purpose, risks, and benefits of this research study.
- You have the right to refuse to take part, or agree to take part now and change your mind later.
- Please review this consent form carefully. Ask any questions before you make a decision.
- Your participation is voluntary.

PURPOSE

You are being asked to participate in a research study of developing strategies for improving communication between nurses and ventilated patients in Botswana. The purpose of the study is to contribute to the knowledge on how nurses and ventilated patients communicate. You were selected as a possible participant in this study because you have worked or are working in the ICU. Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

PROCEDURES AND DURATION

If you decide to participate, you will be invited to complete a questionnaire and also invited for an individual interview or focus group discussion that will be audiotaped. The interview may take 10 to 20 minutes.

RISKS AND DISCOMFORTS

Participation will not cause any physical risk/ discomfort. However, you will feel intimidated by the presence of the researcher or by remembering how were unable to help ventilated patient when they attempted to tell you something. If you feel uncomfortable at any time, you are asked to tell the researcher.

BENEFITS AND/OR COMPENSATION

Though no benefits will be offered through this study, you will be paid a token payment in appreciation of your time and effort involved in the tasks you will perform.

CONFIDENTIALITY

The data from this investigation will be strictly confidential. Your name will not be used; instead study numbers will be used. The only people who will have access to the data collected will be the

researchers. The results will be reported in such manner that your identity will not be revealed in the report and when published in nursing journals. None of these will be used for commercial.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with the University of Botswana, its personnel, and associated institutions**.** If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty. Any refusal to observe and meet appointments agreed upon with the central investigator will be considered as implicit withdrawal and therefore will terminate the subject's participation in the investigation without his/her prior request. In this event the subject will be paid what if owed to him/her or forfeit a proportionate amount of relative payment mentioned earlier in this document. In the event of incapacity to fulfill the duties agreed upon the subject's participation to this investigation will be terminate without his/her consent and no compensation will be offered under these circumstances.

AUTHORIZATION

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

_____ _____

Name of Research Participant (please print) Date

_____

Signature of Participant or representative

_____

Relationship to the Participant

_____ _____

Signature of Witness (Optional) Signature of Staff Obtaining Consent

YOU WILL BE GIVEN A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Office of Research and Development, University of Botswana, Phone: Ms Dimpho Njadingwe on 355-2900, E-mail: research@mopipi.ub.bw, Telefax: [0267] 395-7573.

Annexure G

ORD No. IRB/……..

KOPO YA GO TSAAKAROLO

SETLHOGO SA PATLISISO: GO TLA KA MAANO A GO TOKAFATSA PUISANO YA BAOKI LE BALWETSI BA BA THUSIWANG GO HEMA KA MOCHINE MO BOTSWANA

Mmatlisisi: Kefalotse Dithole
Dinomoro tsa mogala: 355 4650 / 74643469

Se o tshwanetseng go se itse ka patlisiso:

- Re go fa pampiri e gore o bale maikaelelo a patlisiso, bodiphatsa/go sa wele maikutlo le mosola wa patlisio e.
- O na le tshwanelo ya go gana kgotsa go dumela go nna motsaakarolo gone jaana kgotsa go fetola maikutlo morago.
- Ka tswee tswee, bala ka kelotlhoko mafoko a a mo pampiring e. Botsa dipotso pelo o dira tshwetso.
- Go tsaa karolo ke boithaopo.

MAIKAELO A PATLISISO

O kopiwa go tsaya karolo mo patlisisong ya go tla ka maano a go tokafatsa puisano fa baoki le balwetsi ba ba thusiwang go hema ka mochine mo Botswana. Maikaelo a patlisiso e ke go oketsa kitso ka fa baoki ba buisanang ka teng le balwetsi ba ba lwalang thata.O tlhopilwe jaaka mongwe yoo o ka nnang motsaakarolo mo patlisisong e, ka gore o kile wa bereka kana o bereka le balwetsi ba ba thusiwang go hema ka mochine. Pele o supa ka go baa monwana (go saena), o kopiwa go botsa dipotso le se o sa se tlhaloganyang mabapi le patlisiso e. O tla fiwa nako go akanya gore a o batla go tsaakarolo kgotsa ga o batle.

DITSELANA LE LOBAKA

Fa o tsaya tshwetso ya go nna motsaakarolo, o laledwa go araba dipotso o le nosi kana le le setlhotshwana. O kopiwa gore o kapiwe mafoko fa o botsolosiwa, gore re tle re kape mafoko otlhe a o tlaa buang. Go ka tsaya metsotso e ka nna fa gare ga lesome le masome a mabedi go araba dipotso.

BODIPHATSA KGOTSA GO SE TSEEGE SENTLE

Go tsaa karolo ga gona go go utlwisa botlhoko. Legale, o ka nna wa se tseege sentle ka ntata ya gore mmatlisisi o tla bo a le teng, gongwe ka go gakologelwa ka fa o neng wa seka wa kgona go thusa molwetsi fa a ne a batla go go bolelela sengwe. Fa go ka diragala sengwe, o kopiwa go bolelela mmatlisisi.

MALEBOGO

Lefa tota go sena dituelo tse dikalo go tsaa karolo mo patlisisong e, o tla fiwa sengwenyana ele go lebogela nako e o e refileng go dira tsotlhe tse o tla kopiwang go di dira.

SEPHIRI

Dikarabo tsa patlisiso e, ga di na go itsesiwe ope. Ga gona go dirisiwa leina la gago gope, go tla diriwa nomoro ya patlisiso fela. Batho ba ba tla amanang le mafoko a o a buileng, e tla nna babatlisisi fela. Ditlamorago tsa patlisiso e, di tla kwalwa ka fa go senang go itse ope gore go ne go bua mang. Gape di tlaa seke di dirisiwe mo kgwebong ka mokgwa ope.

.

GO TSAAKAROLO KE BOITHAOPO

Go tsaa karolo mo patlisisong e ke boithaopo. Fa o tsaa tshwetso ya go sa nne motsaakarolo mo patlisisong e, tshwetso ya gago ga ena go amana ka gope le kamano ya gago le Mmadikolo, kgotsa le babereki ba dikole tse diamanang le sone. Fa o tlhopha go tsaakarolo, o gololesegile go emisa go nna motsaakarolo nako ngwe le ngwe go sena kwatlhao epe. Fa o sa bonale ka nako e o e dumalaneng le mmatlisisi go tla go botswa dipotso ka patlisiso e, e tla bo e le sesupo sa gore o tsere tshwetso ya go se tseekarolo, Jalo he, o ka neelwa kgotsa wa seka wa neelwa lemmenyane la malebogo. Fa o sa diragatse ditumalano tsa gago le mmatlisisi, o sa tlhole o batla go tsaa karolo, o ka dira jalo kwa ntle ga mabaka ape, mme ga gona tebogo epe e o tlaa e neelwang.

TETLELELO

O dira tshwetso gore o a dumela kana ga o dumele go tsaa karolo mo patlisisong e. Go baa monwana (go saina) go supa gore o badile ebile o tlhalogantse mafoko a a fa godimo, o kgotsofaletse ka fa dipotso tse o di boditseng di arabilweng ka teng, jalo he o dumela go tsaa karolo mo patlisisong.

_____ _____

Leina la motsaakarolo (kwala go bonale) Letsatsi

_____

Monwana wa motsaakarolo/moemela motsaakarolo

_____

Botsalano jwa moemela motsaakarolo

_____ _____

Monwana wa mosupi Monwana wa o o kopang telelelo
(Fa go tlhokega)

O TLA FIWA MORiTI WA KOPO YA TETLELO E GO E BAA SENTLE

Fa o na le dipotso mabapi le patlisiso e, kana letshwenyego lepe go feta ka fa mmatlisisi a arabileng ka teng, mo go ka akaretsang dipotso le patlisiso e, ditshwanelo tsa gago jaaka motsaakarolo, kana fa o ikutlwa e kete ga wa tsewa sentle, mme o batla go bua le mongwe fela eseng babatlisisi, tswee tswee, phuthologa go leletsa ofisi ya dipatlisiso ya Mmadikolo. Nomoro:Dimpho Njadingwe mo 355-2900, email: research@mopipi.ub.bw ,telefax 0267 395-7573

Annexure H

Information sheet for nurse-participant

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important that you understand why the research is being conducted and what it will involve. Please take time to read the following carefully.

What is the purpose of the study?

Critically ill patients have difficulty in communication because of illness and the treatment they receive. The condition may make the patients not to express their needs, or be involved in their care. Nurses may not know how to effectively communicate with patients. Therefore the purpose of this study is to develop strategies for improving communication between nurses and ventilated patients in the ICU following communication skills workshops with nurses.

What is expected of me?

Participants will be nurses who have worked in ICU before or are working in the ICU, as they would have communicated with these patients while providing them with care. The study will be conducted in three phases:

Phase 1: The nurses will be asked to complete a questionnaire.

Phase 2: Nurses will be interviewed individually or as a group and also a group nurse leaders will be interviewed on how nurses communicate with ventilated patients. These interviews will be audiotaped to capture as much information as possible.

Phase 3; Communication skills workshops will be conducted with nurses working in the ICU. Permission to attend the workshops will be solicited from the nurses who will be participating in a one day workshop. The workshops will be based on scenarios on patient care activities and treatment, communication methods and the use of an algorithm to assess patients' ability to communicate. Participants will practice skills discussed during the workshops for a week. During the practice period, the researcher will help nurses on one-to-one basis to give support, reinforcement, feedback. One in-service education session will be scheduled to emphasize the importance of nurse-patient interaction through documentation and report giving during hand over shifts.

Is participation voluntary?

Your participation in this study is entirely voluntary. This means you do not have to be part of the study if you do not want to, and your decision will not in any way affect your future academic progress or employment relationship or rights. You can withdraw from participation at any time without consequences, and without giving a reason. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form.

Are there benefits of participation?

You will not get any reward for participation. However, your participation may improve communication skills between nurses and critically ill patients as well as improve patient outcomes in the ICU.

Is there any risk/discomfort for participation?

Participation will not cause any physical risk/ discomfort. However, you will feel intimidated by the presence of the researcher. The researcher will spend most of the time in unit during practice time. The researcher may perform some nursing activities while in the ward but will not be allocated patients as are other nurses in the unit, but may assist as necessary. Therefore you will get used to seeing her as one of the members of staff.

How will confidentiality be maintained?

All information obtained during the course of this study will be strictly confidential. Your name will not be used; instead study numbers will be used. The only people who will have access to the data collected will be the researchers and named research assistants. In addition, statistician who will be used to help in data analysis will have access to information. Data collected will be stored in a secure place and electronically for a period of 5 years after publication and destroyed thereafter. The results will be reported in such manner that your identity will not be revealed in the report and when published in nursing journals.

Has the study received ethical approval?

The protocol of the study has been submitted to the Human Research Ethics Committees of University of Botswana, Ministry of Health, Botswana and Ngangabgwe Referral Hospital and the committees have granted written approval.

Thank you for taking time to read the information sheet and for taking part in this study.

Appendix I

Consent Form for nurses/nurse leaders

1. I_____(participant) agree to participate in the project:

2. Developing strategies for improving communication between nurses and ventilated patients in Botswana; being conducted by Kefalotse Dithole, who is a lecturer at University of Botswana for her study

3. I understand that the purpose of this study is to develop strategies for improving communication between nurses and ventilated patients in the ICU.

4. I understand that my participation in this study will involve being observed during my interaction with the patient and this may intimidate me in some way. I will be expected to take part in communication workshops for 12 hours over a month, and to practice for two weeks with assistance of the researcher, what was discussed in the workshop.

5. I understand participation is voluntary and I can withdraw from participation at any time without consequences and without giving a reason and withdrawal will not prejudice my future academic progress or employment.

6 I am aware that I can contact MoH or Princess Marina hospital management if I have any concern about the research.

7. I have read the information sheet and I agree that Kefalotse has answered all my questions fully and clearly.

8. I agree that the research data gathered from this project may be published in a form that does not identify me in anyway.

_____ ___ / /

9 Signature participant Date

_____ / /

10 Signature researcher Date

Annexure J

P.O. Box 70845

GABORONE

14th January 2013

The Secretary

Princess Marina Hospital Research and Ethics Committee

P.O. Box 258

GABORONE

Dear Sir,

Request for waiver of consent to use patients' medical records, procedure manual and policies.

This letter serves to request your committee to grant me a waiver to use the medical records, procedure manuals and policies of the ICU as one of the sources of data for my research entitled: **Developing Strategies for Improving Communication between Nurses and Ventilated Patients in ICU in Botswana**. Data and information collection will be commenced upon approval from immediately after the Ethics Committee's approval of the research proposal.

Kind regards

Kefalotse Dithole

Lecturer, University of Botswana

P.O. Box 70845

GABORONE

17th January, 2013

The Secretary

Princess Marina Hospital Research and Ethics Committee

P.O. Box 258

GABORONE

Attention: Mr Bakani Butale

Dear Sir,

Resubmission of the proposal with corrections

Thank you for your letter dated 21st December 2012 regarding my study entitled: **Developing Strategies for Improving Communication between Nurses and Ventilated Patients in ICU in Botswana.** Please find the proposal with the corrections in red and the letter that I request you to grant me a waiver to use medical records.

Kind regards

Kefalotse Dithole

Lecturer, University of Botswana

Annexure K

AUDIT REVIEW GUIDE

Code No: _____

Section A: Patient's personal information:

Please indicate the following patient information extracted from the medical record

File number				
Demographic data				
1 Sex: M ☐ F ☐				
2. Age: 23 – 30 years ☐ 30 – 40 ☐ 41 – 50 ☐ 51 and above ☐				
3. Diagnosis	1	2	3	4
	Medical ☐	Surgical ☐	Trauma ☐	Other (Specify)
5. Admission data				
• Date of admission in ICU: Day Month Year				
• Time of Admission in ICU				
• Date of intubation: Day Month Year				
• Time of intubation:				
• Date of extubation: Day Month Year				
• Time of extubation:				
• Date of tracheostomy insertion: Day Month Year				
• Time of tracheostomy insertion:				
• Date of Discharge: Day Month Year				
• Time of discharge:				
5. Treatment				
Sedation Assessment done: Yes ☐ No ☐				
LOC assessment done: Yes ☐ No ☐				
Analgesic				
Morphine ☐				
Fentanyl ☐				
Other(Specify)				
Sedative				
Midazolam ☐				
Propofolol ☐				
Other (specify)				

Section B

6. Availability of the patient's communication ability assessed by the nurses regarding the following:	**Recorded**	**Not Recorded**
• Ability to communicate		
• Preferred language		
• Literacy (read/spell or No)		
• Method of communication: Written		
Lip reading		
Pictures		
Mouthing		
Gestures		
Yes/No		
Other (Specify)		
• Hearing:		
Normal		
Impaired		
Hearing aid		
• Vision: Normal		
Supported (e.g. Use of glasses)		
• Other (specify		

Section: Use of communication methods

7. Communication strategies/methods used by the nurse to assist with communication:		
• Mouthing		
• Yes/No gestures		
• Head nod		
• Lip reading		
• Gestures/symbols		
• Other (Specify)		
8. Assisted Communication devices used by the nurse		
• pen and paper		
• picture symbols		
• Alphabet board		
• phases/words		
• Other (Specify)		

Section D: Information by the nurse o the patient		
9. Availability of explanations on treatment by the nurses to patients:		
• an explanation of what is a ventilator		
• why ventilation/tracheostomy is in situ		
• information regarding weaning from ventilator		
• information about the tubing's		
• an explanation of procedures performed (e.g. suctioning, turning) Other (specify)		
• Information on what the patient was unable to say		
• Information about experiencing discomfort of the ETT		
10. Availability of information orientating the patient to:		
• the unit		
• persons/Self		
• time and date		

Section E Nurse assessment for communication barriers		
11. Availability of information the nurse assessed the patient for barriers to participate in communication:		
• consciousness		
• sedation		
• Cognitive		
• visual		
• motor function • Other (specify)		

Section G: Nurse's collaboration with team members

12.Does the record indicate the nurse collaborated with health team regarding patient communication:		
• Other nurse		
• Speech therapist		
• Physician		
• Family		
• Friends		

Annexure L

AUDIT GUIDE TO REVIEW THE SYSTEM RECORDS

Facility No_____

Please indicate the following information extracted from the nursing standards and policies regarding nurse-patient communication in the health facility

Section A: Assessment of communication ability

1. Availability of information regarding the nurses' responsibility to assess the patient for the following:	**Recorded**	**Not Recorded**
• communication ability		
• **p**referred language		
• Method of communication: Written		
Oral		
Pictures		
Mouthing		
Gestures		
Yes/No Other (Specify)		
• Hearing:		
Aided		
unaided		
• Vision: Supported (e.g. Use of glasses)		
Not supported		
• Other (specify		

Section B: Communication methods

2. Availability of information regarding communication methods used by the nurse to assist with communication:		
• Mouthing		
• Yes/No gestures		
• Head nod		
• Lip reading		
• Gestures/symbols		
• Other (Specify)		
3. Availability of information regarding Assisted Communication devices to be used by the nurse		

• pen and paper		
• picture symbols		
• Alphabet board		
• phases/words		
• Other (Specify)		
4. **Availability of information the c**ommunication strategies **that the nurse should use when communicating with patients**	**Recorded**	**Not Recorded**
• Call patient by name		
• Speak slowly		
• Say one item of information, pause then wait		
• Pause in between phases		
• Wait for the patient to respond		
• Listen attentively		
• Other (Specify)		

Section C: Information for the patient

5. Availability of information that nurses should explain treatment to patients:		
• an explanation of what is a ventilator		
• why ventilation/tracheostomy is in situ		
• information regarding weaning from ventilator		
• information about the tubing's		
• an explanation of procedures performed (e.g. suctioning, turning) Other (specify)		
• Information on what the patient was unable to say		
• Information about experiencing discomfort of the ETT		
6. Availability for a need to orientate patients to:		
• the unit		
• persons/Self		
• time and date		

Section D: Communication barriers

7. Availability of information that nurse should assess the patient for barriers to participate in communication:		
• consciousness		
• sedation		
• Cognitive		
• visual		
• motor function		

Section E: Nurse's collaboration with others

8. Availability of information that the nurses should collaborate with other health team regarding patient communication:		
• Other nurse		
• Speech therapist		
• Physician		
• Family		
• Friends		

Section F: In-service and conference information

9. Availability of family conference meeting books which contain	**Recorded**	**Not Recorded**
1. Patient assessment for communication need		
2. Communication strategies/methods used		
3. Assessment of barrier for participating in communication		
10. Availability of In-service sessions for nurses on nurse patient communication including		
1. Sessions on nurse-patient communication in ICU		
2. Sessions on use of assisted augmentative communication devices		
3. Others issues related to nurse-patient communication in ICU (Specify)		

Annexure M

Questionnaire for nurses

Code_____

Demographic data

Gender- Male / Female

Age: 23 – 30 years

30 – 40

41 - 50

51 and above

Academic qualification: RN, RN & MD, BEd, BNS, MSN (circle only one)

Years of experience as RN: Date_____ Month _____ Year_____

Work experience in ICU: Date _____Month_____ Year _____

Instructions: Tick in the appropriate box to indicate how you agree with the statement regarding your usually communication with your ventilated patients. There is no right or wrong answer.

Information giving on Mechanical ventilation	**Strongly agree**	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly disagree**
1. I normally inform patient that they are connected to a ventilator					
2. I usually teach patient about mechanical ventilator ventilation tubes					
3. I usually inform patient that s/he has a tube in his/her throat to help him/her to breathe					
4. I usually encourage patient by telling them that they are e.g. doing well and/or I am helping them to get better					
5. I usually inform patient that they					

cannot speak when the tube is in place					
6. I usually show patient the location of the tube/tracheostomy					
7. I usually inform patient that when they start to breathe normal, they will be taken out of the machine					
Orientation to environment/persons	**Strongly agree**	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly disagree**
8. I usually introduce myself to ventilated patient					
9. I usually orientate ventilated patient to unit/environment					
10. I usually orientate ventilated patient to date and time					
Information giving on suctioning secretions	**Strongly agree**	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly disagree**
11. I normally remind patient that they are connected to a ventilator and its tubes before I start to suction secretions					
12. I normally inform patient that when they are on a machine, they are unable to cough and thus secretions accumulate in the lungs					
13. I usually inform patient that I suction them to assist them to remove secretions in the lungs					
14. I usually inform them that suctioning is uncomfortable but it will take a short time					
15. I usually inform the patient that I will insert the suction tube in and out the ETT					
16. I usually inform patient when I finish suctioning					
Communication strategies	**Strongly agree**	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly disagree**
17. I usually assess patent for their communication ability					
18. I usually assess patients for vision and hearing problem					
19. I usually have communication plan for my patient					
20. I usually use trial and error to decide					

the best communication method for patient					
21. I initially decide/ choose a communication method to the patient					
22. I collaborate with patient in choosing a communication method					
23. I usually touch patient when I speak with him/her					
24. I usually agree with the patient on how s/he can respond when communicating with her/him					
25. I usually use signals to communicate such as thump up for yes, shake head for No, use OK, or point to body parts					
26. I usually use body movement eh fist for no, pointing, oral sounds) to communicate with patients					
Assisted Communication Devices	**Strongly agree**	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly disagree**
27. There are ACC devices available in the unit					
28. I usually use pen and paper to facilitate communication with ventilated patient					
29. I usually use alphabet board to facilitate communication with ventilated patient					
30. I usually use picture board to facilitate communication with ventilated patient					
31. I usually use words phases to facilitate communication with ventilated patient					
32. There are no available communication methods in the unit					
33. Use gestures to communicate with patients e.g point to wrist for time, fold hands alongside of head for sleep,					
Communication skills	**Strongly agree**	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly disagree**
34. I usually speak slowly and wait for patients; response					
35. I usually repeat what the patient is attempting to					
36. I usually have time to listen patiently					

to what the patient say					
37. I usually avoid interrupting the patient before he finishes what he wants to say					
Documenting communication and information share	**Strongly agree**	**Agree**	**Neither Agree or Disagree**	**Disagree**	**Strongly disagree**
38. I usually record the information I give patient regarding orientating them the environment					
39. I usually record the information I give patient regarding orientating mechanical ventilation					
40. I usually record the information I give patient when I perform suctioning					
41. I usually record communication strategy I used to facilitate communication with patient					
42. I usually inform my colleagues about patient's communication methods during change of shift					

Annexure N

PRE- INTERVENTION INTERVIEW GUIDE

Study No# Date: / /

Interview Duration: _____ min.

:

Structured Interview for Nurses

INTRODUCTION

I am talking with you today to find out how feel about the way nurses communicate with ventilated patients. There is no right or wrong answer. We just want to know your thoughts the practicality of impacting with the information from your experience. If there is any question that makes you feel uncomfortable, you do not have to answer and can just ask us to go on to the next question. We are doing this because we want to understand this topic better. In order to find out, we need your help to answer the following questions.

Communication experience in ICU

1. How do you feel about how nurses communicate with ventilated patients? (Probe)
2. In your thoughts, did you think the nurses are equipped you with some communication skills to talk with ventilated patients? (Probe)
3. Were/are you comfortable with assessing patients for communication ability?(Probe)
4. What challenges / barriers did you experience when communicating with ventilated patients?
5. How could these barriers be overcomes? (probe)

Communication strategies

1. Which strategies have you used while you communicate with ventilated patients (probe)
2. Which patients did you feel comfortable communicating with?
3. Which ones were you not comfortable communicating with?
4. To what extend did you involve your patients while providing care?
5. Do you understanding of what the patients wanted to communicate about? (Probe)

6. Did you use AAC methods? PROBE: If yes which ones, if no why
7. What challenges did you experience while using assisted communication strategies?
8. From whom did you seek assistance from when you failed to understand your patients while using assisted communication strategies?(Probe)

Information giving

1. How do you explaining the procedure to your patients? (probe)
2. Which procedures did you explain to your patients?
3. Did you orientate the patient to place and time?
4. Do you think it take time to give patients the information you learned from the workshops?
5. Do you think patient appreciated what you told them? PROBE
6. Do you think patient were happy with the information that you gave them?
7. Do you think that patients benefitted from the way you communicated with them after the workshops

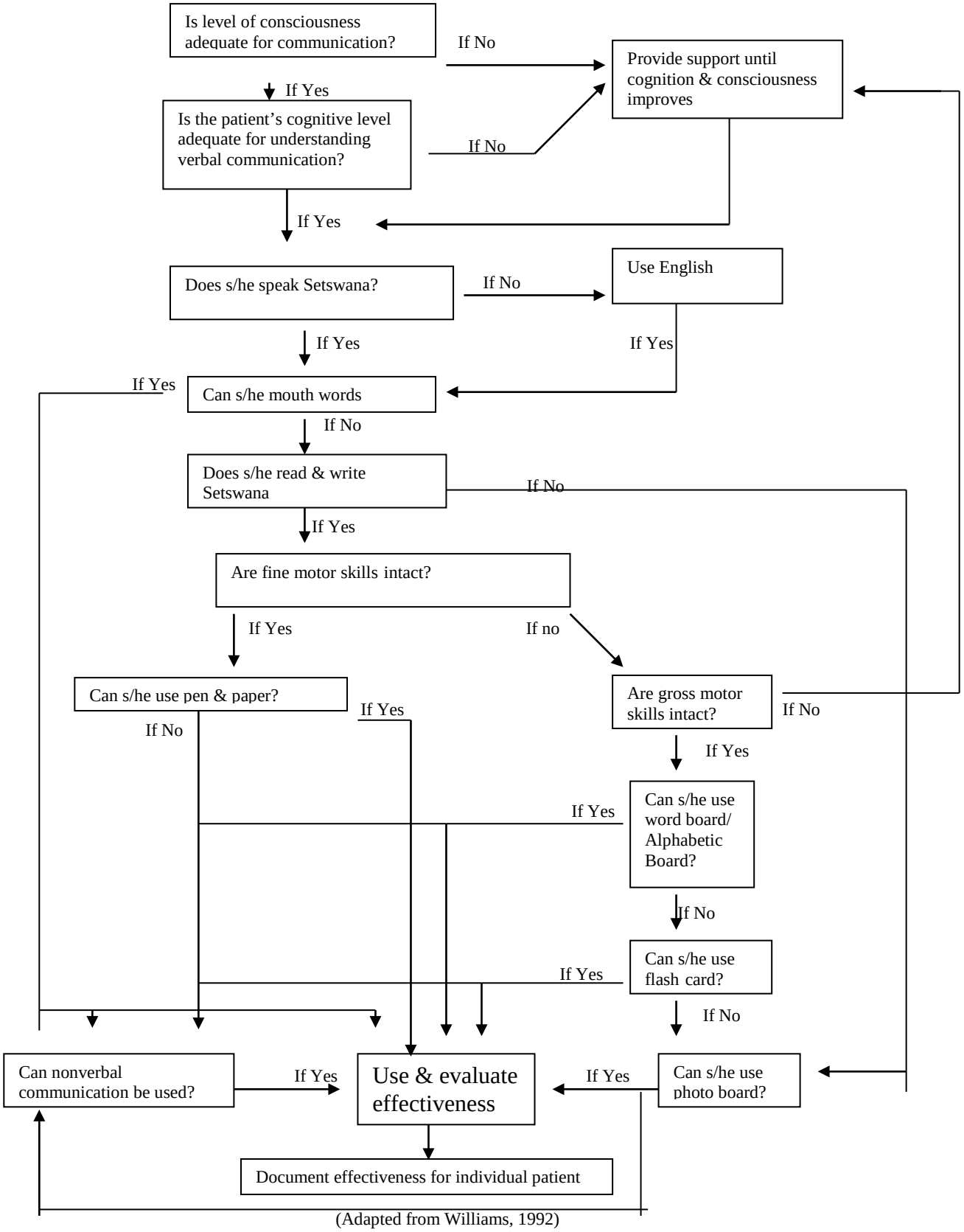
Thank the nurse for volunteering to be the participants

We thank you for taking part in this study; We hope the finding of this study will help come up with some strategies that nurses can use to help them communicate effectively with ventilated patients.

Do you have any suggestion on how nurses can be helped?
Do you have anything you feel you want to share with us that we did not ask you regarding communicating with ventilated patients?

Thank you again for the information.

Annexure O
An algorithm for selecting a communication method with intubated patients



(Adapted from Williams, 1992)

Annexure P

English versions for Scenarios

English version for Scenario A: Mechanical ventilation via an endotracheal tube

General instructions for communicating with intensive care patients about procedures

Use procedure boards whenever possible

- Follow script to expand on points on the board
- Speak slowly in short sentences, and pause after each sentence
- Wait for patient to acknowledge message was received
- Count to 10 before rephrasing a statement or question

<u>Procedure for scenario on mechanical ventilation via endotracheal tuve</u>

- Use picture of patient connected to a ventilator via an endotracheal tube and diagram of endotracheal tube in the mouth and trachea

<u>Script for nurse to explain the picture and diagram</u>

This picture shows a patient connected to a breathing machine

- He has a tube in his mouth that goes down into the lungs (point to tube)
- The tube is connected the breathing machine by this tubing (point to ventilator circuit)
- This is the breathing machine that helps breathe air into the lungs (point to ventilator)
- You have this tube in your mouth (touch tube) connected to the breathing machine behind the bed.
- (Show diagram of ETT in trachea). This diagram shows a tube going through the mouth into the windpipe.
- It goes through the voice box and stops you from talking.
- You need to be on the breathing machine to help with your breathing because your own breathing is not working properly at present.
- The doctor will explain more to you about why your lungs are not working properly.

- Do you understand? Do you want to ask any questions?

Annexure Q

Setswana version Scenario

Tiriso ya lethumpo la kgokgotso le mochine o o thusang go hema sentle

Dikarolo tsa go buisana le balwetsi ba ba mo kgatelelong e kgolo:

- Dirisa ditshwantsho fa o kgona.
- Latedisa mokwalo (pampiri) go tlhalosa dintlha.
- Bua ka bonya le ka bokhutshwane
- Kgonya morago ga seele sengwe le sengwe
- Letela molwetsi go supa gore o tlhaloganya molaetsa
- Bala goema ka lesome(10) pele o bua seele se sengwe.

<u>Tiriso ya lethumpho la kgokgotso le machine o o thusa go hema sentle</u>

Dirisa setshwantsho sa molwetsi a thusiwa go hema sentle ka machine o o thusang go hema, lethumpo le tswa mo ganong go fetala kwa kgokgotso.

Dirisa pampitshana e e tlhalosetsang mooki setshwantsho.

- Setshwantsho se se supa molwetsi a thusiwa go hema sentle ka machine o o thusang go hema.
- Molwetsi o tsentswe lethumpho go tswa mo ganong go ya ko makgwafung (supa ditselana tsa lethumpho).
- Lethumpho le kopantswe le mochine o o thusang go hema sentle.
- Se ke machine o o thusang go lere phefo mo makgwafong (supa letlhabisa phefo/ mochine)
- O tsentswe lethumpho le mo molomung (tshwara lethumphu) le golagane le machine o o thusang go hema sentle, o o fa morago ga bolao.

- (Supa setshwantsho sa ETT e tsentswe mo kgokgotsong) Se ke setshwantsho se se supang lethumpho le le ralala legano go tsena mo kgokgotsong ya phefo.
- Le ralala fa lentswe le fetang teng, ka jalo le go kgoreletsa go bua.
- O tlhoka go thusiwa gore o heme sentle ka go dirisa machine o o thusang go hema ka gore ga o kgone ka bo wena.
- Ngaka o tla go tlhalosetsa gore ke eng fa makgwafo a gago a sa dire sentle.
- A o a tlhaloganya?
- A o nna le potso?

Annexure R

English Version Scenario

Suctioning procedure

Use picture of patient connected to a ventilator via an endotracheal tube and diagram of endotracheal tube in the mouth and trachea

Script for nurse to explain suctioning procedure

- This picture shows a patient connected to a breathing machine (Use the first steps of the mechanical ventilation procedure to explain how suctioning will be performed)
- He has a tube in his mouth that goes down into the lungs (point to tube)
- The tube is connected the breathing machine by this tubing (point to ventilator circuit)
- This is the breathing machine that helps breathe air into the lungs (point to ventilator)
- You have this tube in your mouth (touch tube) connected to the breathing machine behind the bed.
- When you are on the breathing machine to help with your breathing a lot of secretions will accumulate in your lungs.
- It is hard for you to cough these up because of the tube through your vocal cords.
- We will stimulate your coughing and help to remove the secretions by suctioning the tube and your wind pipe
- This thin tube (show patient suction catheter) is inserted in the breathing tube in your mouth and down into your lungs and out again (use gesture to show moving in and out the ETT)
- This will make you feel uncomfortable and probably make you cough
- The tube will be inserted in your wind pipe for less than 10 seconds at a time
- Do you understand?

Do you want to ask any questions?

Annexure S

Setswana version Scenario

Tsamaiso ya go gopa segotlhola mo makgwafong

Dirisa setshwantso sa molwetsi a golagantswe ke lethumpho le letswang mo kgokgotsong le machine o o thusang go hema, le setswantsho sa letlhompho le letswang mo molomong le ya kwa kgokgotsong.

Pampiri e mooki a e dirisang go supa tsamaiso ya go gopa segotlhola

- Setshwantsho se supa molwetsi a thusiwa go hema ka machine o o thusang go hema sentle (Sala morago dikgato tsa ntlha tsa go thusa go hema ka mochine, gore go gopiwa segotlhola jang)
- O tsentswe lethumpho mo molomong le bo le fetela kwa tlase kwa makgwafong (supa lethumpho).
- Lethumpho le tsharagantswe le machine o o go thusang go hema sentle ka mathuphana a (supa mathumpho otlhe a mochine).
- Se ke machine o o thusang go lere phefo mo makgwafong (sepa mochine).
- O na le lethumpho le, mo ganong (tshwara lethumpho) le kopantshwe le machine o o thusang go hema sentle, o o fa morago ga bolao jwa gago.
- Fa o thusiwa go hema sentle ka machine segotlhola se kokotlesegela mo makgwafong a gago.
- Go bokete go gotlhola segotlhola ka gone lethumpho le le mo ganong la gago le ralela kgodu o bo o sa kgone go bua.
- Re tla go gotlhodisa e le go go thusa go ntsha segotlhola ka go se gopa.
- Lethumpana le lesesane le (supetsa molwetsi lethumpha le legopang) le tla tsenngwa mo go le le gothusang go hema, le le ralala molomo go feta ka kgokgotso, le be le

tsenwa kwa makgwafong. Mme le bo le ntshediwa kwa ntle ka bofefo (supetsa molwetsi go tsena le gotswa mo ETT).

- Se se tla dira gore o seka go rata, e kete wa balelwa, gongwe o bo o gotlhola.
- Le thumpho le tla tsengwa mo kgokgotsong motlotswana
- A o a tlhaloganya.
- A o na le potso.

Annexure T

English Version Scenario

Operation for a tracheostomy

General instructions for communicating with intensive care patients about procedures

- Use procedure boards whenever possible
- Follow script to expand on points on the board
- Speak slowly in short sentences
- Pause after each sentence
- Wait for patient to acknowledge message was received
- Count to 10 before rephrasing a statement or question

Procedure for creating a tracheostomy

- Use tracheostomy procedure board
    - Sketch of tracheostomy tube in the neck
    - Minor surgery to help you breathe more easily
    - Doctor makes a small hole on your neck
    - A plastic tube goes into the hole
    - It will take place here in your bed
    - Very little pain
    - 10 – 15 minutes

Script for nurse to expand on points on the board

- Mr L, today the doctor is going to perform minor surgery to help you breathe more easily.
- He will make a small hole in the front of your neck
- A small plastic tube is placed through the hole into the trachea (show sketch to patient)
- This will replace the tube in your mouth that connects you to the breathing machine
- It will take place here with you staying in your bed

- It should not hurt. We will give a local anaesthetic where the hole will be made.
- We will also give you a sedative drug to help you relax.
- You will be laid flat in the bed
- You will feel your neck being washed with cold lotion
- Drapes will be placed over your head and chest with a gap for the doctor to operate through.
- You will feel the local anaesthetic being injected
- Then the doctor will make the hole and insert the tube.
- The breathing machine will then be connected to the new tube.
- It will take about 10 to 15 minutes altogether.

Annexure U

Setswana version

Go dira loaro go tsenya lethumpho la kgokgotso

Dikitsiso tsa kakaretso go buisana le balwetsi ba ba mo kgatelelong e kgolo.

- Dirisa ditshwantsho fa o kgona.
- Sala ditaolo tse dikwadileng go tlhalosa dintlha mo ditshwantshong.
- Bua ka bonya le ka bokhutswane.
- Leta molwetsi go supa fa a amogetse molaetsa.
- Bala go fitlha ka lesome pele o dira seele kgotsa potso gape.

Ditselana tsa go dira loaro go tsenya lethumpho la kgokgotso

Sala dikaelo morago

- Dirisa setshwantsho go supa lethumpho mo thamong ya molwetsi.
- Learonyana le a dirwa go go thusa go hema sentle.
- Ngaka goo punya phatlhanyana mo thamong.
- Lethuntshwana le bo le tsenngwa fa phatlhaneng e.
- O a relwa fa, mo belaong jwa gago
- Ga go ka ke ga nna botlhoko thata.
- Go tsewa metsotso e le ka nna losome go ya kwa go lesome le botlhano.

Ditaolo tsa mooki go tlhalosa dintlha mo ditshwantshong.

- Rre L, ngaka o go dira learwanyana go go thusa go hema sentle.
- O tla phunya phatlhana fa pele ga kgokgotso.
- Lethumphonyana le tla tsengwa fa phatleng e o, gore le tsene mo kgokgotsong.
- Le tla emisetsa le le mo ganong, le tla kopanngwang le mochine o o thusang go hema sentle.
- O tla arelwa fa, o le mo bolaong jwa gago.

- Ga go botlhoko, o tla fiwa mokentho o o dirang bogatsu.
- Re tla fa molemo o o robatsang le yo o tla dirang gore o tebe mo mogopolong.
- Loaro lo tla dirwa o kaname mo bolaong.
- O tla utlwa o tlhapisiwa ka metsi a tsiditsana fa godimo ga mometso.
- O tla utlwa fa o kentwa ka molemo o o dirang gore o swe bogatsu.
- Mme ngaka o tla phunya phatlhana, a bo a tsenya lethumpho.
- Mochine o tla bo o golagangwa le lethumpho le lesha.
- Go ka tsaya metsotso e ka nna lesome go ya kwa go lesome le botlhano fela.