

**ASSESSMENT OF NURSING CARE GIVEN TO
CRITICALLY ILL PATIENTS AT KITWE
CENTRAL HOSPITAL**

BY

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UNZA

2011

THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF NURSING SCIENCES

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**A RESEARCH STUDY SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENT FOR THE AWARD OF BACHELOR OF SCIENCE DEGREE IN
NURSING AT THE UNIVERSITY OF ZAMBIA**

ACKNOWLEDGEMENT

I would like to thank the Almighty God for the good health, and strength to enable me to undertake my studies in Bachelor of Science Degree in Nursing. I would like to express my gratitude to the following people for their support, assistance and guidance during the study:-

- Ministry of Health for sponsoring me.
- Kitwe Central Hospital Management for the financial support and allowing me conduct the study at hospital.
- Dr. Mweemba - the Research Coordinator for the knowledge she imparted in research writing.
- Mrs. P. Mukwato – my Research Supervisor, for her professional guide.
- The lecturers in the Department of Nursing Sciences for their support.
- My friends, Kalimaposo, Nosiku and Mirriam for their continued support.
- My son Mutuba, Mr.W. Munsanje, Mrs.V. Chipeta and the rest of the family for their support, prayers and encouragement during the study.

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ABBREVIATIONS

AIDS	:	Acquired Immunodeficiency Syndrome
AL	:	Activities of Living
CCNO	:	Critical Care Nursing Organization
CCU	:	Critical Care Unit
CSO	:	Central Statistical Office
GCS	:	Glasgow Coma Scale
GNC	:	General Nursing Council
GRZ	:	Government of Republic of Zambia
HIV	:	Human Immunodeficiency Virus
ICN	:	International Council of Nursing
ICU	:	Intensive Care Unit
IIPs	:	Insulin Infusion Protocols
MICU	:	Medical Intensive Care Unit
MoH	:	Ministry of Health
TPR, BP	:	Temperature, Pulse, Respirations and Blood Pressure
WFCCN	:	World Federation of Critical Care Nurses
WGCTA	:	Watson-Glaser Critical Thinking Appraisal
ZUNO	:	Zambia Union for Nurses Organization

DECLARATION

I, hereby declare that the work presented in this study for the Bachelor of Science Degree in Nursing has not been presented either wholly or in part, for any Degree and is not being currently submitted for any other Degree.

SIGNED:*achinda*.....

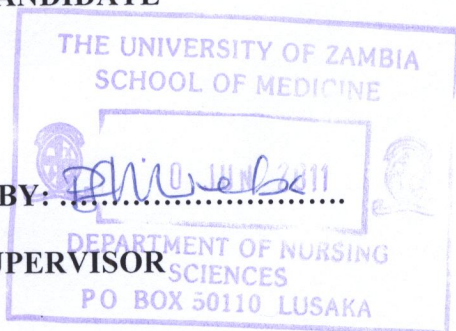
DATE: *02/06/2011*

CANDIDATE

APPROVED BY:*Philebe*.....

DATE: *10/06/2011*

SUPERVISOR



STATEMENT

I, hereby certify that this study is entirely the result of own independent investigations. The various sources to which I am indebted are clearly indicated in the text and references.

SIGNED: reelwa.....

DATE: 02.06.2011

DEDICATION

This research study is dedicated to my son Mutuba, Mr Munsanje and the rest of my family for their encouragement and support during the training.

ABSTRACT

Critical Care Nursing or intensive care nursing is that specialty dealing with human responses to life- threatening problems. The provision of critical care nursing requires adequate medical-surgical supplies, specialized equipment and adequate personnel. The main objective of the study was to determine the nursing care given to critically ill patients at Kitwe Central Hospital. The study hypotheses were that nurses do not give quality nursing care to critically ill patients due to inadequate knowledge on critical care nursing and inadequate surgical and medical supplies. Non availability of protocols or guidelines on critical care nursing and the increased numbers of critically ill patients may also contribute to sub standard nursing care on the critically ill patients. The study was conducted at Kitwe Central Hospital. The hospital and the wards were conveniently selected while the respondents were purposefully selected. The study involved 50 respondents who were nurses working in low cost medical and surgical wards. A self administered questionnaire and participatory observation were used. Data were collected, sorted, coded and entered manually on the data master sheet. Frequency tables, pie charts and cross tabulations were used to provide a better understanding of data.

The study revealed that non availability of required medical-surgical supplies influenced the nursing care; 88% of the medical-surgical supplies were available in surgical department while 73% were available in medical department. The other factor which influenced the nursing care was non utilization of the available protocols on critical care. Only 70% of the participants knew that the protocols were available even when all the wards had all the necessary protocols. The numbers of critically ill patients also influenced the nursing care. It was observed that 54% of participants who gave substandard care were from medical wards while 46% were from surgical wards due to the difference in numbers of critically ill patients. The major recommendations for the study are that the Ministry of Health should support the health institutions in delivering of quality health care through funding of workshops/ seminars and departmental presentation on critical care nursing. The Ministry of Health should also improve supply of medical-surgical supplies and funding to nursing schools in order to train more nurses and improve the staffing levels in the hospitals.

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND

The term critical care nursing is often used interchangeably with the term intensive care nursing, but it is not exclusively restricted to that specialty area. The American Association of Critical Care defines critical care nursing as that specialty dealing with human responses to life- threatening problems. Critical care nursing requires in depth of knowledge of anatomy, physiology, Pathophysiology, pharmacology, and advanced assessment skills, as well as ability to use advanced biotechnology (Lewis, Heitkemper and Dirksen, 2004).

Critical care nursing can be dated as far back as 1800's, when Florence Nightingale forwarded the concept of clustering the most acute ill patients. During poliomyelitis and tuberculosis pandemics in the middle of the twentieth century, special units were established, equipped with technical equipment to manage the airway and ventilate the patients, and staffed by specialized care providers. By 1970s, the Intensive Care Unit was a standard unit in most hospitals worldwide (Lewis, Heitkemper and Dirksen, 2004).

Critically Care Units (CCU) or Intensive Care Unit (ICU) is a hospital unit in which clients receive close monitoring and intensive medical care. The units are equipped with the most advanced technologies. Although many of the technologies can be found on regular nursing units, clients hospitalized within ICU's are being monitored and maintained on multiple devices at the same time (Potter and Perry, 2005). However, if the hospital has got no such units as is with most of our hospitals, then critically ill patients can be placed near the nurse's bay (acute bay) for quick observations.

According to Lewis, Heitkemper and Dirksen, (2004), provision of critical care nursing requires adequate medical-surgical supplies and specialized equipment:-

- Sphygmomanometer- an instrument for measuring the arterial blood pressure.
- Clinical thermometer- an instrument for measuring the body temperature.

- Pulse-oximeters- a photoelectric cell used to determine the oxygen saturation of blood.
- Piped oxygen or cylinder oxygen- for supply of artificial oxygen in patients with low tissue perfusion.
- Suction machine- used to suck the secretions in order to clear the airway.
- Glucometer- used to test blood glucose.
- Mechanical Ventilator- a machine is used to move air in and out of the lungs mechanically. Mechanical ventilation is a means of supporting critically ill patients until they recover the ability to breathe independently or a decision is made to withdraw the ventilator support.
- Endotracheal tubes- used to intubate critically ill patients who often require mechanical assistance to maintain airway. Tracheotomy is performed when the need for an artificial airway is long term.

Nursing and medical staff within the Critical Care Unit are being educated in critical care principles and techniques (Potter and Perry 2005).

Critically ill patients are people who have acute life-threatening conditions but who might recover if they are given prompt, appropriate, effective and often highly technical nursing and medical care. Patients who present in a critically ill state can be considered in three categories:

- Those who have never before had a significant illness and who have suffered a sudden, acute life threatening event such as extensive trauma, severe burns, near drowning, cerebral vascular accident, Diabetic Keto Acidosis and deliberate self-harm.
- Those who suffer from chronic illness, perhaps involving frequent previous hospital admissions such as chronic obstructive airway disease, chronic pancreatitis, diabetes mellitus and those who present as critically ill as a combination of their chronic illness with a life threatening event.
- Those who have become critically ill as a result of surgery; in some cases, the life-threatening situation is expected like in organ transplant, while in other cases

postoperative intensive care is a recognized necessity (Alexander, Fawcett and Runciman, 2004).

Since the critically ill patients are highly dependent on the nurse in meeting their activities of living, it is important that the nurse assesses all these activities in order to identify those that the patient is unable to perform. The identified activities are then prioritized and performed while applying the nursing process. When the nursing process is used correctly it fulfills the purposes of nursing, which are to:-

- Maintain the patient's health.
- Provide nursing care that will return patient to a state of health or to help them achieve a peaceful death.
- Prevent, detect, and treat illness and the complications of illness.
- Provide care and treatment necessary to promote comfort.
- Maximize the quality of life by improving patient's resources and making the appropriate referrals for community help (Dossey, Guzzetta and Kenner, 2002).

According to Smeltzer and Bare, (2004), nursing process is a deliberate problem-solving approach for meeting a person's health care and nursing needs and it has the following steps:-

- Assessment
- Diagnosis
- Planning
- Implementation
- Evaluation

1. Assessment

This is the systematic collection of data to determine the patient's health status and identify any actual or potential health problems. (Analysis of data is included as part of assessment).

2. Diagnosis

This is identification of the following two types of patient problems-:

(a) Nursing diagnosis

This is the actual or potential health problem that can be managed by independent nursing interventions.

(b) Collaborative problem

These are certain physiological complications that nurses monitor to detect onset or changes in status. Nurses manage collaborative problems using physician prescribed and nursing-prescribed interventions to minimize the complications of the events.

3. Planning

This is the developing of goals and outcomes, as well as plan of care designed to assist the patient in resolving diagnosed problem and achieving the identified goals and desired out comes.

4. Implementation

This is the actualization of the plan of care through nursing interventions.

5. Evaluation

This is the determination of the patient's responses to the nursing interventions and the extent to which the outcomes have been achieved (Smeltzer and Bare, 2004).

1.2 STATEMENT OF THE PROBLEM

Apart from lack of documentation, the actual nursing care given to the critically ill patients in low cost wards of Kitwe Central Hospital is sub standard; most of the care is given by the relatives, for example, procedures such as bathing, feeding of patients and bed making are usually done by relatives. Those critically ill patients who have no relatives sometimes develop pressure sores because there is no one to do two hourly

turnings. Critically ill patients have sometimes fallen from beds because there is no nurse to take care of them.

The problem of sub standard care is widely spread although the most affected departments are medical (Mkushi and Luapula wards) and surgical departments (Zambezi and Kafue wards). These wards are on the low cost wing of Kitwe Central Hospital. This could probably be due to several factors which include; increased numbers of critically ill patients, shortage of nurses and lack of protocols on critical care nursing. According to Chitty, (2005), the protocols are used in situations in which nurses need to take immediate action without consulting with a physician, such as in an emergency department, a critical care unit or a home setting. Therefore, if protocols are not available, the care given may not be accurate or of acceptable standard and sometimes even be delayed thus putting the life of the critically ill patient in danger. The patient's condition may deteriorate or may even die while the nurse is trying to conduct the physician or fidget with the patient not knowing exactly what to do.

The consequences of sub standard care on the critically ill patients are enormous; the patient may develop complications which may require complex and costly investigations and treatment. The patient's stay on the ward may be prolonged when complications develop and this can be costly to both the family and the hospital. The mortality rate of the hospital may also increase when these patients die. This is in agreement with Amy, (2008) in the study entitled Prevention of Health Care Associated Infections which revealed that unanticipated infections develop during the course of health care treatment and result in significant patient morbidity and mortality, prolonged duration of hospital stay and necessitate additional diagnostic and therapeutic interventions which generate added costs.

The management at Kitwe Central Hospital has put in some measures in trying to address this problem; moonlighting or part time nursing has been introduced in order to improve the staffing levels at the hospital. The day and night Nursing Officers on duty go round the wards checking on the nursing care given to the patients with more emphasis on the critically ill patients. The Nursing Management also reviews the files

and nursing reports for the critically ill patients and also for those who have died to check on the documentation of nursing care.

Despite the above measures, the nursing care given to the critically ill patients is still sub standard. This has prompted the researcher to carry out an assessment of the nursing care being given to critically ill patients at Kitwe Central Hospital. The findings will help the Nursing Administrators find means of uplifting nursing standards in general and also specifically improve the nursing care being delivered to the critically ill patients; if sub standard care is due to lack of knowledge on critical care nursing, the recommendation will be that a workshop be conducted to help nurses gain some knowledge. If sub standard care is due to lack of protocols on critical care nursing, the management will be encourage to formulate the protocols and circulate them in to the medical and surgical wards so that nurses can read and follow them during their day to day duties. If sub standard is due inadequate of medical and surgical supplies, it will be recommended that management buys the supplies in order to meet the demand. The management can also lobby from the stakeholders.

1.3 ANALYSIS OF THE FACTORS INFLUENCING NURSING CARE GIVEN TO CRITICALLY ILL PATIENTS

There are various factors that may influence the nursing care given to critically ill patients. These factors may be grouped under service related, social- cultural economic and disease related factors.

1.3.1 SERVICE RELATED FACTORS

1.3.1.1 Number of nursing staff

According to World Federation of Critical Care Nurses, (WFCCN), (2005), the required workforce is that the unconscious and ventilated patients should have a minimum of one nurse to one patient, while high dependency patients in a critical care unit may have a lesser nurse ratio. However, this is not possible in Zambia. According to Ministry of Health (MoH), (2005), the Ministry of Health has a critical shortage of nurses; it requires about 22,330 nurses to offer optimal health services to the people of Zambia but at present only about 8,369 nurses are in employment. There is a deficit of 13,963 nurses to meet the establishment. The high morbidity and mortality rates arising from Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome (HIV/AIDS) among health workers have contributed to the significant reduction in the Ministry. The shortage of nurses could lead to increased work load which may contribute to sub-standard nursing care on critically ill patients.

1.3.1.2 Medical and surgical supplies.

Availability of medical and surgical supplies influences the care given to the critically ill patients. When medical and surgical supplies are adequate nurses may be able to give quality nursing care to critically ill patients because they have all the necessary supplies needed to carry out the nursing activities. Inadequate medical and surgical supplies in the health care setting may have an effect on the provision of quality nursing care to the critically ill patients. The nurses usually improvise when carrying out nursing activities thus compromising the standards of care. For example, in cases of medical emergencies like Diabetic Keto Acidosis, the nurses usually use ordinary syringes instead of insulin syringes when giving insulin because the hospital rarely stocks these syringes. Using an ordinary syringe may either lead to high or low dosing thus compromising the care. Monitoring sugar levels is also very difficult because urinary multisticks and glucostixs are usually out of stock.

1.3.1.3 Protocols on critical care nursing

Delivery of nursing care especially on critically ill patients has got guidelines that need to be followed (Lewis, Heitkemper and Dirksen, 2004). Clear guidelines help the nurse to follow during the delivery of nursing care. Therefore the guidelines that are put in place may have effects on the nursing care given. However, there are times when clear guidelines are put in place but nurses do not take time to read and follow. The inability to read and follow guidelines may contribute to the low standard of nursing care. Lack of protocols on critical care nursing may affect the nursing care given on critically ill patients because nurses may lack guidelines to follow especially during emergencies.

1.3.1.4 Training in critical care nursing.

According to Watters et al, (2004), the need to have medical staff trained in recognizing and solving problems faced by critically ill patients is being emphasized. Since all hospitals have critically ill patients, it is inexcusable to fail to do the best for them with the available resources. The Nursing Programme in Zambia only offers Psychiatry, Theatre and Midwifery specialties; it does not offer Critical Care nursing. Therefore, the nurse who is not trained in critical care nursing may fail to deliver the nursing care which is of accepted standards.

1.3.1.5 Knowledge of nurses on critical care nursing

The critical care nurse requires in- depth knowledge of anatomy, physiology, Pathophysiology, pharmacology, and advanced assessment skills as well as the ability to use the advanced biotechnology (Lewis, Heitkemper and Dirksen, 2004). If the nurse has inadequate knowledge on anatomy and physiology he/ she may end up coming with a wrong nursing diagnosis and this may entail instituting wrong interventions. The nurse who also does not know how to use the equipment may harm the patient in the process or even delay in care delivery while fidgeting and this will compromise the care.

1.3.2 SOCIAL- CULTURAL AND ECONOMIC FACTORS

1.3.2.1 Religious beliefs of some patients

Some religious beliefs of the patient may negatively affect the nursing care. The dimensions of the meaning of sickness and health, pain, dying and death and grief should be explored when caring for critically ill patients and their families (Lewis, Heitkemper and Dirksen, 2004). For example, a critically ill patient may not be transfused, because the relatives or the patient may not consent due to some religious beliefs. This may occur even if the blood is available in the hospital. There are also times when relatives or patients refuse resuscitation because they view it as troubling the soul.

1.3.2.2 Knowledge by patients / relatives on critical care nursing

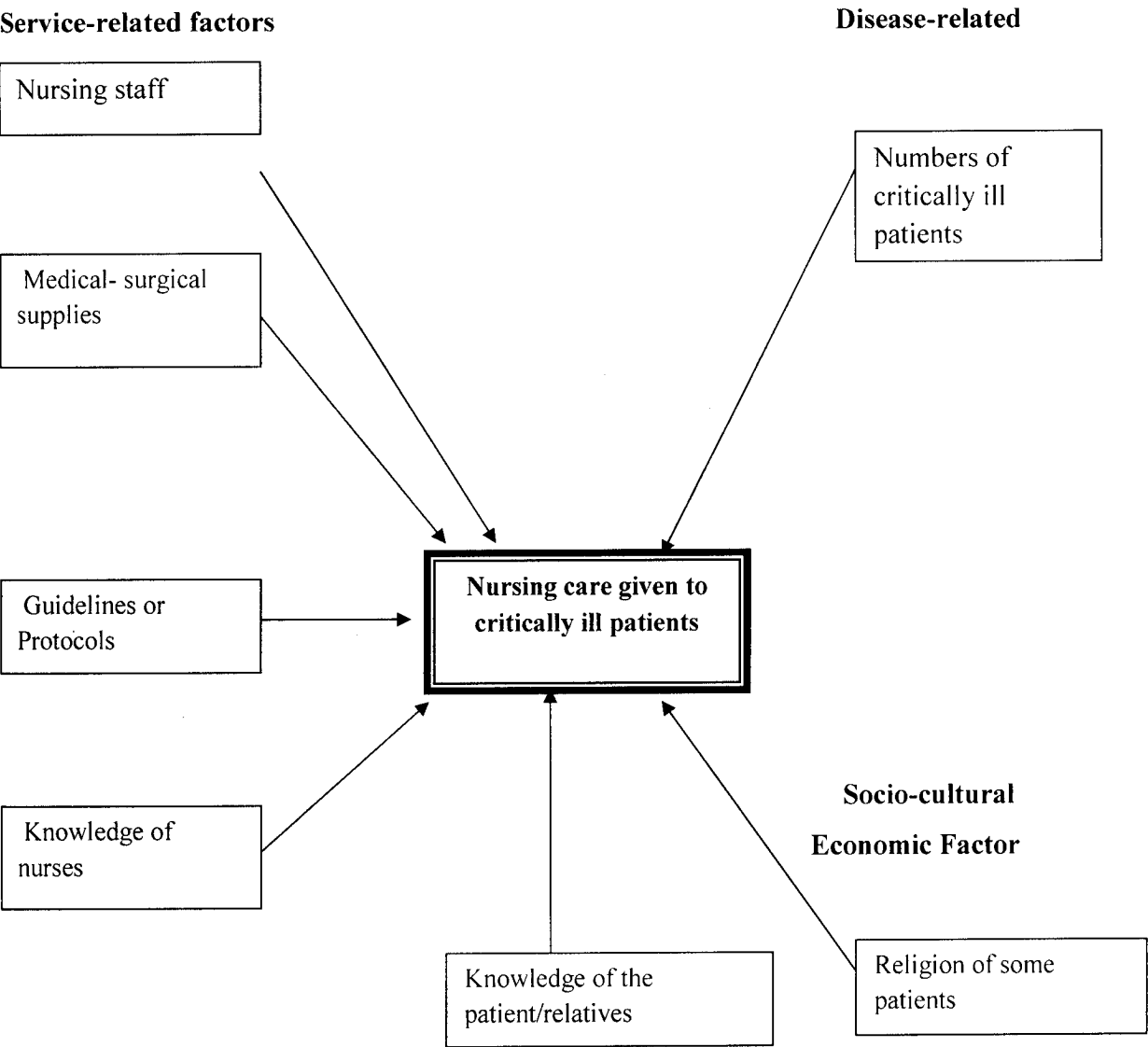
At times the patient's or relative's knowledge influences the type of nursing care. Quality nursing care is given in order to avoid being sued by the patient or relatives in cases of negligence. If the patient or the relatives are ignorant of what is supposed to be done the nurse takes advantage of the situation and ends up giving the nursing care which is sub standards. However, according to the Government of Republic of Zambia (GRZ), (2000), the nurse is supposed to give the best possible care to the members of the public.

1.3.3 DISEASE RELATED FACTORS

1.3.3.1 Numbers of critically ill patients

The numbers of critically ill patients may influence the delivery of nursing care to critically ill patients. If the numbers of critically ill patients are low, nurse may give quality nursing care because she or he may have enough time to care for the patient. The increase in numbers of critically ill patients may affect the nursing care given to critically ill patients. This increase could be due to the medical conditions such as Human Immune deficiency Virus (HIV) opportunistic infections, diabetic coma, cerebral malaria and surgical conditions like head injuries and fractures due to road traffic accidents. The critical care nurse may fail to deliver quality nursing care especially if there are few nurses on the ward because individualized care takes time.

1.4 FIGURE 1: DIAGRAM OF PROBLEM ANALYSIS



1.4.1 VARIABLES

A variable is an attribute of a person or object that varies, that is takes on different values (body temperature, age, heart rate) (Polit and Beck, 2006).

There are mainly two types of variables, namely: independent and dependent variables. These exist not as a cause-effect relationship but as an association.

Dependent variable: The variable hypothesized to depend on or be caused by another variable (the independent variable); the outcome variable of interest (Polit and Beck, 2006).

Independent variable: The variable that is believed to cause or influence the dependent variable; in experimental research, the manipulated (treatment) variable (Polit and Beck, 2006).

The following are the variables that are used in this study.

Dependent variable

- Nursing care given to the critically ill patients

Independent variables

- Knowledge on critical care nursing
- Availability of medical and surgical supplies.
- Availability of guidelines or protocol on critical care nursing
- Numbers of critically ill patients.

1.5 JUSTIFICATION OF THE STUDY

The General Nursing Council (GNC) of Zambia which is a statutory body is responsible for ensuring that the members of the public receive the best possible care. To ensure improved and sustained quality of care, the General Nursing Council of Zambia advocates that the nurse uses the scientific approaches of Assessment, Planning, Implementation and Evaluation in to order to deliver efficient and cost effective health

care (GRZ, 2000). GNC also conducts supervisor visits round the country in order to monitor the nursing care given to the public.

Despite the above measures by GNC, it has been observed that critically ill patients at Kitwe Central Hospital are receiving sub standard nursing care. Most of the nursing activities such as baths, turnings and feeds are done by the relatives. Critically ill patients sometimes develop pressure sores or even fall off the beds signifying that the nursing care is of sub standard. Measures such as reviewing of patient's files, introduction of part time nursing and daily nursing rounds by the Kitwe Central Hospital management have not yielded the desired results. This has compelled the researcher to go on the ground to assess the nursing care given to critically ill patients at Kitwe Central Hospital. The findings of this research will be useful in the continued efforts to improve the delivery of nursing care to the critically ill patients.

1.6 RESEARCH OBJECTIVES

Research objectives are clear, concise declarative statements that are expressed in the present tense (Burns and Grove, 2005).

1.6.1 General objective:

It states what is expected to be achieved by the study in terms of general terms. The general objective of the study is to determine the nursing care given to critically ill patients at Kitwe Central Hospital.

1.6.2 Specific objectives:

These are the breakdown of a general objective into smaller and logically connected parts. The specific objectives of the study are:-

- To establish if the nurse's knowledge of critical care nursing affects the care given to the critically ill patients at Kitwe Central Hospital
- To determine if availability of surgical and medical supplies affect the care given to the critically ill patients at Kitwe Central Hospital.

- To determine whether the availability of protocols or guidelines on critical care nursing has an influence on the care given to the critically ill patients at Kitwe Central Hospital.
- To establish if the numbers of critically ill patients on the ward affect the care given to the critically ill patients at Kitwe Central Hospital.

1.7 HYPOTHESES

A hypothesis is a prediction, usually a statement of predicted relationships between the variables (Polit and Beck, 2006).

The following hypotheses are a prediction of relationships among variables under study:-

- Nurses do not give quality nursing care to critically ill patients due to inadequate knowledge.
- Inadequate surgical and medical supplies may contribute to sub standard nursing care on the critically ill patients.
- Non availability of protocols or guidelines on critical care nursing may contribute to sub standard nursing care on the critically ill patients.
- The increased numbers of critically ill patients on the ward may contribute to sub standard nursing care.

1.8 CONCEPTUAL DEFINITIONS OF TERMS

Conceptual definition provides a variable or concept with connotative (abstract, comprehensive, theoretical) meaning and is established through concepts analysis, concept derivation, or concept synthesis (Burns and Grove, 2005).

Nurse - A person who is qualified in the art and science of nursing and meets certain prescribed standards of education and clinical competence and who is registered by the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (Weller, 2005).

A nurse is a person who has completed a basic education and is qualified and authorized in her or his country to practice nursing (International Council of Nursing (ICN), 1987).

Nursing process - The nursing process is a deliberate problem-solving approach for meeting a person's health care and nursing needs (Smeltzer and Bare, 2004)

Knowledge - The information, understanding and skills that you gain through education or experience (Hornby, 2006).

Guidelines - Rules or instructions that are given by the official organization telling you how to do something especially something difficult (Hornby, 2006).

Nursing care - Care given to the sick or injured by the professional nurse (Weller, 2005).

Quality nursing care - Nursing care which is of high standards or of excellence. The components of critical care nursing include:-

- Observations of Temperature, pulse, Respirations and Blood pressure (TPR, BP) checked and recorded.
- Two hourly turnings
- Three hourly feeds
- Daily baths
- Pressure area care
- Oral care
- Intra venous fluid maintenance
- Catheterization and recording of output (Alexander, Fawcett and Runciman, 2004).

Sub standard nursing care - Nursing care which is not accepted or which is inferior.

Critically ill patient – Those patients who may be physiologically unstable requiring advanced and sophisticated clinical judgments by the physician or a nurse, (Lewis, Heitkemper and Dirksen, 2004).

Resources - A supply of something that a country, an organization or a person has and can use, especially to Patients who require critical care nursing are those who may be

physiologically unstable requiring advanced and sophisticated clinical judgments by the physician or a nurse increase their wealth (Hornby, 2006).

Assessment – Gathering of information about the health status of patient/client, analysis and synthesis of that data, and the making of a clinical judgment (Weller, 2005).

1.9 TABLE 1: VARIABLES AND CUT OFF POINTS

No.	VARIABLE	INDICATORS	CUT OFF POINT
	Dependent variable		
1.	Nursing care given to critically ill patients	<ul style="list-style-type: none"> ▪ Scoring 50% and above on observation of nursing care given to critically ill patients. ▪ Scoring below 50% on observation of nursing care given to critically ill patients. 	<ul style="list-style-type: none"> ▪ Acceptable minimum standards. ▪ Sub-standards.
	Independent variable		
1.	Knowledge	<ul style="list-style-type: none"> ▪ Scoring 75% and above on knowledge questions. ▪ Scoring between 50% and 74% on knowledge questions. ▪ Scoring below 50% on knowledge questions 	<ul style="list-style-type: none"> ▪ Highly knowledgeable ▪ Moderately knowledgeable ▪ Poorly knowledgeable
2.	Availability of medical-surgical supplies	<ul style="list-style-type: none"> ▪ Always available ▪ Occasionally available ▪ Not available 	<ul style="list-style-type: none"> ▪ Supplies found every time ▪ Supplies found sometimes ▪ Supplies not found
3.	Protocols	<ul style="list-style-type: none"> ▪ Available ▪ Not available 	<ul style="list-style-type: none"> ▪ Protocols found on the ward ▪ Protocols not found on the ward
4.	Numbers of critically ill patients	<ul style="list-style-type: none"> ▪ Between 7- 10 patients in the acute bay ▪ Between 4 - 6 patients in acute bay ▪ Below 3 patients in acute bay 	<ul style="list-style-type: none"> ▪ High ▪ Average ▪ Low

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

Literature review is an organized written presentation of what has been published on the topic by scholars. The purpose of the literature review is to convey to the reader what is currently known regarding the Critical Care Nursing has responded and will always continue to respond to the needs of its clients (Potter- Perry, 2005). One of the ways of which nurses globally, regionally and nationally have responded is by caring for the critically ill patients. Several academicians and researchers have taken time to write on critical care nursing in order to gain more knowledge and improve the practice. The literature review will focus on the published information; books, articles, indexes and journals and unpublished information; research proposals, reports, records and computer data bases that have been conducted globally, regionally and nationally. The review is arranged according to study variables:-

2.1.1 CRITICAL CARE NURSING

In India, some nurse experts; Ray, Sen, and John, (2006), conducted a study on “Factors influencing nursing care in an Indian surgical Intensive Care Unit”. They stated that during this age where critical care medicine is costly and where specialized nursing personnel are scarce, providing adequate care is very difficult. The nurse- patient ratio is less than ideal thus compromising on the quality of care. The study was done through observation and the results were analyzed by age, sex, diagnosis, type of admission and need for ventilation. The results were compared with the total time taken for the care to be given and it showed that the type of admission and the need for ventilation appeared to be the main factor influencing the time a nurse requires for the care of the critically ill patients.

According to International Council of Nurses, (2001), a survey was conducted in 2000 on 44 American, Euro-African and Asia/South Pacific countries. The survey was conducted on countries which have Critical Care Nursing Organizations (CCNOs) asking the respondents

about the issues facing critical care nursing in their countries. A semi structured questionnaire was sent either by mail, facsimile or e- mail to all 44 countries in order to collect data. The respondents were asked to rate the important issues using a modified Delphi technique (where 1= not important and 10=very important). Almost every country identified inadequate staffing levels as being the most important issue for critical care. Other important issues included working conditions, access to quality educational programmes and wages. This also applies to Zambia. Critically ill patients at Kitwe Central Hospital are receiving sub standard care probably because of the inadequate staffing levels. The nursing staffs are demotivated because of the poor working conditions. The poor working conditions also have prompted some nurses leave the country making the staffing levels inadequate. The nursing programme in Zambia does not offer critical care specialty thus depriving the nurses of the needed knowledge on critical care nursing.

2.1.2 KNOWLEDGE OF NURSES ON CRITICAL CARE NURSING

Several nurse experts have also researched on the “Relationship between critical thinking and clinical judgment”. According to Follman, (2003), there are different views on the relationship between critical thinking and clinical judgment. Tunner, et al (2003), conducted several studies independently and they all concluded that there is no relationship between critical thinking and clinical judgment. Durhscler, (2003), suggested that these results might have resulted from inadequate refinement in the design and instrument rather than from lack of intrinsic relationship between critical thinking and clinical judgment.

Perciful and Nester, (2003), in the study entitled “Research on Nurses Critical Thinking Cul de Sac”, conducted studies on 83 students and found correlations between the critical thinking and clinical judgment using the Watson- Glaser Critical Thinking Appraisal (WGCTA), which is the National League for Nursing Psychiatric Exam. The correlation was higher than other studies and higher than other nursing test of critical thinking. In order to give quality nursing care, the nurse should always think before carrying out any nursing procedure. Some routine procedures such as feeding may be contraindicated in patients with intestinal obstruction, hence the need for the nurse to be a critical thinker and apply knowledge of critical care nursing in the provision of care.

In another study, Lankford, et al (2004), “Influence of Role Models and Hospital Design on Hand Hygiene of Health care Workers, the study oriented the staff on policies, procedures and paperwork. The study revealed that though nurses could work throughout the hospital, only those nurses having Cardiac Care Certification may work in an Intensive Care Unit. Therefore, only those nurses who have been trained in critical care nursing and have knowledge on critical care nursing can give quality nursing care to critically ill patients.

Burns & Shirley, (2008), conducted a study a study entitled, “Critical care nurse’s knowledge on Pulmonary artery catheters”. The objective of the study was to evaluate Critical Care Nurse’s on Pulmonary artery catheters. The study revealed that Critical care nurse’s knowledge on Pulmonary artery catheter is related to directly to the frequency of their exposure to it, critical care nursing experience, attendance and pulmonary artery catheter class and critical care Registered Nurse certification. In order to deliver quality nursing care to critically ill patients, nurses need some training in critical care nursing and be involved in the care so that they can gain some experience.

Toth, (2003), also conducted a study to compare the basic knowledge in critical care nursing between nurses from United State of America (USA) and nurses from other countries. The research findings were that knowledge of nurses from English speaking countries did not differ from that of nurses from non- English speaking nations. The study revealed that basic knowledge of critical care nursing is a body of knowledge beyond that required for licensure as a Registered Nurse. Critical care nurses use this knowledge to provide safe nursing care to patients in critical care units. Although basic knowledge does not guarantee safe practice, safe practice in critical care nursing cannot occur without basic knowledge. The primary orientation and in- service education in critical care is to ensure that nurses have an understanding of basic knowledge. Nurses working in medical and surgical wards need to be oriented in critical care nursing so that they can gain basic knowledge of critical care nursing. Basic knowledge of critical care nursing will help nurses give quality nursing care to critically ill patients. The orientation can be done through workshops and in- house training.

2.1.3 AVAILABILITY OF MEDICAL-SURGICAL SUPPLIES

According to Emergency Nurses Association, (2000), the Specialty Measurement Criteria has set standards in delivering the quality of nursing care; one of the standard is as follows:-

Standard: The emergency nurse ensures that requisite supplies and equipment are readily available and an appropriate charge is generated when they are in use. The standard has two (2) levels:-

Competency Level: The emergency nurse ensures that the supplies and equipment are readily available and in working order.

Excellent level: The nurse recommends selection and utilization of supplies and equipment.

Mahoney, (2002), also acknowledges the importance of medical supplies in critical care setting. He states that the increasing use of disposable equipment has enabled nurses to use their time more effectively in direct patient care. Because manufactured products are so readily obtainable, improvising equipment has become largely unnecessary function. For example, hospitals now receive all intravenous solutions prepared and delivered with pharmaceutical accuracy and safety. In times of emergency or disaster with great number of patients, the use of disposable equipment and sterilisable instruments only under certain method may not be available. If nurses understand the principles of sterilization, the risk of infection may be minimized in reusing the equipment, although such improvisation will never approximate the safety of the disposable manufactured product currently in use. However, Mahoney, (2002), re-emphasized that improvisation may be accomplished using the most common material available. He stated that it is necessary to work with what is available and that the nurse must use great ingenuity in finding substitutes for supplies. He also stated that some procedures may be delayed or left alone if necessary; the determination being the anticipated outcome of such decision.

Buckail, (2003), conducted a study entitled “Environmental influence on nurse’s real decision in the critical care setting’. Naturalistic observations and semi-structured interviews were conducted on eighteen (18) critical care nurses in private, public and rural hospitals. The study revealed that clinical decisions were strongly influenced by the context in which the decision was made. Three main environmental influences were identified; the patient situation, resources

availability and interpersonal relationships guided all decisions. The availability of resources, for example medical-surgical supplies is essential when caring for critically ill patients. In order to give quality nursing care to critically ill patients, it is important to always have the resources at hand.

In another study, Lankford et al (2004), "Influence of Role Models and Hospital Design on Hand Hygiene of Health care Workers," assessed the effect of medical staff role model and the number of health care worker sinks on hand-hygiene compliance before and after construction of a new designed for increased access to hand washing sinks. The factors perceived as contributing to poor hand-hygiene included unavailability of hand washing sinks, time required to perform the hand hygiene, inadequate knowledge of guidelines, patient's condition e.t.c. The study revealed that, despite the increase number of sinks in the new hospital, hand washing compliance in the new facility decreased substantially. Access to the sink is an important determinant of hand washing compliance but not the solely requirement needed to increase the hand hygiene compliance. The study also revealed that health care workers were significantly less likely to wash their hands if they were in a room with a higher ranking person who did not perform hand hygiene.

The availability of resources, for example medical-surgical supplies may not solely influence the care given to critically ill patients. Knowledge of nurses on the use of available resources may influence the care given to critically ill patients. If the nurses have adequate knowledge on the use of the available resources they will be able to use them and give quality nursing care to the critically ill patients. Compliance to nursing procedures on critically ill patients may be influenced by the presence of the senior nurses on the wards. Senior nurses such as nursing sisters or nursing officers can act as role models to the nurses if they also participate in nursing the critically ill patients.

2.1.4 AVAILABILITY OF PROTOCOLS ON CRITICAL CARE NURSING

According to Bright, (2000), the purpose of protocols in emergency nursing is to standardize the response to be made to each patient; to ensure that a safe response is made and provide reliable guidelines and a source of reference to emergency care staff. Protocols need to be developed by

both the medical and nursing staff in order to provide practical guidelines for the successful care of patients. The terms of reference established in the protocols must not inhibit the professional judgment or intuitive response of the nurse. Protocols provide the less experienced nurse with a source of reference when need arises. In addition, protocols serve well as an educational resource and training aid. Protocols may take the form of notes, flow sheets, diagrammatic, references or a standard documentation format. Whilst the provision of protocols is important to the safe and running of any critical nursing programme, the nurse must always have access to the senior nursing colleague or doctor for advice when a decision is difficult to make.

Mahoney, (2002), also acknowledged the importance of protocols in the critical care setting. He stated that nurses employed in medical facilities where physicians are not always present, including night hours should similarly be covered by carefully formulated orders that meet the approval of medical staff organization. This ensures immediate attention to emergency cases until the physician arrives and at the same time protects the nursing personnel, legally, as well as the patient in that the scope of activity of nursing personnel is well defined.

Krinsley, (2004), in a study, "effect of an intensive glucose management protocol on the mortality of critically ill adult patients". The protocol involved intensive monitoring and treatment to maintain plasma glucose values lower than 140 mg/dL. Continuous intravenous insulin was used if glucose values exceeded 200 mg/dL on 2 successive occasions. The 2 groups of patients were well matched, with similar age, sex, and race, prevalence of diabetes mellitus, Acute Physiology and Chronic Health Evaluation II scores, and distribution of diagnoses. After institution of the protocol, the mean glucose value decreased from 152.3 to 130.7 mg/dL ($P<.001$), marked by a 56.3% reduction in the percentage of glucose values of 200 mg/dL or higher, without a significant change in hypoglycemia. The development of new renal insufficiency decreased 75% ($P=.03$), and the number of patients undergoing transfusion of packed red blood cells decreased 18.7% ($P=.04$). Hospital mortality decreased 29.3% ($P=.002$), and length of stay in the Intensive Care Unit (ICU) decreased 10.8% ($P=.01$). The findings revealed that the use of intensive glucose management protocol resulted in significantly improved glycemic control and was associated with decreased mortality, organ dysfunction, and length of stay in the ICU in a heterogeneous population of critically ill adult patients. These

results support the adoption of this low-cost intervention as a standard of care for critically ill patients.

In another study, Goldberg, (2005), “Implementation of a Safe and Effective Insulin Infusion Protocol in a Medical Intensive Care Unit,” critical care physicians attempted to implement strict glycemic control in the Medical Intensive Care Unit (MICU). This effort was generally unsuccessful, largely because the MICU nurses were uncomfortable with “low-normal” blood glucose levels and lacked the experience to effectively manage intensive insulin infusions. There were many practical barriers to implementing intensive insulin protocols in an ICU. Insulin Infusion Protocols (IIPs) add significantly to the work of managing ICU patients and thus may not be readily accepted by a busy ICU nursing staff. Every hour, the nursing caregiver must locate a glucose meter, perform a finger stick, document the results, and make the necessary insulin drip adjustments; this process can take up to 5 min per hour. In addition, the inherent clinical and logistical perturbations of caring for critically ill patients (fluctuating severity of illness, changes in nutritional delivery, off-unit visits to diagnostic imaging, etc.) produce frequent alterations in hourly insulin requirements.

Another study was conducted by Allan, (2010), on Effect of a nursing-implemented sedation protocol on the duration of mechanical ventilation. The objective was to compare a practice of protocol-directed sedation during mechanical ventilation implemented by nurses with traditional non-protocol-directed sedation administration. Patients were randomly assigned to receive either protocol-directed sedation (n=162) or non-protocol-directed sedation (n=159). The results revealed that the use of protocol directed sedation can reduce the duration of mechanical ventilation, Intensive Care Unit and hospital length stay and the need for tracheostomy among critically ill patients with Acute Respiratory Failure.

The availability of protocols on critical care nursing may influence the care given to critically ill patients. For example, if the ward has a protocol on insulin injection administration, the nurse may follow the protocol when nursing a Diabetic Coma patient especially in the absence of the medical doctor.

2.1.5 NUMBER OF CRITICALLY ILL PATIENTS

A study was conducted by the International Council of Nurses, (2001) on International Nursing Review. The objective was to review nursing staffing in relation to critical care nursing. The results revealed that in order to give quality nursing care to critically ill patients, the nurse-patient ratio has to be 1:1 in an Intensive Care Unit and 1:2 in a high dependency ward. The number of critically ill patients on the ward may influence the care given to critically ill patients. If the ward has less critically ill patients, the nurse may be able to give quality nursing care than when they are more critically ill patients.

2.1.6 CONCLUSION

From the reviewed literature, it has been shown that some researchers found correlation between critical thinking and clinical judgment while others have different views. Some researchers also attributed sub standard nursing care to inadequate knowledge of nurses on critical care nursing. Training in critical care nursing may influence care given to critically ill patients. Few researchers also revealed that the availability of resources such as medical-surgical supplies and protocols influence the care given to critically ill patients. However, the availability of medical-surgical supplies and protocols on critical care nursing do not solely affect the care given to critically ill patients. The knowledge of nurses on how to use the available supplies and protocols also influence the care given to critically ill patients. Therefore the researcher thought it would be necessary to establish the contributing factors to sub standard nursing care given to critically ill patients at Kitwe Central Hospital. The findings will be used to make recommendations to relevant authorities on how to improve nursing care given to critically ill patients at Kitwe Central Hospital.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 INTRODUCTION

Burns and Grove, (2009), define Research Methodology as the process or plan for conducting the specific steps of the study. This is the entire strategy for study, from identification of the problem to final stages of planning for data collection, planning for data presentation as well as planning for findings dissemination. The purpose of the study was to assess the nursing care given to the critically ill patients at Kitwe Central Hospital, on the Copperbelt Province. Therefore, the research methodology aided in determining the knowledge of nurses, availability of protocols and resources and number of critically ill patients regarding the nursing care given to critically ill patients at Kitwe Central Hospital. The methodology covers research design, research setting, study population, sample sampling, data collection, pilot study and plans for data analysis, data presentation and disseminations of findings.

3.2 RESEARCH DESIGN

The research design is an overall plan for addressing a research question, including specifications for enhancing the study's integrity (Polit and Beck, 2006). It is a blue print for conducting a study that maximizes control over factors that could interfere with the validity. In this study a non- experimental study design was used. A non experimental study involves making observations rather than intervening (Polit and Beck, 2006). The researcher in this study only made observation on the nursing care given to critically ill patient without any interventions. Specifically, a cross section descriptive study design was used. According to Basavanthappa, (2006), cross section studies are the studies which examine data at some point in time; the data are collected on only one occasion with the same subjects rather than on the same subjects at several points in time. Descriptive studies are studies that have as their main objective the accurate portrayal of the characteristics of persons, situation, groups and the frequency with which certain phenomena occur (Polit and Beck, 2006). In the study data was collected systematically only at one point in time concerning the care given to the critically ill patients and

then an analysis was carried out. The study is also descriptive because the researcher only observed, described and documented the aspects of nursing care given to critically ill patients. This design had been chosen because it is less- time consuming and less expensive. It is more manageable for the researcher because large amounts of data can be collected at one point and the results can be more readily available. In addition, the confounding variable of maturation, resulting from elapsed time is not present (Basavanthappa, 2006). Finally, this study is quantitative because data was quantified in numerical values and percentage to enable statistical inferences. Burns and Grove, (2009), define quantitative research as the formal, objective, systematic process to describe and test the relationships and to examine cause-and-effect interaction among variables. In this study, the researcher described the relationship and examined the cause- and-effect interaction among the dependent variable (care given to the critically ill patients) and independent variables such as knowledge of nurses on critical care nursing, availability of protocols on critical care nursing and resources.

3.3 RESEARCH SETTING

Research setting is a 'physical and condition in which the data collection takes place in a study' (Polit and Hungler, 2001). The study was conducted at Kitwe Central Hospital in Kitwe District on the Copperbelt Province. Kitwe district is the largest district on the Copperbelt. It covers the radius of 737square kilometers and has a population of 419,487 and a population density of 596 persons per square kilometer (Central Statistical office (CSO), 2000). Kitwe Central Hospital is a government second level and referral hospital catering for patients from within the Copperbelt, Luapula and North-western provinces. The hospital has eleven (11) wards; seven (7) wards on the low cost wing; male medical ward, female medical ward, male surgical ward, female surgical ward, three pediatric wards, antenatal and post natal ward, labour ward and special care baby unit. There are also four (4) wards on the high cost wing; male ward, female ward, pediatrics ward and labour ward. Kitwe Central Hospital was chosen for a study setting because the nursing care given to critically ill patients is sub standard. The study was conducted on two medical wards and two surgical wards on the low cost wing. The wards had been chosen because most of the critically ill patients on these wards receive sub standard care hence the need to conduct the study.

3.4 STUDY POPULATION

The term population refers to a total category of persons or objects that meets the criteria for the study established by the researcher, any set of persons, objects or measurements having an observable characteristics in common (Basavanthappa, 2006). The study population was all the nurses at Kitwe Central Hospital where the study was conducted.

3.4.1 TARGET POPULATION

The term target population refers to the population that the researcher wishes to study, the population about which the researcher wishes to make a generalization. For example the entire set of cases about which the researcher would like to make generalization (Basavanthappa, 2006). The target population in the study were the nurses in two medical wards (Mkushi and Luapula) and two surgical wards (Zambezi and Kafue). These nurses were selected because they are the ones who give nursing care to the critically ill patients.

3.4.2 ACCESSIBLE POPULATION

Accessible population refers to the aggregate of cases which conform to the designated criteria and which is accessible to the researcher as a pool of subjects for the study that is; that aggregate must meet the inclusion in the study and that is available to the researcher/ investigator (Basavanthappa, 2006). The accessible population in this study were all the nurses on the low cost medical and surgical wards.

3.5 SAMPLE SELECTION

Sampling refers to the process of selecting a portion of a designated population to represent the entire population (Basavanthappa, 2007).

3.5.1 DISTRICT SAMPLING

Kitwe district was selected using convenient type of sampling. Convenience sampling is method where the researcher selects those units of the population which appear convenient to him or to the management of the organization where he is conducting research (Basavanthappa, 2006). Kitwe district was convenient because it was relatively inexpensive and easily accessible.

Convenient sampling became more appropriate and acceptable because it was difficult to define the population of interest to allow any reliable form of random sampling.

3.5.2 HOSPITAL SAMPLING

Kitwe Central Hospital was selected using convenient type of sampling because the nursing care given to critically ill patients is sub standard.

3.5.3 SAMPLING METHOD

The researcher used purposive or judgmental type of non- probability sampling in order to obtain a sample of fifty (50) nurses. Burns and Grove, (2009), state that in purposive sampling, sometimes referred to as judgmental or selecting sampling, the researcher consciously selects certain participants, elements, events or incidents to include in the study. The researcher also selects information- rich cases, or those cases that can teach a great deal about the central focus or purpose of the study. The researcher chooses subjects who are judged to be typical of the population. There is certainly a risk of conscious sample biases, but the necessity of making individual decisions minimized the risk. Basavanthappa, (2006), states that in purposive sampling a researcher must know the characteristics under investigation before choosing the subjects. In this study, the characteristic under investigation was nursing care given to the critically ill patients at Kitwe Central Hospital. Since most critically ill patients are found in the medical and surgical wards on the low cost wing and in order to learn a great deal about the care given to them, the researcher drew the study sample from the nurses working in these wards. These nurses who were also part of the whole study population at the hospital made a good study sample. In order to minimize sample biases, the researcher allowed the subjects to make an informed choice on whether to participate in the study or not. Polit and Beck, (2006), also states that although purposive sampling is unrepresentative of the study population, it is convenient and economical.

Inclusion sampling criteria- Burns and Grove, (2009), define inclusion sampling criteria as those characteristics that a subject or element must possess to be part of the target population. The inclusion sampling criteria for this study were the nurses who had at least worked for at least one (1) month in a low cost medical or surgical ward.

Exclusion sampling criteria- Burns and Grove (2009), define exclusion sampling criteria as those characteristics that can cause a person or element to be excluded from the target population. The exclusion sampling criteria for this study were the non-nursing personnel in low cost medical and surgical ward and the nurses who had worked for less than one month in the selected wards.

3.6 SAMPLE SIZE

Basavanthappa, (2007), defines sample as a small part of the population selected in such a way that the individuals in the sample represent (as nearly as possible) the characteristics of the population and it is typically shown as 'n'. Polit and Beck, (2006), define sample size as the total number of participants participating in the study. The researcher chose the sample size of fifty (50) nurses from the two (2) low cost medical wards (Mkushi and Luapula) and two (2) low cost surgical wards (Zambezi and Kafue). This sample size was selected because of limited time and inadequate resources to conduct the study. It was also the recommended number for researches done for attainment of a Bachelor of Science Degree in Nursing at the University of Zambia. The nurses working in the medical and surgical wards had the desirable characteristics because most of the critically ill patients are found in these wards.

3.7 OPERATIONAL DEFINITION OF TERMS

Operational definition is the description of how variables or concepts will be measured or manipulated in a study (Burns and Grove, 2005).

Nurse – A person who is qualified in the art and science of nursing and is registered by the General Council of Nursing of Zambia and is responsible for taking care of the critically ill patients.

Nursing process – This is the systematic, rational method of planning and providing nursing to the critically ill patient.

Knowledge – Being able to understand the principles of critical care nursing.

Guidelines - These are written statements to follow when giving nursing care to critically ill patients.

Nursing care - The care that nurses give to the critically ill patients.

Quality nursing care - Minimum levels of accepted standards of care to be given to the critically ill patients. Components of quality nursing care include:-

- Observations of vital signs of Temperature, Pulse, Respiration and Blood pressure
- Daily baths
- Two hourly turnings
- Pressure area care
- Three hourly feeds
- Maintenance of the intra venous fluids
- Catheterization and recording of urine output
- Balancing the intake and output charts
- Oral care

Sub standard care – The nursing care given to the critically ill patients is below the accepted standards. For example, patients not bathed, not fed, developing pressure sores and falling from beds is indicative of sub standard nursing care.

Critically ill patient - An individual who is physiologically and emotionally unstable and depends on the nurse on order to carry out the activities of living such as personal cleansing and dressing, eating and drinking, breathing ,maintenance of safe environment etc.

Resources – Human, material (medical and surgical supplies) and time necessary in the delivery of critical nursing care.

Assessment – Systematic collection of data to determine the critically ill patient's health status and identify any actual or potential health problems.

Critical care nursing - The care given to very ill patients. This is when the nurse does all the activities that the patient is unable to do. This care involves the usage of sophisticated equipment such as ambu bags, suction machines, ventilators endotracheal tubes, oxygen cylinders etc. The components of critical care nursing include:-

- Bed baths
- Two hourly turnings
- Three hourly feeds
- Pressure area care
- Oral care
- Balancing intake and output charts
- Observations of TPR and BP
- Scoring and recording of Glasgow Coma Scale

3.8 DATA COLLECTION TOOL

Data collection is a precise, systematic gathering of information relevant to the research purpose or the specific objectives, questions or hypotheses of a study (Burns and Grove, 2005). According to Polit and Hungler, (2001), a data collection tool is a measuring device used in gathering of information needed to address a research problem. In this study, data was collected by self-administered questionnaire (Appendix I) and observation checklist (Appendix II) data collection tools. According to Polit and Beck, (2009), triangulation is the use of multiple methods to collect data and interpret data about a phenomenon, so as to converge on an accurate representation of reality. Triangulation enhances reliability of the data collected. Data was verified through self-report using the checklist.

3.8.1 SELF ADMINISTERED QUESTIONNAIRE

Self-administered questionnaire is the formal instrument that specifies the wording of all questions to be asked of the respondents (Polit and Hungler, 2001). With the use of self-administered questionnaire, all subjects respond to the same questions. The researcher had decided to choose this tool because of the following advantages:-

- It is a relatively simple method of obtaining data. Items can be constructed rather easily by beginning researchers.
- Using open ended question will permit free response and the information provided may be more valid.

- It is a rapid and efficient method of gathering information.
- It is less costly and requires less time and effort to administer.
- It offers the possibility of complete anonymity.
- The absence of an interviewer ensures that there will be no biases reflecting respondent's reaction to the interviewer rather than to the question themselves.
- Data from close-ended items are relatively easy to tabulate.
- The respondent has time to contemplate his or her response to the same questions.
- Measurement is enhanced because all subjects respond to the same questions.
- Analysis and interpretation of data can easily be accomplished.
- All the respondents are literate.

However, despite the numerous advantages, a self administered questionnaire has the disadvantages. The respondent may omit or disregard any item he or she chooses, without giving an explanation. Some items may be misunderstood. The instrument is unable to probe a topic in depth without becoming lengthy. Some items may force the respondents to select responses that are not his or her actual choice (forced- choice items). Data are limited to the voluntarily supplied by the respondents. Not all members of the anticipated sample may comply with the request to participate.

In order to overcome some of the disadvantages, the questionnaires were constructed using simple language which could easily be understood. Respondents may also tend to answer all questions without omitting them when they are easy and straight forward. The respondents were also instructed to answer all questions. The questionnaire was complemented by using a checklist so that it could cover those aspects of the topic not fully covered by the questionnaire. For example, the availability of supplies (medical and surgical) was tallied against the formulated checklist. Through the use of checklist, the researcher was able to evaluate the relationship between the availability of medical-surgical supplies with the quality of nursing care given. In order for the subject to make an informed choice to participate in the study, the benefits will have to outweigh the risks; the researcher explained that participation will remain anonymous and that research results will help management find ways of improving the care to the critically ill

patients. Improved nursing care will bring job satisfaction and also improve patient quality of life.

3.8.2 CHECKLIST

According to Basavanthappa, (2006), a checklist is a tool used for structured observation where phenomena are recorded by putting a tally against a particular behavior, event or characteristics depending upon its presence or absence. When developing a checklist, the researcher had to list all the behaviours related to the variable being measured, so that all relevant behaviours would correctly be identified. The researcher had chosen the tool so that it could supplement the questionnaire in order to observe other relevant behaviours which could have been missed out by the questionnaire. For example, instead of depending entirely on the respondent’s responses to questions on the availability of medical and surgical supplies on the ward, the checklist was formulated so that the researcher could observe and tally against what was available. The researcher had to confirm and tally the availability of surgical and medical supplies used in critical care nursing against the checklist. The type of nursing care given to critically ill patients was also tallied against the checklist. The advantage of this method is that it permits collection of accurate information on behaviours of individuals which cannot be obtained through a questionnaire. The disadvantage of this tool is that observational data is subject to observer bias. There is also Hawthorne effect. Hawthorne effect is a psychological response in which subjects change their behavior simply because they are subjects in a study, not because of the research treatment (Burns and Grove, 2005).

3.9 VALIDITY

According to Basavanthappa, (2007), validity refers to determination of whether a measurement instrument actually measures what is purported to measure. To evaluate the adequacy of the research design, statistical conclusion, internal validity, external validity and construct validity was assessed.

3.9.1 INTERNAL VALIDITY

Burns and Grove, (2009), define internal validity as the extent to which the effects detected in the study are a true reflection of reality rather than the result of extraneous variables. The

researcher must examine the causality by determining whether the independent and dependent variables may have been caused by the third, often unmeasured variable. According to Burns and Grove (2009), internal validity will be held up by controlling the following threats:-

History - History is an event that is not related to the planned study but that occurs during the time of the study. This was controlled by not conducting the study during events such as strikes, or public holidays; these events might influence the respondent's responses thus affecting the study results.

Maturation - Maturation is defined growing older, wiser, stronger, hungrier, more tired, or more experienced during the study. This was controlled by ensuring that data was collected in the morning or at the same time of the day for all subjects before the respondents got tired, hungrier as such unrecognized and unplanned changes may affect the study results.

Mortality – This threat is due to subjects who drop out of the study before completion. It becomes a threat when those who drop out of a study are a different type of persons from those who remain in the study. In this study, there was no mortality of the respondents who failed to complete or return the questionnaire. The mortality would have been reported when analyzing the data; the reasons for dropping out and the characteristics of the drop outs are included in the report.

3.9.2 EXTERNAL VALIDITY

External validity is concerned with the extent to which the study findings can be generalized beyond the sample used in the study (Burns and Grove, 2009). In the study external validity is used to generalize the findings of research to other departments at Kitwe Central Hospital such as pediatrics, gynecological and obstetrics departments. The study findings cannot be generalized to other hospitals because a sample size of fifty (50) was small. The researcher ensured external validity by ensuring that the study target population was not involved in other studies; involvement in other studies may influence the respondent's response thus affecting the study results. For example, involvement in the study on nurse's attitudes towards patients may influence this study because some would have portrayed that the nursing care given was of

quality while in the actual sense it was not. The researcher was also not overzealous especially when collecting data using the checklist in order to avoid giving cues to the respondents.

3.9.3 CONSTRUCT VALIDITY

Construct is a quality that is devised by psychologists in order to explain aspects of human behavior that cannot be directly observed and construct validity can be defined as the extent to which the results of the test are related to the data gained from observations of individual's behavior with regard to the construct in question (Quinn, 2000). Knowledge is an example of a construct in the study. Construct validity was ensured by the researcher developing the tool to measure the relationship between knowledge of nurses on critical care nursing and care given to critically ill patients at Kitwe Central Hospital.

3.10 RELIABILITY

Reliability is the term used to indicate the consistency with which a test measures what it is designed to measure (Quinn, 2000).

3.11 DATA COLLECTION TECHNIQUE

This is a description of how data were collected. Polit and Hungler, (2001) define data collection technique as a procedure of collection of data needed to address research problem. Before distributing the questionnaire to the respondents, the researcher checked it and tested it for validity, reliability and completeness to ensure collection of proper data. In the study, the researcher obtained permission from authority of University Teaching Hospital and Kitwe Central Hospital for pilot study and actual study respectively. The researcher did self introduction and got permission from the respondents. The purpose and instructions of the study were explained to the respondents in simple language for easy understanding. The respondents were assured of confidentiality and anonymity; the researcher explained that the serial numbers were used on the questionnaires instead of their names. The researcher also explained that the results will not identify any individual. This enabled the respondents to participate freely without fear. It also promoted rapport building between the researcher and the participants. The respondents were made to sign the informed consent forms after agreeing to participate in the study. The informed consent form described the details of the study and explained what

participation means. The researcher explained that the consent forms will be put separately in a different envelop from the questionnaires. The researcher distributed the questionnaires to the respondents who were found working on the low cost wards and agreed to participate. The questionnaires were collected within a period of four (4) weeks; some respondents signed the questionnaires on the same day while others had to be followed later. Each respondent was thanked for participating in the study. The entire questionnaires were kept in the brief case for the purpose of confidentiality.

The researcher also used participant observation to observe the selected respondents perform nursing procedures such as bed bath, pressure area care and oral care on critically ill patients. The researcher used critical care nursing scoring system during participant observation.

3.12 PILOT STUDY

According to Burns and Grove, (2009) pilot study is a smaller version of a proposed study conducted to develop or refine the methodology, such as treatment, instrument or data collection process. The questionnaires should be tried out on a sample of people representative of the population to be studied, and the size of the pilot will be influenced by the time available and the size of the sample to be studied in the actual survey, but 10% seems a reasonable number for groups larger than fifty (50). In the study, a pilot study was conducted at University Teaching Hospital in which the researcher chose a total number of five (5) nurses from a low cost medical ward. The characteristics of pilot study sample were similar to that of the final sample size; both samples give care to the critically ill patients. University Teaching Hospital was also convenient to the researcher. The pilot study was conducted after getting permission from Hospital Executive Director, Deputy Medical Officer, the Chief Nursing Officer, the Nursing Officer for the department of medicine and the Sister in-charge of the medical ward. The results of the pilot study were carefully evaluated and any improvements were introduced into the final version.

3.13 ETHICAL AND CULTURAL CONSIDERATIONS

The development and implementation of research should be ethically and culturally accepted. Ethics refers to the moral component of nursing knowledge that influences difficult decisions that must be made in the context of increasingly complex health services (Basavanthappa, 2006).

Ethical rights of participants such as right to privacy, voluntary participation, anonymity and confidentiality were respected during the study). Before conducting the pilot study and the actual study, permission and clearance were obtained from the Department of Nursing Sciences, University Teaching Hospital, Kitwe Central Hospital managements and nurses respectively. The following are the ethical principles:-

The respect for person's (Autonomy-self determination)-According to Burns and Grove, (2009), the right to self-determination is based on the principle of respect for persons. This principle holds that because humans are capable of self- determination, or controlling their destiny, they should be treated as autonomous agents who have the freedom to conduct their lives as they choose without external controls. The researcher upheld this principle by treating the subjects as autonomous agents; by informing them about a proposed study and allowing them to choose to participate or not.

Beneficence and Non-maleficence- According to Burns and Grove, (2009), the right to protection from harm and discomfort is based on the principle of beneficence, which holds that one should do good and above all, do no harm. According to this principle, members of the society should take an active role in preventing discomfort and harm and promoting good in the world around them. In order to uphold this principle, the researcher protected the subjects from harm and discomfort and tried to bring about the greatest possible balance of benefits in comparison with harm. In order to ensure no harm to the participants, the researcher observed the behavior of the participants and participated in caring for the critically ill patients (Participant as observer). According to Burns and Grove, (2005), participant as observer is the type of participant observation in which the participants are aware of the dual roles of the researcher. The researcher also ensured that the participants were protected from harm by using the consent form. The participants were given a written consent form which explained the purpose of the study, which was to determine the nursing care given to critically ill patients, the time involved, the benefits of the study and how the research was confidential. The participants were also told that their actions would be observed and recorded and that they were free to participate or not.

Justice –According to Burns and Grove, (2009), the principle of justice holds that human subjects should be treated fairly. Virtually all research involving humans constitutes some type

of an intrusion into someone's personal life. The researcher guaranteed of anonymity by not linking a subject with the information gathered. For example, the questionnaires were distributed and collected without any names or any other identifying information. Confidentiality was guaranteed by promising that any information that the study participant divulged was not publicly reported. It is the researcher's responsibility to ensure that any such pledges of confidentiality be strictly honored and that the subjects should be fully aware that their privacy will be maintained. Before conducting a study, the researcher obtained the informed consent from research participants after explaining how they were selected, the purpose of the study, nature of the study and how the findings will be utilized.

CHAPTER FOUR

4.0 DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 INTRODUCTION

This chapter describes the data analysis done on responses from 50 respondents. Data were collected from respondents using self administered questionnaires with 21 question items and from observations. The main aim of the study was to assess the nursing care given to critically ill patients at Kitwe Central Hospital. The main study was conducted on the low cost medical and surgical wards from 20th October to 19th November, 2010.

4.2 DATA ANALYSIS

Data analysis is the systematic organization, synthesis of research data, and the testing of hypothesis using that data (Basavanthappa, 2009). The aim of data analysis is to reduce, organize and give meaning to data. Both qualitative and quantitative data were collected and analyzed.

4.2.1 Quantitative data

According to Polit and Beck, (2005), quantitative data is information collected in the course of study that is in a quantified or numeric form. Quantitative data were collected from closed ended questions in the self administered questionnaires. Following data collection, the self administered questionnaires were sorted out, edited and checked for accuracy, completeness, uniformity and internal consistence. The data was coded before entering on the data master sheet. The percentages and mean were worked out for categorical variables.

4.2.2 Qualitative data

According to Polit and Beck, (2005), qualitative data is information collected in the course of the study that is in narrative or non-narrative form. Qualitative data were obtained from seven (7) open ended questions. The data was coded and categorized before entering on the data master sheet.

4.3 PRESENTATION OF FINDINGS

The findings of the study have been presented in frequency tables in order to summarize the occurrences of events under study. Visualizing the data also increases insight regarding the nature of data. Cross tabulations have also been used to show clearly the relationship between the variables and enable the researcher draw the important inferences (Wood and Haber, 2006). Pie charts have also been included to provide a variety of ways in which to present data which helps to avoid the monotony of narrative presentations.

4.3.1 DEMOGRAPHIC DATA

Four (4) questions solicited demographic data which included sex, age, profession and years in service. Demographic data is presented into one (1) table.

TABLE 4.1: The demographic characteristics of the respondents which include sex, profession and their years in service, n=50

VARIABLE	FREQUENCY	PERCENTAGE %
Sex		
Male	2	4
Female	48	96
TOTAL	50	100
Age		
23-29 years	29	58
30-36 years	12	24
37-43 years	6	12
44-51 years	3	6
TOTAL	50	100
Profession		
Registered Nurse	24	48
Enrolled Nurse	26	52
TOTAL	50	100
Years in service		
0-5 years	22	44
6-10 years	11	22
11-15 years	7	14
16-20 years	2	4
Above 20 years	8	16
TOTAL	50	100

Almost all, 48 (96%) of respondents were females, slightly more than half, 29 (58%) of the respondents aged ranging from 23-29 years. About half, 26 (52%) of the respondents were enrolled nurses. Two fifths, 22 (44%) of the respondents had been in service for less than 5 years.

4.3.2 KNOWLEDGE OF NURSES ON CRITICAL CARE NURSING

This section sought to determine the knowledge of nurses on critical care nursing. There were four (4) questions which solicited for knowledge; this section has three (3) frequency tables and one (1) pie chart.

TABLE 4.2: Responses on what critical care nursing is, n = 50

CRITICAL CARE NURSING IS	FREQUENCY	PERCENTAGE
Care given to critically ill patients	46	92
Care given to bed ridden patients	4	8
TOTAL	50	100

Almost all, 46 (92%) of the respondents cited that critical care nursing is the care given to critically ill patients.

TABLE 4.3: Types of patients who are critically ill, n= 50

Patients who are critically ill, e.g. severe head injury, severe burns, Diabetic Keto Acidosis, cerebral malaria, meningitis and renal failure	FREQUENCY	PERCENTAGE
Patients with any of the three (3) surgical or medical conditions.	26	52
Unconscious patients	19	38
Patients who are unable to do activities of daily living on their own.	5	10
TOTAL	50	100

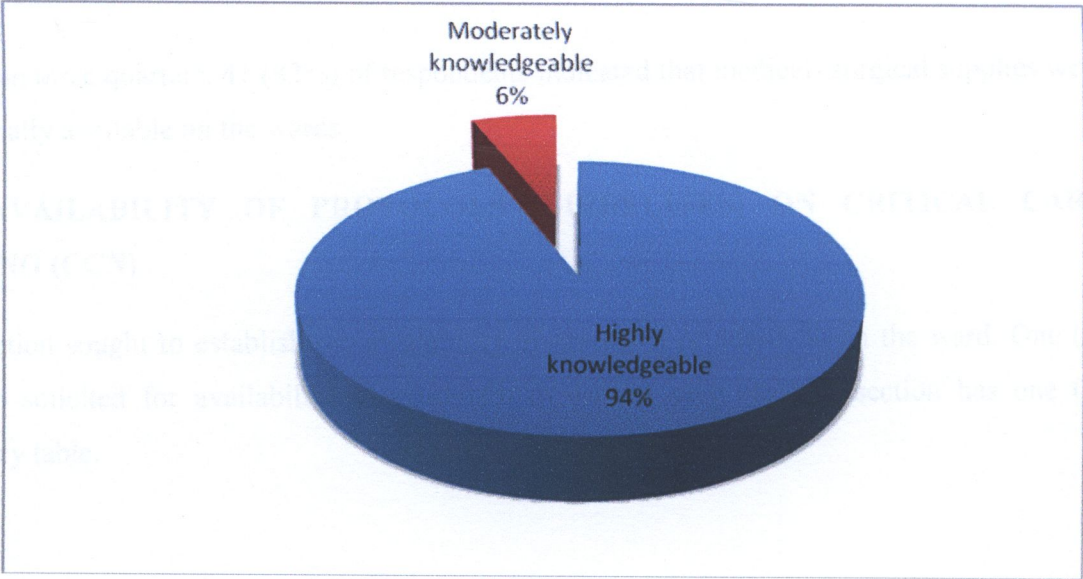
About half, 26 (52%) of the respondents cited at least three types of patient’s conditions categorized as critically ill.

TABLE 4.4: Type of procedures done on critically ill patients, n=50

Procedures done on critically ill patients, e.g. bed baths, pressure area care, two hourly turnings, oral toilet, three hourly feeds and observations of vital signs.	FREQUENCY	PERCENTAGE
At least three (3) procedures	47	94
One correct procedure	2	4
No correct procedure	1	2
TOTAL	50	100

The majority, 47 (94%) of the respondents cited at least three of the procedures done on critically ill patients.

FIGURE 4.1: Level of knowledge on critical care nursing, n=50



Almost all, 47 (94%) of the respondents were highly knowledgeable.

4.3.3 AVAILABILITY OF MEDICAL-SURGICAL SUPPLIES

This section sought to establish the availability of medical-surgical supplies on the ward.

One (1) question solicited for availability of medical-surgical supplies, this section has one (1) frequency table.

TABLE 4.5: Responses on the availability of medical-surgical supplies on the ward, n = 50

Availability of medical-surgical supplies in the ward	FREQUENCY	PERCENTAGE
Always available (Every time)	8	16
Occasionally available (Sometimes)	41	82
Not available (Not found)	1	2
TOTAL	50	100

More than three quarters, 41 (82%) of respondents indicated that medical- surgical supplies were occasionally available on the wards.

4.3.4 AVAILABILITY OF PROTOCOLS (GUIDELINES) ON CRITICAL CARE NURSING (CCN)

This section sought to establish the availability of protocols (guidelines) on the ward. One (1) question solicited for availability of protocols on critical care nursing, section has one (1) frequency table.

TABLE 4.6: Responses on the availability of protocols (Guidelines) on CCN on the ward, n = 50

Availability of protocols (guidelines) on CCN on the ward	FREQUENCY	PERCENTAGE
Available (Found)	35	70
Not available (Not found)	15	30
TOTAL	50	100

Less than three quarters, 35 (70%) of the respondents indicated that protocols were available on the wards.

4.3.5 AVERAGE NUMBER OF CRITICALLY ILL PATIENTS IN ACUTE BAY

One (1) question solicited for number of critically ill patients in acute bay, this section has one (1) frequency table.

TABLE 4.7: Average number of critically ill patients found in acute bay, n= 50

Number of critically ill patients usually found in acute bay	FREQUENCY	PERCENTAGE
Between 7-10 (High)	22	44
Between 4-6 (Average)	21	42
Below 3 (Low)	7	14
TOTAL	50	100

About two fifths, 22 (44%) of the respondents indicated that patients in acute bay ranged between 7 and 10.

4.3.6 CRITICAL CARE NURSING BASED ON OBSERVATIONS

This section sought to establish the type of nursing care given to critically ill patients. A critical care nursing scoring system with nineteen nursing actions solicited for critical care nursing, this section has four frequency tables and one (1) pie chart.

TABLE 4.8: Advanced nursing procedures

NURSING PROCEDURE	FREQUENCY	PERCENTAGE
Fluid Balancing	20	40%
Recording output	6	12%
Blood sugar testing	5	10%
Three hourly feeding	2	4%
Secretion suction	10	71%
Oxygen administration	29	97%
Wound dressing	18	95%

Out of 50 participants, less than a third, 20 (40%) balanced the fluid charts, less than a quarter, 6 (12%) recorded the output, 5 (10%) tested the blood sugar. Out of 14 participants who were taking care of critically ill patients, slightly less than three quarters, 10 (71%) did suctioning. Out of 30 participants who were taking care of critically ill patients, almost all, 29 (97%) administered oxygen. Out of 19 participants who were taking care of critically ill patients, almost all, 18 (95%) performed wound dressing.

TABLE 4.9: Vital signs observation, n=50

NURSING PROCEDURE	FREQUENCY	PERCENTAGE
Temperature taking	49	98%
Pulse checking	43	86%
Respiration checking	44	88%
Blood pressure checking	45	90%

Almost all, 49 (98%) of the participants checked and recorded temperature, more than three quarters, 43 (84%) of the participants checked and recorded the pulse , more than three quarters, 44 (88%) of the participants checked and recorded respirations and the majority, 45 (90%) checked and recorded blood pressure.

TABLE 4.10: Meeting psychological and spiritual needs of the patient, n=50

NURSING PROCEDURE	FREQUENCY	PERCENTAGE
Reassuring the patient	26	52%
Explaining procedures	32	64%
Allowing visitors	50	100%

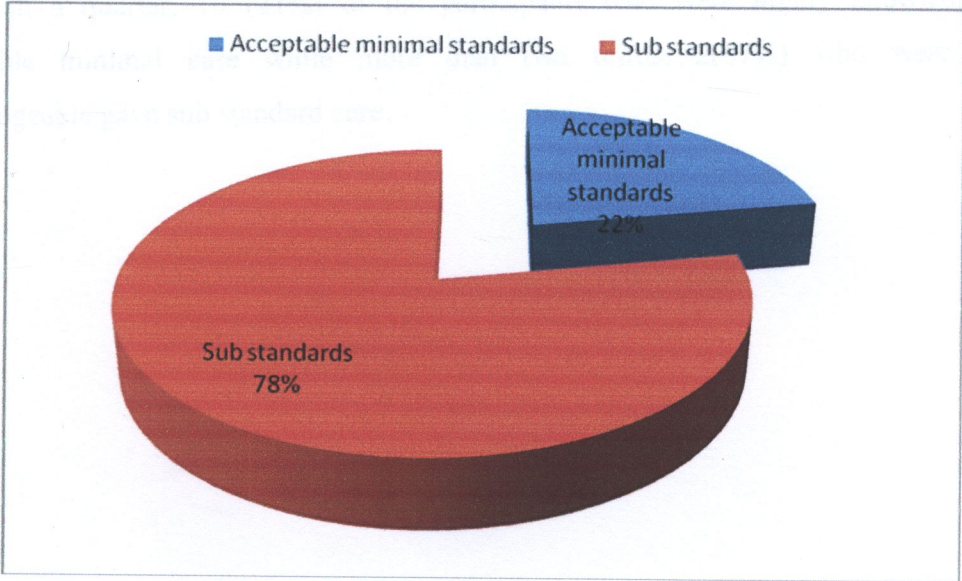
Out of 50 participants, about half, 26 (52%) reassured the patients and relatives, almost two thirds, 32 (64%) explained procedures and all 50 (100%) allowed visitors to be by bedside.

TABLE 4.11: Total nursing care scored, n=50

Nineteen (19) Nursing procedures (bed bath, oral care, pressure area care, turnings, feeding, vital sign observations, wound dressing etc)	FREQUENCY	PERCENTAGE
Acceptable minimal care (above 50%)	11	22%
Sub standard care (below 50%)	39	78%
TOTAL	50	100%

Slightly above three quarters, 39 (78%) of the respondents gave sub standard care to the patients.

FIGURE 4.2: Critical care nursing based on observations, n=50



About three quarters, 39 (78%) of the respondents gave sub standard care to the critically ill patients.

4.3.7 CROSS TABULATIONS: RELATIONSHIP BETWEEN VARIABLES

TABLE 4.12: Knowledge in relation to care given to critically ill patients, n=50

CARE GIVEN TO CRITICALLY ILL PATIENTS	KNOWLEDGE		TOTAL
	Highly knowledgeable	Moderately knowledgeable	
Acceptable minimal standards	10(21%)	1(33%)	11 (22%)
Sub standard care	37(79%)	2(67%)	39 (78%)
TOTAL	47(100%)	3(100%)	50 (100%)

Less than a quarter, 10 (21%) of the participants who were highly knowledgeable gave acceptable minimal care while more than two thirds, 2(67%) who were moderately knowledgeable gave sub standard care.

TABLE 4.13: Availability of medical- surgical supplies in relation to care given to critically ill patients based on the questionnaire, n=50

CARE GIVEN TO CRITICALLY ILL PATIENTS	AVAILABILITY OF MEDICAL-SURGICAL SUPPLIES			TOTAL
	Always available	Occasionally available	Not available	
Acceptable minimal standards	1 (11%)	10 (25%)	0 (0%)	11 (22%)
Sub standard care	8 (89%)	30 (75%)	1 (100%)	39 (78%)
TOTAL	9 (100%)	40 (100%)	1 (100%)	50 (100%)

Less than a quarter, 1 (11%) of the respondents who indicated that medical-surgical supplies were always available gave acceptable minimal care while three quarters, 30 (75%) of the respondents who indicated that medical-surgical supplies were occasionally available gave sub standard care.

TABLE 4.14: Availability of medical-surgical supplies in relation to department based on observations, n=26 items

MEDICAL-SURGICAL SUPPLIES	DEPARTMENT		TOTAL
	Medical	Surgical	
Available	19 (73%)	23 (88%)	42 (81%)
Not available	7 (27%)	3 (12%)	10 (19%)
TOTAL	26 (100%)	26 (100%)	52 (100%)

Most, 23(88%) of the medical- surgical supplies required for nursing critically ill patients were available in the surgical department while slightly less than three quarters, 19 (73%) of the medical-surgical supplies were available in medical department

TABLE 4.15: Care given to critically ill patients in relation to departments based on observations, n=50

CARE GIVEN TO CRITICALLY ILL PATIENTS	DEPARTMENTS		TOTAL
	Surgical department	Medical department	
Acceptable minimal standards	7 (64%)	4 (36%)	11(100%)
Sub standard care	18 (46%)	21 (54%)	39(100%)
TOTAL	25 (50%)	25 (50%)	50 (100%)

Almost two thirds, 7(64%) of the participants who gave acceptable minimal care were from the surgical department compared to about a third, 4 (36%) of the participants from medical departments

TABLE 4.16: Availability of protocols in relation to care given to critically ill patients
based on observations, n=50

CARE GIVEN TO CRITICALLY ILL PATIENTS	AVAILABILITY OF PROTOCOLS		TOTAL
	Available	Not available	
Acceptable minimal standards	11(22%)	0 (0%)	11 (22%)
Sub standard care	39 (78%)	0 (0%)	39 (78%)
TOTAL	50 (100%)	0 (0%)	50 (100%)

Less than a quarter, 11 (22%) of the participants gave acceptable minimal care with the availability of protocols while more than three quarters, 39 (78%) of the participants gave sub standard care with the availability of protocols.

TABLE 4.17: Number of critically ill patients in relation to care given to critically ill patients based on the questionnaire, n=50

CARE GIVEN TO CRITICALLY ILL PATIENTS	NUMBER OF CRITICALLY ILL PATIENTS			TOTAL
	Between 7-10 patients	Between 4-6 patients	Below 3 patients	
Acceptable minimal standards	6 (27%)	5 (24%)	0 (0%)	11 (22%)
Sub standard care	16 (73%)	16 (76%)	7 (100%)	39 (78%)
TOTAL	22(100%)	21(100%)	7(100%)	50 (100)

Slightly less than three quarters, 16 (73%) of the respondents who indicated that critically ill patients ranged from 7-10 gave sub standard care while all, 7 (100%) respondents who indicated that the critically ill patients were below three (3) gave sub-standard care.

CHAPTER FIVE

5.0 DISCUSSION OF FINDINGS AND IMPLICATIONS FOR THE HEALTH CARE SYSTEM

5.1 CHARACTERISTICS OF THE SAMPLE

5.1.1 Demographic characteristics of the respondents

The study sample consisted of fifty (50) respondents. The socio-demographic characteristics of the study population are shown in table 4.1. The demographic characteristics of the respondents which were relevant to this study were sex, age, profession and number of years in service.

Almost all 48 (96%) respondents were females. Female nurses outnumbered the male counterparts. The explanation of this finding could be that nursing is predominantly a profession for females. The study findings are similar to those by Coleman and Roth, (2008), in the study on Nursing Implication for Gender Diversity, which revealed that although, historically men worked as nurses dating back to the monastic movement, today few male nurses are aware of the significant contributions men provided to the profession of nursing. Unfortunately, this leaves men with inaccurate perceptions about their role in the development of the profession. The inherent assumption underpinning nursing was that it was 'natural' for nursing to be performed by females and this view dominates subsequent ethos of the occupation.

Another study, entitled "Nurse Education Today", (Scott, 2004), revealed that although the number of males who choose nursing as a career is increasing, there is evidence to suggest that attrition rates are significantly high. Nurse educators have the tendency to isolate male nursing students both in educational and clinical setting. This could probably be the reason why male nurses are leaving.

The study showed that the age range of the respondents was between 23 years and 51 years. The mean age was 30 years old while the standard deviation was 7.275. The study showed that slightly more than half, 29 (58%), of the respondents aged ranging from 23-29 years. This is

probably because in Zambia, pupils complete secondary school at the average age of 19 years. These study findings are similar to those by Lloyd, (2000), in a study conducted in Zambia on Population Development Review which revealed that the school entry age is 7 years old. This means pupils finish secondary school at the age of 19 years, enter nursing schools at the age of 20 years and graduate as nurses at the age of 23 years old.

The number of the enrolled nurses, 26 (52%) and that of the registered nurses, 24 (48%) were almost equal. The rationale could be that there are almost the same numbers of enrolled and registered nursing schools in the country. The government of Zambia has upgraded a number of enrolled nursing schools to registered nursing schools. These study findings are contrary to those by State Health Publication, (2006), conducted in New South Wales on the Profile of Nursing revealed that they were 83.3% registered nurses and 16.7% enrolled nurses as the survey respondents. This could be attributed to the fact that most European nations have stopped training enrolled nurses. Another similar study conducted by Elliott, (2005), on Intensive Care Nursing Staff revealed that although the ideal is 1 registered nurse to 1 patient a rich skill mix reduces the occurrence of adverse effects. The research suggested that the use of nurses other than registered is a solution to the current shortage of critical care nurses.

Two fifths 22 (44%) of the respondents had been in service for less than 5 years compared to less than a quarter, 8 (16%) who had been in service for more than 20 years. This is probably because government hospitals attract less experienced nurses as the experienced nurses leave for greener pastures. These study findings are similar to those by Mangiza, (2001), in the study conducted in Zimbabwe on Surviving on the move: Migration, Poverty and Development in Southern Africa which revealed that migration of skilled professionals from the developing to industrialized countries (the so called the 'brain- drain') is one of the major sources shaping the landscape of 21st century. In Zimbabwe, all nurses trained from 1997 were bonded by government for three years; however it is common practice that the nurses may serve the duration of bonding period after which they are free to make their own decision regarding where they want to work. Nurses migrate at the end of their bonding period thus serving less than five years. Africa is faced with this large and growing problem.

5.2 KNOWLEDGE OF NURSES ON CRITICAL CARE NURSING

Knowledge is theoretical or practical understanding from the sum of what is known. It is a noun used to denote an understanding of or information about a subject which has been obtained by experience or study (Mayer, 2006). This variable helped to explore the level of knowledge or information that the respondents had on critical care nursing.

To determine the level of knowledge, the nurses were asked what critical care nursing is, the types of patients who are critically ill and the types of procedures done on critically ill patients.

This study revealed that almost all, 46 (92%) of the respondents cited that critical care nursing is the care given to critically ill patients (table 4.2). This could be attributed to the fact that critical care nursing is being taught in schools of nursing (GNC, 2005). These study results are not similar to those by Lankford, (2006), in the study on Influence of Role Models and Hospital Design on Hand Hygiene of Health Care Workers which revealed that only those nurses having Cardiac Care Certification may work in an Intensive Care Unit. Those nurses who have been trained in critical care nursing and have knowledge on critical care nursing can work in Intensive Care Unit.

The study further revealed that about half, 26 (52%) of the respondents cited at least three types of patient's conditions categorized as critically ill (table 4.3). The reason for this could be that these nurses are frequently exposed to these types of patients. These study results are in line with Burns and Shirley, (2008) in the study on Critical care nurse's knowledge on Pulmonary artery catheters. The objective of the study was to evaluate Critical Care Nurse's Knowledge on Pulmonary Artery Catheters. The study revealed that critical care nurse's knowledge on pulmonary artery catheter is related directly to the frequency of their exposure to it, critical care nursing experience, attendance and pulmonary artery catheter class and critical care.

The study also revealed that the majority, 47 (94%) of the respondents cited at least three of the procedures done on critically ill patients (table 4.4). This could be attributed to that critical care nursing is being taught in schools of nursing (GNC 2005).

The total score under knowledge was nine (9) points. The level of knowledge ranged from 6-9 points while the mean level of knowledge was 8.12 points. The standard deviation was 0. 918.

The level of knowledge was categorized into three categories namely highly knowledgeable, moderately knowledgeable and low knowledge. The study further revealed that almost all, 47 (94%) all respondents were highly knowledgeable (figure 1). This could mean that critical care nursing is being taught in schools of nursing (GNC, 2005). In this study, the results through observations revealed that less than a quarter, 10 (21%) of the participants who were highly knowledgeable gave acceptable minimal care while more than two thirds, 26(67%) who were moderately knowledgeable gave sub standard care (table 4.12).

The explanation to this finding could be that the nurses were overwhelmed with work. It was observed that the nurses were always doing part time nursing which made them so tired to deliver quality nursing to critically ill patients. These study results are similar to those by the International Council Nurses, (2001), on International Nursing Review which revealed that almost every country identified inadequate staffing levels as being most influential for critical care nursing.

In this study the results have indicated that knowledge of nurses on critical care nursing did not correspond with the care given to critically ill patients. The researcher rejects the hypothesis which states that the nurses do not give quality nursing care to critically ill patients due to inadequate knowledge. The researcher concludes that the majority of nurses with adequate knowledge in critical care nursing give sub standard care to the critically ill patients.

5.3 AVAILABILITY OF MEDICAL-SURGICAL SUPPLIES

About three quarters, 41 (82%) of the respondents indicated that medical- surgical supplies were occasionally available on the wards (table 4.5). This finding could be due to the fact the medical-surgical supplies are not always available on the wards. The researcher observed that some of the supplies such as naso gastric tubes and urinary catheters were not enough for all critically ill patients.

Only 1 (11%) of the respondents who indicated that medical-surgical supplies were always available gave acceptable minimal care while three quarters, 30 (75%) of the respondents who indicated that medical-surgical supplies were occasionally available gave sub standard care (table 4.13). This may be due to the fact that the nurses had inadequate knowledge on the use of

the available medical-surgical supplies. This can apply especially to newly qualified nurses who may lack some skills. The other reason could be that the nurses had no role models. Nurses may get motivated and emulate the higher ranking nurses in the delivery of quality care. These study results are similar to those by Lankford, (2006), in the study on Influence of Role Models and Hospital Design on Hand Hygiene of Health Care Workers which revealed that despite the increase in number of sinks in the hospital, hand washing compliance decreased substantially. The study revealed that access to the supplies is an important determinant of carrying out a nursing procedure but not the solely requirement needed. Knowledge of nurses on the use of the available resources may influence the use of the available resources. In the same study, Lankford, (2004), revealed that health care workers were significantly less likely to carry out a nursing procedure if they were with a higher ranking person who did not perform the procedure. Senior nurses can act as role model to nurses.

Based on observation, most, 23 (88%) of the required medical- surgical supplies were available in the surgical department while slightly less than three quarters, 19 (73%) were available in medical department (table 4.14). On observation, medical wards had more critically ill patients than surgical wards hence the supplies tend to finish faster in medical wards. Almost two thirds, 7(64%) of the participants who gave acceptable minimal care were from the surgical department compared to about a third, 4 (36%) of the participants in medical departments. The explanation to this finding could be that there were more medical-surgical supplies and fewer critically ill patients in the surgical department. These results are similar to the study conducted by Buckail, (2003), on Environment Influence on Nurse's real Decision in the Critical Care Setting which revealed that the three main environmental influences were the patient situation, resource availability and interpersonal relationship.

In this study, the results have indicated that there is a relationship amongst availability of required medical-surgical supplies, numbers of critically ill patients and nursing care given to critically ill patients. The researcher therefore failed to reject the hypothesis which states that inadequate medical-surgical supplies may contribute to sub standard nursing care on the critically ill patients. The researcher also failed to reject the hypothesis that states that the increased numbers of critically ill patients on the ward may contribute to sub standard nursing

care. The researcher concludes that the nurses gave acceptable minimal nursing care when the medical-surgical supplies were available and also when they were few numbers of critically ill patients on the ward.

5.4 AVAILABILITY OF PROTOCOLS ON CRITICAL CARE NURSING

Less than three quarters, 35 (70%) of the respondents indicated that protocols were available on the wards (table 4.6). However, the researcher observed that all the four low cost medical and surgical wards had appropriate protocols. Based on observations, this study revealed that less than a quarter, 11 (22%) of the participants gave acceptable minimal care with the availability of protocols while more than three quarters, 39 (78%) of the participants gave sub standard care with the availability of protocols (table 4.17). The findings could be attributed to the fact that the nurses were not referring to the available protocols in their nursing care. This could be that they were not oriented on the importance of protocols. These results are in line with those by Goldberg, (2005), in a study on Implementation of a Safe and Effective Insulin Infusion Protocol which revealed that the use of the protocol was unsuccessful because the nurses were uncomfortable with the use of the protocol. The protocol was unacceptable by the users.

These study results are contrary to those by Krinsley, (2004), in a study on Effect of an intensive glucose management protocols on the mortality of critically ill adult patients which revealed that the use of intensive glucose management protocol resulted in significantly improved glycemic control and was associated with decreased mortality, organ dysfunction and length of stay in the Intensive Care Unit.

These study results are also contrary to those by Allan, (2010), in a study on Effect of a nursing-implemented sedation protocol on the duration of mechanical ventilation which revealed that the use of protocol directed sedation can reduce the duration of mechanical ventilation, Intensive Care Unit and hospital length stay and the need for tracheostomy among critically ill patients with Acute Respiratory Failure.

Based on the questionnaire, the study revealed that less than three quarters, 35 (70%) of the respondents indicated that protocols were available on the wards even when all the wards had the

protocols (table 4.6). This signifies that some nurses did not even know that protocols were available on the wards.

In this study, the results have indicated that there is no relationship between availability of protocols on critical care nursing and nursing care given to critically ill patients. The researcher therefore rejects the hypothesis which states that non availability of protocols on critical care nursing may contribute to sub standard nursing care on the critically ill patients. The researcher concludes that the nurses gave sub standard nursing care even when the protocols are available because they did not refer to the available protocols.

5.5 AVERAGE NUMBER OF CRITICALLY ILL PATIENTS

About two fifths of the 50 respondents, 22 (44%) indicated that patients in acute bay ranged between 7 and 10 (table 4.7). Almost three quarters, 16 (73%) of the respondents who indicated that critically ill patients ranged from 7-10 gave sub standard care while all, 7(100%) respondents who indicated that the critically ill patients were below three (3) gave sub-standard care (table 4.17). The result could probably mean that the nurses generally gave substandard care regardless of the number of critically ill patients. The results are contrary to a study conducted by the International Council of Nurses, (2001) on International Nursing Review, which revealed that in order to give quality nursing care to critically ill patients, the nurse-patient ratio has to be 1:1 in an Intensive Care Unit and 1:2 in a high dependency ward.

5.6 IMPLICATIONS TO THE HEALTH CARE SYSTEM

5.6.1 Nursing Practice

The study revealed that 78% of the respondents gave sub standard care to the critically ill patients (figure 2). Sub standard nursing care was due to inadequate medical-surgical supplies and non utilization of protocols. Therefore, there is need to increase the availability of medical-surgical supplies. There is also need to sensitize nurses on the utilization of available protocols on critical nursing care and to improve the staffing levels in order to meet the demand.

5.6.2 Nursing Education

The study findings show that 94% of the respondents were highly knowledgeable on critical care nursing (figure 1). This means that General Nursing Council curricular on nursing is inclusive of Critical care nursing (GNC 2005). If nursing care to critically ill patients is to be of quality, training of nurses on critical care nursing has to continue, starting from training institutions. However, there is need for nurse educators to emphasize more on practical aspects because 79% of the participants who were highly knowledgeable gave sub standard care (table 4.12).

5.6.3 Nursing Administration

The study has revealed that 22% of the participants gave acceptable minimal care with the availability of protocols compared to 78% of those who gave sub standard care (table 4.16). The study has also revealed that only 70% knew that protocols were available even when all the wards had protocols (table 4.6). These are indicators that there is need for in-service training on the effective use of protocols in critical care nursing. There is also need to sensitize the nurses to know the type of protocols available on the wards.

5.6.4 Nursing Research

The study revealed that 79% of the participants who were highly knowledgeable gave substandard care (table 4.12). The study also revealed that 78% of the participants gave substandard care with the availability of protocols (table 4.16). These are indicators that nurse researchers need to investigate more on other factors such as nurse's attitude that may influence care given to critically ill patients.

5.7 RECOMMENDATIONS

The following are recommendations after taking the research:

To Ministry of Health

- The Ministry of Health should support the health institutions in delivering quality health care through funding of workshops on critical care nursing and supply of medical-surgical supplies for use on critically ill patients.

- The Ministry of Health should fund schools of nursing to train more nurses so that health facilities can have enough nurses.
- Ministry of Health should create an environment that facilitates conducting researches on critical care nursing.
- Ministry of Health should open a school specializing in critical care nursing.

To Kitwe Central Hospital Management

- Kitwe Central Hospital Management should promote critical care nursing by providing medical-surgical supplies like glucometers, suction machines to be used on critically ill patients.
- Kitwe central Hospital Management should employ more nurses so that critically ill patients receive minimal acceptable care without nurses being fatigued.
- Kitwe Central Hospital Management should have an in service department so that in house training on critical care nursing and on other areas of need can be done.

5.8 DISSEMINATION OF FINDINGS

A research study is not useful unless the results are communicated to others who may use them (Chitty, 2005). Wide dissemination of research results ensure that important issues on critical care nursing can be understood and be useful to others. Also, letting people know what has happened to the research is often helpful in obtaining resources for further research.

The Department of Nursing Sciences at the University of Zambia (UNZA), the researcher's sponsors, Ministry of Health (MoH) and Kitwe Central Hospital, the University of Zambia, School of Medicine, library will be availed with the research findings as they are all interested in finding ways of giving care to critically ill patients. The researcher intends to make copies of study findings and give the above mentioned organizations and departments a copy each. The Executive summaries will be given to the General Nursing Council of Nursing (GNC), Zambia Union for Nurses Organization (ZUNO). Other ways in which the researcher will disseminate important information about nursing care of critically ill patients include presentations at in-service training sessions for nurses at Kitwe Central hospital.

5.9 LIMITATION OF THE STUDY

The following are the limitations of this study:-

- The sample comprised of nurses from one hospital on the Copperbelt province hence results might not be generalized to other hospitals in the country. It should have been a comparative study with those nurses working in other hospitals in order to have a good picture of factors influencing care given to critically ill patients.
- The use of self administered questionnaire made it difficult for the respondents to clarify some issues; some answers were vague, for example ‘yes’ or ‘no’ answers were problematic because respondents could put ‘no’ if the choice only once was not available. This was overcome by participatory observation where the researcher got more data. The researcher also used the checklist to see exactly what was obtaining on the ground.

5.10 CONCLUSION

The study was conducted to assess the care given to critically ill patients at Kitwe Central Hospital. After the proposal was done, the researcher sampled the district and the hospital was conveniently selected. The researcher went ahead and sought permission from the Medical Superintendent of Kitwe Central Hospital. When the permission was granted, 50 respondents were purposefully selected. A written consent was obtained from each respondent before observing them administering a self administered questionnaire. Data was collected from two low cost medical wards and two low cost surgical wards. The data was later checked for completeness and accuracy. After that, data was entered manually on the data master sheet. Data was presented using frequency tables and figures for easy analysis. Cross tabulations were also used to show relationship between variables. Calculations were done using a calculator. Finally findings were discussed.

The study revealed that non availability of required medical-surgical supplies influenced the nursing care. This was the case in medical wards where nurses gave substandard care due to non availability of all necessary medical-surgical supplies; 88% of the medical-surgical supplies were available in surgical department while 73% were available in medical department. The other factor which influenced the nursing care was non utilization of the available protocols on critical

care. Only 70% of the participants knew that the protocols were available even when all the wards had all the necessary protocols. The number of critically ill patients also influenced the nursing care. It was observed that nurses in medical wards gave substandard care because there were so many patients; 54% of the participants who gave substandard care were from medical departments while 46% were from surgical departments.

REFERENCES

- Alexander, M. F., Fawcett, J. N. & Runciman, P. J. (2004). **Nursing Practice, Hospital and Home**. 2nd Edition. Eslevier, Philadelphia, USA.
- Basavanthappa, B. T. (2006). **Nursing Research**. 1st Edition. Japee, New Delhi
- Basavanthappa, B. T. (2009). **Nursing Research**. 2nd Edition. Japee, New Delhi.
- Bright, B. **Management and Practice in Emergency Nursing**. 1st Edition. St Edmundsbury Press, Sufflk, Great Britain.
- Buckail, T. (2003). **Journal of Advanced Nursing: The Clinical Landscape of Critical Care: Nurse's Decision Making**. [online] available at <<http://www.jstor.org/stable>>. [accessed on 10-10-2010].
- Burns, D., Burns, D. & Shirley, M. (2008). **American journal of critical care: Critical Care Nurse's Knowledge of Pulmonary Artery Catheters**. [online] available at <<http://www.ajccaacn>>. [accessed on 06-10-2010].
- Burns, N. & Grove, S. K. (2005). **The Practice of Nursing Research Conduct, Critique and Utilization**. 5th Edition. Elsevier, Saunders, Philadelphia.
- Burns, N. & Grove, S. K. (2009). **The Practice of Nursing Research Appraisal, Synthesis and Generation of Evidence**. 6th Edition. Elsevier, Saunders, Philadelphia.
- Chitty, K. K. (2005). **Professional Nursing, Concepts and Challenges**. 4th Edition. Elsevier Saunders, Philadelphia.
- Coleman, C. L. & Jay, E. R. (2008). **Nursing Implication for Gender Diversity**. [online] available at< <http://www.britannica.com/bpt>>. [accessed on 13-01-11].
- Dossey, B. M., Guzzetta, C. E. & Kenner, C. Z. (2002). **Critical Care Nursing, Body-Mind-Spirit**. 3rd Edition. Lipincott Company, Philadelphia.
- Elliott, D., Artken, L. & Chaboyer, W. (2005). **Critical Care Nursing**. [online] available at <<http://onlinelibrary.wiley.com/doi>>. [accessed on 17-01-11].

Emergency Nurses Association, (2000), **Standards of Emergency Nursing Practice**. 3rd Edition. Mosby, St Louis, Missouri.

Follman, J., Tunner, P., Kitgen, A. J. Hickman, J. A. & Durhscler, E. B. (2003). **Research on Nurses, Critical Thinking Cul de Sac**. [online] available at <<http://www.nursingcentre.com.library/journal/article>>. [accessed on 07-08-2010].

Goldberg, P. A., Roussel, G. & Inzucchi, S. E. (2005). **Diabetes Care: Clinical Results of an Update Insulin Infusion Protocols in Critically ill Patients** [online] available at <<http://www.spectrum.diabetesjournal.org/content>>. [accessed on 18-09-2010].

Government of Republic of Zambia (GRZ), (2000). **Nurses and Midwives Act No. 31 of 1997 of the laws of Zambia**. Government Printers, Lusaka.

Hornny, A. S. (2006). **Oxford Advanced Learner's Dictionary**. 7th Edition. Oxford University Press, India.

International Council of Nursing (ICN), (1987). **Defining nursing**. [online] available at <<http://www.rcn.org.uk>>. [accessed on 07-08-2010].

Kozier, B. & Erb, G. (2005). **Fundamentals of Nursing, Concepts and Procedures**. Addison Wesley Company, California.

Krinsley, S. J. (2004). **Mayo Foundation for Medical Education and Research**. [online] available at <<http://www.ncbi.nlm.gov/pubmed>>. [accessed on 18-09-2010].

Lankford, M. G., Zembower, T. R., Trik, W. E., Hacek, D. M., Noskin, G. A. & Peterson, L. R. (2004). **Emerging Infectious Disease**. [online] available at <<http://www.silvio.inzucchi@yale.edu>>. [accessed on 18-09-2010].

Lewis, S. M., Heitkemper, M. M. & Dirksen, S. R. (2004). **Medical- Surgical Nursing**. 4th Edition. Mosby, Philadelphia.

Lloyd, C. B. & Blank, A. K. (2000). **Popoulation and Development and Review**. [online] available at <<http://www.a.c.n.nche.edu/img>>. [accessed on 19-01-11].

Mahoney, F. R. (2002). **Emergency & Disaster Nursing**. 2nd Edition. Macmillan Company Canada, Toronto.

Mangiza, M. (2001). **Surviving on the Move: Migration, Poverty and Development in Southern Africa**. [online] available at < <http://booksgoogle.com>>. [accessed on 13-01-11].

Mayor, M. R., Rundel, K. & Fox, G. (2006). **Macmillan English Dictionary**, International Student Edition. Bloomsbury Publishing Plc, London.

Ministry of Health (MoH), (2005). **National Strategic Plan 2006-2010**. Lusaka, Zambia

Ministry of Health (MoH), (2006). **HIV/AIDS/STIS/TB Workplace Policy 2006 - 2010**. Lusaka. Zambia.

New South Wales, (2006). **Profile for Nursing Labor Force**. [online] available at <[http//www.health.nsw.gov](http://www.health.nsw.gov)>. [accessed on 17-01-11].

Polit, D. F. & Beck, C. T. (2006). **Essentials of Nursing Research Methods, Appraisal and Utilisation**. 6th Edition. Lipincott, Philadelphia.

Polit, D. F. & Beck, C. T. (2008). **Nursing Research, Generating and Assessing Evidence for Nursing Practice Methods**. 8th Edition. Lipincott, Philadelphia

Polit, D. F. & Hungler, G. P. (2001). **Essentials of Nursing Research Methods, Appraisal & Utilisation**. 2nd Edition. Lipincott, Philadelphia.

Potter, P. A. & Perry, A .G. (2006). **Fundamentals of Nursing**. 6th Edition. Elsevier, New Delhi.

Scott, A. (2004). **Nurse Education Today**. [online] available at <[http//www.nurseeducationtoday.com](http://www.nurseeducationtoday.com)>. [accessed on 12-10-11].

Toth, J. C. (2003). **American journal of critical care: Comparing Basic Knowledge in Critical Between Nurses From the United States and Nurses From Other Countries**. [online] available at <[http// www.ajccaacn](http://www.ajccaacn)>. [accessed on 06-10-2010].

Weller, B. F. (2005). **Bailliere's Nurse's Dictionary**. 24th Edition. Elsevier, Philadelphia.

Wood, G. L. & Haber, J. (2006). **Nursing Research Methods and Critical Appraisal for Evidence-Based Practice**. 8th Edition Mosby Elsevier, St Louis, Missouri.

World Federation of Critical Nurses, (2005). **Position Statement on the provision of Critical Care Nursing Workforce**. Buenos, Aires, Argentina.

APPENDIX: I

THE UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF NURISNG SCIENCES

SELF- ADMINISTERED QUESTIONNAIRE

**TOPIC: ASSESSMENT OF THE NURSING CARE GIVEN TO CRITICALLY ILL
PATIENTS AT KITWE CENTRAL HOSPITAL**

**RESPONDENTS: NURSES WORKING IN LOW COST MEDICAL AND SURGICAL
WARDS.**

DATE.....

NUMBER OF QUESTIONNAIRE:

INSTRUCTIONS TO THE RESPONDENT

1. Do not write your name on the questionnaire.
2. Answer all questions.
3. For questions provided with alternatives, indicate the most appropriate response by ticking
4. For questions without alternatives write down the responses in the space provided.
5. All information will be held in confidence.



SECTION A

DEMOGRAPHIC DATA

For Official Use

- | | | |
|---|--------------------------|-----|
| 1. Sex | | [] |
| (a) Male | <input type="checkbox"/> | |
| (b) Female | <input type="checkbox"/> | |
| 2. How old were you on your last birthday? | <input type="checkbox"/> | [] |
| 3. What is your level of professional attachment? | | [] |
| (a) Registered Nurse | <input type="checkbox"/> | |
| (b) Registered Nurse/Midwife | <input type="checkbox"/> | |
| (c) Theatre Nurse | <input type="checkbox"/> | |
| (d) Enrolled Nurse | <input type="checkbox"/> | |
| (e) Enrolled Midwife | <input type="checkbox"/> | |
| (f) Others specify | | |
| 4. Number of years in service | | [] |
| (a) 0 - 5 years | <input type="checkbox"/> | |
| (b) 6- 10 years | <input type="checkbox"/> | |
| (c) 11- 15 years | <input type="checkbox"/> | |
| (d) 16-20 years | <input type="checkbox"/> | |
| (e) Above 20 years | <input type="checkbox"/> | |

SECTION B

KNOWLEDGE OF NURSES ON CRITICAL CARE NURSING

5. Have you ever heard of Critical Care Nursing? []
(a) Yes ☐
(b) No ☐
6. If Yes to No. 5, what is Critical Care Nursing? []
.....
.....
7. What types of patients (conditions) are critically ill? []
.....
.....
8. Was Critical Care Nursing included in your curriculum? []
(a) Yes ☐
(b) No ☐
9. If yes to No. 8. Do you think you were adequately prepared? []
(a) Yes ☐
(b) No ☐
10. What type of procedures do you carry out on critically ill patients? []
.....
.....
11. Is the nursing care given to critically patient adequate? []
(a) Yes ☐
(b) No ☐
12. If No to No.11, give reasons []
.....
.....

SECTION C

AVAILABILITY OF MEDICAL- SURGICAL SUPPLIES

13. Please score the availability of Surgical- medical supplies in the ward. []
- (a) Always available ☐
- (b) Occasionally available ☐
- (c) Not available ☐
14. Medical-Surgical supplies may influence the care to be given to critically ill patients []
- (a) Strongly agree ☐
- (b) Agree ☐
- (c) Uncertain ☐
- (d) Disagree ☐
- (e) Strongly disagree ☐
15. If you strongly agree or agree in No. 15, give examples of medical-Surgical supplies necessary in Critical Care Nursing. []
-
-

SECTION D

AVAILABILITY AND USE OF PROTOCOLS (GUIDELINES) ON CRITICAL CARE NURSING

16. Please score the availability of protocols (guidelines) on Critical Care Nursing on your ward. []
- (a) Available ☐
- (b) Not available ☐

17. Protocols (guidelines) on critical care nursing may be a guide when giving care to the critically ill patients.

- (a) Strongly agree ☐
- (b) Agree ☐
- (c) Uncertain ☐
- (d) Disagree ☐
- (e) Strongly disagree ☐

18. If you strongly agree or agree, give examples of protocols (guidelines) on critical Care Nursing.

.....

.....

SECTION E

NUMBER OF CRITICALLY ILL PATIENTS

19. How many critically ill patients do you usually have in your ward?

- (a) Between 7-10 patients in acute bay ☐
- (b) Between 4-6 patients in acute bay ☐
- (c) Below 3 patients in acute bay ☐

20. Number of critically ill patients may influence the critical care nursing?

- (a) Strongly agree ☐
- (b) Agree ☐
- (c) Uncertain ☐
- (d) Disagree ☐
- (e) Strongly disagree ☐

21. Any recommendations or suggestions to improve nursing care to the critically ill patients.

.....

.....

THANK YOU VERY MUCH FOR YOUR TIME

MARKING KEY FOR STUDY VARIABLES

SECTION B		KNOWLEDGE OF NURSES ON CRITICAL CARE NURSING	
Question number	Question	Correct Answers	Maximum Score
6.	What is critical care nursing?	Care given to critically ill patients or seriously ill patients	3
7.	What type of patients are critically ill patients?	Severe head injury, severe burns, Diabetic Keto Acidosis, cerebral malaria, meningitis, renal failure.	3
10.	What type of procedures do you carry out on critically ill patients?	Bed baths, pressure area care, two hourly turnings, oral care, three hourly feeds, observations of vital signs.	3

APPENDIX: III

MEDICAL AND SURGICAL LOW COST WARD EQUIPMENT CHECKLIST USED WHEN GIVING NURSING CARE TO CRITICALLY ILL PATIENTS

NO.	ITEM	PRESENT(+) ABSENT(-)	COMMENTS
1.	Sphygmomanometer		
2.	Clinical thermometer		
3.	Pulse-oximeter		
4.	Piped oxygen or cylinder oxygen		
5.	Suction machine		
6.	Mechanical ventilator		
7.	Glucometer		
8.	Endotracheal tubes		
9.	Naso- gastric tubes		
10.	Gloves <ul style="list-style-type: none">▪ Sterile▪ Clean		
11.	Sterile needles and syringes		
12.	Insulin syringes		
13.	Urinary catheters		
14.	Specimen bottles		
15.	Sharps box		
16.	Buckets for decontamination		
17.	Disinfectant jik		
18.	Emergency drugs		
19.	Intravenous cannulae of various sizes		
20.	Intravenous giving sets		

21.	Intravenous fluids of types		
22.	Drip stands		
23.	Running water		
24.	Hand washing soap or hand rub		
25.	Linen		
26.	Back rest		

APPENDIX: IV

CRITICAL CARE NURSING SCORING SYSTEM FOR NURSES

NO	ACTION	DONE	SCORE 1
		NOT DONE	SCORE 0
1.	4 hourly checking and recording of Pulse.		
2.	4 hourly checking and recording of temperature.		
3.	4 hourly checking and recording respirations.		
4.	4 hourly checking and recording of blood pressure		
5.	Performing and recording two hourly turnings		
6.	Feeding the patient three (3) hourly		
7.	Performing a bed bath the patient		
8.	Performing Pressure area care four (4) hourly		
9	Doing oral care four (4) hourly.		
10	Maintenance and balancing of intravenous fluids		
11.	Catheterization and recording of output		
12.	Suctioning of secretion		
13.	Oxygen administration		
14.	Wound dressing		
15.	Glasgow Coma Scale scoring and recording		
16.	Monitoring blood sugar		
17.	Reassuring and encouraging the patient and relatives		
18.	Explaining all procedures prior to carrying them out		
19.	Allowing relatives to visit the patient regularly		

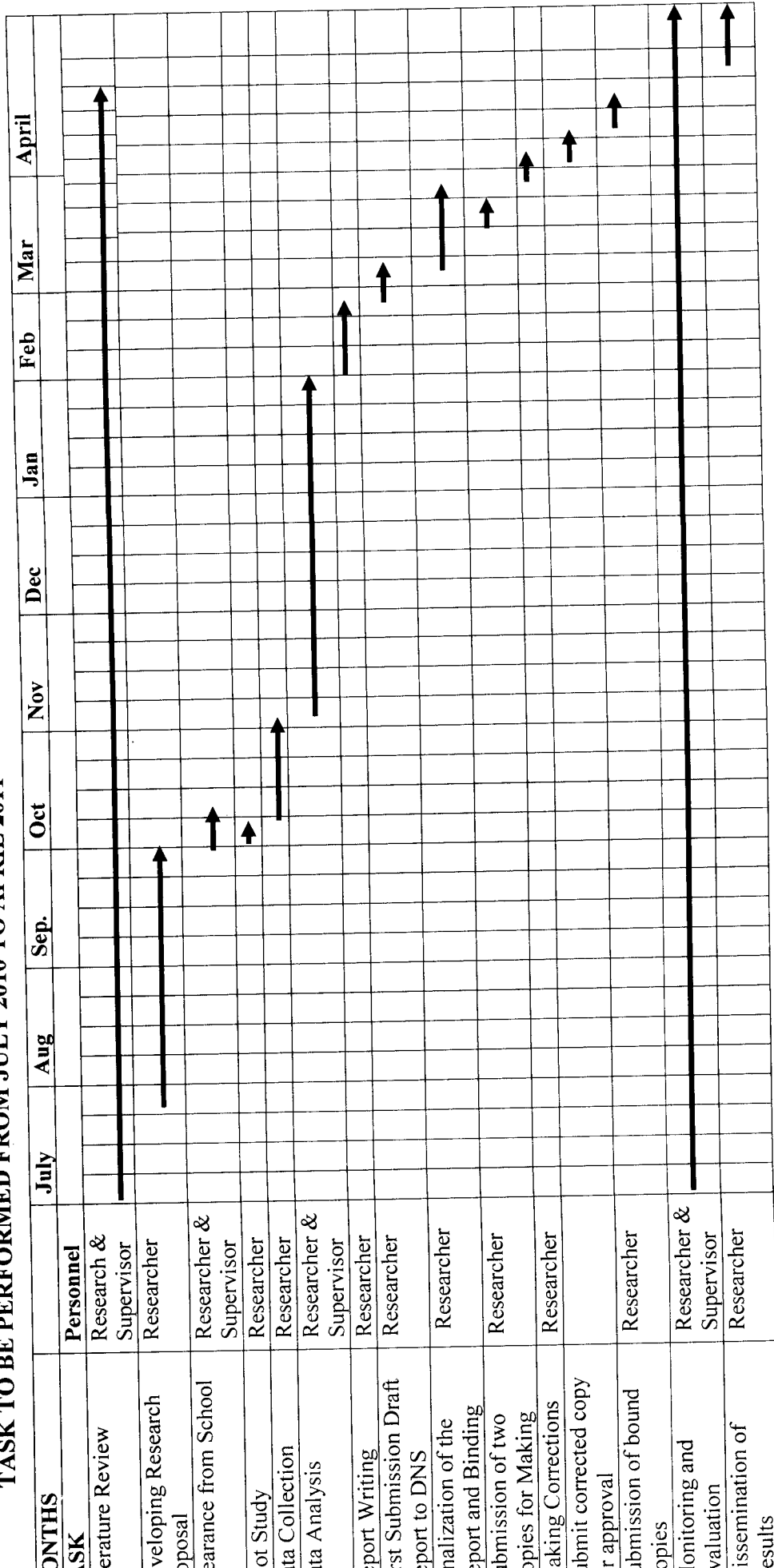
APPENDIX V: RESEARCH WORK SCHEDULE

No.	TASK TO BE PERFORMED	DATES	PERSONNEL RESPONSIBLE	DAYS REQUIRED
1.	Literature review	Continuous	Researcher & Supervisor	Continuous
2.	Development of research proposal	21/07/10 - 30/09/10	Researcher	69 days
3.	Clearance from relevant authorities	31/09/10 - 12/10/2010	Researcher & Supervisor	13 days
4.	Pilot study	06/10/10 - 07/10/10	Researcher	2 days
5.	Data collection	13/10/10 - 08/11/10	Researcher	26 days
6.	Data analysis	09/11/10 - 30/01/11	Researcher & Supervisor	81 days
7.	Report writing	01/02/11 - 20/02/11	Researcher	19 days
8.	First (1 st) Submission of draft to DNS	21/02/11 - 07/03/11	Researcher	14 days
9.	Finalizing research report and binding	08/03/11 - 21/03/11	Researcher	12 days
10.	Submission of two bond copies for marking	22/03/11	Researcher	1 day
11.	Making corrections	28/03/11-04/04/11	Researcher	7 days
12.	Submit corrected copy for approval	05/04/11	Researcher	1 day
13.	Submit bound copies	11/04/11	Researcher	1 day
14.	Monitoring and Evaluation	Continuous	Researcher, Supervisor & Course Coordinator	Continuous

APPENDIX: VI GANTT CHART

THE GANTT CHART SHOWING VARIOUS TASKS TO BE UNDERTAKEN AND THE TIME REQUIRED FOR EACH

TASK TO BE PERFORMED FROM JULY 2010 TO APRIL 2011



APPENDIX: VII

BUDGET

BUDGET CATEGORY	UNIT(K)	QUANTITY	TOTAL(K)
A. STATIONERY			
Typing paper	30,000.00	2 Reams	60,000.00
Note book	10,000.00	1	10,000.00
Diskettes	5,000.00	3	15,000.00
Pencils	500.00	5	2,500.00
Pens	1,000.00	10	10,000.00
Correction fluid	10,000. 00	2	20,000.00
Stapler	40,000. 00	1	40,000.00
Staples	10,000. 00	1 packet	10,000.00
Markers	8,000. 00	5	40,000.00
Calculator	80,000. 00	1	80,000.00
Erasers	15,000. 00	1 packet	15,000.00
Flip Chart	15,000. 00	2	30,000.00
Ruler	1,000. 00	1	1,000.00
Cello-tape	5,000. 00	1	1,000.00
Folder	5,000. 00	1	5,000.00
Subtotal			345,000.00
B. SECRETARY SERVICES			
Typing Research Proposal	2,500.00	100 pages	250,000.00
Typing Questions	2,500.00	50 pages	125,000.00
Photocopying Questionnaires	300.00	50 pages	15,000.00
Binding Research Proposals	10,000.00	1 copy	10,000.00

Typing Report Draft	2,500.00	100 pages	250,000.00
Biding Final Report	80,000.00	5 copies	400,000.00
Bag for carrying the questionnaires	150,000.00	1	150,000.00
Subtotal			1.200,000.00
C. PERSONNEL			
Transport to and from Kitwe	250,000.00	1	250,000.00
Lunch for the researcher	50,000.00	1x30	1,500,000.00
Transport to and from Data collection site	10,000.00	1x30	30,000.00
Refreshments during findings presentation	2,500.00	50 attendants	125,000.00
Subtotal			1.805,000.00
TOTAL			3.350,000.00
10% contingency			335,000.00
GRAND TOTAL			3.685,000.00

APPENDIX: VIII

BUDGET JUSTIFICATION

Stationery

The reams of papers will be used for drafting the Research Proposal, self-administered questionnaires, draft research report and printing the final reports. The other stationery needed include pens pencils for writing, corrective fluid for erasing the mistakes, folders for filling in the references, diskettes for saving in the whole document, stapler and staples for putting the work in an orderly way. The calculator is for calculation. The note book is for taking down important notes while the flip chart and the ruler will be use for analyzing the data manually.

The bag for carrying self administered questionnaires is for the researcher to ensure the self administered are kept safely.

Personnel

Data collection will be conducted throughout the day as such the researcher will need money for transport and lunch. The thirty (30) days allocated to the researcher will be adequate for administration of questionnaire and for observations.

Secretarial services

The money will be needed for photocopying, printing and binding the documents. The researcher will need five (5) copies of final reports for findings disseminations.

Contingency

Contingency fund which is 10% of the total budget is required for any extra costs incurred due to fluctuation of currency and for any other eventualities

APPENDIX IX

The University of Zambia
School of Medicine
Department of Nursing
Sciences
P.O.Box 50110
LUSAKA

7th October, 2010

The Medical Superintendent
University Teaching Hospital
P/B RW IX
LUSAKA

UFS: The Head of Department
Department of Nursing Sciences
School of Medicine
P. O. Box 50110
LUSAKA

Dear Sir,

REF: PERMISSION TO CONDUCT A PILOT STUDY

I am a 4th year student pursuing a Bachelor of Science (BSc) in Nursing Degree at the University of Zambia, School of Medicine, Department of Nursing Sciences. In partial fulfillment of the BSc Nursing degree programme, I am required to undertake a Research study. The topic for my research is **“Assessment of Nursing Care given to critically ill patients at Kitwe Central Hospital”**.

I am therefore requesting for permission to conduct a pilot study in University Teaching Hospital, low cost Medical ward. This will be done through administration of Questionnaires and by participant observation to test the reliability and validity of the data collection tools. I intend to carry out this exercise from 12th October, 2010 to 13th October, 2010.

Your assistance in this matter will be appreciated.

Yours faithfully,

Mabvuto Chirwa, 4th Year BSc Nursing Student

APPENDIX: X

The University of Zambia
School of Medicine
Department of Nursing
Sciences
P.O.Box 50110
Ridgeway
LUSAKA

7th October, 2010

The Medical Superintendent
Kitwe Central Hospital
Box 20969
KITWE

UFS: The Head of Department
Department of Nursing Sciences
School of Medicine
P. O. Box 50110
LUSAKA

Dear Sir,

REF: PERMISSION TO CONDUCT A RESEARCH STUDY

I am a 4th year student pursuing a Bachelor of Science (BSc) in Nursing Degree at the University of Zambia, School of Medicine, Department of Nursing Sciences. In partial fulfillment of the BSc Nursing degree programme, I am required to undertake a Research study. The topic for my research is **“Assessment of Nursing Care given to critically ill patients at Kitwe Central Hospital”**.

I am therefore, requesting for permission to collect data from nurses at Kitwe Central Hospital, low cost Medical and Surgical wards. This will be done through administration of Questionnaires and by participant observation. I intend to carry out this exercise from 18th October, 2010 to 15th November, 2010.

Your assistance in this matter will be appreciated.

Yours faithfully,

Mabvuto Chirwa,
4th Year BSc Nursing Student

APPENDIX: XI

INFORMED CONSENT

Dear participant,

My name is Mabvuto Chirwa, I am a student enrolled in the Bachelor of Science in Nursing Programme in the Department of Nursing Sciences, at the School of Medicine, University of Zambia.

In partial fulfillment of the degree of BSc. Nursing, I am required to undertake a research project. My study topic is on **“assessment of nursing care given to critically ill patients at Kitwe Central Hospital”**. The main objective of the study is to determine factors that influence nursing care given to critically ill patients at Kitwe Central Hospital.

You have been purposively selected to participate in this study and I wish to inform you that participation in this study is voluntary and you are free to withdraw at any stage of the study if you so wish. You are expected to answer in relation to nursing care given to critically ill patients. Any information you give me will be kept confidential and no name will be written on the self administered questionnaire.

You will not receive direct benefits from the study or monetary gain. The information you give will help develop better understanding of nursing care is given to the critically ill patients at Kitwe Central Hospital and will be used by health planners and other organizations that have interest on the improvement of the care to the critically ill patients.

If you have any queries, please contact the Head of Department, Department Nursing Sciences on Telephone Number 252453.

I hereby called the participant understands the guidelines of this study and I am willing to participate.

Dated thisday of2010

Signature/ thumb print of respondent.....

Signature of interviewer.....

MINISTRY OF HEALTH
UNIVERSITY TEACHING HOSPITAL

Internal Memo

TO: Nursing Officer – E Block

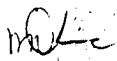
**PERMISSION FOR BACHELOR OF SCIENCE NURSING STUDENT -
MABVUTO CHIRWA TO CONDUCT PILOT STUDY IN E-BLOCK**

The above mentioned subject refers.

This memorandum serves to inform you that the above-mentioned student has been granted permission by University Teaching Hospital Management to conduct a pilot study for her research topic entitled **"Assessment of Nursing Care given to Critically ill Patients"**.

Kindly assist her as needed.

Your usual cooperation and assistance is always greatly appreciated.


M. Wasomwe (Mrs)
A/PRINCIPAL NURSING OFFICER
13th October 2010

cc: Ms. Mabvuto Chirwa
cc: File

/gm

APPENDIX: IX

The University of Zambia
School of Medicine
Department of Nursing Sciences
P.O.Box 50110
Ridgeway
LUSAKA

7th October, 2010

The Medical Superintendent
Kitwe Central Hospital
Box 20969
KITWE

UFS: The Head of Department
Department of Nursing Sciences
School of Medicine
P. O. Box 50110
LUSAKA

Dear Sir,

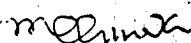
REF: PERMISSION TO CONDUCT A RESEARCH STUDY

I am a 4th year student pursuing a Bachelor of Science (BSc) in Nursing Degree at the University of Zambia, School of Medicine; Department of Nursing Sciences. In partial fulfillment of the BSc Nursing degree programme, I am required to undertake a Research study. The topic for my research is "**Assessment of Nursing Care given to critically ill patients at Kitwe Central Hospital**".

I am therefore, requesting for permission to collect data from nurses at Kitwe Central Hospital, low cost Medical and Surgical wards. This will be done through administration of Questionnaires and by participant observation. I intend to carry out this exercise from 18th October, 2010 to 15th November, 2010.

Your assistance in this matter will be appreciated.

Yours faithfully,



Mabvuto Chirwa,

4th Year BSc Nursing Student