

**KNOWLEDGE, ATTITUDE AND PRACTICE AMONG NURSES  
TOWARDS DOCUMENTATION OF FLUID BALANCE CHART  
AT UTH, LUSAKA**

**BY**

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## **LIST OF ABBREVIATIONS**

<b>ADH</b>	<b>Anti-Diuretic-Hormone</b>
<b>AIDS</b>	<b>Acquired Immune Deficiency syndrome</b>
<b>CBoH</b>	<b>Central Board of Health</b>
<b>CSO</b>	<b>Central Statistics Office</b>
<b>EN</b>	<b>Enrolled Nurse</b>
<b>EM</b>	<b>Enrolled Midwife</b>
<b>GNC</b>	<b>General Nursing Council</b>
<b>HIV</b>	<b>Human Immune Virus</b>
<b>LDHMT</b>	<b>Lusaka District Health Management Team</b>
<b>Obs/Gynae</b>	<b>Obstetrics and Gynaecology</b>
<b>RN</b>	<b>Registered Nurse</b>
<b>RM</b>	<b>Registered Midwife</b>
<b>UNZA</b>	<b>University of Zambia</b>
<b>UTH</b>	<b>University Teaching Hospital</b>
<b>WHO</b>	<b>World Health Organization</b>

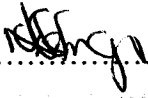
## DECLARATION

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

NAME: Naomi Kalengo

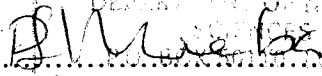
DATE: 9/6/2011

(Candidate)

SIGNED: 

THE UNIVERSITY OF ZAMBIA  
SCHOOL OF MEDICINE  
NAME: Dr. P. Mweemba

for (Supervisor)

SIGNED: 

DATE: 9/6/2011

**STATEMENT**

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

SIGNED:                     *dsingh*                    

DATE:                     9/6/2011                    

(Candidate)

## **DEDICATION**

This study is dedicated to God the Almighty, who has seen me this far.

To my late father, Mr. Winstone .N. Kalengo, who has been a source of inspiration and encouragement. To my children Daniel, Tiza, David and Jonathan who tolerated my busy schedule which denied them my care.

## ABSTRACT

The main purpose of the study was to determine the Knowledge, Attitude and Practices among nurses towards the documentation of fluid intake and output chart in clinical areas at University Teaching Hospital in Lusaka. The major hypotheses were (1) the higher the knowledge on fluid balance chart, the better the practice and (2) There is an association between knowledge and practice on importance of documenting the fluid intake and output chart.

A non - experimental descriptive cross sectional study was used and a total of 50 nurses were recruited in the study using convenient sampling method and a self administered questionnaire was used for data collection. The respondents in this study were from different departments at the University Teaching Hospital (UTH) such as Padiatrics, Obstetric/gynaecology, Medical and Surgical departments and Emergency Departments. Coding and editing of data was done after data collection. Data was analyzed manually, findings presented in frequency tables, pie charts and cross tabulations.

The results of the study indicated that (60%) of the respondents had high knowledge of fluid balance chart documentation. Majority of the respondents (54%) had a positive attitude towards fluid balance chart documentation. Despite such a scenario the results still indicated that even though the respondents had high knowledge and positive attitude, (80%) of the respondents had an average practice of fluid balance chart documentation. The study findings also revealed that most of the respondents were females (84%), and majority of the respondents (52%) were in the ages 20-29 years.

According to the study, the level of knowledge was high while those with level of practice are average. This revealed that the Nursing Tutors/Clinical instructors need to be more vigilant while conducting demonstrations to the Student Nurses in clinical areas; the latter could do return demonstration and practice more procedures for them to be more efficient so that they improve on practice of fluid balance documentation. There is need for the Nursing Management to conduct some on the spot checks on the performance of nurses on the wards as they perform some of these procedures on the patients. In case of the newly qualified

nurses, orientation of some procedures by the Ward In-Charges or senior staff inclusive of the Nursing Officer should be done during the first two weeks of reporting for work.

The study, however, revealed that there was no relationship between level of knowledge and practice towards the documentation of fluid balance chart. Therefore, the hypothesis could not be accepted.

Therefore, there is need to reinforce the documentation and maintenance of fluid balance chart through sensitization of nursing students and the nurses by clinical instructors in collaboration with tutors in nursing schools, the nurses on the wards together with the supervisors and nursing officers if we are to yield good response from nurses as well as improve the documentation of fluid balance chart and understand its importance in providing quality and meaningful care to the patients on monitoring of intake and output of fluids.

## **CHAPTER ONE**

### **1.0 INTRODUCTION**

#### **1.1 BACKGROUND INFORMATION**

The health care system in Zambia serves a population of 11.8 million people (MoH, 2010). Since the commencement of the health care reforms, the public health sector in Zambia has taken significant steps towards meeting the objectives/and or the reforms, particularly in improving access of health care, affordability of health services and strengthening health system. One of the areas of focus of the reforms has been on improving the standards of care. The health care system needs to be re-organized. This included the nursing care being given by the nurses.

The General Nursing Council of Zambia (GNC) is a statutory body responsible for regulating nursing practice in the country. In order to monitor the quality of nursing care being given effectively in the country, the council incorporated the concept of documentation of fluid balance chart into the curriculum of the Registered and Enrolled Nurses. The council has emphasized the fact that nurses must be accountable for the nursing care they offer to patients and must be prepared to prescribe nursing care (GNC, 1998).

The Zambia Health System has two categories of nurses and these are the Registered and Enrolled Nurses. The learning levels differentiate the categories. The Enrolled Nurses undergo training for two years and obtain a Certificate while Registered Nurses undergo training for three years and graduate with a Diploma.

At different levels of training, the component of documentation of the fluid balance charts and monitoring the patient's fluid status is included in the curriculum. Fluid balance chart is a common tool used by nurses to assess and monitor fluid status of patients to ensure adequate hydration.

## FLUIDS AND ELECTROLYTES

Fluids and electrolyte balance is cardinal to the process of life. When there is abnormal fluid volume, electrolyte concentrations can seriously change physiologic homeostasis and can be life threatening. Although preventing and treating fluid and electrolyte imbalances in patients' falls directly under the Medical Doctors' domain, the nurses play a very important role in documenting the patients' intake and output chart. Knowing and understanding how fluids and electrolytes imbalances occur and how the body compensates serves as a foundation for understanding many diseases and associated nursing care (Monahan et al, 2007).

Water is the largest constituent of the body, accounting for 45% to 75% of body weight. The volume and distribution of body water vary with age and gender. In the new born, almost 75% of body weight is water, with the greatest percentage found in the extracellular compartment. In the adult man, 60% of body weight is water, with two thirds being in the intracellular compartment while in the woman, is approximately 50% of body weight is water because in general they have a higher ratio of fat, which holds less water than skeletal muscle (Monahan et al, 2007).

Distribution of water within the body is separated into two portions, the intracellular fluid, is the water that contains substances within the cells and the other is extracellular fluid which comprises of fluids out side the cells and this is made of plasma, lymph, interstitial fluid and extracellular cavity fluids. These include cerebrospinal fluid, synovial fluids and tears of the eye and secretions of the glands and the kidneys. Plasma is in the vascular compartment and the interstitial fluid, is the small percentage of the body's total water located in the intravascular fluid (Ganong, 2005).

The interaction between these fluid compartments differs in that the intracellular body water does not move out of the cell easily. The body fluid in the intravascular and the interstitial spaces easily diffuse and is similar in electrolyte constitution. The movement of fluid from the vascular compartment to the interstitial spaces back to blood is controlled by several factors such as the hydrostatic pressure, osmotic pressure and the diameter of the blood vessels. The maintenance of the body fluid is the result of adjustments made between the



gains and losses of water that occur on the daily basis. The major source of water in the body is consumed in liquids and in foods (smith et al, 1982).

There are several functions performed by water and these are: Maintenance of blood volume, cellular transport of vital substances such as oxygen and glucose, transport of cellular waste products to the lungs and kidneys for removal, lubrication and cushioning, hydrolysis of food in the digestive system, reactant and medicum for the chemical reactions in cells and maintenance of body temperature (Monahan et al, 2007).

Most of the water that leaves the body is through the urinary excretion. Water is lost also through sweating, defeacation, diffusion and evaporation through the skin and the lungs. The kidney is the major organ of excretion and it handles the end products of cellular metabolism, as well as the intake of fluids, it excretes a minimum of 500mls to 600mls per day. The small amount of water is also produced as a by product of cellular metabolism (Smith et al, 1982).

Electrolytes carry an electrical charge and have the ability to combine with other ions. The most prominent positively charged ions (cations) are hydrogen, sodium, potassium, magnesium and calcium. The negatively charged ions (anions) are chloride, bicarbonate, sulfate and phosphate. Electrolyte concentration in the body is expressed in miliequivalents (mEq) per liter- a measure of combining power rather than a measure of weight. Precise concentrations of electrolytes are important to osmolarity, body pH and overall homeostasis (Monahan et al, 2007).

The volume and concentration of body fluids regulation is managed by two mechanisms which are, thirst and urination. Thirst is stimulated by the receptors in the central nervous system. In normal circumstances, a person will take fluids when the receptors are stimulated. During an illness or an altered level of consciousness, the thirst responses may be altered, causing conditions such as hypovoleamia and increased toxicity or concentration of the extracellular fluids (Smith et al, 1982).

Elimination by the kidneys is regulated or influenced by two regulatory systems. The first one is the Anti Diuretic Hormone (ADH). By increasing and decreasing ADH, the system helps to regulate the balance of fluids in the body. When the extracellular body fluids

become concentrated, osmoreceptors located in the hypothalamus stimulate the release of ADH from its storage place. ADH will then act on the kidneys, causing it to retain more fluids. When the water is retained, it circulates through the extracellular fluid compartment thus reducing the concentration of the body fluid. The osmoreceptors, sensing the change, slows the secretion of the ADH, which then acts on the kidneys causing them to excrete more water.

The other disturbances that may trigger the secretion of ADH and leading to the retention of water by the kidneys include dehydration, bleeding, pain, trauma, reduced cardiac output, fear and surgery. Some drugs such as barbiturates, nicotine, morphine and some anaesthetics and tranquillizers will increase the secretion of ADH. The secretion of the ADH can be inhibited by taking alcohol, hypoglycemia and decreased concentration of body fluids (Ganong, 2005).

The other system that is involved in the regulation of the urinary secretion includes the hormone Aldosterone such as Anti Diuretic Hormone (ADH). Aldosterone is secreted by the adrenal cortex and regulates the level of sodium in the body. Since sodium is exchanged for either potassium or hydrogen, Aldosterone indirectly affects the levels of potassium or hydrogen as well. Release of Aldosterone is increased in response to various stimuli that include decreased sodium and increased extracellular potassium, hypovolemia and physical or emotional stress.

In cases where the levels of sodium are low or hypovolemia has occurred, the receptor-like area in the glomerulus of the nephron releases an enzyme substance called rennin. Renin circulates in the body; it converts a plasma protein in the liver into a vasoconstrictor called Angiotensin 1. When this substance enters the lungs, it is converted into Angiotensin 2. This Angiotensin 2 acts directly on the adrenal cortex and increases the level of Aldosterone secretion. Aldosterone then stimulates the kidney's tubule cell to retain sodium and to release hydrogen or potassium (Ganong, 2005).

The sodium which is retained in the body increases the concentration of extracellular fluids, which stimulates the osmoreceptors in the hypothalamus to increase the secretions of the

hormone ADH. The increased secretion of the ADH, in turn causes the kidney to retain more fluids.

From the stated information above, the nurse should understand the fluid, electrolytes and their relationship to cellular life in order to assess and manage the patient's problems. For instance, the non dependent patients will be assisted to maintain the fluid balance while those highly dependent patients such as the critically ill patients, neonates, malnourished children, pregnant women, post operative patients, urology patients, renal and elderly patients whose conditions prevent them from performing any activity.

These substances that constitute mostly minerals contribute to the body function in several ways and are important to life and posses an electrical charge when placed in water.

## **AN OVERVIEW OF A FLUID BALANCE**

Body fluids are fluids within the body, composed of water, electrolytes and non-electrolytes. The volume and distribution of fluids vary with age, sex and amount of adipose tissue. Water is the largest single component of the body. About 70% - 80% of body weight for infants is composed of water while the average adult's weight is about 60% in males and females 55% (Phipps et al, 2003).

### **Distribution and composition of Body fluids**

The body fluids are distributed in two main compartments which are intracellular and extracellular fluids. Intracellular (ICF) comprises of two thirds of body water within the body cells while the extracellular (ECF) is all the fluid outside a cell consists of fluids spaces interstitial or lymph and plasma. Extracellular fluid makes up about 20% of the total body weight. The third small compartment is the transcellular space which includes fluids in the cerebrospinal space, gratrointestinal tract, pleural, synovial and peritoneal space fluid. Plasma comprises of 5% of body weight, interstitial 15% and intracellular 40% of body weight. As water moves through the compartments of the body, it contains substances that are called minerals or salts. Technically they are known as Electrolytes. An electrolyte is a compound which, when dissolved in a solution, will dissociate into ions. These ions are

electrically charged particles and will thus conduct electricity (Baillieres, 2007). Electrolyte composition varies between ECF and ICF but the overall composition of the electrolyte is approximately the same; however the concentration of specific ions differs greatly.

Cell function is dependent on maintaining the normal balance of electrolytes, the most important being sodium (normal range 136-150mmol/l), potassium (normal range 3.4-5.0mmol/l), calcium, magnesium (normal range 0.7-1.0mmol/l), chloride (normal range 96-107mmol/l), hydrogen ion (4.8-7.5) and bicarbonate (normal range 24-32mmol/l). Sodium is the main prevalent extracellular cation while potassium is the prevalent intracellular one (Phipps et al, 2003).

### **Functions of the Body Fluids**

Plasma is the liquid part of blood that carries blood cells, hormones, proteins, and other substances throughout the body. Lymphatic fluid and mucus are both fluids that play a role in protecting the body from disease. The process of digestion is aided by body fluids called saliva and gastric juice. The body fluid also helps in regulation of body temperature and lubricates the joints and the membranes (Potter and Perry, 2001).

### **Disturbance in fluid balance**

Approximately 60% of body weight in males constitutes total body fluid, with 52% in females. A reduction in body fluids can have major effects on the body, that is, a reduction of 5% will cause thirst, a reduction of 8% will cause illness and a 10% reduction in fluid can cause death (Carroll, 2000). Age, gender and body fat do influence the proportion of body fluid.

There are times when disturbances in electrolyte, fluid or acid-base balances seldom occur alone and can disrupt normal body functioning. When this occurs, there is loss of body fluids because of various reasons such as Hypovolaemia which is the term used for loss of fluid and hypervolaemia is the term used when a patient has fluid overload. There are a number of factors which will cause fluid loss and gain and these are:

**Loss:** Diarrhoea, Vomiting, Sweating/fever, Haemorrhage, Diuretics; Excessive urination.

**Gain:** Congestive cardiac failure, renal failure, High sodium intake, Cirrhosis of the liver, over infusion of intravenous fluids.

All of the above could be symptoms of disease and illness.

Another factor in fluid loss to consider is the patient's physical mobility/abilities. If a patient is physically disabled they may not be able to access fluid. A patient who has had a cerebral vascular accident may not be able to physically take and drink the fluid. Some patients with continence problems may restrict their fluid intake believing this will alleviate the problem.

### **Documenting fluid balance**

The nursing assessment of fluid balance should include: the patient's history, physical examination, clinical observation and interpretation of laboratory results (Place and Field, 1997).

A detailed account of the patient's history should be taken especially the fluid intake and output. The nurse may have to rely on relatives and carers to give this information if the patient is unable to.

A fluid balance chart is a chart that nurses use for recording how much fluid that has been taken in as well as how much that has been taken out in milliliters or liters (ml/l). Documentation of intake and output chart is done to determine whether or not the kidneys are working properly. The total body water is 60% of body weight, intracellular fluid is 40% of the body weight and extracellular fluid is 20% of the body weight (Phipps et al, 2003).

It is assumed that nursing documentation has received considerable attention in recent years (Bjorvell et al, 2003; NHS Modernisation Agency, 2001). Essence of Care (NHSMA, 2001) emphasises that "record-keeping is a fundamental aspect of care, and that the Nursing record is the first source of information examined when complaints are received". In legal terms, if nursing care is not documented it is assumed not to have happened.

Fluid balance documentation is concerned with maintaining a record of patients' fluid input and output, and is an important aspect of nursing care, particularly with critically ill patients. Failure to maintain fluid balance can have serious consequences for the patient.

Fluid balance is also maintaining the correct amount of fluid in the body. It is the continuance of the fluid input and output of the body. Fluid balance can be altered with disease and illness. Body fluids are regulated by fluid intake, hormonal controls and fluid output (Potter and Perry, 2001). A good understanding of these charts is important, as inaccurate interpretation can have a detrimental effect on patient outcome.

## **1.1 STATEMENT OF THE PROBLEM**

The aim of documenting a patient's fluid intake and output chart is to see if the patient is able to maintain the fluid balance in the body, and is an important aspect of nursing care, particularly with critically ill patients. Failure to maintain fluid balance can have serious consequences for the patient. The quality of fluid and electrolyte management in critically ill patients is crucial and careful attention to fluid balance include, accurate recording of fluid losses, particularly where there are no facilities for electrolyte analysis. The fluid balance chart can also be used as a means of evaluating the effectiveness of nursing care offered by the nurses. The fluid balance chart is also used as a non-invasive tool to assess the surgical patient's hydration status. A good understanding of these charts is important, as inaccurate interpretation can have a detrimental effect on patient outcome.

Essence of Care (NHSMA, 2001) emphasises that record-keeping is a fundamental aspect of care, and that the nursing record is the first source of information examined when complaints are received. In legal terms, if nursing care is not documented it is assumed not to have happened. With the current emphasis on clinical governance and risk management this is clearly of concern to the medical personnel, as it could be interpreted as a lack of individualized care and leaves the organization vulnerable to litigation" (NHSMA, 2001).

There was a complaint by some Doctors where they fail to use the fluid balance chart due to the fact that they are not adequately documented. This has caused some doctors not to rely

on fluid balance chart (FBC) and resort to use other methods such as Daily Weight monitoring and Jugular venous Pressure.

A review on the documentation of fluid charts by the nurses at the University Teaching Hospital is frequent and adequate in some wards while in other wards it is inaccurate and incomplete. When the charts are used, there are often inaccurate and may be commenced without understanding the clinical purpose. It has also been noticed that when a patient is commenced on strict oral or intravenous infusion and should be monitored; a fluid balance chart may be commenced or not and if it is commenced, documentation may not be done or may be incomplete. When the fluid balance chart is properly utilized in health facilities, it will show that the nurses have the knowledge on the documentation of the fluid balance charts and this will contribute to the quality of nursing care being given to the patients.

The studies show that nurses do acquire adequate knowledge from the nursing schools which they could apply after qualifying. According to the Curriculum Diploma for Registered Nursing Programme (2007) and for the Curriculum for the Enrolled Nurses, it reveals that training nurses are taught on measuring, documentation of fluids and maintenance of fluid charts. Therefore, with this acquired knowledge nurses will be able to closely monitor and observe the patient and accurately provide early detection of fluid imbalance in the body.

This could lead to unexpected deterioration in illness, late referral and even death. According to Carroll, (2000), reduction in body fluids can have major effects on the body such as a reduction of 5% will cause thirst, a reduction of 8% will cause illness and a 10% reduction in fluid can cause death.

The purpose of this study is to determine the knowledge, attitude and practices by nurses towards the documentation of fluid balance charts at the University Teaching Hospital in Lusaka.

### **1.3 FACTORS THAT MAY INFLUENCE DOCUMENTATION OF FLUID BALANCE CHART**

There are several factors that may influence nurses' knowledge, attitude and practice towards documentation of the fluid balance chart by Nurses at the University Teaching Hospital in Lusaka. The factors identified are divided into three categories as follows:

- Service Related
- Diseases related factors
- Socio-cultural and Economic factors.

#### **1.3.1 SERVICE RELATED FACTORS**

##### **Nursing Responsibility**

The maintenance of fluid balance chart is the responsibility of the nurses. One of objectives of nursing practice is health maintenance through giving prescribed amount of fluids to the patient. The nurse has the responsibility to record what the patient has taken especially the patients on strict intake and output therapy. If the nurse neglects this responsibility, it may put the patient at risk, which may result into dehydration or over hydration.

##### **Guidelines**

Maintenance of the fluid balance chart has some guidelines that need to be followed. Following these guidelines enables the nurses to come up with a patient oriented nursing care. If the guidelines are not clear, the nurse may not follow the correct procedure. Therefore, the guidelines that are in place may have effects on the formulation and implementation of quality nursing care and may fail to offer evidenced based care.

##### **Inadequate stationary**

Inadequate resources such as stationary in the institution may have an impact on the utilization of the fluid balance chart. For instance, nurses may not have enough paper, pencils, pens, and erasers for use when implementing the fluid balance chart. When nurses



do not have enough of these items, the use of the fluid balance chart in offering quality nursing care may be compromised.

### **Lack of supervision**

Some nurses on the wards may need close supervision in the initial stage of maintaining the fluid balance chart. This is a common problem among the newly qualified nurses. When the new nurses are not supervised, they may not know how to apply it adequately.

### **Inadequate in-service training**

Inadequate in-service training through seminars and workshops on maintenance of fluid balance chart may lead to inadequate knowledge among nurses which may also result in inadequate documentation of the fluid balance chart.

### **Attitude of some nurses**

Some nurses may have a negative attitude of carrying out nursing actions using the fluid balance chart. They may think that the use of the fluid balance chart is a waste of time since they are used in routine administration of care; they may not have a positive attitude of assessing the patient.

### **Work Overload**

The disease burden may influence the maintenance of fluid balance chart. The development of the use of the chart demands that nurses have adequate time to monitor the patient. This may take some time if the patients are many, and it may become difficult for the nurse to record on the fluid balance chart. It may be easy for the nurse to use the chart on few patients, and thus disease burden may have some influence on the documentation of the fluid balance chart.

### **1.3.2. DISEASE RELATED FACTORS**

#### **Chronicity of the disease**

The Chronicity of the disease may have an effect on the recording of the fluid balance chart. For instance, if the patient has a chronic disease, nurses may get tired of documenting the same actions and end up ignoring certain nursing activities which they may assume not to be important for the patient.

#### **How critical the patient's condition is**

The patient's general condition may influence the planning and implementation of the nursing activities. If the condition is critical and acute, the nurse may attend to patients without documenting on the fluid balance chart, until the patient stabilizes. When the patient stabilizes, the nurse may have time to assess and document on the fluid intake and output chart.

### **1.3.3. SOCIO-CULTURE AND ECONOMIC FACTORS**

#### **Knowledge by some patients**

The knowledge the patient has on what is to be done on him/her by the health team may influence the nurse to record on the patient's intake and output chart. If the patient has no knowledge on what is supposed to be done on him/her, the nurse may take advantage of the situation and ignore the documentation of the fluid balance chart.

#### **Experience**

It is assumed that some nurses' who have been long in the service may feel that they know a lot about nursing of patients as such this may influence them to document the intake and output chart, while the nurses who have little experience may not record adequately.

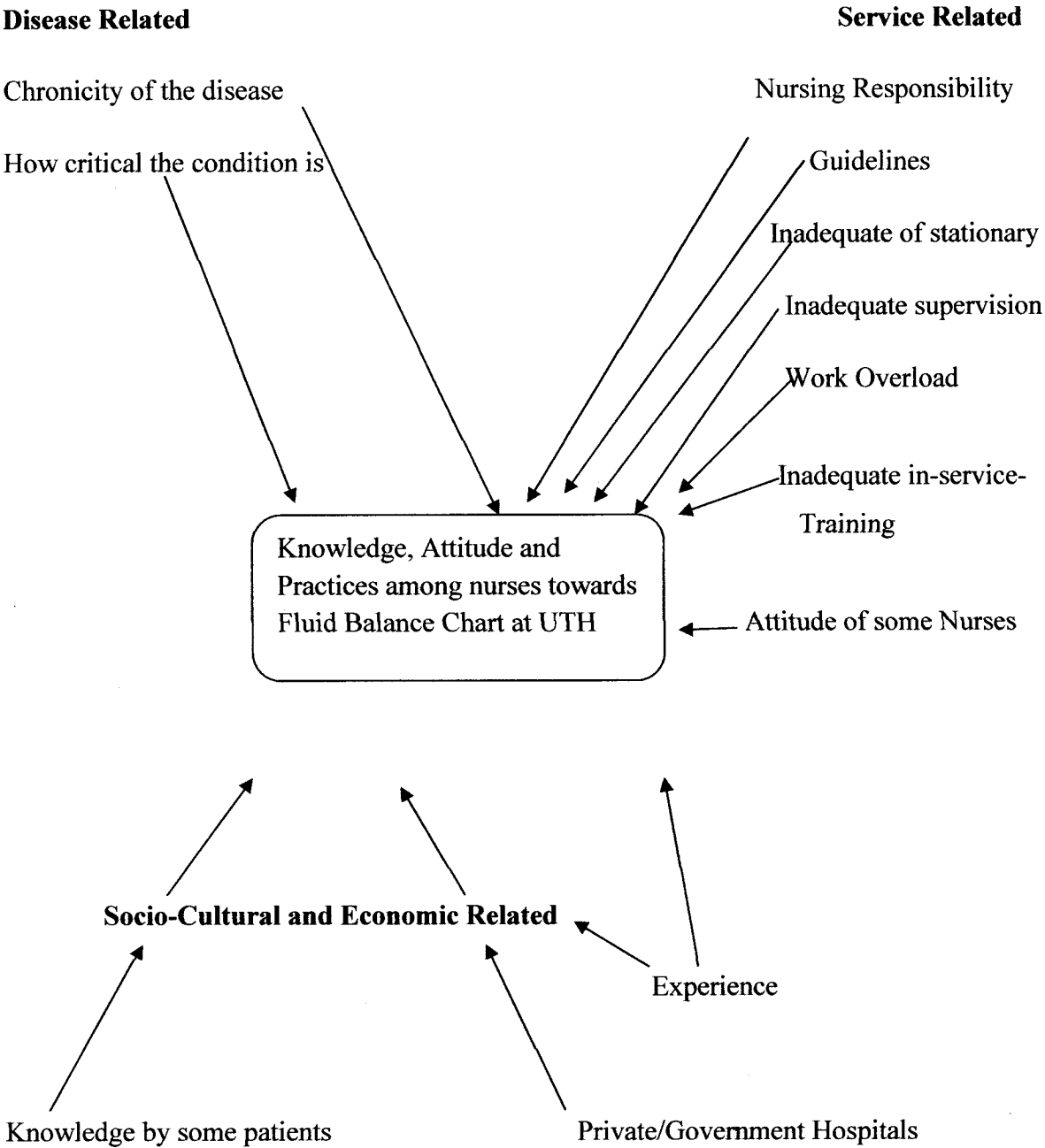
#### **Private Hospital/Government Hospital**

The nurses working in the profit making institutions may use the fluid balance chart more as

compared to those working in Government Hospitals. The nurses in profit making hospitals may use the efficacy of the nursing care to attract customers. The fluid balance chart is one of the approaches that can be used to give attractive services to the customers while those working in Government Hospitals may ignore this approach.

**DIAGRAM OF PROBLEM ANALYSIS**

**Figure 1**



## **1.5 JUSTIFICATION**

The fluid balance chart is one of the common tools used by nurses in rendering nursing care to a patient. Despite including it in the curriculum for nurses' basic training, some nurses still find difficulties on documentation and maintenance of the fluid balance chart. In some wards, the nurses seem to be able to document the fluid balance chart adequately and have some knowledge on its importance while others are unable to accurately use the chart.

Hence, it was felt appropriate to find out the knowledge, attitudes and practices among nurses towards documentation of fluid balance chart. This was to determine the gaps in nurses' knowledge and practice towards the fluid balance chart documentation. It is hoped that information obtained from the study shall be useful to the health care providers, Ministry of Health, General Nursing Council and the University Teaching Hospital in particular by helping leaders find means of uplifting the nursing standards and make the nurses realize the benefits of maintaining the fluid balance chart. By so doing, improve the provision of health care being delivered to the people.

## **1.6 RESEARCH OBJECTIVES**

### **1.6.1 General Objectives -**

To determine the nurses' knowledge, attitudes and practices towards fluid balance chart

### **1.6.2 Specific Objectives-**

- To determine the knowledge of nurses on fluid balance chart.
- To establish the nurses attitudes and practices towards fluid balance chart.
- To make recommendations to the Nursing Personnel on how to improve knowledge, attitude and practice towards fluid balance charts.

## 1.7 Hypothesis –

The hypotheses of this study are:

- The higher the knowledge on fluid balance chart the better the practice.
- There is an association between knowledge and practice on documentation of the fluid balance chart.

### 1.8.0 CONCEPTUAL DEFINITION OF TERMS

Fluid balance is maintaining the correct amount of fluid in the body. It is the continuance of the fluid input and output of the body (Carroll et al, 2000).

Knowledge is the expertise, and skills acquired by a person through experience or education (Oxford, 2005).

Attitude is the feeling that a person has about something (Quirk et al, 1987).

Practice is doing something ([www.tellmewhyfacts.com/2008/06.what...](http://www.tellmewhyfacts.com/2008/06.what...)).

### 1.8.2 OPERATIONAL DEFINITION OF TERMS

**Attitude:** The manner in which nurses perceive the use of the fluid balance charts at the hospital.

**Fluid:** Refers to all kinds of fluids for example water, orange drinks, intravenous solutions like sodium chloride, dextrose and so on, also urine, vomit and wound exudates.

**Fluid intake record:** This is the recording of fluids given orally, parentally, rectally or fluids administered by tubes and retained by the patient.

**Fluid intake and output chart:** Refers to a chart where measurements of the volume of all fluids taken in and leaving the body.

**Fluid output record:** Is the recording of fluids lost by the patient through vomiting, diarrhoea, gastric drainage, wound exudates and urine.

**Knowledge:** The ability of the Nurse to be able to define, answer correctly, give correctly, give correct reasons and to state the benefits correctly of the fluid balance chart.

**Practice:** Being able to utilize fluid balance chart in the patient care and document it.

## **1.9 VARIABLES**

### **VARIABLES AND CUT OFF POINTS**

A variable is measurable or potentially measurable component of an object or event that may fluctuate in quantity or quality or that may be different in quality or quantity from one individual object or event to another (Basavanthappa, 2007). There are mainly two types of variables, namely: Independent Variables and Dependent Variables. These exist not as a cause- effect relationship but as an association.

#### **DEPENDENT VARIABLE**

This is the variable that changes as the independent variable is manipulated by the researcher (Basavanthappa, 2007). It is the presumed effect. In this study the dependent variable is:

- Knowledge of the fluid balance chart.

#### **INDEPENDENT VARIABLE**

This is the variable that is purposely manipulated or changed by the researcher (Basavanthappa, 2007). It is the presumed cause. Examples are:

- Attitude
- Practice

**Table 1: VARIABLES, INDICATORS AND POINTS**

The table below shows main variables and their cut points

<b>Variables</b>	<b>Indicators</b>	<b>Cut off Points</b>	<b>Questions</b>
Knowledge	High level	When the respondent is able to define fluid balance chart, mention the patients who have fluids monitored and correctly state the purpose of using the fluid balance chart. The score 14 to 19 points in the knowledge category.	8 to 17
	Medium Level	Able to score 7 to 13 in the knowledge category.	
	Low Level	0 to 6 points in the knowledge category	
Attitude	Positive	5 to 7 Points Respondents able to document the intake and output chart	18 -22



	Negative	0 to 4 Points Respondents not able to document the intake and output chart	
Practice	High	The respondent who will be able to take prompt action and correctly identify patients who need to have fluids monitored and correctly states the purpose for using the fluid balance chart, will score 6 to 8 points	23- 31
	Medium	A score of 4 to 5 points	
	Low	A score of 0 to 3 points	

## **CHAPTER TWO**

### **2.0 LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

Literature review is an organized written presentation of what has been published on a topic by scholars (Burns and Grove, 2005). The literature review presents a strong knowledge base for the conduct of the research (Burns and Grove, 2005). Literature review helps in determining what is already known about the proposed study, obtain a comprehensive picture of the state of knowledge on the topic to avoid duplication. Literature review gives clues on methodology and instruments that existed and tried or not tried. It makes the researcher familiar with the practical or theoretical issues relating to a problem area, generating ideas or focus on the research topic. It also helps the researcher to refine certain parts of the study and support collection and analysis of data of qualitative studies (Polit and Hungler, 2001).

This chapter is an overview of the literature which is mainly on knowledge, attitude and practices among nurses towards documentation of fluid balance chart conducted throughout the world. However, there are very few studies that have been conducted to determine the knowledge, attitudes and practices among nurses towards documentation of fluid balance chart. Therefore, related literature was reviewed and the sources of the literature reviewed were published and unpublished information from articles, books, and internet searches. This literature review focuses on both published and unpublished studies about knowledge, attitude and practices by nurses towards documentation of fluid balance charts globally, regionally and nationally.

However, there are very few studies that have been conducted to determine the knowledge, attitude and practices among Nurses towards documentation of fluid balance chart.

## **2.2 KNOWLEDGE**

In this study, Knowledge is defined as the information gained through experience or education, or the awareness gained by experience of a fact or situation (Pocket Oxford English Dictionary, 2005:504).

A study was conducted in the United Kingdom (UK) at East Somerset NHS Trust. The survey involved sending a questionnaire to nurses asking for information on how they record fluid balance data and when they record it. It revealed several discrepancies such as inadequate communication and organisation within the nursing team regarding patients' fluid balance status (Chin Nutrition, 2008). Most notably, because the information was exchanged at handover among the nurses, lack of understanding about where the responsibility lay for the education and training of ward staff in fluid balance monitoring, lack of ownership and accountability for the completion of fluid balance charts and also lack of equipment to enable nurses to accurately record volume input and output, which resulted in the estimation of fluids. It was established that all staff be given mandatory training on fluid balance and that in circumstances where fluid balance was not recorded appropriately, an incident form was completed to highlight the seriousness of this anomaly in care.

In Zambia, according to Zambia Demographic and Health Survey (ZDHS), 1992, a survey was conducted by Central Statistics Office in conjunction with University of Zambia to determine knowledge among nurses on Natural Family Planning and revealed that 98% heard about natural family planning method of contraception thus 72% heard from nursing schools, 14% heard from friends, 2% heard from their partners, while 8% heard from the media and 4% from other services.

## **2.3 ATTITUDE**

Attitude is the way of feeling and thinking towards fluid balance chart. Actions are governed to a large extent by attitudes.

French (1974) stated that attitude is an enduring system of positive or negative evaluations, emotional feelings and tendencies towards action. A study was undertaken in United Kingdom by Bell (1973), to consider the type of work nurses do in the wards. It showed that

nurses spent about 65% of their total working hours on nursing tasks and 31% on non nursing tasks. Also it revealed that majority of nurses' neglected basic procedures, there were instead done by student nurses. This showed some nurses had a negative attitude towards the basic nursing tasks which could include documenting intake and output charts (Chin Nutrition, 2008).

On determining the attitude among nurses by Muulu (2006) towards nursing role revealed that 83% had a negative attitude. He concluded that Nurses do have the required knowledge but lacked motivation in their work. The above study and many other studies that have been revealed in relation to attitude among nurses has shown that majority of them have a negative attitude which could also influence negatively the documentation of the intake and output chart. Having a negative attitude in documenting the fluid balance chart may cause nurses failure to identify any problems and warning signs that may arise due to inadequate recording of the fluid balance. The signs may indicate that the patient is acutely ill or is deteriorating; as such indicators may be missed due to failure of documenting the fluid balance chart.

## **2.4 PRACTICE**

Practice is the action of doing rather than the theories about it: putting policy into practice or the act of doing something repeatedly so as to become skillful (Pocket Oxford English Dictionary, 2005:705)

There are very few studies that have been conducted on practice among nurses on documentation of fluid balance chart; as such this variable is being researched on in relation to knowledge of nurses on documentation of fluid balance charts.

A study which was conducted at East Somerset NHS, Trust in the UK, involved reviewing 42 fluid balance charts on four wards, to assess the accuracy with which they had been completed by staff. Although the investigation used a small sample, this element of the study revealed a disturbing trend: not one of the 42 charts was completed appropriately. For instance, one patient's chart had no fluid records on the first day, while for the other two

days, total input was recorded to be 5500ml more than the total volume of output. Inappropriate comments were common on the charts, such as 'wet pad', 'toilet?' 'I forgot to measure', 'estimated', 'sips' and even ' (Chin Nutrition, 2008).

The study above revealed that the staff lacked the practical skills on managing the patients' fluid balance charts which could predispose to mismanagement of patients' illnesses. The nurses also lacked observation and checking of the fluid charts during exchanging of shifts when they could note the discrepancies on the charts. As cited by NICE (2008), that fluid balance chart is a key requirement for staff to demonstrate skill. All forms of fluid loss need to be accounted for as much as possible, as poor documentation is life threatening, especially when one is dealing with urine output. This can help in determining whether the kidneys are functioning properly or not.

Reference to making use of the available resources or information, a study was conducted in Zambia, by ZHDS to assess the practice of natural family planning method among nurses. It revealed that, majority of the nurses about 86% did not use the natural family planning method despite having the knowledge about natural family planning method (Kwesi et al, 1993). Since the nurses are the same people who take care and manage the patients' needs, from this study it also reveals lack of practice and skill on what they know such that it may also influence the manner in which they document the fluid balance which could be ineffective. This study also showed that there is need to investigate the factors that could influence nurses from practicing appropriately and effectively basing on the knowledge that they have acquired.

A study conducted by Sinkamba (2006) on the use of fluid balance chart by Enrolled Nurses at Mukinge Mission Hospital, he observed the use of the fluid balance chart by nurses and revealed that it was often not rational and was of little importance in the management of patients as the chart were often inaccurate, were being commenced unnecessarily and majority of the chart were incomplete that doctors failed to use them. The study showed that despite nurses having the basic knowledge on the purpose of fluids in the body and consequences of over-hydration and under-hydration lacked the willingness to document whatever the patients took in orally, parentally and any output especially on patients on strict

maintenance of fluid balance chart. This may cause mismanagement of patients on the part of the medical personnel.

## **2.5 CONCLUSION**

From the reviewed literature, it is evident that documentation of the fluid balance chart by the nurses faces various challenges. This is in agreement with Sinkamba (2006), who observed that fluid balance chart is one of the areas that are least well managed by Nurses.

It has been revealed also that there is more research that has been done by nurse experts in other countries compared to African countries and to Zambia in particular. However, it seems that understaffing is a common challenge that is faced by nurses globally regionally and nationally. There is also inadequate literature that has looked specifically at the knowledge, attitude and practices among nurses towards the fluid balance chart documentation in Zambia. Fluid balance chart documentation is one of the procedure and responsibility of the nurses in providing quality nursing care to the patients thus the need to pay more attention on it.

Despite high and average levels of knowledge among nurses, inadequate and inefficient documentation of fluid balance chart is being practised. Some other studies have also been done in Zambia on the usage and factors contributing to inaccurate maintenance of fluid intake and output records among nurses. However, none of these studies has been conducted at the University Teaching Hospital, Lusaka. It is for this reason that the researcher would like to conduct this study at UTH.

## **CHAPTER THREE**

### **3.0 METHODOLOGY**

#### **3.1 INTRODUCTION**

Research Methodology is the development, testing and evaluation of the research instruments and methods used in research investigation (Dempsey and Dempsey, 2002). This chapter focuses on methodology that was used in the study. It will look at the research design, study population, sample selection methods that were used, sample size, data collection tools, data collection technique, pilot study, validity, and reliability, ethical, cultural considerations and utilization of data and the limitations of the study.

#### **3.2 STUDY DESIGN**

A research design is the framework or the blue print of the study and it guides the researcher in the planning and implementation of the study while optimal control is achieved over factors that could influence the study (Burns and Grove, 2005). The purpose of the research design is to provide answers to the research questions and to control variance by planning the study in such a way as to rule out other hypotheses or intervening variables as causes to the study outcome.

The study adopted a Non Experimental Quantitative Methodology (Basavanthappa, 2007) using the descriptive design. The study is a non experimental descriptive study because it did not require intervention of the subjects and it was undertaken in a natural setting. Descriptive studies involved systematic collection and presentation of data about the level of knowledge, attitudes or behaviors and the level of practices among Nurses towards the documentation of the fluid intake and output chart. This describes the phenomena and also gives the clear picture of the situations.

The study is a cross sectional study because it involved examining data at one point of time. The data are collected on only one occasion with the same subjects rather than on several points in time (Basavanthappa, 2007). This design allowed the researcher to collect large amount of information at one point and the results were more readily available. Cross-

sectional designs are appropriate for describing the status of the relationship of phenomena among the variables.

### **3.3 RESEARCH SETTING**

Research setting is a physical allocation and conditions where the research will be conducted or where specific data collection takes place in the study (Polit and Beck, 2008). This study was conducted at the University Teaching Hospital (UTH) in Lusaka.

The University Teaching Hospital serves as a National Referral, Teaching and Research Centre. It has a Bed capacity of 1,800. It is situated on Nationalist Road in Lusaka and is the only national tertiary referral hospital. Due to the absence of a district and provincial hospital, UTH provides 1st, 2<sup>nd</sup> and 3rd level health care services. This outstanding collection of two-storey buildings, houses ultra modern medical facilities, spread over one and a half kilometers (80 hectares) of land and manned by 3000 medical staff and other personnel (Action plan, 2009-2011).

UTH not only functions as a national referral hospital but also functions as a provincial and district hospital servicing five districts namely Kafue, Chongwe, Luangwa, Mumbwa and Lusaka districts with an estimated 3 million people.

Within the catchments area of UTH there are several other service providers. The major ones are the health centers administered by the Lusaka District Health Management Team (LDHMT). There is one specialized Cancer diseases hospital, a specialized Mental Hospital and a Dental clinic. These hospitals also offer training in their respective specialties. In addition, there are several privately run hospitals and clinics that have continued to compliment health care service in the catchment area. (Action plan, 2009-2011).

University Teaching Hospital provides several services such as training of nurses and doctors in various fields, Paediatrics, Neonatal, Obstetrics and Gynaecology, Medicine, Surgery, ophthalmology, ENT, Out-Patient Departments, Radiological, Physiotherapy and



### **3.5 SAMPLING METHOD**

Sampling Method is the process of selecting a number of individuals from the determined target population in such a way that the individuals in the sample represent, as much as possible the characteristics of the entire target population (Polit and Beck, 2008). In this study, a non probability sampling method called convenience sampling was used. This was done by interviewing the nurses who were available in the departments at the time of conducting the research. For instance, the nurses who were found working in the morning shift on the day of research were interviewed in each department until the required number of 50 respondents had been reached. This method allows the available subjects to be entered into the study until the desired sample size is reached. Convenience sampling method is found to be suitable because the nurses do not work one shift all of them (Basavanthappa, 2007), they work different shifts which are divided into three allocations (morning, afternoon and night shifts). The advantage of convenience sampling method is that, it is cheaper and simplest; it does not require a list of population and does not require any statistical expertise.

#### **3.5.1 Eligibility Criteria**

This is the population that is defined in terms of characteristics that people must possess (Polit and Beck, 2006). It is those characteristics that restrict the population to a homogenous group of subjects which may also be viewed as delimitation (Basavanthappa, 2005). In this study the eligibility criteria are qualified nurses and these are Enrolled, Registered, Midwife, male or female working in the five Departments at UTH that will give consent to participate.

#### **3.5.2 Inclusion Criteria**

Inclusion criteria specify population characteristics (Polit and Beck, 2006). It reflects considerations rather than substantive or theoretical concerns. In this study, the inclusion criteria were nurses of all categories, all ages, males and females working in the various

departments at UTH who gave consent to participate and should have served at the hospital for six months and more.

### **3.5.3 Exclusion Criteria**

This is the criteria that specify characteristics that a population does not have (Polit and Beck, 2006). In this study, these characteristics included the nurses working in theatres and intensive care units, newly qualified nurses who have worked for less than six months and those who were on transfer and have worked in the ward for less than two months.

## **3.6 SAMPLE SIZE**

A sample size is the number of objects or participants included and consented to take part in the study (Burns and Groove, 2009).

The sample for this study comprised of 50 respondents (male and female nurses). This sample size of fifty (50) was chosen among nurses from the various Departments working at the university Teaching Hospital. The sample size is the minimum required for the Bachelor of Science in Nursing Degree. The minimum sample size was used because of limited time in which the study was to be conducted as well as inadequate financial and material resources.

### **3.6.1 University Teaching Hospital**

The University Teaching Hospital was conveniently chosen for study because the researcher is familiar with the study site and it is easily accessible and the costs to be incurred are fewer. This also allowed collection of data within the stipulated time.

### **3.6.2 Study Respondents**

The respondents in the study were chosen using the non probability sampling method of convenience sampling. The convenience sampling method was used to select the

respondents of the population in the sample which appeared convenient to the researcher and the management of the organization where the research was conducted. The weakness with this method is that the results obtained may not be generalized beyond the study's sample, but these studies are still of value to research process.

### 3.7 OPERATIONAL DEFINITIONS

**Accurate:** This refers to careful, precise or exact conformity with a standard.

**Attitude:** The manner in which nurses perceive the use of the fluid balance charts at the hospital.

**Encouragement:** This refers to the praises nurses receive when they implement or preformed the procedures well.

**Enrolled Nurse:** A person, who completed a two year programme of basic nursing education at a recognized school of nursing and is qualified, licensed and authorized by the Government through the General Nursing Council of Zambia to provide nursing care to patients.

**Experience:** Participation in the use of the fluid balance sheet.

**Fluid:** Refers to all kinds of fluids for example water, orange drinks, intravenous solutions like sodium chloride, dextrose and so on, also urine, vomit and wound exudates.

**Fluid intake record:** This is the recording of fluids given orally, parentally, rectally or fluids administered by tubes and retained by the patient.

**Fluid intake and output chart:** Refers to a chart where measurements of the volume of all fluids taken in and leaving the body.

**Fluid output record:** Is the recording of fluids lost by the patient through vomiting, diarrhoea, gastric drainage, wound exudates and urine.

**Guide:** This is a written statement to follow when carrying out a procedure.

**High care patient:** Is the patient who entirely depends on the nurse for the activities of living such as eating and drinking.

**Inaccurate:** The continued use of the chart to clinically stable patients and failure to estimate the insensible losses such as fluid lost in perspiration.

**Knowledge:** The ability to be able to define, answer correctly, give correctly, give correct reasons and to state the benefits correctly of the fluid balance chart.

**Nursing Responsibility:** This is the accountability that nurses take for the actions they have performed.

**Practice:** Being able to utilize fluid balance chart in the patient care and document it.

**Registered Nurse;** This is a person, who completed a three year programme of nursing education at a recognized nursing school and obtained a Diploma, licensed by the Government through the GNC to provide nursing care to patients.

### 3.8 DATA COLLECTION TOOL

A data collection tool is a measuring device used in gathering of information needed to address a research problem (Polit and Hungler, 2001). A self administered questionnaire is the method of collecting data that involves a direct report of information by the person who is being studied (Polit and Beck, 2001). In this study a questionnaire was used to collect data from the respondents in this study and it comprised of 31 questions divided in four parts. This is according to the main variables that are in the study and the interview schedule contained open and closed ended questions. The first part looked at demographic data, part B knowledge items, part C on attitudes and the final part on practice.

Some open ended questions were asked to allow the respondents to answer the questions in their own words and write in the questionnaire.

The advantages of using a questionnaire are that they are less expensive, permits anonymity and may result in more honest responses; do not require a research assistant when answering the questionnaire, data from closed-ended items are easy to tabulate and easy to test for validity and reality. However, the questionnaire may be applicable to literate people only, participates may omit or disregard some questions without giving an explanation and the amount of information gathered is limited to the subjects available time and interest span. The subjects who may return the questionnaire may not be the representative, the researcher may not be able to observe the facial expressions and non-verbal cues and the researcher also may not have an opportunity to interact with the respondents (Basavanthappa, 2007).

### **3.8.1 Validity**

Validity is the degree of a research instrument to measure what it intends to measure (Polit and Beck, 2009). So to ensure the quality of data collection tool, it is important to establish its validity. Validity constitutes both internal and external validity. External validity is the extent to which the findings of the research can be generalized to a larger extent population or to a different social, economical and political setting. To ensure external validity nurses from different departments, wards, with various levels of experience and training were included in the study.

Internal validity is an extent to which the effects detected in the study are a true reflection of reality rather than being the result of the effects of the extraneous variables (Burns and Grove, 2009). The implication is to have representative sample. To ensure validity, the research instrument and questions were simple and clear, and a pilot study was conducted at the University Teaching Hospital, ward C02 to test the intervention and the effectiveness of the instrument. This was chosen to test the tool to be used in the study and evaluate the questionnaire to determine whether they bring out the desired outcome and this was so. From the responses of the respondents the questions were reviewed and those that need some adjustment were adjusted. The research instrument was also reviewed by the supervisor to see whether or not it would meet the standard for the study.

### **3.8.2 Reliability**

This refers to the degree of consistency and accuracy with which an instrument measures the attributes it is designed to measure (Polit and Beck, 2008). Reliability is concerned with how consistent the instrument measures the concept of interest. It is synonymous with repeatability or stability. Reliability was upheld to ensure good interpretation of questions; the tool was used in the pilot study. A reliable instrument is one that can produce the same results if the behavior is measured again by the same scale (Wood and Haber, 2006). Reliability was maintained by using the same instrument to collect data from the respondents and clarifications were done to those with problems of understanding the

questions, so that they did not misunderstand the questions. This was ensured by use of the same kind of questionnaire with the same variables for all the respondents.

### **3.9 DATA COLLECTION TECHNIQUE**

Data collection technique is the method followed in the gathering of information needed to address a research problem (Polit and Beck, 2008). In this study, data was collected using a self administered questionnaire. Data collection was done by the researcher after obtaining clearance from the supervisor and the Head of department in the School of Medicine and Department of Nursing Sciences.

About ten respondents were interviewed each day at their most convenient time of the respondents so that they were not disturbed from what they were doing as most of the wards are understaffed. Some respondents answered the questionnaire there and then while others brought it the following day.

### **3.10 PILOT STUDY**

Pilot study is defined as a small or trial run, done in preparation for a major study (Polit and Beck, 2008). A pilot study is conducted before the actual research is done. For this study, it was done at UTH in ward C02 because it was near and easy to get clients for the pilot study as the layout of the area was similar to the areas for the main study, and the respondents had similar characteristics. The pilot study was done to test the validity and reliability of the data collection tool in order to detect and solve unforeseen problems before the actual study. The sample for the pilot study had been conveniently selected and the sample size was ten percent (10%) of fifty (50) respondents (the actual sample size) which is five respondents.

It was necessary to conduct a pilot study for the following reasons:

- It shows the adequacy of the tool for data collection

- The pilot study detects errors in the questionnaire for the main study.
- It also helps in developing better approaches to target population as regards to introduction and rapport.
- Pilot study provides information for estimating the probable cost and duration of the main study and of its various stages (Basavanthappa, 2007).

After conducting the pilot study a few changes were made to the questionnaires which include changing a practical question to the section of knowledge and the cut margins were also altered to suit the changes made.

### **3.11 ETHICAL AND CULTURAL CONSIDERATIONS**

Ethical considerations refers to ethics which are a system of moral values that is concerned with the degree to which research procedures adhere to professional, legal and social obligations to the study participants (Polit and Beck, 2008).

In this regard, permission was obtained from the UTH, Executive Director for the pilot study. Permission was further sort from the Director of Nursing which was followed by obtaining permission from the Departmental Nursing Officers and Nursing sisters of the various wards in the hospital where the study was conducted. The purpose of the study was explained to the participants and that consent form was to be filled in before answering the questionnaire. The consent was obtained from the participants to allow the researcher to conduct the interview though some at first were not willing to give any information, but after explaining the purpose and reassuring them that all data collected would be treated in privacy and confidentiality would be maintained at all times. Names were not written on the questionnaires; instead numbers were allocated to all respondents. This was done after explaining the purpose, nature of the study and what the results would be used for. This was also done by requesting for written and verbal permission from the participants. Those who declined to participate were reassured that no privileges were going to be taken away from them. Those who participated in the study were not remunerated in any way. The

respondents were in the natural setting and hence were not exposed to any physical and emotional danger or harm.

Confidentiality and anonymity were maintained to the respondents in that no names appeared on the questionnaires. Respondents were interviewed in a duty room or sister's offices where there were no other people to ensure privacy. After each interview, the researcher put the questionnaires in a separated bag in an envelope labeled "answered questionnaires to avoid mixing and prevent giving them to other respondents to fill them in.



## **CHAPTER FOUR**

### **4.0 DATA ANALYSIS AND PRESENTATION OF FINDINGS**

#### **4.1 INTRODUCTION**

This chapter describes analysis and presentation of data. The aim of the study was to determine knowledge, attitude and practice of Nurses towards documentation of intake and output chart at the University Teaching Hospital. The data was collected from the 50 Nurses working in Pediatrics Department, Obstetrics/gynaecology Department, Emergency Adults Department and Medical and Surgical Departments using convenient sampling method. A self administered questionnaire was used to collect data.

The findings were analyzed using the Master Datasheet Plan and scientific statistical calculator, also a number two pencil for easy writing, clear and neatly preparing.

#### **4.2 DATA ANALYSIS**

Data analysis is a practice in which raw data is ordered and organized so that useful information can be extracted from it ([www.robertniles.com/./dataanly.shtml](http://www.robertniles.com/./dataanly.shtml)).

Data analysis is the process of categorizing, scrutinizing and cross-checking the research data (Basavanthappa, 2007). Data collected was sorted out, edited for completeness and later entered on the data master sheet for manual procession. Open and closed ended questions were also edited and coded. The data analysis methods used were qualitative for the open-ended questions and quantitative for the closed-ended questions. Analysis was done using a scientific calculator and frequency tables.

##### **4.2.1 Quantitative Data**

Quantitative data is the information collected in the course of the study that is in a quantified or numeric form (Polit and Beck, 2006). The responses from closed ended questions were analyzed and entered on the data master sheet manually using a scientific calculator and frequency tables. The closed-ended questions were analyzed by creating codes that were

entered on the data master sheet. The responses were counted, then aggregated and the percentages were calculated using a scientific calculator into total numbers and percentages. Open questions were analyzed by reading through the data in its entirety to identify and group answers that belonged together. This is known as categorization (Polit et al, 2001). Following categorization the researcher assigned numerical codes.

#### 4.2.2 Qualitative Data

Qualitative data is the information collected in the course of a study that is narrative (Polit and Beck, 2006). Qualitative data derived from the open-ended questions were analyzed using the principle of content analysis. Data obtained from open ended questions were summarized using a narrative. The findings were interpreted and the most useful quotations that emerged from the questions to illustrate the main ideas were selected.

According to Polit et al (2001), content analysis is the process of organizing and integrating narrative, qualitative information according to emerging themes and concepts. The responses from the open-ended questions were categorized according to similarity and then coded. This called for reading and proof-reading and vigorous study of each question in order to come up with concepts in the responses through the process of open coding. The respondents gave various definitions of the fluid balance chart such as *it is a chart used to balance the intake and output of any fluid administered to the patient in order to know how much the patient is taking in 24 hours. Others wrote that it is a chart used to record fluid intake and output and it helps in detection of any renal failure and while others noted that it is a chart a nurse uses to document patients' information, making proper diagnosis and its used in management of the patient.*

On the question concerning what they were taught during the basic nursing training about the fluid balance chart, the responses given were that *"the chart is used to record all kinds of fluids being taken in and out by the patient. Other responses were "to balance all fluids taken in and out every 24 hours, to document the amount and type of food and time the patient received the feed. Also to monitor intake and output on patients as it helps to assess the renal functions while others the information was missing.*

The respondents were also asked to explain whether the fluid balance chart was helpful in providing quality care to the patients. Several responses were given and the majority stated that, *it's helpful in that it helps to know how the kidneys are functioning*, others said, *It helps to monitor and maintain the amount of fluids the patient is supposed to receive and how often, it helps to rule out fluid overload therefore providing quality care to the patient and also, helps to monitor patient's condition*".

On the question whether the fluid balance chart was an appropriate too for monitoring the body fluid, most of the respondents stated that *"It is appropriate as it helps assess how much fluid is going in and out of the body there by helping the nurse to maintain a normal body fluid volume, it is also appropriate as it helps to determine whether the kidneys are working properly or not and others said that it is appropriate as it is used to determine how much fluids the patient has to receive and also consider the amount to be taken by the patient and others said it is appropriate as it helps to know how hydrated the patient is.*

#### **4.3.0 PRESENTATION OF FINDINGS**

The findings of the study in this section are presented according to the lay out of questions and sections of the interview schedule. Some have been grouped together to give an overview picture. The results have been presented in different forms such as frequency tables, cross tabulations and pie charts. The frequency tables summarised the results of the study to ensure that the readers understand the findings of the research study. The use of pie charts in the presentation of findings makes the work neat, presentable and easy to read by the reader. Cross tabulations of the variables help to show clearly the relationship between variables so as to draw meaningful inferences. The findings from this study are presented according to the sequence and sections in the questionnaire i.e. demographic data, knowledge, attitude and practice towards fluid balance chart documentation. Cross tabulations of the variables used have also been done to identify relationships among them.

In section A represents the demographic characteristics of the respondents, the tables and pie chart, in section B represents the respondents' knowledge of the fluid balance chart while the tables in section C represents the Attitude among Nurses towards the documentation of

fluid balance chart and section D represents practice among Nurses and the relationship between variables.

**SECTION A**

**4.3.1 SAMPLE CHARACTERISTICS**

This section consists of a table that looks at the characteristics of the sample which were included in the study. The characteristics are gender, age, marital status, professional attainment and the years served of the respondents.

**Table 2        SAMPLE CHARACTERISTICS**

**Socio-demographic characteristics of the sample (N=50)**

		Frequency	Percentage (%)
GENDER	Female	42	84
	Male	08	16
	Total	50	100
AGE	20 – 29 years	26	52
	30 – 39 years	18	36
	40 – 49 years	4	8
	50 years and above	2	4
	Total	50	100
MARITAL STATUS	Single	24	48
	Married	24	48
	Divorced	1	2
	Widowed	1	2
	Separated	0	0
	Total	50	100
RELIGION	Christian	50	100

	Moslem	-	-
	Hindu	-	-
	<b>Total</b>	<b>50</b>	<b>100</b>
<b>PROFFESIONAL ATTAINMENT</b>	RN	17	34
	RM	2	4
	EN	26	52
	EM	5	10
	<b>Total</b>	<b>50</b>	<b>100</b>
<b>YEARS IN SERVICE</b>	1 – 2	19	38
	3 – 4	9	18
	5 – 6	1	2
	7 – 10	9	18
	Above 10 years	12	24
	<b>Total</b>	<b>50</b>	<b>100</b>
<b>AREA OF OPERATION</b>	Peadiatrics Dept	10	20
	Obs/Gynea	10	20
	Dept	10	20
	Medical Dept	10	20
	Surgical Dept	10	20
	Emergency Dept		
	<b>Total</b>	<b>50</b>	<b>100</b>

Majority of the respondents 42 (84%) interviewed were females while the rest 8 (16%) were males. Most 26 (52%) of the respondents were within the age group 21 – 29 years old and 18 (36%) were within the age group 30 -39 years. 24 (48%) of the respondents were married and the same percentages were single.

All the respondents 50 (100%) were Christians. Majority 19(38%) of the nurses had been in service for not more than two years (1 – 2). Those above 10 years were 12(24%) and 10(20%) of the respondents came from each department in the hospital.

## SECTION B

### 4.3.2 NURSES KNOWLEDGE OF FLUID BALANCE CHART DOCUMENTATION

#### 4.3.2.1 OVERVIEW

This section looks at the nurses' knowledge of fluid balance chart documentation. It includes the definition of the fluid balance chart, types of patients and conditions, on which the chart is used, the importance of accurately filling the fluid balance chart and also identifying the components of the fluid balance chart.

**Table 3: Type of patients you use the fluid balance chart**

Type of patients you use the fluid balance chart	Frequency	Percentage (%)
a) Critically ill	13	26
b) Cardiac patients	11	22
c) Patients with renal conditions	15	30
d) (a) and (b) only	-	-
e) (c) only	-	-
f) (a), (b) and (c)	39	78

❖ **Multiple responses do not add up-to 50**

39(78%) respondents indicated that critically ill, cardiac and patients with renal conditions are the ones on which fluid balance chart was used while 11(22%) indicated that it is on cardiac patients.

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39(78%) respondents indicated that critically ill, cardiac and patients with renal conditions are the ones on which fluid balance chart was used while 11(22%) indicated that it is on cardiac patients.

**Table 4: People involved in documentation of fluid balance chart**

People involved in documentation fluid balance chart	Frequency	Percentage (%)
a) Doctors	22	44
b) Nurses	50	100
c) Ward Attendants	8	16
d) Maids	-	-
e) Patient's Guardian	4	8

❖ **Multiple responses do not add up-to 50**

All of the respondents 50 (100%) reported that Nurses are the ones involved in documentation of the fluid balance chart while 4(8%) respondents reported that patient's guardians are also involved in documenting the fluid balance chart.

**Table 5: Conditions on which you commence the fluid balance chart**

Conditions you commence the fluid balance chart	Frequency	Percentage
a) Nil by mouth	41	82
b) Diarrhoea	43	86
c) Excessive vomiting	42	84
d) Excessive wound exudates	15	30

❖ **The totals do not add up to 50 because respondents had to choose more than one choice**



Table 5 shows that 43 (86%) of the respondents stated that diarrhoea is a condition in which fluid balance chart is commenced, while. 15 (30%) of respondents stated that in excessive wound exudates fluid balance chart is also commenced.

**Table 6: Importance of accurate filling in a fluid balance chart**

Importance of accurate filling in a fluid balance chart	Frequency	Percentage (%)
a) It is the only way to treat the patients	-	-
b) So that the nurse carries the doctors orders adequately	-	-
c) So that one can determine whether or not the kidneys are functioning well	33	66
d) To monitor the condition of the patient	15	30
e) To determine the fluid intake	26	52

❖ Totals do not add up to 100% because respondents had more than one choice to choose from in the question.

Majority of the respondents 33(66%) indicated that it is important to accurately fill in the fluid balance chart so that one can determine whether the kidneys are functioning well While the least15 (30%) indicated that it helps to monitor the condition of the patient.

**Table 7: Components of the fluid balance chart**

<b>Component of a fluid balance chart</b>	<b>Frequency</b>	<b>Percentage (%)</b>
a) Type of fluid	48	96
b) Time of commencement of the fluid	45	90
c) Particulars of the patient	45	90
d) Amount taken in	41	82
e) Amount out put	40	80

❖ **Multiple responses do not add up-to 50**

The table shows that 48 (96%) of the respondents stated that type of fluid is a component of fluid balance chart while others about 45 (90%) stated time of commencement of the fluid and particulars of the patient. About 41 (82%) of the respondents stated the amount taken in and 40 (80%) stated the amount out put.

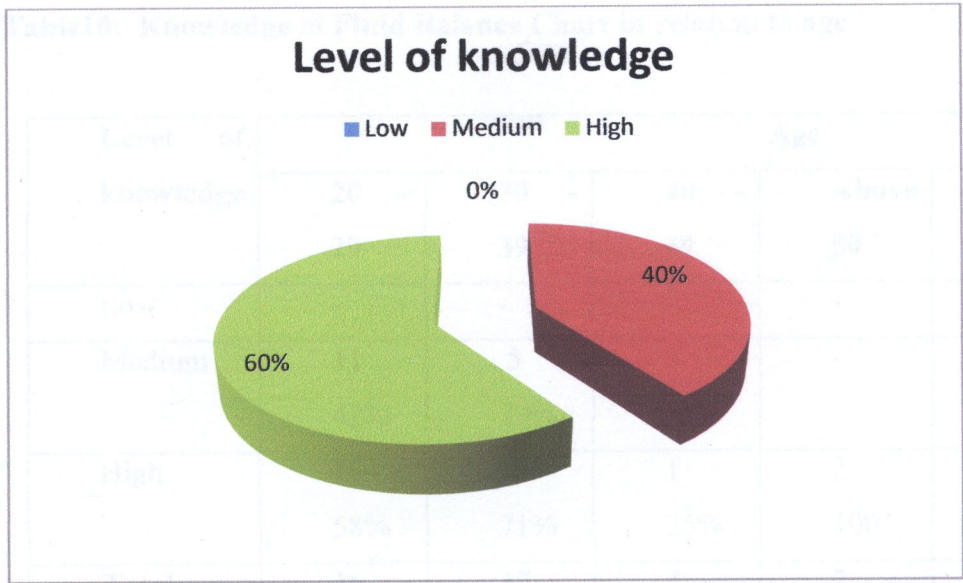
**Table 8: Level of knowledge on fluid balance chart**

<b>Level of knowledge</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Low</b>	00	00
<b>Medium</b>	20	40
<b>High</b>	30	60
<b>Total</b>	<b>50</b>	<b>100</b>

The tables shows 30 (60%) of the respondents had high level of knowledge and 20(40%) had medium level of knowledge.

Of the respondents with high level of knowledge on demonstration of fluid balance chart

Figure 2 Distribution of respondents' level of knowledge (n=50)



30(60%) of the respondents had high knowledge of the fluid balance chart while 20 (40%) had medium level of knowledge on fluid balance chart.

Table 9: Knowledge of Fluid Balance Chart in relation to gender

Level of knowledge	Gender		
	Female	Male	Total
Low	-	-	-
Medium	15	5	20
	36%	62%	40%
High	27	3	30
	64%	38%	60%
Total	42 (100%)	8 (100%)	50 (100%)

Of the respondents with high level of knowledge on documentation of fluid balance chart, 27(64%) were females while 3 (38%) were males.

**Table10: Knowledge of Fluid Balance Chart in relation to age**

Level of knowledge	Age				
	20 - 29	30 - 39	40 - 49	Above 50	Total
Low	-	-	-	-	-
Medium	11 42%	5 29%	3 75%	-	19 38%
High	15 58%	13 71%	1 25%	2 100	31 62%
Total	26 100%	17 100%	4 100%	2 100%	50 100%

The table shows 3(75%) of the respondents with medium level of knowledge were aged between 40 - 49 years while 2(100%) of the respondents with high level of knowledge were within age group above 50 years old while 15(58%) of the respondents with high knowledge were aged between 20 – 29 years old.

**Table 11: Knowledge of Fluid Balance Chart in relation to years in service**

Level of knowledge	Years in Service					
	1 – 2 years	3 – 4 years	5 – 6 years	7 – 10 years	Above 10 years	Total
Low	-	-	-	-	-	-
Medium	7 37%	4 44%	1 100	3 30%	5 45%	20 40%

High	12 63%	5 56%	-	7 70%	6 55%	30 60%
<b>Total</b>	<b>19</b> <b>100</b> <b>%</b>	<b>9</b> <b>100</b> <b>%</b>	<b>1</b> <b>100</b> <b>%</b>	<b>10</b> <b>100</b> <b>%</b>	<b>11</b> <b>100</b> <b>%</b>	<b>50</b> <b>100</b> <b>%</b>

1(100%) of the respondents with medium levels of knowledge had worked between 5 - 6 years while those who had worked for 7 - 10 years 7(70%) showed high level of knowledge. 6(55%) of the respondents who had a high level of knowledge were those who had worked over 10 years.

**TABLE 12: KNOWLEDGE IN RELATION TO AREA OF WORK**

Level of knowledge	AREA OF WORK					
	Peadiatrics	Obs/Gyna	Medical	Surgical	Emergency	Total
Low	0	0	0	0	0	0
Medium	6 60%	8 80%	5 50%	7 70%	4 40%	30 60 %
High	4 40%	2 20%	5 50%	3 30%	6 60%	20 40 %
<b>Total</b>	<b>10</b> <b>100%</b>	<b>10</b> <b>100%</b>	<b>10</b> <b>100</b> <b>%</b>	<b>10</b> <b>100</b> <b>%</b>	<b>10</b> <b>100%</b>	<b>50</b> <b>10</b> <b>0</b> <b>%</b>

The table shows 6(60%) of the respondents with high level of knowledge were from the Emergency department while 8(80%) of the respondents with medium level of knowledge were from the Obs/Gyneacology Department.

**SECTION C**

**4.3.3 ATTITUDE TOWARDS DOCUMENTATION OF FLUID BALANCE CHART**

**OVERVIEW**

This section deals with the attitude of nurses towards documentation of fluid balance chart. The section will consist of three tables which show the responses to the questions on attitude and a pie chart which shows the levels of attitude of nurses.

**Table 13: Nurses attitude towards fluid balance chart documentation**

Fluid balance chart is useful in patient care	Frequency	Percentage (%)
a) Always	29	58
b) Sometimes	8	16
c) It depends	13	26
d) I do not know	-	-
Total	50	100

Majority of the respondents 29 (58%) indicated that the fluid balance chart was always useful in providing care to the patients while 13(26%) indicated that it depends and still others 8(16%) indicated sometimes it's useful.

**Table 14: Documentation of fluid balance chart is time consuming**

	Frequency	Percentage (%)
a) Always	1	2
b) Sometimes	16	32
c) It depends	26	52
d) I do not know	2	4
e) missing	5	10
<b>Total</b>	<b>50</b>	<b>100</b>

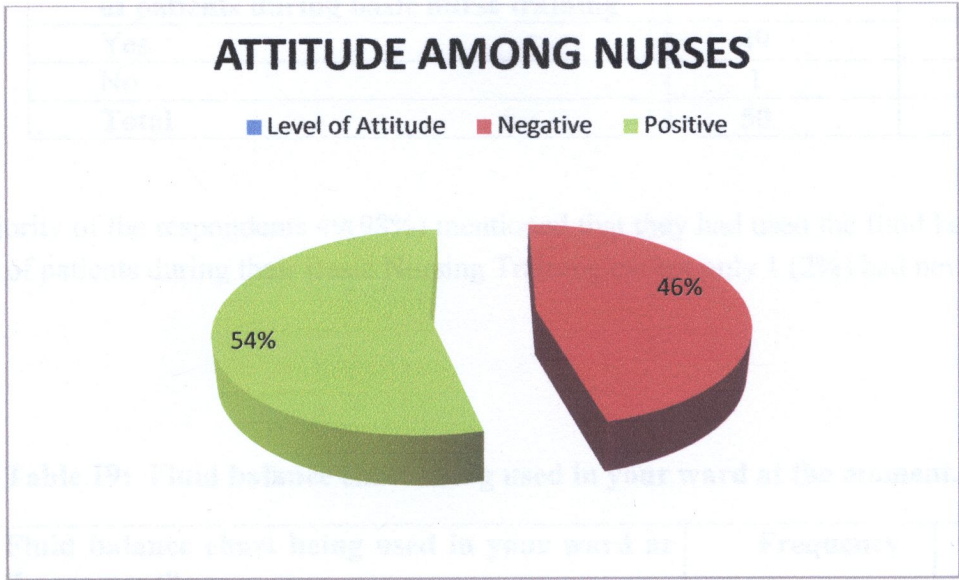
The table shows 26(52%) of the respondents felt that documentation of fluid balance chart depends on the situation at hand. They felt that it was time consuming or not, while 1(2%) felt that it was time consuming.

**Table 15: Fluid balance chart is helpful in providing quality care to patients**

	Frequency	Percentage (%)
Yes	49	98
No	1	2
<b>Total</b>	<b>50</b>	<b>100</b>

Majority of the respondents 49(98%) agreed that the fluid balance chart is helpful in providing quality care to the patients and 1(2%) disagreed.

**Figure 3: NURSE’ LEVEL OF ATTITUDE TOWARDS DOCUMENTATION OF FLUID BALANCE CHART**



Majority of the respondents 27 (54%) had a positive attitude towards documentation of the fluid balance chart while 23(46%) had a negative attitude.

**SECTION D**

**4.3.4 NURSES PRACTICE OF FLUID BALANCE CHART DOCUMENTATION**

**Table 17: Appropriate tool for monitoring body fluid**

Appropriate tool for monitoring body fluid	Frequency	Percentage (%)
Yes	44	88
No	6	12
Total	50	100

Majority of the respondents 44 (88%) were of the view that the fluid balance chart is an appropriate tool for monitoring body fluid while 6(12%) stated that it was not.



**Table 18: Used the fluid balance chart in the care of patients during basic nurse training**

Used the fluid balance chart in the care of patients during basic nurse training	Frequency	Percentage (%)
Yes	49	98
No	1	2
Total	50	100

Majority of the respondents 49(98%) mentioned that they had used the fluid balance chart in the care of patients during their Basic Nursing Training except only 1 (2%) had never use the FBC.

**Table 19: Fluid balance chart being used in your ward at the moment.**

Fluid balance chart being used in your ward at the moment?	Frequency	Percentage (%)
Yes	50	100
No	0	-
Total	50	100

All respondents 50(100%) indicated that the fluid balance chart was being used on the wards.

**Table 20: Maintenance of fluid balance chart in some wards**

The fluid balance chart is not maintained in some wards, why?	Frequency	Percentage (%)
a) Nurses are too busy	32	64
b) Nurses not sure	4	8
c) No supervisor to check	3	6
d) Nurses are indifferent	10	20
Total	49	98

32(64%) of the respondents gave reasons that fluid balance charts are not maintained in some wards because nurses were too busy and 3 (6%) mentioned that there was no supervisor to check the charts.

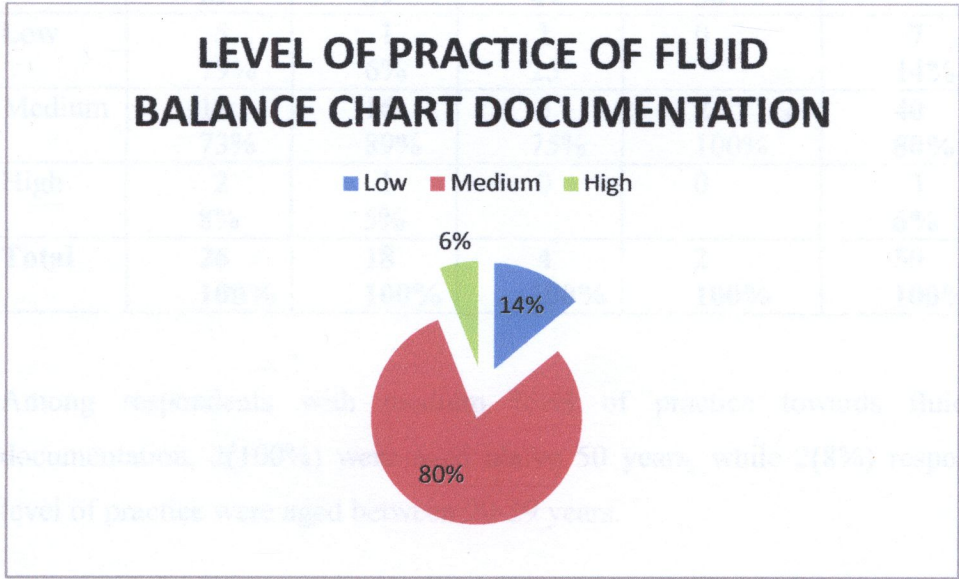
**Table 21: Who ensures that fluid charts are maintained on your ward**

Who ensures that fluid charts are maintained on your ward?	Frequency	Percentage (%)
a) Doctors	8	18
b) Nursing Officer	6	12
c) Sr -in-charge	30	60
d) Staff nurse	32	64
e) Patient’s relatives	1	2

Majority of the respondents 32 (64%) indicated that the staff nurse is the one who ensures that the fluid balance chart is maintained on the ward while 30 (60%) of the respondents indicated that it’s the Sister-in-charge and 1 (2%) indicated that the patient’s relatives can ensure that the fluid balance chart is maintained on the ward.

**Figure 4:**

**NURSES’ LEVEL OF PRACTICE OF DOCUMENTATION OF FLUID BALANCES CHART**



40 (80%) of the respondents had medium level of practice of fluid balance chart documentation

**TABLE 22: PRACTICE IN RELATION TO GENDER**

Level of Practice	GENDER		
	FEMALE	MALE	TOTAL
Low	5	3	8
	12%	38%	16%
Medium	34	5	39
	81%	62%	78%
High	3	0	3
	7%		6%
Total	42	8	50
	100%	100%	100%

The table shows 34 (81%) of the respondents who had medium level of practice towards fluid balance chart were females.

**TABLE 23: PRACTICE IN RELATION TO AGE**

Level of Practice	AGE				
	20 - 29	30 - 39	40 - 49	ABOVE 50	TOTAL
Low	5	1	1	0	7
	19%	6%	25		14%
Medium	19	16	3	2	40
	73%	89%	75%	100%	80%
High	2	1	0	0	3
	8%	5%			6%
Total	26	18	4	2	50
	100%	100%	100%	100%	100%

Among respondents with medium level of practice towards fluid balance chart documentation, 2(100%) were aged above 50 years, while 2(8%) respondents with high level of practice were aged between 20-29 years.

TABLE 24: LEVEL OF PRACTICE IN RELATION TO YEARS IN SERVICE

Level of Practice	YEARS IN SERVICE					
	1 - 2	3 - 4	5 - 6	7 - 10	Above 10 years	Total
Low	4 21%	1 11%	0	0	2 17%	7 14%
Medium	15 80%	6 67%	1 100%	8 89%	10 83%	40 80%
High	0	2 22%	0	1 11%	0	3 6%
Total	19 100 %	9 100 %	1 100 %	9 100 %	12 100%	50 100 %

Majority of the respondents 1(100%) who were in service between 5 - 6 years had medium level of practice while those who were in service for 3 – 4 years 2(22%) had high level of practice.

TABLE 25: PRACTICE IN RELATION TO THE AREA OF WORK

Level of Practice	AREA OF WORK					
	Pediatric	Obs/Gynecology	Medical	Surgical	Emergency	Total
Low	1 10%	0	1 10%	3 30%	2 20%	7 14 %

Medium	8 80%	10 100%	8 80%	7 70%	7 70%	40 80 %
High	1 10%	0	1	0	1 10%	3 6%
<b>Total</b>	<b>10 100%</b>	<b>10 100%</b>	<b>10 100 %</b>	<b>10 100 %</b>	<b>10 100%</b>	<b>50 100 %</b>

Majority 10(100%) of the respondents who had medium level of practice were working in obstetrics/gynaecology department

## SECTION E

### 4.3.5.0 RELATIONSHIP AMONG KNOWLEDGE, ATTITUDE AND PRACTICE

This section looks at the relationship between the different variables that are in this study. There are three tables in this section which include practice in relation to the level of knowledge, knowledge in relation to attitude and attitude in relation to practice.

**TABLE 26: RESPONDENTS' LEVEL OF KNOWLEDGE IN RELATION TO THE LEVEL OF PRACTICE**

LEVEL OF KNOWLEDGE	LEVEL OF PRACTICE			
	Low	Medium	High	Total
Low	0	0	0	0
Medium	7 100%	12 30%	0	19 38%
High	0	28 70%	3 100%	31 62%

<b>Total</b>	<b>7</b>	<b>40</b>	<b>3</b>	<b>50</b>
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

The table shows that the respondents 7(100%) who had medium level of knowledge had low level of practice while those who had high level of knowledge 3(100%) had high level of practice.

**TABLE 27: LEVEL OF KNOWLEDGE IN RELATION TO LEVEL OF ATTITUDE**

LEVEL OF KNOWLEDGE	LEVEL OF ATTITUDE		
	Negative	Positive	Total
Low	0	0	0
Medium	8 42%	11 35%	19 38%
High	11 58%	20 65%	31 62%
<b>Total</b>	19 100%	31 100%	50 100%

20 (65%) respondents, who had a positive attitude towards fluid balance chart, had high level of knowledge, while 8(42%) respondents who had negative attitude had medium level of knowledge towards fluid balance chart documentation.

**TABLE 28: LEVEL OF ATTITUDE IN RELATION TO PRACTICE**

LEVEL OF ATTITUDE	LEVEL OF PRACTICE			
	Low	Medium	High	Total
Negative	5	12	2	19
	71%	30%	67%	38%
Positive	2	28	1	31
	29%	70%	33%	62%
Total	7	40	3	50
	100%	100%	100%	100%

Majority of the respondents 28(70%) who had positive attitude had medium level of practice while5 (71%) of the respondents who had a negative attitude had a low level of practice.

**TABLE 29: DESCRIPTIVE STATISTICS OF TOTAL KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS DOCUMENTATION OF FBC**

Distribution of study variables (n=50)

Variable	Mean	Std Deviation	Range
Knowledge	13.7	2.2	8-17
Attitude	4.4	1.4	1-7
Practice	4.2	0.8	3-6

Knowledge levels ranged from 8 to 17 (mean=13.7; SD=). Attitude ranged from 1-7(mean=4.4; SD=1.4). Practice ranged from 3-6 (mean=4.2; SD=0.8).

## **CHAPTER FIVE**

### **5.0 DISCUSSION OF FINDINGS AND IMPLICATIONS FOR THE HEALTH CARE SYSTEM.**

#### **5.1 INTRODUCTION**

The discussion of the study is based on analysis of data collected from a sample of fifty (50) respondents using a self administered questionnaire. The study was aimed at determining knowledge, attitude and practice of nurses at the University Teaching Hospital in Lusaka towards documentation of the fluid balance chart. Data were collected using a self administered questionnaire.

The discussion is presented under headings which are in line with the objectives namely, demographic, knowledge, attitude and practice.

#### **5.2 CHARACTERISTICS OF THE SAMPLE**

The demographic characteristics of the respondents of the study included sex, age, and the level of education, religion and area of work.

The sample included nurses only, both males and females (Table 4.2). Most of the respondents 42(84%) in this study, were females and 8(16%) were males this is attributed to the fact that Nursing profession is female dominated in Zambia since two decades ago only females were enrolling for Nursing. The results agree with Mulala (2006) who found that the majority 47(94%) of the health workers were females.

Majority of the respondents 26 (52%) were aged between 20 - 29 years old (Table 2) and about 18(36%) were between the age range of 30 - 39 years old while 4(8%) were aged between 40 - 49 years old and 2(4%) of the respondents were above 50 years old. The results are similar with Sinkamba (2006), who had majority 41(82%) of the respondents between the ages of 20 – 29 years. This could be attributed to the fact that the current population of nurses mostly consists of the younger newly qualified nurses.



The results also revealed that 24(48%) of the respondents were married and the same figure, 24 (48%) of the respondents were single while 1(2%) were divorced and 1 (2%) widowed. This is because majority of the respondents have finished their training and are settling down before they could start planning seriously to marry and have a family of their own, because marriage is a life time commitment which requires one to take some time to prepare him/herself psychologically, financially and materially.

All the respondents of the study population 50(100%) were Christians this is in agreement to the Declaration of Zambia as a Christian Nation as such most respondents were Christians. The sample had 26(52%) Enrolled Nurses, while 17(34%) were Registered Nurses and 5(10%) were Enrolled Midwives and 2(4%) were Registered Midwives (Table 4.2). This could be attributed to the fact that previously we had more Nursing schools for Enrolled Nurses.

The study shows that 19 (38%) had worked between 1 - 2 years while 9(18%) had worked 3 - 4 years and 7 - 10 years respectively. About 1(2%) of the respondents had worked between 5 - 6 years and 12(24%) had worked above 10 years (Table 3). The tables revealed that majority of the nurses are newly qualified straight from training and are being deployed to work in most of the wards at UTH. This could be attributed to retirement, resignation and death of the older nurses (UTH, Action Plan, 2009 -2011).

### **5.3 DISCUSSION OF VARIABLES**

#### **5.3.1. KNOWLEDGE ON FLUID BALANCE CHART DOCUMENTATION**

Knowledge may influence one's action; hence having knowledge on fluid Balance Chart will influence ones' ability to document the fluid balance chart. The study findings show that 30(60%) of the respondents had high knowledge on fluid chart documentation (table 4.7). Majority of the respondents 42 (84%) where also able to define the fluid balance chart as the chart used to record fluid intake and output in order to know how much the patient is taking while others 4 (8%) included that it helps in detecting any renal failure. This is in agreement with Phipps, et al (2000) who defined fluid balance chart as a record maintained

for a patient to show the intake and output. Holloway (1999) defined the fluid balance chart as a common tool used by nurses to assess fluid status of patients' and monitor fluids which include water, soups, tea juices and coffee in patient under the nurses' care. The study findings revealed also that 20 (40%) of the respondents had medium level of knowledge (table 4.2).

The unconscious patients, cardiac patients and patients with renal conditions are some of the conditions on which a fluid balance chart is used. The study showed that 39(78%) of the respondents knew on which conditions the fluid balance chart is used while 43(86%) had knowledge on what conditions the fluid balance chart is commenced (Table 4.4). The study findings also revealed that all the respondents 50(100%) know the people who are involved in the documentation of the fluid balance chart which are the nurses while 4(8%) of the respondents indicated that patients' guardian are involved in documentation of the fluid balance chart. This could be because; patients' relatives are now co- partners in rendering quality care to our patients in the hospital and health facilities.

Furthermore, the findings revealed that majority 33(66%) of the respondents knew the importance of accurate filling on a fluid balance chart as this could determine whether or not the kidneys are functioning properly ([wiki.answers.com/Q/What is fluid](http://wiki.answers.com/Q/What_is_fluid)). The study revealed that majority of the respondents 48(96%) had the knowledge on the components of the fluid balance chart (Table 4.6) in which they indicated the, type of fluid, is a component of fluid chart.

The findings also showed that majority 27(64%) of the respondents with high level of knowledge on documentation were females while 5 (62%) were males (Table 4.8).

Table 4.9 revealed that 3(75%) of the respondents with medium level of knowledge were aged between 40 -49 years while those 2(100%) with high level of knowledge were aged above 50 years.

The study further showed that 1(100%) of the respondents with medium level of knowledge had worked between 5 – 6 years while those who had worked for 7 – 10 years 7(70%) showered high level of knowledge of fluid balance chart. Concerning the respondents

involved (Table 4.11) those with medium level of knowledge 8(80%) were from Obs/Gynea department and those with high level of knowledge were from the emergency department.

The study revealed also that among the respondents 3 (100%) with high level of knowledge had high level of practice while those 7(70%) with medium level of knowledge had low level of practice (Table 4.25). This could have been attributed to the fact that majority 26(52%) of the respondents age group was 20 – 29 years (Table 4.9) were newly qualified and still remembered what was taught in the Nursing Training School. This is in agreement with the study by Sinkamba (2006) on the use of fluid balance chart by Enrolled Nurses. The above findings and results support the hypothesis of this study.

### **5.3.2 ATTITUDE TOWARDS FLUID BALANCE CHART DOCUMENTATION**

The results under this section were elicited from the questions asked with regards to the attitude of nurses towards documentation of the fluid balance chart. Generally the attitude towards fluid balance chart as analyzed indicates that 27(54%) of the respondents had a positive attitude towards fluid balance chart, while 23(46%) had a negative attitude (figure 3). Despite having a higher percentage of respondents with a positive attitude towards the fluid balance chart the difference margin is quite narrow with the negative attitude. Hence, Nurses need to be encouraged to improve on their attitude as they render service to the patients. A positive attitude towards something will motivate one to work hard in offering quality nursing care to the patients and this may improve the documentation of fluid balance charts. Most respondents indicated that documentations helps the medical personnel detect how the kidneys are functioning, others indicated that it helps to monitor and maintain the amount of fluids the patient is supposed to receive and how often. Documentation of fluid balance chart also helps the Nurses to prevent overloading the patients with fluids.

When asked the nurses whether the fluid balance chart was useful in the patient care, majority 29(58%) of the respondents indicated that the fluid balance chart was always useful in providing care to the patients while 8(16%) indicated sometimes. This could be attributed to the fact that the chart helps the Doctors and Nurses to monitor patient's condition,

regulate the amount to give either reducing or increase depending on the condition of the patient. 26(52%) of the respondents felt documentation of the fluid balance chart depends whether it was time consuming, while 1(2%) felt that it is time consuming. This could be due to shortage of staff where one Nurse is nursing 40 to 50 patients (UTH, 2009). When the patients are few and the ward is not very busy the Nurses are able to document the fluid balance charts. The recommended Nurse Patient ratios as 1:6: and 1:4 for Registered Nurses and Enrolled Nurses respectively.

The study also showed that majority 49(98%) of the respondents agreed that the fluid balance chart was helpful in providing quality care to the patients as it helps to know how the kidneys are functioning and also to monitor and maintain the amount of fluids the patient was supposed to receive while 1(2%) disagreed that not every patient admitted was commenced on intravenous infusion. This is in agreement with Sinkamba (2006), in which the respondents stated that “the fluid balance chart was useful because patients received adequate fluids at the right rate and it was easy to give the handover reports to other medical staff.”

The study further showed that majority 7(70%) of the respondents who had positive level of attitude were from Paediatrics and Obs/Gynaecology departments while 7(70%) of the respondents who had a negative attitude were from emergency department (Table 4.15). This reveals that the Nurses in these departments have understood the importance and usefulness of documentation of fluid balance charts in the care of the patients. The study reveals that Nurses in these departments, deal with neonates, children and women in whom the former are more susceptible to fluid overload and other complications which may lead to losing the patients. Obstetric/gynaecology department's, deals mostly with post operative care which also requires the Nurses to pay more attention inaccurately monitoring the fluid intake and output.

The findings also revealed that 28(70%) of the respondents who had positive attitude had medium level of practice while 5(71%) of the respondents who had negative level of attitude had low level of practice (Table 4.27). This is in line with the study by Munganga (2007) in which she revealed the majority of respondents had a negative attitude. This shows that

Nurses with a positive attitude towards documentation of fluid balance chart had an average level of practice.

### **5.3.3 PRACTICE OF FLUID BALANCE CHART DOCUMENTATION**

The information on practice was elicited from section D. Despite having high knowledge and negative attitude towards fluid balance chart, this study finding shows that majority 40(80%) of the respondents had medium level of practice of the fluid balance chart documentation while 3(6%) of the respondents had a high level of practice (Figure 3). The findings imply that 6% of the respondents were able to utilize fluid balance chart in the patient care and document it as they are required to. In this view, there is need for more emphasis and encouragement of the nurses on the importance of fluid balance chart documentation in the care of patients.

The study revealed that majority 44(88%) of the respondents view that the fluid balance chart was an appropriate tool for monitoring body fluid as it helped in assessing the fluid intake and output, thereby helping the nurse to maintain normal body fluid volume for the patient. Others stated that it allows determining how much fluids the patient has to receive while 6(12%) stated that it was not appropriate as there are other tools used apart from the FBC. This is in line with Kilfoy-Perez (1994), who stated that fluid balance charts are widely used in the expectation that the doctors will use the information to prescribe the appropriate fluid management, but evidence suggests that this does not occur as the doctors also tended to use other means of assessment such as Jugular venous pressure and daily weight measurements.

On whether the respondents had used the fluid balance chart in the care of patients during basic training, the respondents 49(98%) mentioned that they had used the fluid balance chart except 1(2%) stated that he never used it. This could be attributed to the fact that he was absent or sick at the time the fluid balance chart was being taught to the class.

The study findings revealed also that all respondents 50(100%) mentioned that the fluid balance chart was being used on the wards where they are working currently. On the reason

for not maintaining the fluid balance chart in some of the wards, the respondents 32(64%) stated that the nurses were too busy because of the shortage of staff as one nurse has to take care of many patients as a result he has no time to maintain the fluid balance chart. This is in agreement with Miti (1983) who found the factors that contributed to inaccurate maintenance of fluid intake and output records that the less number of nurses on the ward contributed greatly to inaccurate maintenance of the fluid balance charts. While 3(6%) of the respondents stated that there was no supervisor to check the state of the charts. This is in contrast with GNC (2004), where Nurses and Midwives are personally accountable for their practice and in exercise of professional accountability they are expected always to perform in such a manner as to promote and protect the interests, safety and well being of the patients and clients.

The study further revealed that majority 32(64%) of the respondents indicated that the staff nurse is the one who ensures that the fluid balance chart is maintained on the ward while 30 (60%) of the respondents indicated that it's the Sister-in-charge while 1 (2%) indicated that it is the patient's relative. This could be because the staff nurse is always found on the ward attending to patients and he/she expected to offer quality care to patients under his/her care since the nurse is also personally accountable for the actions should he/she neglect the patient. The Sister-in-charge is the overseer of the ward and he/she is expected to plan, organize, control and see to it that the plans are implemented on the patient accordingly. For the one who indicated, that the patients' relatives ensure that the fluid balance chart is maintained, this is attributed to the fact that the latter is a partner in the care of the patients and once the patients are discharged from the health facilities they continue caring for them in their homes.

The findings revealed also that 34(81%) female respondents had medium level of practice towards fluid balance chart. It also further reveals that 3(7%) of the respondents who had high level of practice were female respondents. The difference could have been attributed to the small sample size which consisted of 8 male participants and it could be due to the traditional belief that Nursing profession is dominated by females.

The study shows that the Nurses have high level of knowledge towards the fluid balance chart documentation so is their level of practice. This is in agreement with the hypotheses

stated in the study that, the higher the knowledge on fluid balance chart the better the practice. This shows that, there is also an association between knowledge and practice on documentation of the fluid balance chart.

## **5.4 IMPLICATION TO THE HEALTH CARE SYSTEM**

### **5.4.1 PRACTICE**

The findings in the study reveal that majority 32 (64%) of the respondents' state that the fluid balance chart is an appropriate tool in monitoring body fluid and assisting in providing quality care to the patients. Therefore, there is need for nurses to follow the contents taught on the maintenance of the fluid balance chart while in training school, since fluid balance documentation is concerned with maintaining a record of patients' fluid input and output, and is an important aspect of care, particularly with critically ill patients. This implies that the Nurse has the skill to improve care that is evidence based. Failure to maintain fluid balance can have serious consequences for the patient such as fluid overload, dehydration and even death.

“Nursing documentation has received considerable attention in recent years” (Bjorvell et al, 2003; NHS Modernisation Agency, 2001). Essence of Care (NHSMA, 2001) emphasises that record-keeping is a fundamental aspect of care, and that the nursing record is the first source of information examined when complaints are received. In legal terms, if nursing care is not documented it is assumed not to have happened. With the current emphasis on clinical governance and risk management this is clearly of concern, as it could be interpreted as a lack of individualized care and leaves the organization vulnerable to litigation. Nurses are encouraged to put more effort to the fluid chart as this will improve the welfare of the patients in our care.

### **5.4.2 ADMINISTRATION**

As stated in the study that some of the challenges nurses face for failure to document the fluid balance chart is that they are busy due to the workload on the wards. In order for the nurses to be able to offer quality care to the critically ill patients, the Nursing administration in conjunction with the Ministry of Health, there is need to source for more manpower in the Nursing profession to adequately manage and offer holistic care to the patients entrusted in their care.

The Nursing Administration in conjunction with the Nursing Officer and Sister-in-charge should ensure that the part-time nurses who book to work in the hospital should do so during their free time when they are on leave or off duty from their official duties, and should be committed to work effectively in the delivery of care to the patients.

### **5.4.3 EDUCATION**

Most nurses who qualify after their basic training do lack the practical skills. The study showed that most of the nurses had the knowledge and positive attitude towards the fluid balance chart documentation, their practice was mostly average and below average (Tables 4.21 and 4.22). It is important that the Tutors in the Nursing schools together with the Clinical instructors work hard to see to it that the student nurses gain proficiency and do understand the importance of fluid balance chart documentation. On the clinical areas the Nursing sisters and Nursing officers should also encourage in-house discussions on various procedures and by arranging in-service training for the Nurses who have worked for some time and also for the newly qualified nurses. Education is necessary as it empowers and allows individuals to make decisions based on what they know and understand in the clinical settings.



#### **5.4.4 RESEARCH**

The study has revealed several issues which could be taken up for further follow up research to determine, for instance, the attention paid to fluid monitoring, also a larger sample could be used and to determine the attitude of Doctors towards the use of the fluid balance chart.

There is also need for the study to be duplicated in other geographical areas to enable generazation of the results.

### **5.5 RECOMMENDATIONS**

Based on the research findings, the following are the recommendations:

#### **5.5.1 To the Government**

Through the Ministry of Health which is the policy making body should follow up to ensure that the nurses comply with the laid down guide lines on maintenance of the fluid balance chart by the provision of the required and set standards in the care of patients.

The Government should also increase funding to health institutions so that refresher courses for the Nurses and other staffs in the hospitals could be conducted to regularly maintain and update the professional knowledge and competency through education and research.

#### **5.5.2 To the Hospital Management**

The Hospital Management should ensure that more Nurses are employed to work on the wards so that the current Nurses are not overworked and be able to offer quality care to the patients.

The Nursing Administration to be conducting random checks on the wards to assess how fluid balance charts are maintained by the Nurses. The departments where they are performing well should be rewarded so that they could be motivated to work even harder and other Nurses would be encouraged to work hard too.

The management should form Nursing Audit committee headed by Departmental Nursing Officers to be monitoring the quality of nursing care given to the patients and how the Nurses account for the resources.

### **5.5.3 To the Nursing School**

The Nursing School should ensure that the Nursing students understand the importance of documenting the fluid balance chart, as this being the foundation of the Nursing practice career. Every Nursing student should be involved in the procedure being demonstrated and should be willing to practice effectively and the teaching staff should reinforce the practice throughout training. The Supervisors and clinical teachers and the Ward Staff could also be involved in teaching the students.

The clinical instructors should ensure that the student Nurses while on the wards, are participating effectively in the care of patients by practicing the procedures taught and demonstrated to them according to the level of training.

## **5.6 DISSEMINATION OF FINDINGS**

Two copies will be printed and distributed to the following areas, that is, the Department of Nursing Sciences of the University of Zambia and School of Medicine Library.

The findings of the study will be disseminated to the General Nursing Council of Zambia and the Ministry of Health, who are my sponsors of the programme, who are the policy makers to improve the quality of nursing care rendered to the patients and clients. The summaries of the findings will also be distributed to the nurses at the University Teaching Hospital in various departments through the clinical meetings and a one day meeting with the Nursing Officers and Nursing sisters will be arranged where the study findings will be presented. Further, the results of the study will also be given the University Teaching Hospital and the Lusaka Nursing School management for the implementation of the recommendations.

## **5.7 LIMITATION OF THE STUDY**

The sample size was too small (selection of 50 respondents) due to financial and time constraints. The other constraint is that the method used, convenient sampling method does not produce the representative findings as some degree of bias could exist as the sample only had 8 male Nurses while female Nurses were 42 respondents. The other setback is inadequate literature review on previous research done on fluid balance chart documentation by other researchers.

## CONCLUSION

The study was conducted to determine the knowledge, attitude and practice towards documentation of fluid balance chart by Nurses the University Teaching Hospital. The 50 respondents were conveniently selected under a non experimental descriptive study design and a self administered questionnaire was used to collect data.

The study showed that majority of the Nurses' level of knowledge and practice on documentation of fluid balance chart was average as all the Nurses had learnt about fluid balance chart recording and monitoring. The overall level of knowledge was 60% it also showed that majority (54%) of Nurses had a positive attitude towards the fluid balance chart. Despite these figures, the difference range is quite minimal for instance, those with negative attitude towards documentation of fluid balance chart was 46%. Many of the respondents (52%) were in the age group 20-29 years; this reveals that most of the nurses who are newly qualified have joined the Nursing profession. The study revealed that there is no association between knowledge and practice towards documentation of fluid balance chart. This calls for the Nursing Administration to ensure that these Nurses are re-oriented on how the fluid balance charts are maintained and ensure that the charts are checked especially critically ill and renal patients who require close assessment on their conditions.

Therefore as one considers conducting research on fluid balance chart, in this era of new trends of Nursing, with the increased inaccuracies and anomalies in documentation of the fluid balance charts, it is important that patients are incorporated in the documentation of the fluid intake and output according to their care.

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**APPENDIX I**

**QUESTIONNAIRE No.....**

**THE UNIVERSITY OF ZAMBIA**

**SCHOOL OF MEDICINE**

**SELF ADMINISTERED QUESTIONNAIRE FOR NURSES**

**INTERVIEW SCHEDULE**

**TITLE OF STUDY: KNOWLEDEGE, ATTITUDE AND PRACTICES  
AMONG NURSES TOWARDS FLUID INTAKE AND OUTPUT CHART  
DOCUMENTATION AT UTH, LUSAKA.**

**DATE.....**

**DEPARTMENT.....**

**Instructions to respondents**

1. Do not write your name on the questionnaire.
2. Put a cross (x) against the appropriate answer(s) of the response in the space provided.
3. For responses without alternatives, write the response (s) in the space provided.
4. Kindly answer all the questions.
5. Any information provided will be kept confidential and used for the purpose it is intended for.
6. Do not attach the signed consent form to the answered questionnaire.

SECTION A: DEMOGRAPHIC DATA

1. What is your sex?

Male ☐

Female ☐

☐

2. How old were you on your last birthday?

a) 21 – 30 years ☐

b) 31 – 39 years ☐

c) 40 – 49 years ☐

d) Above 50 years ☐

☐

3. What is your marital status?

Single ☐

Married ☐

Divorced ☐

Widowed ☐

Separated ☐

☐

4. What is your religion?

a) Christian ☐

b) Moslem ☐

c) Hindu ☐

d) Any other, please specify .....

☐

5. What is your education level?

a) Grade nine (9) ☐

b) Grade ten (10) ☐

☐

c) Grade twelve (12)

d) College

6. What is your professional attainment?

a) Registered Nurse

b) Registered Midwife

c) Enrolled Nurse

d) Enrolled Midwife

e) Any other please specify .....

7. How many years have you served as a nurse?

a) 1 – 2

b) 3 – 4

c) 5 – 6

d) 6 – 10

e) Above 10 years

**SECTION B      KNOWLEDGE**

8. Have you heard about fluid balance chart?

Yes

No

9. What is a fluid balance chart? (In your own words)

.....

.....

.....

.....

FOR OFFICIAL  
USE

10. Did you learn about the fluid balance chart during the course of your training?

Yes ☐  
No ☐

☐

11. If your answer in question 10 is yes, what were you taught?

.....  
.....

☐

12. Do you think the fluid balance chart is easy to use?

Yes ☐  
No ☐

☐

13. If your answer to question 12 is No, please explain?

.....  
.....  
.....  
.....

☐

14. On which type of patients do you use the fluid balance chart?

- a) Critically ill patients ☐
- b) Cardiac patients ☐
- c) Patients with Renal Conditions ☐

☐

d) (a) and (b ) only

e) c only

f) (a ), (b) and (c)

☐☐

15 Who ensures that fluid charts are maintained on your ward?

a) Doctors

☐

b) Nursing Officer

☐

c) Sr-In-Charge

☐

d) Staff Nurses

☐

e) Patients' relatives

☐☐

16 Which conditions do you commence the fluid balance chart?

a) Nil by mouth

☐

b) Diarrhoea

☐

c) Excessive vomiting

☐

d) Excessive wound exudates

☐

e) Other answers, specify

☐☐

17. Why is it important to accurately fill in a fluid balance chart?

a) It is the only way to treat the patients

☐☐☐

b) So that the nurse carries the doctors orders adequately

c) So that one can determine whether or not the kidneys are functioning

☐☐

d) To monitor the condition of the patient

e) To determine the fluid intake

☐

18. The following are the components of the fluid balance chart

- a) Type of fluid
- b) Time of commencement of the fluid
- c) Particulars of the patient
- d) Amount taken in
- e) Amount put out

### SECTION C. ATTITUDE TOWARDS THE FLUID BALANCE CHART

19. Do you think the fluid balance chart is useful in patient care?

a) Always

b) Sometimes

c) It depends

d) I do not know

20. Documentation of fluid balance chart is time consuming.

a) Always

b) Sometimes

c) It depends

d) I do not know

21. The fluid balance chart is helpful in providing quality care to the patients?

a) Yes ☐

b) No ☐

☐

22. If yes to question 21, please explain.

.....  
.....  
.....

☐

23. If no to question 21, please explain.

.....  
.....  
.....

☐

**SECTION D PRACTICES TOWARDS THE FLUID BALANCE CHART**

24. The fluid balance chart is an appropriate tool for monitoring body fluid  
balance?

a) Yes ☐

b) No ☐

☐

25. If yes to question 24, kindly explain.

.....

.....

.....

☐

26. Did you use the fluid balance chart in the care of patients during your  
basic nurse training?

a) Yes ☐

b) No ☐

☐

27. If no to question 26, kindly explain.

.....

.....

.....

☐

28. Is the fluid Balance Chart, at the moment, being used in your ward  
where you are working?

Yes ☐

☐



No ☐

29. If No to question 30, Please explain?

.....  
.....

☐

30. The fluid charts are not maintained in some wards, why?

a) Nurses are too busy ☐

b) Nurses not sure ☐

c) No supervisor to check ☐  
☐

☐

d) Nurses are indifferent

e) Other reasons, specify ☐

31. Who ensures that fluid charts are maintained on your ward?

a) Doctors

b) Nursing Officer

c) Sr-In-Charge

d) Staff Nurses

e) Patients' relatives

**THANK YOU FOR ANSWERING THE QUESTIONNAIRE**

## APPENDIX II

### INFORMED CONSENT

Dear participant,

I am Naomi Kalengo, a student at the University of Zambia, School of Medicine, undertaking a Bachelor of Science in Nursing Programme in the Department of Nursing Science.

In partial fulfillment of my Degree in Nursing, I'm required to undertake a research project. My study topic is on **Knowledge, Attitude and Practice among nurses towards intake and output chart documentation at University Teaching Hospital (UTH), Lusaka.**

You have been randomly selected to participate in this study and I wish to inform you that participation in this study is voluntary and therefore, you are free to withdraw at any stage of the study if you wish to. You will be asked some questions about the fluid intake and output chart documentation in your institution to assess knowledge, attitude and practice. Any information you will provide will be kept in the strictest confidence and no name will be written on the interview schedule. I wish to inform you also that you might not receive direct benefits from the study in terms of monetary gain. The information that you give will help in developing strategies to improve documentation of fluid intake and output chart at UTH and other hospitals or health facilities in Zambia and the Southern Region at large. The documentation of fluid intake and output chart is one of the most important roles of the nurse in maintaining fluid balance in the body and this will also help to improve the nursing care given to the patients.

**Declaration**

I understand that my participation in this study is voluntary and that I may refuse or withdraw my consent at any time without any penalty.

I.....freely give consent to take part in this study.

Signature ..... Date.....  
.....

Signature of interviewer.....  
Date.....

## APPENDIX III

### Research Project Work Plan June 2010 to April 2011

<b>Task to be performed</b>	<b>Responsible person</b>	<b>Dated</b>	<b>Time Required</b>
Literature Review	Researcher and Supervisor	Continuous	Continuous
Compiling research proposal	Researcher	14 <sup>th</sup> June 2010 to 25 <sup>th</sup> August 2010	10 weeks
Clearance from school	Researcher	25 <sup>th</sup> August 2010 to 8 <sup>th</sup> October 2010	8 weeks
Pilot Study and adjustments to the data collection tool	Researcher	11 <sup>th</sup> October 2010 to 15 <sup>th</sup> October 2010	5 Days
Data collection (main study)	Researcher	18 <sup>th</sup> October 2010 to 19 <sup>th</sup> November 2010	23 Days
Data Analysis	Researcher	22 <sup>nd</sup> November 2010 to 17 <sup>th</sup> December 2010	4 Weeks
Report Writing	Researcher	24 <sup>th</sup> December 2010 to 28 <sup>th</sup> January 2011	5 Weeks
Draft Report to DNS	Researcher	31 <sup>st</sup> January 2011 to 11 <sup>th</sup> February 2011	2 Weeks
Finalization of Report	Researcher	14 <sup>th</sup> February 2011 to 25 <sup>th</sup> March 2011	5 Weeks
Monitoring and Evaluation	Researcher and Supervisor	Continuous	Continuous

## APPENDIX IV

### Budget

Budget Category	Unit	Unit Cost (K)	Quantity	Total (K)
<b>1. Stationary</b>				
a) Ream of paper	Each	35,000.00	5	175,000.00
b) Ball Pen	Each	1,500.00	5	7,500.00
c) Pencil	Each	1,000.00	12	12,000.00
d) Eraser (Tipex)	Each	15,000.00	2	30,000.00
e) Rubber	Each	1,000.00	10	10,000.00
f) Note book	Each	2,000.00	5	10,000.00
g) Folders	Each	3,000.00	2	6,000.00
h) Stapler	Each	35,000.00	1	35,000.00
i) Staples	Each	15,000.00	1 Box	15,000.00
j) Flip Chart	Each	75,000.00	1	75,000.00
k) Markers	Each	5,000.00	5	25,000.00
l) Perforator	Each	45,000.00	1	45,000.00
m) Ruler	Each	5,000.00	1	5,000.00
n) Spiral Binders	Each	10,000.00	2	10,000.00
o) Back and Front Hand Cover	Each	10,000.00	2	20,000.00
p) Cello-tape	Each	5,000.00	1	5,000.00
<b>Total Cost</b>				<b>485,500.00</b>
<b>2. Secretarial Services</b>				
a) Bag for stationary	Each	100,000.00	1	100,000.00
a) Flash Disk	Each	90,000.00	1	90,000.00
b) Binding Research proposal	Each	30,000.00	1	30,000.00
c) Questionnaire photocopying	Each	4,000.00	50	200,000.00
d) Research Report Writing	Page	4,000.00 x 100	5	400,000.00
e) Cartridges	Each	300,000.00	5	1,500,000.00
f) Printing Proposal	Each	400,000.00	1	400,000.00
g) Printing report	Each	2,000.00	102	204,000.00
h) Binding Reports	Each	100,000.00	5	500,000.00
i) Binding Final Report	Page	100,000.00	5	500,000.00
<b>Subtotal</b>				<b>3,924,000.00</b>

<b>3. Personnel</b>				
a) Lunch Allowance for investigator	Day	20,000.00	28 days	560,000.00
<b>Subtotal</b>				<b>560,000.00</b>
<b>4. Dissemination Workshop</b>				
a) Premises Hire for Dissemination	Day	700	1	700,000.00
b) LCD Hire	Day	300	1	300,000.00
c) Stationary	Each	200		200,000.00
d) Refreshments	Each	5,000.00	50	250,000.00
<b>Sub total</b>				<b>1,450,000.00</b>
<b>Total</b>				<b>6,420,500.00</b>
<b>Contingency 10%</b>				<b>642,550.00</b>
<b>GRAND TOTAL</b>				<b>7,063,050.00</b>

## JUSTIFICATION FOR THE BUDGET

### a) Stationary

Stationary is required in this research for writing and typing the research proposal, writing the final research report as well as typing and printing the report. Self administered questionnaires will be produced using the same stationary. Because the work will need reprinting after it has been marked and remarked by my research supervisor, the cartridges will be needed for this purpose. The notebooks are needed for record keeping during data collection and analysis. The scientific calculator is required for data analysis. The stapler and staples are needed to put papers together and to maintain their proper arrangement.

Tipex will be used to erase errors. Folders and the bag will be used for storing the questionnaires during the data analysis period.

**b) Secretarial Services**

There will be need for funds to cater for printing and reprinting and also photocopying services during the whole period of research process. Diskettes will be required for data storage. The research bags are needed for carrying the questionnaires. Money is also required for binding the research proposal and report.

**c) Personnel**

Funds will be needed for lunch for the investigator during the period of pilot study and the main research period (28) days.

**d) Contingency**








Contingency is the 10% of the total amount of the budget. It is required to cater for any unseen expenses during the research process.

**e) Dissemination Workshop**

The dissemination workshop will be required to communicate the research findings to the stakeholders at the Ministry of Health and the University Teaching Hospital leaders.

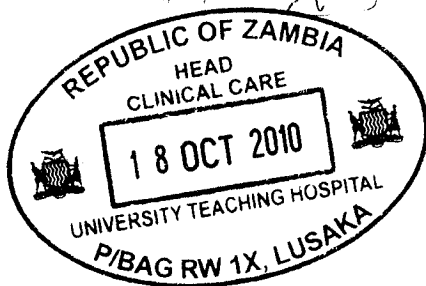
APPENDIX V

GANTT CHART SHOWING VAIIOUS TASKS TO BE UNDERTAKEN FROM JUNE 2010 TO APRIL 2011

Months		Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Marcl
Task To Be Performed	Researcher And Supervisor										
Literature Review	Researcher & Supervisor										
Compiling Research Proposal	Researcher										
Clearance From School	Researcher										
Pilot Study											
Data Collection	Researcher										
Data Analysis	Researcher										
Report Writing											







University of Zambia

School of Medicine,

Department of Nursing Sciences

P. O. Box 50110

Lusaka

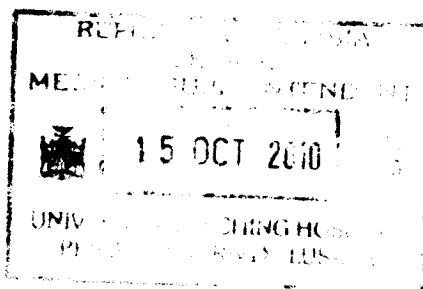
8<sup>TH</sup>, October, 2010

The Managing Director

University Teaching Hospital

P/B RW IX

Lusaka



UFS: The Head of Department

School of Medicine

Department of Nursing Sciences

P. O. Box 50110

Lusaka

Dear Sir/Madam,

**R.E: REQUEST FOR PERMISSION TO CARRY OUT A PILOT STUDY AT THE UNIVERSITY TEACHING HOSPITAL (WARD C02).**

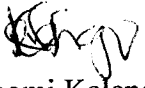
I am Naomi Kalengo, a 4<sup>th</sup> year student pursuing a BSc Degree in Nursing at the University of Zambia, School of Medicine.

In partial fulfillment for the award of the Bachelor of Science Degree in Nursing, I am required to conduct a pilot study before embarking on conducting the main research study in the final year of training. My research topic is titled **"Knowledge, Attitude and Practices among nurses towards the Fluid Balance Chart documentation."**

For this reason, I am requesting for permission to carry out this study in your Institution, particularly in ward C02.

Thanking you in anticipation for your favorable response.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Naomi Kalengo', written in a cursive style.

Naomi Kalengo

4<sup>th</sup> year BSc. Nursing student.

cc. Principal Nursing Officer UTH

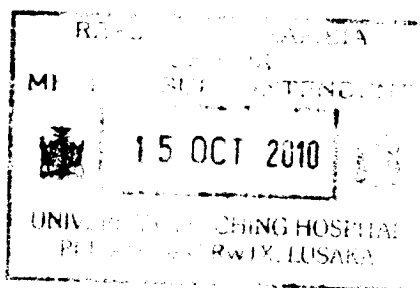


University of Zambia,  
School of Medicine,  
Department of Nursing Sciences,  
P. O. Box 50110,  
**Lusaka**

8<sup>th</sup> October, 2010

The Managing Director  
University Teaching Hospital  
P/Bag RW IX

**Lusaka**



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

**Lusaka**

Dear Sir,

**REQUEST FOR PERMISSION TO CARRY OUT A RESEARCH STUDY AT THE UNIVERSITY TEACHING HOSPITAL**

I am Naomi Kalengo, a 4<sup>th</sup> year student at The University of Zambia, School of Medicine, in the Department of Nursing Sciences pursuing a Bachelor of Sciences Degree in Nursing.

In partial fulfillment for the award of Bachelor of Science Degree in Nursing, I am required to conduct a research study in the final year of training. My research topic is titled "**Knowledge, Attitude and Practices among Nurses towards Fluid Balance Chart Documentation at the University Teaching Hospital.**" The target population includes Registered Nurses, Enrolled Nurses and Midwives.

*Sisters-in-charge*

*Block*

*Please allow the student to go ahead*

*the above*

26 OCT 2010

For this reason, I hereby request for permission to carry out this study in your respectable Institution.

Thanking you in advance.

Yours faithfully,



Naomi Kalengo

4<sup>th</sup> year student BSc. N Student

cc: Principal Nursing Officer UTH

\*Property of UNZA Library



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