

**NURSE'S KNOWLEDGE, ATTITUDE AND PRACTICE ON THE INITIAL  
MANAGEMENT OF ACUTE POISONING AMONG ADULT CASUALTIES: STUDY  
AT ACCIDENT AND EMERGENCY DEPARMENT, KENYATTA NATIONAL  
HOSPITAL, KENYA.**

**BY**

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REQUIREMENT FOR THE AWARD OF MASTER OF SCIENCE DEGREE IN  
NURSING (CRITICAL CARE NURSING) OF THE UNIVERSITY OF NAIROBI.**

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## **DECLARATION**

I, Japheth Kipkosgei Rutto declare that this dissertation is my original work and has not been presented in any other institution for the purpose of obtaining degree or any other award.

Signed.....Date.....

## **DEDICATION**

I dedicate this work to my wife Caroline and our children Emmanuel and Egan for their understanding and bearing with my long absence as I pursued my studies.

I also dedicate this work to my parents who instilled the value of education and fundamental skills of life in me. Thank you for raising me to be who I am today.

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Special thanks goes to my research assistant Marilyn Langat who ensured that questionnaires were distributed and returned accordingly. Finally, thanks to Mr. Phillip Ayieko for his assistance in data analysis.

## **SUPERVISORS' APPROVAL**

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

<b>A&amp;E</b>	Accident and Emergency
<b>ABC</b>	Airway, Breathing and Circulation
<b>ACLS</b>	Advance Cardiac Life Support
<b>AED</b>	Accident and Emergency Department
<b>BLS</b>	Basic Life Support
<b>BscN</b>	Bachelor of Science in Nursing
<b>CI</b>	Confidence Interval
<b>CME</b>	Continuous Medical Education
<b>ED</b>	Emergency Department
<b>ERC</b>	Ethics Research Committee
<b>IDRC</b>	International Development Research Centre
<b>KAP</b>	Knowledge Attitude and Practice
<b>KMTC</b>	Kenya Medical Training College
<b>KNH</b>	Kenyatta National Hospital
<b>MAPP</b>	Maudsley Alcohol Pilot Project
<b>MscN</b>	Masters of Science in Nursing
<b>NICE</b>	National Institute for Clinical Excellency
<b>NO</b>	Nursing Officer
<b>OPP</b>	Organophosphate Poisoning
<b>SPSS</b>	Statistical Package of Social Science
<b>WHO</b>	World Health Organization
<b>GCS</b>	Glasgow Coma Scale

## **OPERATIONAL DEFINITIONS**

**Accident and emergency nurse.** Any qualified nurse deployed at accident and emergency department with or without accident and emergency specialisation during time of study.

**Acute poisoning:** When the body is exposed to a toxic substance in a high dose, on one occasion and during a short period of time. Symptoms develop in close relation to the exposure.

**Adults:** Anyone who is above 18 years.

**Attitude:** Attitude is positive or negative reaction of health professionals towards poisoned patients exhibited in their beliefs, feelings, or intended behaviour. Individuals' behaviours are influenced by their feelings (affective) and beliefs (cognitive).

**Deliberate self harm:** An act with fatal or non-fatal outcome in which an individual deliberately initiates a non-habitual behaviour that without intervention from others will cause self harm, or deliberately ingests a substance in excess of the prescribed or generally recognized therapeutic dosage.

**Emergency department:** This is where all casualties brought to the hospital are received.

**Evidence-based nursing practice:** Applying the scientific evidence that has been found effective to a specific nursing intervention.

**Initial assessment:** Management and care given by nurses to poisoned patient on arrival at accident and emergency department as part of patient stabilization. The care ends when the patient's physiological parameters are within normal and patient is out of life threatening situations.

**Knowledge:** Familiarity with acute poisoning management among accident and emergency nurses. It includes; information, facts and skills acquired through experience and education on poisoning.

**Nursing practice:** Actual provision of nursing care using the nursing process to poisoned casualties.

**Poison:** Substance capable of producing damage or dysfunction to the body by its chemical activity. In this study, it is substance that has been ingested through the oral cavity and produces damage or dysfunction to the body by its chemical activity.

**Quality of care:** The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge

## **Abstract**

Acute poisoning is a medical emergency and patients are always rushed to the hospital at the earliest possible moment, irrespective of the amount and nature of poison. It requires early management decisions to ensure an optimal patient outcome. Accident and emergency (A&E) nurses are often at the forefront when it comes to this initial and critical assessment. Their knowledge, skills and positive self esteem are fundamental to their practice and patient outcome.

The purpose of this study was to determine nurse's knowledge, attitude and practice on the initial management of acute poisoning among adult casualties attended to at accident and emergency department (AED), Kenyatta National Hospital (KNH).

This was cross sectional study were both qualitative and quantitative methods of data collection were used. The target population were all nurses working at AED, KNH. Purposive sampling was used to select the subjects. Sample size comprised of all A&E nurses who met subject's inclusion criteria. Structured questionnaires, observation checklist and interview were used to collect the data. Data were entered and analyzed in the statistical program SPSS version 16.

Sixty eight A&E nurses participated in the study. The study found out that with higher nursing qualification and training on courses related to emergency care, knowledge and skills of A&E nurses on the initial management of acute poisoning increased. A&E nurses with lower nursing qualification had a higher mean score of positive attitude compared with those nurses with higher qualification. Majority 60 (88.2%) of the A&E nurses indicated that they required more training on the initial management of poisoning.

A&E nurses should be trained on various types of poisoning including assessment, their clinical presentations, management and gut decontaminations. In addition, refresher courses should be

organised for those already trained. Flowcharts that will enhance easy identification and management of poisoned casualties should be set and utilized accordingly at AED.

# **CHAPTER ONE: INTRODUCTION**

## ***1.1 Background information***

Acute poisoning is common reason for visits to emergency departments and for hospitalization worldwide and it is a cause of both morbidity and mortality in many parts of the world. The toxic agents associated with the morbidity and mortality varies from place to place due to the availability and use of various chemicals and other poisoning agent. Globally it is estimated that poisoning events are responsible for more than one million illnesses annually (Malangu and Ogunbanjo 2009).

Study done by Sharma and Bangar (2005) indicates that a high mortality and morbidity rate from poisoning is a major health service delivery issues in developing countries. Majority of these patients present in AED for their initial treatment. Their treatment poses some numerous clinical challenges where severely poisoned patients can be medically unstable and require resuscitation, specific treatment, close observation and monitoring.

Fernando (2007) and Greene et al. (2008) found out that majority of acute poisoning cases seen in clinical practice especially in developing countries are a result of deliberate and accidental ingestion. Homicidal poisoning is rare. Although overall mortality from acute poisoning is low, poorly managed poisoning-related complications can lead to long-term morbidity and mortality.

Konradsen (2007) found out that, in many countries in Asia, Africa and Latin America the health system lacks the capacity to manage many cases of acute poisoning and they are in dire need for more antidotes, respirators, better trained staff and more equipped ambulances.



## ***1.2 Problem statement***

A&E nurses are frequently the first health care professionals to come in contact with patients who have ingested poisons. Proper initial assessment, evaluation and treatment are very essential for patient survival. Osion (2004) suggested that, even though they may not appear acutely ill, all poisoned patients should be treated as if they have a potentially life-threatening intoxication.

Poisoning affects the patient's condition quickly, and the patient's life can be endangered if there is a delay in initiating urgent treatment. Decisions on appropriate responses to such casualties have to be appropriate, swift and evidence based (Senarathna, 2008). It is essential that all A&E nurses are familiar with the clinical priorities in life - threatening situations in order to ensure that problems are identified and treated accordingly. Therefore, A&E nurses should be equipped with professional knowledge and skills that enables them to manage poisoned patient accordingly.

McAllister et al. (2001) explored the personal experience of poison patients in hospitals. They found out that, when patients are transferred to Emergency Department (ED) they are often ignored, have to wait, experience judgmental comments and painful treatment. Disturbingly, ED is an important access point for these clients who might be in dire need for emergent life saving interventions. Further, they found out that without focused skills training and deeper understanding of the complexity of self-harm and therapeutic responses of emergency clinicians; nurses are likely to provide inadequate emergency care for this type of patients.

### ***1.3 Justification***

Kenya is currently faced with increasing incidences of acute poisoning which range from aflatoxins ingestion, illicit brews consumption and use of uncertified herbal medicine for treatments.

A&E nurses are often at the forefront when it comes to this initial and critical assessment of poisoned casualties. Their knowledge, skills and positive self esteem are fundamental to their practice and influence the overall patient outcome.

There is no study of the same that has been done in KNH and specifically being the largest referral hospital in Eastern and Central Africa. The findings of the study therefore will be invaluable in understanding the capabilities of A&E nurses in management of these patients. Furthermore, the study will form a basis for improving the quality of service delivery in management of poisoned casualties at AED, KNH.

### ***1.4 Study objectives***

#### ***1.4.1 Broad objective***

- To determine the nurse's knowledge, attitude and practice on the initial management of acute poisoning among adult casualties seen at AED, KNH.

#### ***1.4.2 Specific Objectives***

- Determine the nurse's knowledge and practice in prioritizing rapid assessment and intervention in the management of poisoned casualties at AED, KNH.
- To determine the nurses' attitude towards poisoned casualties at AED, KNH.
- To determine if nurse's social-demographic characteristics has any impact on the initial management of poisoning at AED, KNH.

## ***1.5 Research questions***

The study seeks to answer the following questions:

- Do A&E nurses have necessary knowledge and skills on the initial assessment and management of poisoned patients?
- Does attitude towards poisoned patients affect A&E nurse's provision of optimal assessment and management of poisoned patients?
- Do A&E nurse's social- demographic characteristics affect the initial management of poisoned patients?

## ***1.6 Hypotheses***

- There is no difference in the initial management of acute poisoning among nurses of different education levels.
- Experience in accident and emergency nursing is not a factor in the initial management of acute poisoning.

## ***1.7 Study benefits***

The study findings will provide basic information on the capabilities of A&E nurses in relation to their knowledge, skills and attitude on the initial management of patients with acute poisoning.

The finding will also help in laying a basis for continuous staff training through continuous medical education (CME) and refresher courses on issues related to poisoning management where weakness was identified among A&E nurses.

## 1.8 Conceptual Framework

Individual nurses and situational factors (Independent variables) such as nursing professional qualification, A&E experience, attitude and social demographic characteristics could enhance nurses' skills and practices on the initial management of acute poisoned casualties (dependent variables). Attaining the desired goals is indirectly influenced by AED resources, staff motivation and hospital policy (confounding variables). The relationships between the various variable are summarized in Figure 1.1

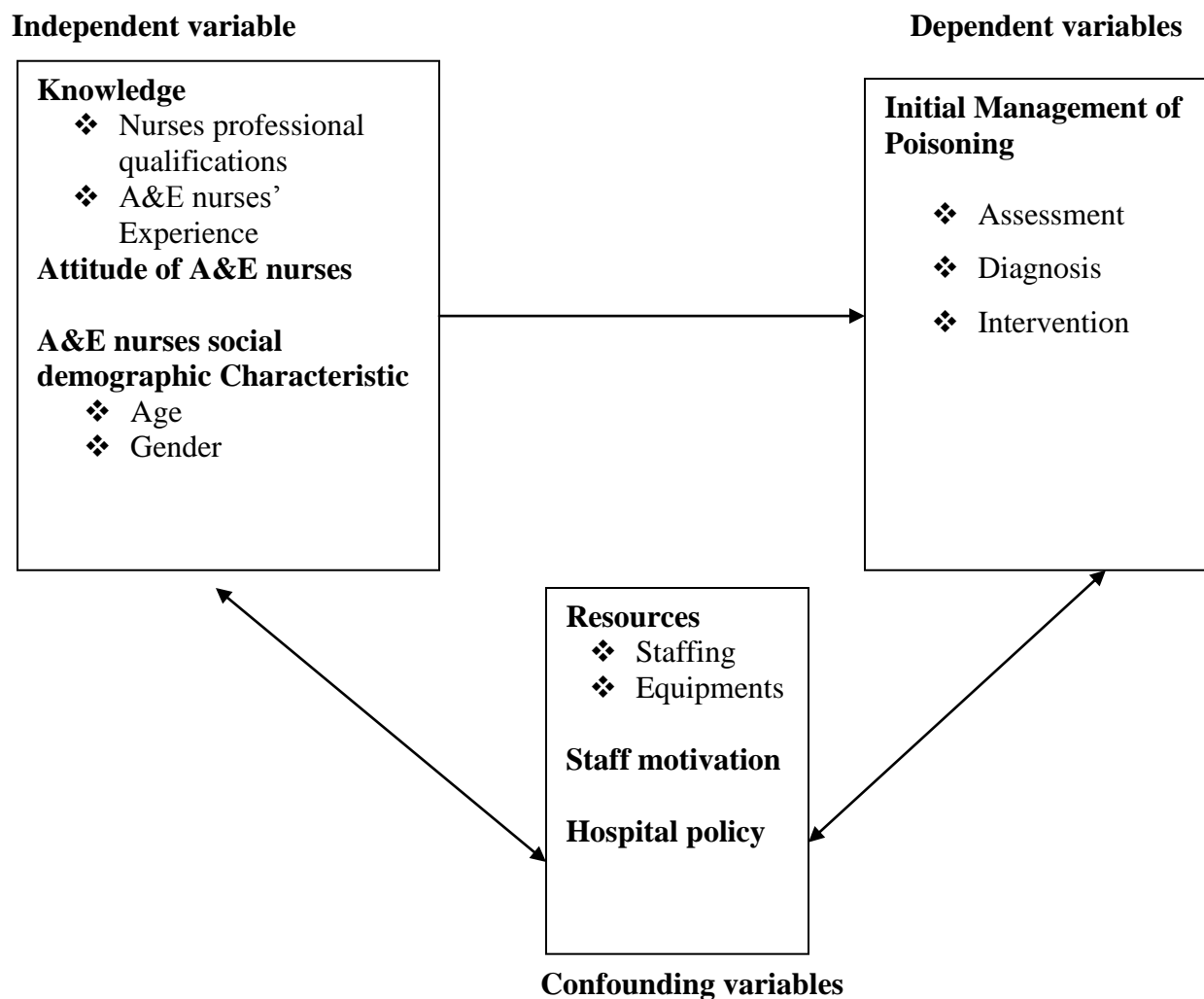


Figure 1.1. Conceptual Framework

## **CHAPTER TWO: REVIEW OF LITERATURE**

### ***2.1 Introduction***

Carroll (2007) defines poisoning as chemical injury to organs of the body or a chemically induced disturbance of the function of the bodies systems. Hodgson (2010) defines it as any substance that causes a harmful effect when administered, by accident or by design; to a living organism. The toxic properties of a certain poison are often specific, and hence the clinical symptoms after exposure to a poison may be quite characteristic. Substances that normally are considered as harmless may also, if the dose is big enough, cause deleterious effects and thereby act as poisons (Moller and Karolinska, 2005).

Poisoning may be acute or chronic. In acute poisoning the body is exposed to the toxic substance in a high dose, on one occasion and during a short period of time. Symptoms of poisoning develop in close relation to the exposure. In chronic poisoning the organism is repeatedly exposed to toxic agents during a long period, but every exposure means that just a low dose of the poison is entering the body.

Poisoning is a medical emergency and patients are always rushed to the hospital at the earliest possible moment, irrespective of the amount and nature of poison ingested. All the cases of poisoning are admitted through emergency services where the life of the patient is the main issue for the medical personnel.

Dally et al. (2006) stated that, “the assessment and management of acute poisoning constitutes a core emergency medicine. It is a common presentation that requires early management decisions to ensure an optimal outcome while at the same time avoiding unnecessary investigation and intervention. In formulation of rational management plan for individual patients, clinician require understanding of the agent ingested, dose ingested, time since ingestion, clinical features, patient

factors, geographical location, and the available medical facilities. A highly organized approach is essential if the emergency physician is to ensure effective delivery of time-critical interventions while at the same time devising a management plan tailored to the individual patient's needs.

## ***2.2 Epidemiology of poisoning***

According to a study done by Malangu (2008) poisoning is a common cause of presentation to emergency departments in the United Kingdom (UK) and accounts for up to 10% of acute medical admissions. However, the mortality from acute poisoning is less than 1% and the vast majority of patients will make a rapid and complete recovery with good supportive care. The challenge is to identify those poisonings that are most likely to cause serious complications and morbidity and to institute appropriate treatment promptly. He found out that deliberate self poisoning is the commonest cause of poisoning in adults and accidental poisoning is largely due to chemical exposure at work or at home.

The incidence of acute poisoning has been increasing in recent years in China. The study conducted by Chen et al. (2010) in one of the referral hospitals, indicates that there has been tremendous increase in acute poisoning over the years and the male female ratio was 1:1.04, and their average age was 33.8 years.

In developing countries, especially in Asia, 44% of all deaths amongst 10-50 year old women were due to poisoning and majority following suicidal ingestion of pesticides (Unnikrishnan et al., 2005). Pesticide poisoning from occupational, accidental and intentional exposure is a major world health problem. Millions of people are exposed to danger by hazardous occupational practices and unsafe storage.

In South Africa, recent reports suggest that acute poisoning is responsible for up to 17% of total ward admissions in adults. In Botswana acute poisoning contributes to 7% of morbidity and ranks third among injuries leading to hospitalization (Malangu, 2008).

The challenge for the attending clinician is to identify as early as possible patients who are at risk of developing serious clinical toxicity, and who may benefit from decontamination or a specific intervention (Greene et al., 2005).

### ***2.3 Classification of poisoning***

Proudfoot (1982) stated that the realization of analytic studies requires some knowledge about all critical determinants of illness, hence the need to specify very precisely the circumstances surrounding poisoning. He classified poisoning episodes into four categories according to motive or nature of use of which only two are common. They are:

#### **Accidental poisoning**

Accidental poisoning is most frequently encountered in children between the ages of 1 and 5 years and is the usual cause of poisoning in these age groups.

#### **Deliberate self poisoning**

Deliberate self poisoning is the commonest form of poisoning in adults and accounts for at least 95 per cent of all poisoning admission to hospitals. It is also referred to as attempted suicide. This form of poisoning is more common in woman. Such patients intentionally take poison or overdose of drugs, often impulsively, after a disagreement with a key person in their lives. Most patients however have no wish to die. The peak age incident for self poisoning is between the ages of 20 and 35 years, but it is not uncommon before the age of 15 years.

## **Homicidal poisoning**

Acute poisoning as a method of homicide is very uncommon. Sporadic cases occur but in most the poisoning is sub acute or chronic. Any chemical substance has the potential of becoming the means of committing a poisoning homicide. Clearly, the prime candidate for the most effective weapon in homicidal poisonings is the chemical with the greatest lethality, the smallest dose, and the least likelihood of detection.

## **Non –accidental poisoning**

Non accidental poisoning is the term given to the deliberate administration of a poison to child by one of its parents and may be regarded as an extension of the battered-child syndromes.

## ***2.4 Signs and symptoms of acute poisoning***

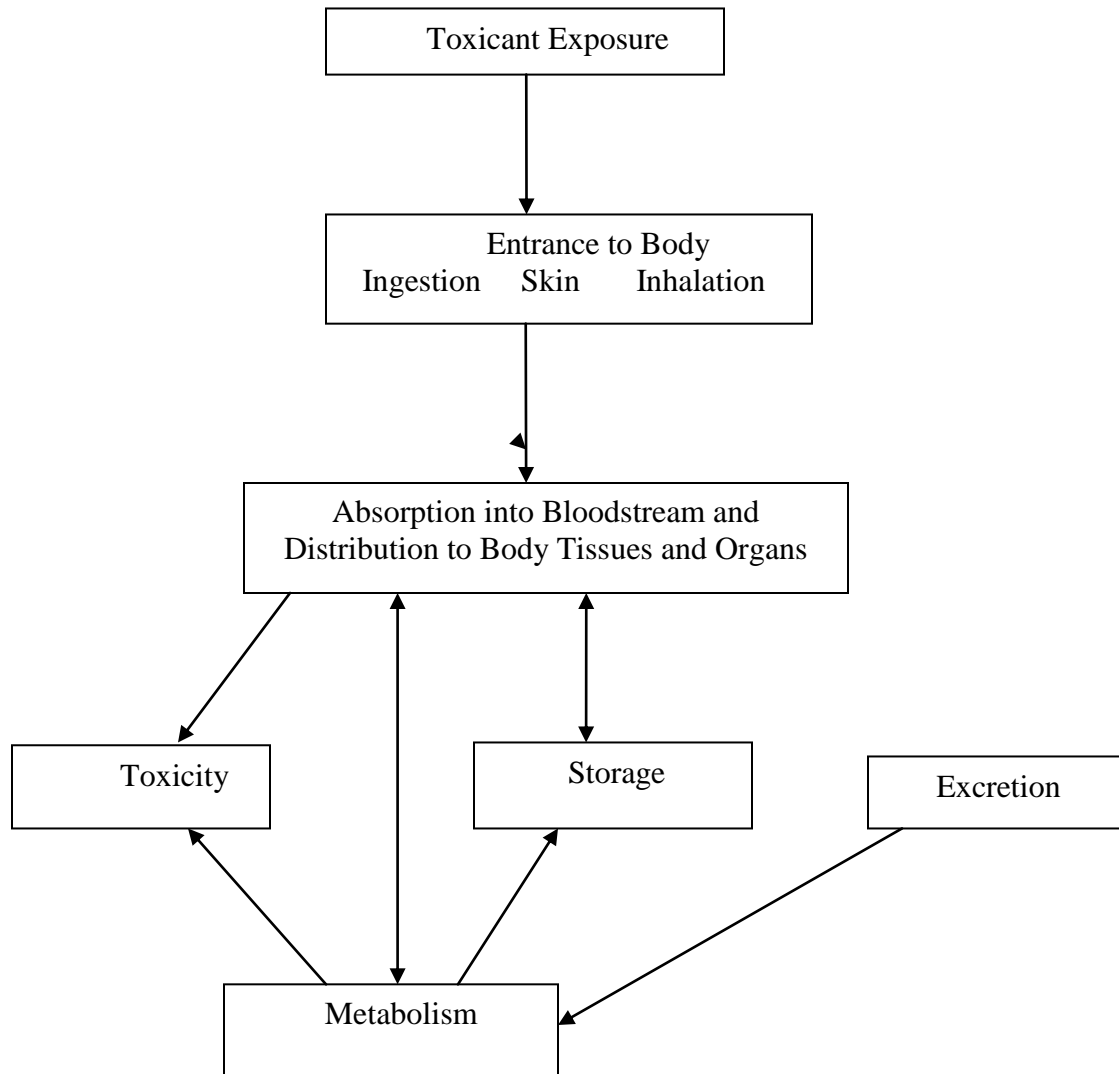
In most cases of poisoning, patients are able to tell what they have taken and symptoms are of little diagnostic value. However, their presence or absents may give some indication of the severity. Many poison affect multiple body systems and symptoms are frequently numerous and non specific. Some of the signs and symptoms are listed in Table 2.1 below.

**Table 2.1: Signs and symptoms of poisoning**

<b>Alimentary features</b>	<b>Pain and ulceration of the oral cavity, salivation, dry mouth, nausea and vomiting, abdominal pain and diarrhea</b>
<b>Cerebral and neuromuscular features</b>	Staggering and dizziness, coma, convulsions, delirium and hallucination
<b>Respiratory features</b>	Cyanosis, hypoventilation, coughing, wheezing, breathlessness
<b>Cardiovascular features</b>	Loss of pulse, tachycardia and bradycardia, and hypotension
<b>Skin</b>	Purpura, sweating



## 2.5 Fate and effect of toxicants in the body.



**Figure 2.1. Fate and effect of toxicants in the body**

**Source : (Adapted from Hodgson, 2010)**

According to Ahmad et al., (2009), Poisons may enter the body through different routes. The rapidity of action of a poison depends upon the route of administration, the rate of absorption and the mode in which it is introduced into the system. Absorption through the stomach depends on some factors such as fullness of stomach and presence of pyloric stenosis. The toxic action of the poison depends on amount of the substance taken, its distribution to the tissues and also the rate

of excretion from the body. With massive ingestion or inhalation, symptoms may appear within five minutes; or may be delayed to half to one hour and a maximum of 2 to 8 hours.

## ***2.6 General Management of poisoning.***

In the management of poisoning cases, a quick and correct decision is always desirable. The familiar adage “TREAT THE PATIENT, NOT THE POISON” is appropriately stated, as it is of no use to make vigorous attempts at removing the ingested poison from patient’s stomach in case there is no breathing or the blood pressure is not recordable (Sharma and Bangar, 2005).

According to the work of (Hodgson 2010; Schwartzstein and Burns, 1999), there are two main elements in the management of poisoned patients. The first is the provision of good supportive care and the second is decontamination or elimination enhancement measures. Management begins with a thorough evaluation, recognition that poisoning has occurred, identification of the agent involved, assessment of severity and prediction of toxicity. Supportive care is directed at preventing or limiting the complications of a toxic exposure and is the cornerstone of good management.

It is essential to ensure a patent airway, adequate ventilation and effective circulation. A thorough history is essential in determining management and assessing the risk posed by a particular poisoning. Important historical factors include what exactly was taken, when it was taken, how it was taken, how much was taken, why it was taken, and what else was taken.

As with any patient attending an emergency department, physical assessment of the poisoned patient starts with the airway, breathing and circulation (ABC). The patient must be capable of maintaining and protecting a patent airway. If there is any doubt, active airway management is required to protect against further compromise or aspiration.

Evaluation of breathing involves measuring the respiratory rate and assessing the adequacy of ventilation. Observation, auscultation of the chest, and oxygen saturation will confirm adequate ventilation in most cases, though arterial blood gases should be checked if there is any doubt. Evidence of inadequate ventilation requires immediate correction.

Evaluation of the circulation includes a baseline pulse rate and blood pressure (BP). Serious poisoning requires continuous electrocardiograph monitoring and regular BP checks. After assessment of ABC, a complete physical examination is undertaken to look for other signs of poisoning, injection marks, trauma (head injury or self-injury) and other disease (e.g. sepsis). In cases where unknown tablets have been taken, clues as to the type of agent taken will often arise during the course of the examination.

The neurological assessment is particularly important. An altered level of consciousness is a frequent complication of poisoning and ranges from mild drowsiness to agitation, delirium, coma and seizures. A Glasgow Coma Scale (GCS) of 8 or less strongly suggests that the patient may be unable to protect their airway and intubation is required. Pupil size and reaction are affected in many poisonings, and muscle tone and. Temperature should be recorded as many agents cause hyperthermia.

## ***2.7 Initial nursing assessment and management of poisoning***

Clegg and Hope (1999) explored the first line of response for people who self-poison. They found out that nurses are often at the forefront when it comes to the initial management of these casualties and decision on appropriate responses to such individuals are always complex. As a consequence, nurses need to be confident that such responses are firmly rooted in evidence-based practice.

The process of initial assessment and management of acutely poisoned patients as suggested by Wood and Rhode (2003) is very fundamental to the role of the A&E nurse. It requires a detailed knowledge of presenting medical complaints and their underpinning pathophysiology, relevant investigations and appropriate treatment options. A&E nurses roles in the initial assessment is to ensure that decisions about a patient's need for admission or discharge are made as promptly as possible and that delays in this process are minimized. Therefore, appropriate skills, knowledge and positive self esteem are fundamental to their practice.

Assessment is the cornerstone of safe and effective practice and goes hand in hand with the process of prioritizing patients' needs. It has been compared to the process of house building whereby assessment is the foundation on which all care planning and nursing action is built. The process of assessment starts as soon as the patient arrives in the accident and emergency department and incorporates the gathering of information regarding the patient's current physiological status along with a history of the present and any previous episodes.

According to Clegg and Hope (1999) initial management of self-poisoning involves rapid evaluation of a patient's airway, breathing, circulation, and conscious state. If life-threatening abnormalities are identified these are corrected using standard resuscitation techniques. Once stability has been ascertained and established, decisions regarding further treatment regimes can be formulated. As with all nursing care and treatment, a clear and concise assessment of the patient's needs must be undertaken prior to the formulation of a treatment regime. The risk of something detrimental happening to the patient as a result of ingesting a substance will depend on a variety of factors including the amount ingested, time since ingestion, toxicity of the particular substance and the age and body weight of the patient. Other factors include alcohol

consumption and mixtures of substances, both of which can potentiate the effects of the agents ingested.

NICE guidance (2007) proposes a ‘Chain of Response’ should be in place, which aims at being timely, effective, and seamless. Different professional groups may contribute to different parts of the chain according to the local setting. The most important requirement is that the ‘overall team’ possesses competencies that cover assessment, recognition, intervention and communication to ensure help is obtained when needed (Adam et al, 2010).

### ***2.7.1 Management of poisoning at AED by nurses***

Lau (2000) suggested that; after arriving at the accident and emergency department(AED), all poisoned patients are triaged as being in a critical or emergency condition, whether they are stable or not. This practice will ensure that the patients can be seen almost immediately for stabilization and consideration of early gut decontamination.

According to Singapore Ministry of Health guideline (2000), on first contact with the poisoned patient, assessment of the level of consciousness is important. For an unconscious patient, careful evaluation of the ABC should be followed by active measures to not only secure these, but also to reverse the unconscious state, if possible.

The cornerstone on the management of poisoning is supportive that is, care of the airway and the maintenance of breathing and the blood circulation. Toxic symptoms such as convulsion and arrhythmia should be watched for, as their onset can be quite sudden. If the patient’s history and the results of the physical examination support toxic ingestion, gut decontamination should be considered.

In the treatment of trauma patients, there is the 'golden hour' concept, whereby the first hour represents the best chance to stabilize and treat potentially life threatening injuries before the patient's condition deteriorates. In the management of ingested poisons, a similar concept should be emphasized; after the first hour, the amount of poison removed from the body is much decreased. Medical personnel who care for poisoned patients should keep this concept in mind by considering early decontamination after the overdose, preferably within the first hour (Lau, 2000).

Schwartzstein and Burns (1999), stated that there are various methods of gastrointestinal decontamination, which can be used alone or in combination. These include the induction of emesis by syrup of ipecac, gastric lavage, administration of activated charcoal, whole bowel irrigation, and endoscopic or surgical removal of the ingested poison. Regardless of the method employed, efficacy decreases with greater delay between ingestion and treatment. The choice of a decontamination procedure depends upon its relative efficacy, the associated risks of complications, and the presence of contraindications

Eddeleston et al. (2004) suggested that we consider the need for gastric decontamination once the patient has been stabilised. The lavage should not be performed until the patient is stable and, if necessary, intubated. Fernando (2000) stated that when the toxic agent ingested is not known, it is not advisable to induce vomiting by the gag reflex or with chemical agents. If the toxic agent is a corrosive, vomiting will inflict a second insult on the upper gastrointestinal tract. Furthermore, aspiration of vomit in patients with decreasing consciousness can be fatal.

## ***2.8 Knowledge, Attitude and Practice (KAP)***

A&E nurses are frequently the first health care professionals to come in contact with patients who have ingested poisons. Knowledge of the proper initial evaluation and treatment of these patients are very essential. A&E nurses should be equipped with the professional knowledge and skills to enable them to deal with a poisoned patient, and to assess the patient's support system and family structure professionally.

In order to develop and maintain good management skills and practice, Sun et al. (2007), urge that nursing education must continue to design and develop units of study for casualty nurses. The study should focus on the therapeutic care of poisoned patients at pre- and post-registration levels as well as in continuing professional education programs. Relevant research findings must be included in the educational programs and specialized teaching units for casualty nurses should be developed.

Attitudes of A&E nurses towards patients who attempt suicide are particularly important because they are likely to determine the enthusiasm that will be shown in providing help for such patients and hence influence the effectiveness of treatment. Thus, health care professionals must be aware of their attitudes towards this group of patients as part of their professional and therapeutic role (Sun et al., 2007).

Attitude of an individual consists of three components, namely cognitive, affective and behavioural. The cognitive component includes beliefs, facts and information about an object. The affective component describes the emotional reactions toward an object and the behavioural component includes the behaviour associated with an object. These three components are interrelated. Individuals' behaviours are influenced by their feelings (affective) and beliefs (cognitive) (Chung, 2003).

Results from factor analysis on the research conducted by McAllister et al. (2002) revealed that if staff perceive themselves as skilled to address the needs of clients who self-poison, they are more likely to feel worthwhile working with such clients and less likely to demonstrate negative attitudes. This is particularly relevant when we consider the work of Malone (1996) who concluded that ED clinicians tend to feel they are doing nothing for such clients except treating symptoms.

McAllister et al. (2002) found out that nurses are frequently required to respond to clients presenting because of deliberate poisoning, but most have no formal training or specialized preparation for the care. Without focused skills training and deeper understanding of the complexity of poisoning and therapeutic responses nurses are likely to provide inadequate emergency care for these clients.

It is imperative that nurses are skilled to perform and record a thorough risk assessment and emergency response to clients with poisoning. Crawford et al. (1998) cited in McAllister et al. (2002) found out that even after an hour teaching session staff were more likely to assess accurately.

Findings from the study done by Sun et al. (2007) indicate that; sample group of casualty nurses from the middle of Taiwan held positive attitudes toward patients who have attempted suicide. In addition, they found out that, with higher level of nursing education the more positive the nurses' attitudes were. The importance of education and training emerged as a key factor throughout the study. The evidence indicated that the nurses who were educated to a higher level of education held more positive attitudes than those who were not. Findings illustrated that this group of casualty nurses needed further education and training on poisoning and the nursing care of



poisoned patients. Results demonstrated that 94.8% ( $n = 147$ ) of the respondents had not attended academic programmes on care of self poisoning patients.

Ouzouni and Nakakis (2009) referring to Sun et al. (2007) findings, pointed out that there were three different types of attitudes towards suicidal patients. Some nurses were angry and held judgmental attitudes towards patients who attempted suicide. They did not like caring for suicidal patients and felt they could be of no benefit to this group of patients. A number of nurses demonstrated empathy and sympathetic feelings for suicidal patients. They accepted suicidal behaviors and felt that their nursing care had meaning. They also found few nurses perceived that suicidal patients were troubled people therefore, they felt powerlessness and fearful when they were providing care. Thus, they distanced themselves from caring for people who had attempted suicide.

In a survey carried out to assess doctors and nurses attitudes to self poisoning, Ouzouni and Nakakis (2009) found out that both professionals held negative attitudes towards self poisoning patients and did not enjoy caring for them. In particular, nurses and doctors held the most negative attitudes to patients who made multiple attempts to commit suicide. McAllister et al. (2002) found out that, nurses held negative attitude towards clients who self-harm and there was correlations between years of ED experience.

According to Anderson (1997) more experienced accident and emergency nurses held more positive attitude towards deliberate poisoning behaviour compared to less experienced nurses, this was echoed by Mclaughlin (1994) who found out that there were significant differences in two variables in relation to nurse's length of experience in casualty.

Sun et al. (2007) found out that, nurses who had experience in caring for deliberate poisoned patients had more positive attitudes towards suicidal patients than nurses who had nursed above

10 patients who had attempted suicide. Alston and Robinson (1992) disputed this findings and pointed out that increasing age and broader educational exposure may often prompt nursing from different specialties, to question issues around the subjects of deliberated poisoning. In his study he found out that less experience nurses held more positive attitude towards poisoned casualties than experience nurses.

Study done by McCarthy and Gijbels (2010) found out that ED nurses held positive attitudes towards individuals presenting with deliberate self harm. There was no correlation between total scores and gender, ED experience, history of self-harm education but older nurses and hospital trained nurses held less positive attitudes. Age and length of clinical experience produced a trend in which attitudes increased, reached a peak and then declined. McCann (2006) found out that, older and more experienced nurses had more supportive attitudes than younger and less experienced nurses and nurses who had attended in-service education on deliberate poisoning had more positive attitudes than non-attendees.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### ***3.1 Study design***

This was a cross sectional study that employed both qualitative and quantitative methods of data collection.

### ***3.2 Study area***

The study was conducted at KNH, AED. KNH is a referral hospital with a bed capacity of approximately 2000 patients. It gathers for patients within Eastern and Central Africa.

For effective and efficient administration, Nursing services in KNH have been categorized into Accident and Emergency, Obstetrics/Gynaecology/Radiotherapy, Paediatrics, Operating Room Nursing, Surgery (General and Specialized), Orthopaedics, Ear/Nose and Throat, Eye/ophthalmology, Medicine, Private (Amenity) wing, Patient Health Education and Research Unit, Counselling and Continuing Education departments.

KNH, AED is the gateway to the hospital. The department operates 24 hours and handles an average of 350 patients in a day. Out of these, 25% are accident victims and the rest are treated as outpatients, directed to consultant clinics for senior reviews or admitted to respective wards depending on their presenting condition. It operates in collaboration with the University of Nairobi (UON) College of Health Sciences and Kenya Medical Training College (KMTC) in offering teaching, training and research to students in their respective medical field.

### ***3.3 Study population and sampling procedure.***

The study population were all nurses working in AED during the time of study. To select the subjects, non probability sampling was used and specifically purposive sampling. Basavanthappa (2007) defines purposive sampling as a type of non probability sampling where subjects are selected because they are identified as knowledgeable regarding the subject under investigation.

### ***3.4 Subject's inclusion and exclusion criteria.***

Participant subject that were included in this study met the following subject's characteristics;

#### ***3.4.1 Inclusion criteria.***

- Nurses working at Kenyatta National Hospital.
- They were either enrolled, registered, BscN or MscN nurses.
- They were deployed in AED during the time of study.
- They were directly involved in patient care management.
- They gave a written consent to participate.

#### ***3.4.2 Exclusion criteria***

- Nursing students in AED placement doing basic trainings.
- Nurses who were on study leave, maternity leave, and annual leave during time of study.
- All AED nurses who declined to participate in the study.
- AED nurses who were not involved directly in immediate patient management like those permanently deployed in radiology, minor theatre etc.

### ***3.5 Sample size determination***

According to Israel (1992) sample size determination for small populations is achieved by use of census. He states that census is attractive for small population of less than 200 subjects under investigation. Census is where entire population under study is used as a sample. In AED all the 82 nurses working there were eligible to participate in this study so long as they met the subject's inclusion criteria

### ***3.6 Data collection***

#### ***3.6.1 Study tools***

Structured questionnaire, observation checklist and interview schedules were used to collect the data.

#### ***3.6.2 Research assistant.***

One research assistant holding a Bachelor of Science in Nursing (BscN) qualification, BLS and ACLS was recruited to assist in data collection. She was trained on how to collect the data using various data collection instruments.

#### ***3.6.3 Pilot study***

Approval authority to carry out the study was sought from KNH/UON- Ethics and Research Committee (ERC). Pilot study was done at Mbagathi District Hospital. Fifteen questionnaires were administered to nurses who were deployed at AED to test validity and reliability of the instrument. Mbagathi District hospital was chosen because it is close proximity to KNH and shares the same catchment area of poisoning cases. Poisoned casualties attending both hospitals share the same cause characteristics in one way or another as they are served by the same catchment area of Nairobi. Initial nursing management of these patients by AED nurses at both hospitals held near similar management pattern due to their poisoning characteristics and goals.

### ***3.6.4 Data collection methods***

#### ***3.6.4.1 Questionnaires***

Structure of the questionnaire comprised five sections as indicated in Table 3.1

**Table 3.1 Distribution of questionnaires**

<b>Section</b>	<b>No of items</b>	<b>Aspect to be covered</b>
<b>A</b>	8	Social and demographic data
<b>B</b>	14	General Knowledge on poisoning
<b>C</b>	10	Initial management of acute poisoning practices
<b>D</b>	7	Nurses practices self report
<b>E</b>	12	Nurses attitude. Components were drawn from a number of previously validated attitudinal measures

#### ***3.6.4.2 Observation Checklist***

The focus of the observations was to asses' actual practice of nurses on how they apply and implement their knowledge and skills on the initial management of acute-poisoning. Checklist was used to ascertain what the nurses were doing to the patient at that given moment.

#### ***3.6.4.3 Interviews***

Nursing Officer in-charge of AED was interviewed on various aspects related to the department and specifically on the management of acute poisoning.

### ***3.7 Data management***

#### ***3.7.1 Data cleaning.***

Data were cleansed, checked for completeness and entered into Statistical Package of Social Sciences (SPSS) version 16.

### ***3.7.2 Data Analysis***

Data were entered and analyzed in the statistical program SPSS version 16. Statistical measures of Central tendency, T-test and ANOVA were used in determining the association between independent and dependent variables.

### ***3.7.3 Data presentation***

Data were presented as frequency tables, bar graphs and figures. Inferential statistics were presented in relation to their level of significance.

## ***3.8 Ethical Consideration***

Ethical clearance of the proposal was granted by KNH/UON –ERC. Permission to carry out the study was granted by the Ministry of Science and Technology and KNH administration.

All A&E nurses were informed in advance that participation in the study was voluntary and the identities of those who participated were withheld throughout the study. Purpose of the study was explained to them, and those who were willing to participate provided a written consent by signing a consent form provided.

## CHAPTER FOUR: RESULTS

### 4.1 *Social demographic characteristics of A&E nurses.*

Out of 82 nurses providing nursing care at AED, KNH, 68 of these nurses participated in the study, which was 82% response rate. The social demographic characteristics of the nurses are presented in Table 4.1 below. There were 41 (60.3%) female nurses and 27 (39.87%) male nurses in the study.

**Table 4.1. Social demographic characteristics of A&E nurses, KNH.**

	Frequency (n)	Percent (%)
<b>Gender</b>		
Female	41	60.3
Male	27	39.7
<b>Age</b>		
20-29 years	3	4.4
30-39 years	48	70.6
40-49 years	15	22.1
50 years and above	2	2.9
<b>Level of Education</b>		
Certificate	5	7.4
Diploma	30	44.1
Higher diploma	23	33.8
Degree	10	14.7

The mean age of participants was 36.8 years and standard deviation (SD) of participants (SD 5.6) with a range of 25 to 53 years. Majority 48 (70.6%) of participants were aged between 30 to 39 years. Fifteen (22.1%) of the nurses were in the age group 40 to 49 years. The five remaining participants were either aged below 30 years or above 50 years. Thirty (44.1%) of the nurses held

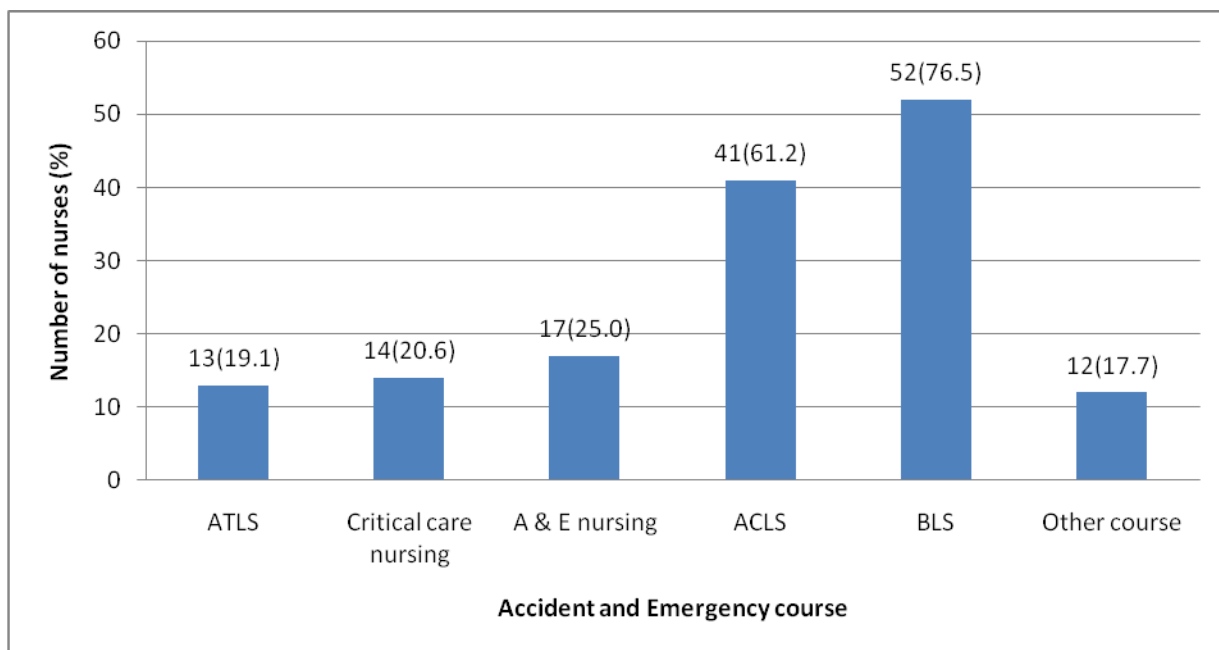


diploma nursing qualifications, 23 (33.8%) had higher diplomas, 10 (14.7%) had degree and 5 (7.4%) had certificates in nursing.

The average number of years (SD) since qualification was 11.9 years (SD 5.7 years). The recently qualified nurse had attained nursing qualifications three years prior to the time of study while the earliest qualified 30 years ago.

#### ***4.1.1. Accident and emergency trainings***

Figure 4.1 below presents available accident and emergency training courses that nurses in this study had attended. Majority (95.6% (65 out of 68) of the nurses had attended one of the A&E courses. The most commonly attended A&E course was basic life support training (BLS) attended by 52 (76.5%) of participants. Forty one (61.2%) nurses had been trained in advance cardiac life support (ACLS), 17 (25%) in accident and emergency nursing.



**Figure 4.1. Training in different accident and emergency courses among nurses at AED, KNH.**

Table 4.2 below shows that 29 (42.7%) of nurses had been formally trained in management of acute poisoning after their basic nursing qualifications.

**Table 4.2. Accident and emergency experience and post qualification trainings among A&E nurses, KNH.**

	Frequency (n)	Percent (%)
<b>Accident and emergency experience</b>		
0-4 years	40	58.8
5-9 years	16	23.5
10 years and above	12	17.7
<b>Current training related to accident and emergency</b>		
Yes	16	23.5
No	52	76.5
<b>Formal training in management of acute poisoning</b>		
Yes	29	42.7
No	39	57.3

## **4.2 General knowledge on poisoning**

The general knowledge of nurses on poisoning was assessed using the 14 items. The item for which nurses displayed the lowest knowledge level was the relationship between gender and ingestion of poison in the general population. Only 35 (51.5%) of the nurses were aware that women were more likely to take poison than men. Another question that was poorly scored was the alimentary signs and symptoms of acute poisoning during early stages, most nurses could not differentiate signs affecting gastrointestinal system and those affecting other body systems. Also 39 (57%) of nurses were not aware that poisoning can be classified as non accidental and 44 (64.7%) thought that there was a euthanasia poisoning.

**Table 4.3. Nurses responses to items on general knowledge on poisoning**

Knowledge on poisoning	Response	
	Correct (%)	Incorrect (%)
Poison is any substance capable of producing damage or dysfunction in the body by its chemical activity <b>(T)</b>	61(89.7)	7(10.3)
Dose ingested and time of ingestion are not very necessary consideration when managing an adult poisoned patients <b>(F)</b>	63(92.6)	5(7.4)
As an A&E nurse it is always important to treat the poison not the patient <b>(F)</b>	56(82.3)	12(17.7)
The commonest cause of poisoning in developing countries is pesticide poisoning <b>(T)</b>	56(82.3)	12(17.7)
Women are more likely to take poison in the general population to commit suicide than men <b>(T)</b>	35(51.5)	33(48.5)
Cause of poisoning among casualties attending any AED, according to motive and nature of use, can be classified as:		
Deliberate poisoning <b>(T)</b>	55(80.9)	13(19.1)
Accidental <b>(T)</b>	48(70.6)	20(29.4)
Homicidal poisoning <b>(T)</b>	48(70.6)	20(29.4)
Non accidental poisoning <b>(T)</b>	29(42.7)	39(57.3)
Euthanasia poisoning <b>(F)</b>	24(35.3)	44(64.7)
Alimentary signs and symptoms of acute poisoning during early stages include:		
Dry mouth, abdominal pain and salivation <b>(T)</b>	52(76.5)	16(23.5)
Nausea, vomiting, hallucination and convulsions <b>(F)</b>	13(19.1)	55(80.9)
Coughing, cyanosis, hyperventilation and salivation <b>(F)</b>	14(20.6)	54(79.4)
Tachycardia, hypotension, diarrhoea and breathlessness <b>(F)</b>	12(17.6)	56(82.4)

Based on responses to the 14 general knowledge items, a score (range 0 to 14) was calculated for each nurse. The mean score out of 14 for the entire sample was 8.3 with SD of 2.3 and a range of 2 to 13.

Table 4.4 compares the mean general knowledge score for nurses according to nursing training and length of A&E experience. Degree nurses had the highest mean score (9.0) on the general

knowledge of poisoning while the certificate nurses scored a mean of 8.0 representing the lowest score. Similarly nurses with 5-9 years of A&E experience had a higher mean scores than those with less or more than 10 years of experience.

**Table 4.4: Nursing qualification and length of experience versus general knowledge on poisoning among A&E nurse.**

	Number (n)	Mean (SD)	Range	ANOVA
<b>Nursing qualification</b>				
<b>Certificate</b>	5	8.0 (2.4)	2-9	F = 0.43; p = 0.74
<b>Diploma</b>	30	8.1 (2.4)	2-13	
<b>Higher diploma</b>	23	8.3 (2.4)	3-12	
<b>Degree</b>	10	9.0 (1.7)	7-12	
<b>Accident and emergency experience</b>				
<b>0-4 years</b>	40	8.0 (2.1)	3-12	F = 2.27; p = 0.11
<b>5-9 years</b>	16	9.4 (2.2)	5-13	
<b>10 years and above</b>	12	8.0 (2.8)	2-12	

Nursing trainings and poisoning knowledge was measured basing on 14 general knowledge items. Table 4.5 below compares the mean general knowledge score for nurses according to nursing trainings they had attended.

**Table 4.5. Training on A&E related courses versus general knowledge on poisoning among A&E nurses.**

		Number (n)	Mean (SD)	Range	P value; <i>t</i> -test Confidence interval (CI) <0.05
<b>Formal training in management of acute poisoning</b>					
	<b>Yes</b>	29	8.5 (2.7)	2-12	p = 0.55
	<b>No</b>	39	8.2 (2.0)	3-13	
<b>BLS</b>	<b>Yes</b>	52	8.5 (2.3)	2-13	p= 0.31
	<b>No</b>	16	7.8 (2.2)	3-11	
<b>ACLS</b>	<b>Yes</b>	41	8.7 (2.1)	3-12	p= 0.14
	<b>No</b>	27	7.8 (2.6)	2-13	
<b>ATLS</b>	<b>Yes</b>	13	9.1 (9.1)	5-12	p=0.19
	<b>No</b>	55	8.2 (2.4)	2-13	
<b>A&amp;E Nursing</b>	<b>Yes</b>	17	8.4 (2.5)	3-12	p=0.95
	<b>No</b>	51	8.3 (2.2)	2-13	
<b>CCN</b>	<b>Yes</b>	14	8.7 (2.1)	5-12	p=0.48
	<b>No</b>	54	8.2 (2.4)	2-13	

### ***4.3 Initial management of acute poisoning practices among A&E nurses.***

Out of the 68 nurses included in the study, 13 (19.2%) gave the correct response to all the ten questions on initial management of acute poisoning practices. The area in which nurses displayed the least knowledge was in management of patients who had ingested controlled release preparations with 40 (58.8%) of nurses recognizing that these patients may benefit from decontamination even after a longer delay. Conversely, 64 (94.1%) of nurses rightly identified that the priority in managing severe acute poisoning is maintaining adequate airway, breathing and circulation.

**Table 4.6. A&E nurses responses to items on initial management of poisoning practices**

Initial management of acute poisoning	Response	
	Correct (%)	Incorrect (%)
In severe acute poisoning, maintaining adequate airway, respiration and circulation is always a priority <b>(T)</b>	64(94.1)	4(5.9)
In case of organophosphate poisoning atropine should not be administered in any circumstances <b>(F)</b>	59(86.8)	9(13.2)
Nearly all poisoning encountered in A& E have their specific antidote <b>(F)</b>	40(58.8)	28(41.2)
The decision to perform Gastro Intestinal (GI) decontamination should be based upon the specific poison(s) ingested, time from ingestion to presentation, and the presenting and predicted severity of poisoning <b>(T)</b>	60(88.2)	8(11.8)
Emesis is to be considered in an alert, conscious patient who has ingested a substantial amount of a toxic substance within 60 minutes of presentation <b>(T)</b>	38(55.9)	30(44.1)
Activated charcoal can increase absorption of a wide range of poisons from the gastro-intestinal tract to the entire human system <b>(F)</b>	48(70.6)	20(29.4)
Gastric lavage is indicated in patients who have ingested kerosene or corrosive substances within an hour of presentation <b>(F)</b>	47(69.1)	21(30.9)
The efficacy of gastric lavage increases as the time between ingestion and treatment increases <b>(F)</b>	52(76.5)	16(23.5)
The volume of lavage fluid returned should approximate to the amount of fluid given <b>(T)</b>	50(73.5)	18(26.5)
Patients presenting following ingestion of controlled release preparations may benefit from decontamination even after a longer delay (e.g. more than 2-4 hours) <b>(T)</b>	40(58.8)	28(41.2)

Based on the responses to the 10 items on initial management of acute poisoning, a score (range 0-10) was calculated for each nurse. The mean score for all nurses in the study was 7.3 (SD 1.5), range 3 to 10.

Table 4.7 below summarizes the knowledge of nurses on the initial management of acute poisoning according to nursing trainings, attendance of formal courses on the management of poisoning and length of experience in A&E.

**Table 4.7. A&E nurses professional qualification and length of experience versus knowledge on initial management of acute poisoning practices.**

	Number (n)	Mean (SD)	Range	ANOVA
<b>Nursing qualification</b>				
Certificate	5	7.2 (1.3)	6-9	F = 0.29; p = 0.97
Diploma	30	7.3 (1.5)	4-10	
Higher diploma	23	7.4 (1.6)	3-10	
Degree	10	7.4 (1.5)	5-9	
<b>Accident and emergency experience</b>				
0-4 years	40	7.1 (1.4)	3-9	F = 1.10; p = 0.35
5-9 years	16	7.7 (1.7)	5-10	
10 years and above	12	7.5 (1.6)	4-9	

There was very little variation in nurses' knowledge on the initial management of acute poisoning. The mean scores for acute poisoning knowledge ranged from 7.2 among certificate nurses to 7.4 for higher diploma and degree nurses (F = 0.09; p = 0.97). Nurses with 0 to 4 years accident and emergency experience scored 7.1 (SD 1.4), 5 to 9 years scored 7.7 (SD 1.7) while those with experience over 10 years scored 7.5 (SD 1.6).

**Table 4.8. A&E related trainings courses versus knowledge on the initial management of acute poisoning practices among A&E nurses.**

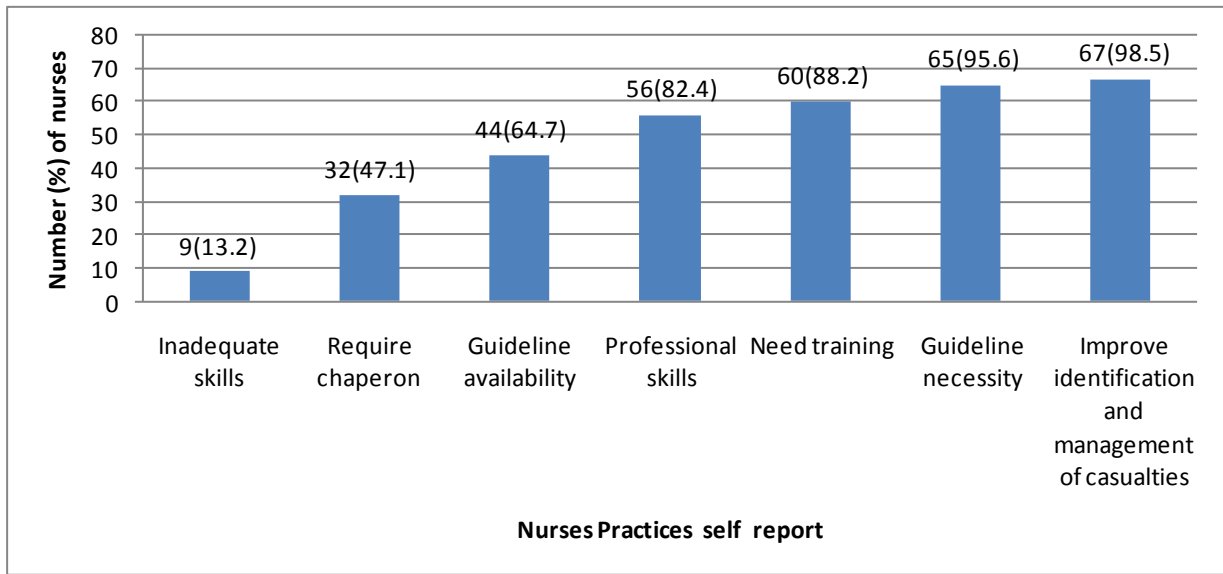
		Number	Mean (SD)	Range	P value; <i>t</i> -test CI <0.05
<b>Formal training in management of acute poisoning</b>					
	<b>Yes</b>	29	7.4 (1.4)	4-10	0.83
	<b>No</b>	39	7.2 (1.7)	2-10	
<b>BLS</b>	<b>Yes</b>	52	7.4 (1.6)	3-10	0.33
	<b>No</b>	16	7.0 (1.4)	4-9	
<b>ACLS</b>	<b>Yes</b>	41	7.1 (1.6)	3-10	0.59
	<b>No</b>	27	7.2 (1.5)	4-9	
<b>ATLS</b>	<b>Yes</b>	13	7.2 (1.5)	5-10	0.65
	<b>No</b>	55	7.4 (1.5)	3-10	
<b>A &amp; E Nursing</b>	<b>Yes</b>	17	7.6 (1.4)	5-10	0.31
	<b>No</b>	51	7.2 (1.6)	3-10	
<b>CCN</b>	<b>Yes</b>	14	7.1 (1.6)	3-9	0.62
	<b>No</b>	54	7.4 (1.5)	4-10	

As shown in Table 4.8 above there was variation in those who had done specific courses with those who had not done. Nurses who had done formal training on poisoning, BLS and accident and emergency nursing scored higher mean score than those who had not done.

#### **4.4 Self reported nursing practice of A&E nurses**

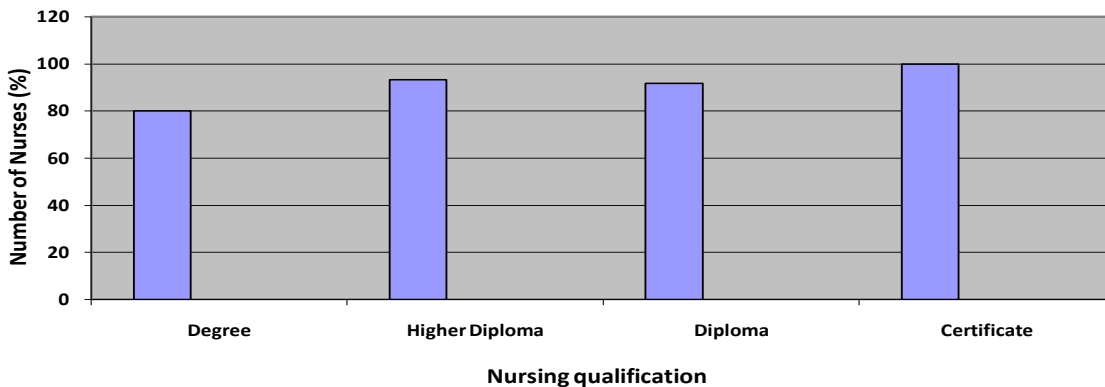
Out of the 68 interviewed nurses only 9 (13.2%) reported that they felt insecure dealing with poisoned casualties because they lack necessary skills and confidence (Figure 4.2) below. Thirty two (64.7%) of nurses however indicated that, though they were confident in their ability they required the presence of a staff member trained or experienced in poison management while responding to poison related emergencies in AED.





**Figure 4.2. Self reported nursing practices among nurses at AED, KNH**

Fifty six (82.4%) of nurses felt that they had professional skills to handle patients with acute poisoning but 60 (88.2%) still indicated that they required more training in initial management of poisoning. Sixty five (95.6%) nurses indicated that guidelines on management of poisoning in the AED were necessary. Concerning triage of poisoning casualties 67 (98.5%) nurses felt that it was necessary to develop procedures for improving the identification and management of acute poisoning of patients attending AED, KNH.



**Figure 4.3. Need for poisoning trainings among A&E nurses.**

As shown in figure 4.3 above, all certificate nurses indicated that they needed further training on the management of acute poisoning , eight (80%) degree nurses, twenty (91%) diploma nurses and twenty seven (92.5%) higher diploma indicated that they needed more training on management of poisoning.

#### ***4.5 Perception towards patients presenting with acute poisoning***

The responses to 12 items on perception of nurses towards patients presenting with acute poisoning were obtained on a five-point Likert scale presented in Table 4.9 below. The item with the highest rate of strong agreement among nurses (76.5%) was that a person who has made numerous suicide attempts by taking poison is at high risk of succeeding in the future and needs help and understanding. On the other hand, the item that most nurses (67.7%) disagreed with strongly was that once a person takes poison, he is suicidal forever and staff can do nothing about it.

**Table 4.9. A&E nurse’s perceptions towards patients presenting with acute poisoning**

<b>Key:</b>	<b>SA</b>	<b>A</b>	<b>U</b>	<b>D</b>	<b>SD</b>
<i>SA- Strongly agree, A- Agree, U-Undecided, D- Disagree, SD- Strongly disagree</i>	(%)	(%)	(%)	(%)	(%)
<b>Patients presenting with poisoning occupy more staff time, so staff are unavailable to patients who are in greater need of help</b>	19.1	30.9	2.9	33.8	13.2
<b>Sometime I fell nervous and uncomfortable when I have to care for a poisoned patient especially those with deliberate poisoning</b>	14.7	20.6	5.9	33.8	22.1
<b>A person who has made numerous suicide attempts by taking poison is at high risk of succeeding in the future and needs help and understanding</b>	76.5	14.7	1.5	1.5	5.9
<b>I am happy to care for poisoned patients and I feel the same sympathy as I care for other patients in accident and emergency department</b>	33.8	45.6	8.8	5.8	5.8
<b>It is frustrating to treat patients who have taken poison each time they present themselves in casualty.</b>	17.7	38.2	5.9	20.6	17.7
<b>Hospitalized intentional poisoned patients will make future attempts regardless of how supportive health care professionals were to them.</b>	14.7	19.1	11.8	45.6	8.8
<b>Patients presenting with poisoning must be treated using “strict” methods to curb the practice</b>	11.8	26.5	13.2	32.4	14.7
<b>Empathy demonstrated by the health professional may positively influence patients who have intentionally taken poison to reconsider future poison attempt</b>	32.4	33.8	4.4	22.1	7.4
<b>Poisoned patients are not responsible for their actions but are victims of their environment and they need understanding and utmost care.</b>	32.4	30.8	13.2	19.2	4.4
<b>Honestly, I prefer not to get involved with patients who have taken any form of poisoned , irrespective of the intention and cause</b>	5.9	2.9	1.5	45.6	42.7
<b>Nurses consider it less important to treat self poisoning patients compared to accidental poisoning whom they can give more attention to.</b>	5.9	16.2	7.4	35.2	35.2
<b>Once a person takes poison, he is suicidal forever. Staff can do nothing about it.</b>	2.9	1.5	1.5	26.5	67.7

#### ***4.5.1 Overall attitude of A&E nurses towards poisoned patients***

On a scale ranging from 12 to 60 with higher scores representing positive attitude the nurses in this sample scored a mean of 42.1 (SD 6.7) representing a generally positive attitude on management of acute poisoning. The attitude score had a range from 21 to 57. The comparison of attitude scores among nurses according to their nursing professional qualification, A&E experience, age group, gender and attendance of formal course on management of acute poisoning is presented in Table 4.10 below.

**Table 4.10. Nursing qualification, length of experience, formal training on poisoning management, age group and gender versus attitude of A&E nurses towards poisoned patients.**

	Number (n)	Mean (SD)	Range	ANOVA
<b>Nursing qualification</b>				
Certificate	5	44.4(6.0)	36-52	F = 1.05; p = 0.38
Diploma	30	44.2 (7.1)	27-58	
Higher diploma	23	43.6 (4.3)	33-52	
Degree	10	40.5 (7.5)	21-46	
<b>Accident and emergency experience</b>				
0-4 years	40	41.9 (6.8)	21-57	F = 0.09; p = 0.91
5-9 years	16	42.1 (4.8)	35-54	
10 years and above	12	42.8 (8.5)	27-56	
<b>Formal training in management of acute poisoning</b>				
Yes	29	43.2 (4.9)	34-56	F = 1.31; p = 0.26
No	39	41.3 (7.7)	21-57	
<b>Age group</b>				
20-29 years	3	41 (4.6)	36-45	F = 0.09; p = 0.91
30-39 years	48	42 (6.8)	21-57	
40-49 years	15	43.7 (6.1)	36-54	
50 years and above	2	35 (11.3)	27-43	
<b>Gender</b>				
Male	27	42.07(5.7)	27-56	F = 0.001; p=0.98
Female	41	42.12(7.3)	21-57	

As tabulated in table 4.10 above, the results were not statistically significant, however, the mean scores for various cadres varied. Degree nurses had the least mean attitude score compared to certificate nurses. Mean score for attitude increases with accident and emergency experience.

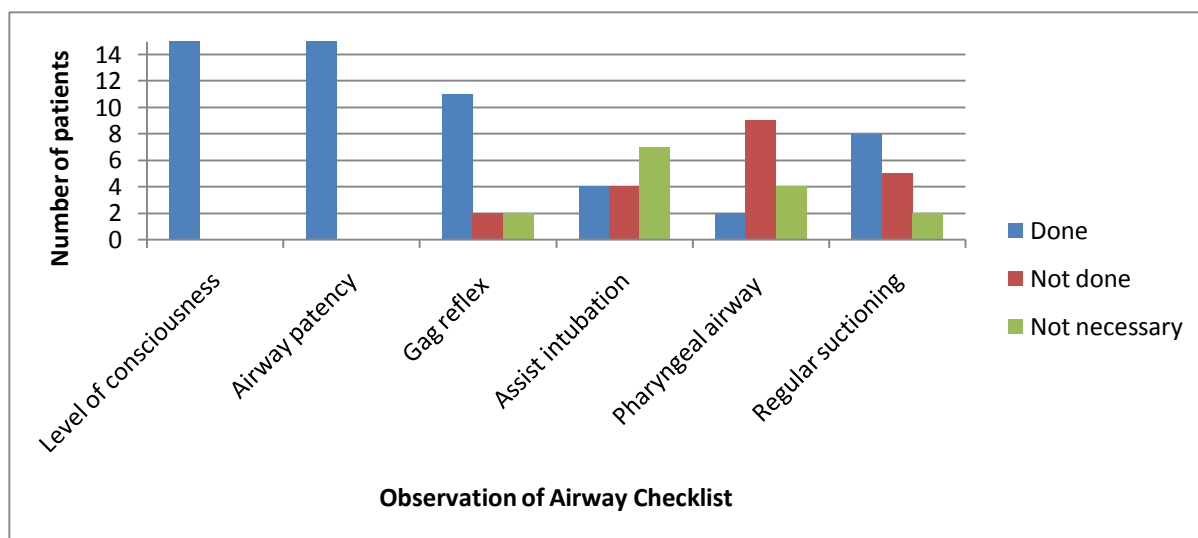
Female nurses scored slightly higher positive mean scores than men. Positive attitude for age group increases until certain limit, training on poisoning management increases mean positive attitude score.

#### ***4.6 Competency of A&E nurses on the management of acute poisoning***

The emergency management of fifteen poisoned casualties attended at KNH by different teams of A&E nurses was observed. The essence was to observe and document the actual nursing practices during this initial management of acute poisoning. The findings of the observations was conducted using structured checklists are presented in this section.

##### **a) Airway**

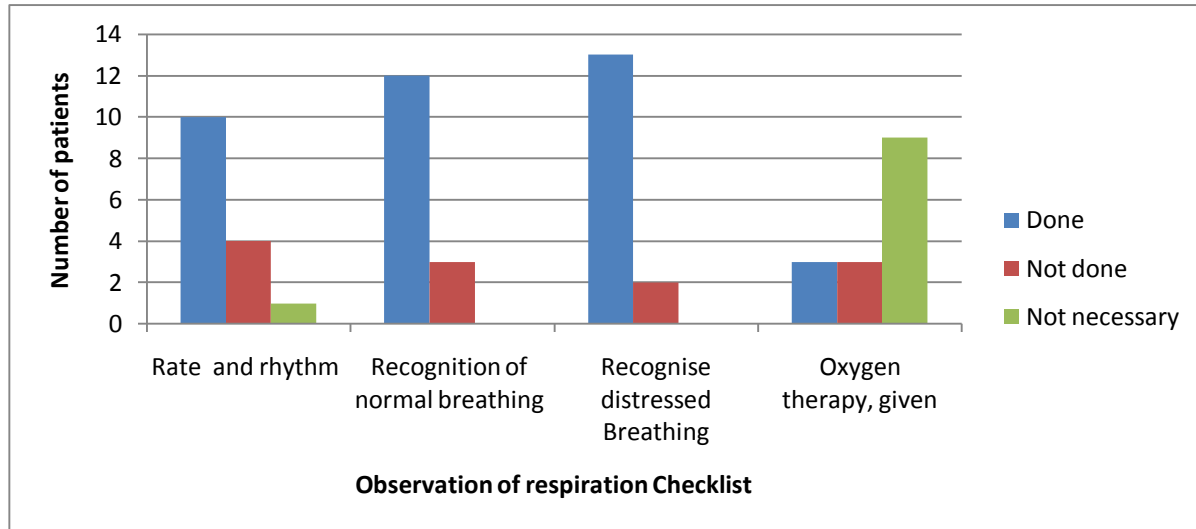
The team of nurses checked for the level of consciousness and airway patency in all the fifteen patients as shown in Figure 4.4. Intubation was not required in 7 out of the 15 patients, and pharyngeal airway, regular suctioning and checking gag reflex were also not always necessary. It was observed that nursing teams commonly failed to assist with inserting pharyngeal airways, intubation, performing regular suctioning and checking gag reflex.



**Figure 4.4: Observation of airway management on poisoned patients at AED, KNH.**

## b) Breathing

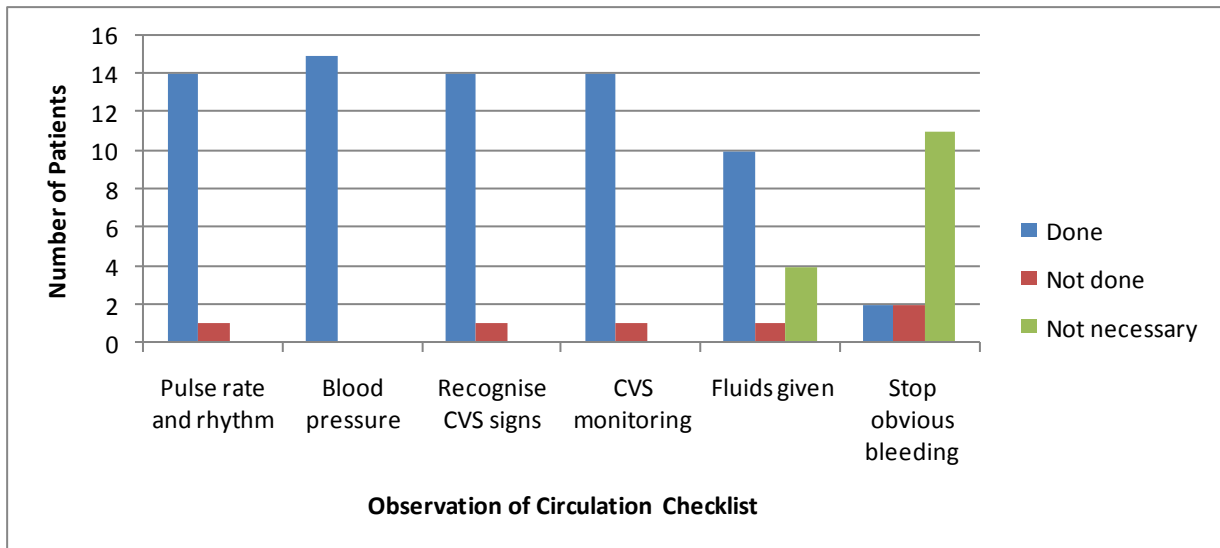
Oxygen therapy was not necessary in 8 patients and was not given in three of the patients who required it (Figure 4.5), but after my interventions the three patients were given oxygen. At least 2 patients did not have their normal breathing checked which included the rate and rhythm. Respiratory distress was also not recognized in two patients.



**Figure 4.5: Management of breathing on acute poisoned patients at AED, KNH.**

## c) Circulation

The circulation system of poisoned patients were generally well managed (Figure 4.6). Blood pressure was checked in all 15 patients. The following was not done in one patient only, checking of pulse and rhythm and recognition of cardiovascular system. There was no obvious bleeding in 11 patients and such bleeding was stopped in half of cases with the bleeding ( $n = 2$ ).



**Figure 4.6: Management of circulation in 15 patients presenting with acute poisoning**

**d) Neurological status**

Neurological assessment using Alert, Verbal, Pain and Unresponsive (AVPU) scale and Glasgow Coma Scale (GCS) was done in all the 15 patients. Altered level of Consciousness (LOC) was recognized in 11 patients.

**e) Drugs**

Drugs were administered to eight out of the 15 patients. Five out of the eight patients received at least two drugs and three received only one drug. Four patients received normal saline, seven receive 5% dextrose solution; two received both 5% dextrose and normal saline. Two were not given any fluid therapy.

**f) Medical history**

During the history taking it was established that 9 patients had suffered from organophosphate poisoning, 2 food poisoning, 3 hydrocarbons poisoning and one unknown poison. In two cases the dose or amount of poison ingested was indicated in the medical history. Time of ingestion was specified in 12 out of the 15 cases. 12 patients had intent of committing suicide, three were accidental. Five patients had been treated before presenting to AED, KNH and 10 had not



received any treatment. Casualties presenting signs and symptoms of acute poisoning were rarely noted down by A&E nurses.

#### **g) Gut decontamination**

Gut decontamination was done in six patients who underwent gastric lavage. All the six patients were cases of organophosphate poisoning and had ingested the poison within the last 1 to 4 hours except one whose time of ingestion was not indicated. Emesis was induced in one patient.

### ***4.7 Interview with Nursing Officer in Charge AED, KNH.***

Nurse in charge of AED was interviewed and several issues were raised; there was acute shortage of nurses at AED. This increase the workload of the nurses who were sometimes forced to work extra hard to meet all the patients needs and demands.

A&E nurses are sometimes faced with both internal and external challenges. Internal challenges faced by nurses during this initial management of acute poisoning include, shortage of specific antidotes, shortage of staff, shortage of supportive drugs. External challenges faced by nurse's range from hostile patients, hostile relatives, uncooperative patients and relatives. Sometimes A&E nurses receive conflicting medical history of the poisoned casualties and some vital information's are withheld from them by the accompanying persons, this makes the management of this casualties complicated.

Courses, seminars and trainings revolving around management of poisoning for A&E staff are very minimal. Flowcharts from National Poison Control Centre are available at AED, but they are designed specifically for management of organophosphate poisoning. AED have not design their own flowchart for easy identification and management of the various types of poisoning.

## **CHAPTER FIVE: DISCUSSION**

### ***5.1 Introduction***

The aim of the study was to determine nurse's knowledge, attitude and practice on the initial management of acute poisoning among adult casualties seen at AED, KNH.

### ***5.2 KAP of A&E on the initial Management of Poisoning.***

The mean general knowledge score for nurses according to their professional qualifications, trainings on courses related to emergency care and A&E experience was measured. Those nurses with higher qualifications had higher mean scores than the ones with lower professional qualifications. Further, those who had done courses or trainings related to emergency care like BLS, ACLS, ATLS, A&E nursing and CCN scored higher than those who had not done these courses. A&E nurses who had done formal training on the management of poisoning had a higher mean score (8.5) than those without the training (8.2). A Study done by Turnbull and Chalder (1997) showed that after implementation of a teaching package on poisoning, the general knowledge of staff improved while attitudes did not become more favorable.

A&E nurses with experience of 5-9 years had higher mean score than those with experience below 5 years and above 10 years. It is evident from the study that with any form of nursing training and substantial years of experience, knowledge of nurses on poisoning increased. This is consistent with Benner (1982) who introduced the concept that nurses develop skills and understanding of patient care over time through a sound educational base as well as a multitude of experiences. Study results indicated that 60 (88.2%) of A&E nurses needed training on the management of poisoning.

The mean knowledge score of A&E nurses on initial management of poisoning practices were measured. A&E nurses with degree and higher diploma qualification scored higher than those

with diploma and certificate qualification. A&E nurses who had had formal training on poisoning, BLS and had specialization in A&E nursing had higher mean scores than those who had not done. It was further found that A&E nurses who had done ACLS, ATLS and CCN had lower mean score than nurses who had not done the same.

The area in which nurses displayed the least knowledge was in management of patients who had ingested controlled release preparations with 40 (58.8%) of nurses recognizing that these patients may benefit from decontamination even after a longer delay. The main characteristic of poisoning with controlled release formulations is the delay in presentation and onset of clinical effects. There is a prolonged absorption phase, which leads to delay time to maximum plasma concentration. Absorption may continue for more than 24 hours (Buckley et al., 1995).

The results of the study demonstrate that A&E nurses held positive attitudes towards individuals presenting with acute poisoning, corresponding with the findings of earlier studies (McLaughlin, 1994; Anderson, 1997; McCann et al., 2006; Sun et al., 2007; and McCarthy and Gijbels., 2010). However, a third (35.3%) of nurses reported that they sometimes felt nervous and uncomfortable when caring for a poisoned patient especially those with deliberate poisoning. Over half of the A&E nurses agree that it is frustrating to treat patients who have taken poison and around 40% of the participants are for the opinion that they should be treated using 'strict' method to curb the practice. Study findings contradicted earlier studies by McAllister (2002) and Onzoni and Nakakasi (2009) who found that nurses held negative attitude towards suicidal casualties.

From the study it was found out that attitude of A&E nurses decreased with higher level of education. Certificate nurses had more positive attitude than degree nurses. This was consistent with the findings of Alston and Robinson (1992) cited in Anderson (1997) who reported that broader educational exposure often prompted nurses from different specialties to question issues

around the subject of deliberate poisoning. The results were contrary to the findings of Sun et al (2007), who discovered that the higher the level of nursing education, the more positive the nurses' attitudes were.

Study findings indicated that the mean positive attitude of A&E nurses increased with years of experience, age and poisoning related courses. The findings are consistent with those of earlier studies (McCann, 2006; McLaughlin, 1994) who reported that older and more experienced nurses had more supportive attitudes than younger and less experienced nurses. They further reported that nurses who had attended in-service education on deliberate poisoning had more positive attitudes than non-attendees. The results contradict McCarthy and Gijbels's (2010) findings who reported that there was no correlation between total scores and gender, ED experience, or a history of self-harm education, although older nurses and hospital trained nurses had less positive attitudes. Age and length of clinical experience produced a trend in which attitudes increased, reached a peak and then declined.

It was observed that teams of A&E nurses managing poisoned casualties from time to time failed to assess, make diagnosis, plan, intervene and evaluate appropriately. Further, it was found that A&E nurses occasionally failed to check patient respiration rate and rhythm, pulse rate and to recognize distressed patients. History taking was done well by team of nurses except on two areas: - nurses were not very keen on noting down the dosage of poison the patients had taken as well as not paying attention to any signs and symptoms presenting at that given time. It was noted that most A&E nurses could not differentiate between alimentary signs and symptoms of acute poisoning and those that affect other body systems.

Gastric lavage was the most preferred way of gut decontamination for patients who had taken poison within 1- 4 hours of ingestion. Most (60; 88.2%) A&E nurses were aware that the

decision to perform Gastro Intestinal (GI) decontamination should be based on the specific poison(s) ingested, time from ingestion to presentation and the presenting and predicted severity of poisoning. According to American Academy of Clinical Toxicology and the European Association of Poison Centers (1997), gastric lavage is of benefit and is acceptable if a patient has ingested a potentially toxic amount of substance and the procedure is performed within one hour of ingestion. From the study results, 21 (30.9%) of A&E nurses concurred that lavage can be performed on patients who have taken kerosene or any other corrosive substance. Sixteen (23.5%) of A&E nurses were of the idea that the effectiveness of gastric lavage increased as time from ingestion elapses; demonstrating ignorance about the efficacy and benefits of this procedure.

Although there is variation in KAP mean scores for A&E nurses as per their education level, this variation was not statistically significant. The P-value for study variable were; Knowledge ( $p=0.74$ ), Attitude ( $p=0.38$ ) and Practice ( $p=0.97$ ) where the level of statistical significance is  $p<0.05$ . We therefore accept our null hypothesis that there is no difference in the initial management of acute poisoning among nurses of different education levels.

Although the KAP mean scores for A&E nurses increases with years of experience, this increase was not statistically significant. The P-value for study variable were; Knowledge ( $p=0.11$ ), Attitude ( $p=0.91$ ) and Practice ( $p=0.35$ ) where the level of statistical significance is  $p<0.05$ . On that note, we accept our null hypothesis that, experience in accident and emergency nursing is not a factor in the initial management of acute poisoning.

### **5.3 Conclusion**

The study revealed that social demographic characteristic of A&E nurses such as education level, gender, age, length of ED experience and course trainings impacted the initial management of acute poisoning in diverse ways. Higher level of nursing education, A&E experience, training on courses related to emergency care enhanced the knowledge and practice of A&E nurses on the initial management of poisoning.

A&E nurses, overall, held positive attitudes towards individuals presenting with acute poisoning. Those with lower nursing qualifications were more positive than those with higher qualifications. Positive attitude increases with age, A&E experience, training on courses related to poisoning.

### **5.4 Recommendations**

- It is acknowledged that the study was situated in one ED and utilized a convenience sample of A&E nurses, thereby limiting the ability to generalize the findings beyond the current study. A similar study, within Kenya referral centres/ Provincial hospitals is recommended.
- A&E nurses should be trained on various types of poisoning including assessment, their clinical presentations and management. In addition, refresher courses are required in order to maintain the positive changes with regard to the nurses' confidence, knowledge and attitudes.
- Although A&E nurses' attitudes were on the whole positive, variations and differences between some of the variables merit further investigation.

- Flowcharts that will enhance easy identification and management of poisoned casualties should be set and utilized. Such guidelines will improve identifications and management of these casualties.
- A&E nurses should be trained on different types of gut decontamination focusing on the type, efficacies, indications, contraindications and complications. They are obligated to choose the best gut decontamination that is evidence based and best suited for a specific patient.

## WORK PLAN IN GANTT CHART

Month →	Nov 2010	Dec	Jan 2011	Feb	Mar	Apr	May	June	July- Aug	Sep - Nov
Activity ↓										
Concept paper										
Proposal writing and literature review										
Forwarding of proposal for approval to KNH-ERC										
Correction of final proposal and forwarding to KNH-ERC										
Training of research assistants and pre- testing questionnaires										
Data collection										
Data processing and analysis										
Report writing										
Draft report presentation and correction										



Final report presentation and submission										
Thesis Defence										

## BUDGET

COMPO- NENT	ACTIVITY DESCRIPTION	ITEM	UNIT OF MEASUREME NT	UNIT COST (KSH)	TOTAL (KSH)
Literature review	Search for literature in libraries	Transport and subsistence	15 days	@300	4,500
	Internet services	Browsing for 5 hours in cyber cafe	40 days	@200	8,000
	Stationeries	A 4 notebook	4	@100	400
		Foolscaps	2 reams	@250	500
		Photocopy papers	2 reams	@450	900
		Proposal typing	4 drafts	@400	1600
		Proposal printing	4 drafts	@400	1600
		Photocopying	200 pages	@3	600
Approvals		KNH ethics committee			1,000
		Ministry of Science and technology			1,000
Sub -total					<b>20,100</b>
Research	Pre-testing	Transport and subsistence	1 day	300×3 persons	900
		Typing, Printing	20 copies	@40	800
	Questionnaires	Photocopying	400 copies	@3	1200
	Data Collection	Transport and subsistence	30 days	300× 3 persons	27,500
		2 research assistance allowance	30 days	@400	12,000
	Data processing and analysis				20,000
Sub –total					<b>62,400</b>
Reports	Draft reports	Typing, printing	200	@20	4,000

		Photocopying	5 copies	@400	2,000
	Final reports	Correction and printing	200 pages	@ 10	2,000
		photocopying	5 copies	@ 400	2,000
		Binding	5 copies	@ 500	2,500
Sub total					<b>97,000</b>
		Contingencies 10%			9700
Grand total					<b>106,700</b>

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## **APPENDICES**

### ***Appendix I: Consent Explanation***

I am Japheth Kipkosgei Rutto a second year postgraduate student at the University of Nairobi, College of Health Sciences pursuing a Masters degree in Critical Care Nursing.

#### **Dear participant**

I intend to carry out a study on “*The initial nursing management of acute poisoning among adult casualties seen at accident and emergency department at Kenyatta National Hospital*” as part of my course requirement. The study seeks to evaluate nurses’ skills, knowledge and attitude on the initial management of acute poisoning among adult casualties seen at accident and emergency department, KNH. The study has no any material or monetary benefits.

Your participation is on voluntary basis and will not result in any physical or psychological harm. You will have the right to withdraw at any time without any penalty. We will require you to fill a questionnaire which will take about 30 minutes and you will be guided through. You are free to ask any question about the study any time. Study findings will be used to develop strategies on how to improve poisoning management and service quality.

The information you provide will be kept confidential and anonymous, and on that note, you will not write any of your personal particulars. Your participation will be highly appreciated

In case of any questions or clarifications feel free to contact the principal investigator on mobile number 0721-747895 or contact the Secretary to the KNH/UON- ERC at 2726300 Ext 44102.

**Thank you**

**Japheth K Rutto (Principal investigator)**

## ***Appendix II: Informed Consent***

I have read the consent explanation and understood its content. I have been given opportunity to discuss all my concerns with the investigator. I do therefore agree voluntarily to participate in the study on ***“The initial nursing management of acute poisoning among adult casualties seen at accident and emergency department at Kenyatta National Hospital”***.

Signature of participant \_\_\_\_\_ Date \_\_\_\_\_

Signature of researcher \_\_\_\_\_ Date \_\_\_\_\_

## Appendix III: Research Questionnaires

Date \_\_\_\_\_

**Directions:** You are requested to fill this form about some of your demographic data. Please answer every question if possible.

### SECTION A: Social and Demographic Data

1. 1. Gender: Female 1.  Male 2.
2. What is your age?
  1. 20-29 yrs.
  2. 30-39yrs
  3. 40-49yrs
  4. 50 > Yrs
3. Highest nursing education earned:
  1. Certificate
  2. Diploma
  3. Higher diploma
  4. Degree
  5. Masters
  6. Post-Masters
4. Number of years since you first qualified as a nurse: \_\_\_\_\_
5. How many years of experience do you have in accident and emergency environment
  1. < 2 years
  2. 2-3 years
  3. 4-5 years
  4. 6-7 years
  5. 8-9 years
  6. >10 years
6. Have you done any of the following courses since you first qualified as a nurse:
  1. BLS  which year \_\_\_\_\_
  2. ACLS  which year \_\_\_\_\_

3. ATLS  which year \_\_\_\_\_
4. Accident and emergency nursing  which year \_\_\_\_\_
5. Critical care nursing(CCU)  which year \_\_\_\_\_
6. Any other course relevant to your field? 1. Yes  2. No

If yes which course? \_\_\_\_\_

7. Is there any course you are currently pursuing related to your nursing field?

1. Yes
2. No

If yes which course? \_\_\_\_\_

8. Have you had any formal training on the management of acute poisoning since you first qualified as a nurse?

1. Yes
2. No

**SECTION B: General Knowledge on Poisoning**

**Direction:** Indicate whether the following statements are **True**, **False** or you are **Not Sure** regarding poisoning. Tick the correct response in the space provided.

No	Question Statement	True	False	Not Sure
1.	Poison is any substance capable of producing damage or dysfunction in the body by its chemical activity.			
2.	Dose ingested and time of ingestion are not very necessary consideration when managing poisoning cases in AED			
3.	As an A/E nurse it is always very important to treat the poison not the patient			
4.	The commonest cause of poisoning in developing countries is pesticide poisoning			
5.	Women are more likely to take deliberate poison in general			

	population to commit suicide than men.			
6.	Cause of poisoning among casualties attending any AED, according to motive and nature of use, can be classified as:			
	i. Deliberate poisoning			
	ii. Accidental poisoning			
	iii. Homicidal poisoning			
	iv. Non accidental poisoning			
	v. Euthanasia poisoning			
7.	Alimentary signs and symptoms of acute poisoning during early stages include ;			
	i. Dry mouth, abdominal pain and salivation			
	ii. Nausea, vomiting, hallucinations and convulsions			
	iii. Coughing, cyanosis, hyperventilation and salivation			
	iv. Tachycardia, hypotension, diarrhoea and breathlessness			

**SECTION C: Initial Management of Acute Poisoning Practices**

When managing acute poisoned patient, indicate your management view if the following statements are **True**, **False** or you are **Unsure**. Indicate the correct answer at the beginning of each statement, **T** for true, **F** for False and **US** for Unsure

1. \_\_\_\_\_ In severe acute poisoning, maintaining adequate airway, respiration and circulation are always a priority.
2. \_\_\_\_\_ In case of organophosphate poisoning atropine should not be administered in any circumstance.

3. \_\_\_\_\_ Nearly all poisoning encountered in accident and emergency department have their specific antidote.
4. \_\_\_\_\_ The decision to perform Gastrointestinal (GI) decontamination should be based upon the specific poison(s) ingested, time from ingestion to presentation, and the predicted severity of the poison.
5. \_\_\_\_\_ Emesis is to be considered in an alert, conscious patient who has ingested a substantial amount of a toxic substance within 60 minutes of presentation.
6. \_\_\_\_\_ Activated charcoal can increase absorption of a wide range of poisons from the gastro-intestinal tract to the entire human system.
7. \_\_\_\_\_ Gastric lavage is indicated for patients who have ingested kerosene or corrosive substances within an hour of presentation.
8. \_\_\_\_\_ The effectiveness of gastric lavage increases as the time between ingestion and treatment increases.
9. \_\_\_\_\_ The volume of lavage fluid aspirated should approximate to the amount of fluid given.
10. \_\_\_\_\_ Patients presenting following ingestion of controlled/ slow released substances may benefit from decontamination even after a longer delay (e.g. more than 2-4 hours).

**SECTION D:      *Nursing Practice Self Report***

Instruction: Indicate by ticking the correct box either **Yes** or **No**

	<b>Nurses Practice</b>	<b>Yes</b>	<b>No</b>
	I have professional skills to handle patients with acute poisoning		
	I feel insecure dealing with poison patient as I lack necessary skills and confidence		
	I need more training/education pertaining to the management of acute poisoned casualties.		

	While responding to poison related attendances in A&E, I require the presence of a staff member trained or experience in poison management		
	It is necessary to developing procedures for improving the identification and management of acute poisoning on casualties seen at A&E department		
	Are there any guidelines or flowcharts in place at A&E to assist you in management of poisoned casualties?		
	Are guidelines to A&E staff on the management of poisoning really necessary?		

**SECTION E: Perception/Attitude towards Patients Presenting With Acute Poisoning.**

Indicate to what extent you personally agree or disagree with the following questions/ statements using the five point likert scale

1. Strongly agree (**SA**)
2. Agree (**A**)
3. Neither agree or disagree i.e. Undecided (**U**)
4. Disagree (**D**)
5. Strongly disagree (**SD**)

No	Question statement	SA (5)	A (4)	U (3)	D (2)	SD (1)
1.	Patients presenting with poisoning occupy more staff time, so staff are unavailable to patients who are in greater need of help.					
2.	Sometime I feel nervous and uncomfortable when I have to care for a poisoned patient especially those with deliberate poisoning.					



3.	A person who has made numerous suicide attempts by taking poison is at high risk of succeeding in the future and needs help and understanding					
4.	I am happy to care for poisoned patients and I feel the same sympathy as I care for other patients in accident and emergency department					
5.	It is frustrating to treat patients who have taken poison each of the time they present themselves in casualty.					
6.	Hospitalized intentional poisoned patients will make future attempts regardless of how supportive health care professionals were to them.					
7.	Patients presenting with poisoning must be treated using “strict” methods to curb the practice					
8.	Empathy demonstrated by the health professional may positively influence patients who have intentionally taken poison to reconsider future poison attempt					
9.	Poisoned patients are not responsible for their actions but are victims of their environment and they need understanding and utmost care.					
10	Honestly, I prefer not to get involved with patients who have taken any form of poison, irrespective of the intention and cause					
11	Nurses consider it less important to treat self poisoning patients compared to accidental poisoning whom they can give more attention to.					
12	Once a person takes poison, he is suicidal forever. Staff can do nothing about it.					

## Appendix IV: Observation Checklist

### OBSERVATION CHECKLIST ON THE MANAGEMENT OF POISONED PATIENT.

Indicate whether the following activities were **done**, **not done** or **not necessary** by ticking the appropriate box. Provide comment on the performance if any,

	Date _____	Done	Not Done	Not Applicable	Comment (s)/ Remarks
A	<b><u>Emergency Management</u></b>				
	<b>1. Airway</b>				
	i. Check the patient level of consciousness				
	ii. Check airway patency				
	iii. Check gag reflex				
	iv. Assist in insertion of oro-pharyngeal or nasopharyngeal tube				
	v. Regular suctioning.				
	vi. Oral cavity inspected and any obvious foreign bodies such as food or broken dentures removed.				
	<b>2. Breathing</b>				
	i. Rate and rhythm of respiration				
	ii. Recognition of normal breathing patterns				
	iii. Recognition of compromised/Distressed Breathing				
	iv. Oxygen therapy, given				
<b>3. Circulation</b>					

	i. Checked pulse rate and rhythm				
	ii. Checked blood pressure				
	iii. Recognition of normal and abnormal cardiovascular status				
	iv. Cardiovascular monitoring of any changes				
	v. Resuscitation fluids given				
	vi. Stop obvious bleeding				
	<b>4. Neurological status ( use of AVPU and GCS)</b>				
	i. Recognition of normal and abnormal neurological status				
	ii. Neurological assessment and monitoring				
	iii. Recognition of altered LOC				
	<b>5. Drugs</b>				
	i. Given specific antidote ( <i>Specify</i> )				
	ii. Given any other drug ( <i>Specify</i> )				
	iii. Fluid therapy ( <i>Specify</i> )				
<b>B</b>	<b>Medical History:</b> ascertain whether the following where noted during history taking; ( <i>Specify where necessary</i> )				
	i. Type of drug or poison ingested				
	ii. Dosage and amount if available				
	iii. Time of ingestion				
	iv. Reason for taking the drug or poison				
	v. Any presence of suicide intent ( <i>yes/no</i> )				
	vi. Current symptoms noted ( <i>yes/ no</i> )				
	vii. Any treatment received prior ( <i>yes/none</i> )				
	viii. Past suicide attempts ( <i>yes/ no</i> )				

<b>C</b>	<b>Gut decontamination:</b> Indicate the gut decontamination used by ticking at the appropriate box and give comment if appropriately used.	<b>Decontaminator used</b>	<b>Comment(s)</b>
	i. Gastric lavage		
	ii. Emesis		
	iii. Activated charcoal		
	iv. Whole bowel irrigation		

## ***Appendix V: Interview Guides***

### **Introduction to Nurse In- Charges/ Section Heads**

I am a post graduate student pursuing Critical Care Nursing. I am here to get more information on how acute poisoning is managed at your department and the day to day challenges you are faced with. Note that, Participation in the interview is completely voluntary and you are free to withdraw any time. If you have any questions, you are welcome to ask me any time.

**Thank you**

**Japheth Kipkosgei Rutto (Principal investigator)**

## **Nurses In- Charge Interview Guide**

### **Probing questions**

- How is the staffing in your department
- What are some of the challenges you face in the management of acute poisoning at AED  
ie
  - Challenges as nurses.
  - Challenges from patients and relatives
- Do you have enough resources i.e. antidotes like atropine, pralidoxime etc, resuscitation drugs, oxygen, IV fluids.
- Do you sometimes have seminars, courses, CME's for your staff on the management of poisoning?
- Are there any flowcharts in place to assist staff in decision making regarding management of various types of poisoning

## ***Appendix VI: Letter to KNH/UoN Ethics and Research Committee***

Japheth Kipkosgei Rutto,  
University of Nairobi,  
School of Nursing Science

To,  
The Chairperson,  
KNH Ethics & Research Committee,  
P.O. Box 20723-00202,  
Nairobi.

Dear Sir/Madam,

### **RE: RESEARCH AUTHORISATION REQUEST**

I am a second year postgraduate student pursuing Masters in Critical Care Nursing (MscN).

I am writing to request your permission to carry out research on *“Nurses knowledge, attitude and practice on the initial management of acute poisoning among adult casualties”*. I am planning to carry out the research at Accident and Emergency Department, KNH.

Your consideration will be highly appreciated and it will go a long way in facilitating my study completion and also research findings will be utilized both locally and internationally in provision of optimal patient care.

Thank you.

Yours faithfully

Japheth K Rutto

**Appendix VII: Letter to the Ministry of Education, Science and Technology**

Japheth Kipkosgei Rutto,  
University of Nairobi,  
School of Nursing Science

To,  
The Chairperson,  
The Ministry of Education, Science and Technology,  
P.O. Box 30623-00100,  
Nairobi.

Dear Sir/Madam,

**RE: RESEARCH AUTHORISATION REQUEST**

I am a second year postgraduate student pursuing Masters in Critical Care Nursing (MscN).

I am writing to request your permission to carry out research on “*Nurses knowledge, attitude and practice on the initial management of acute poisoning among adult casualties*”. I am planning to carry out the research at Accident and Emergency Department, KNH.

Your consideration will be highly appreciated and it will go a long way in facilitating my study completion and also research findings will be utilized both locally and internationally in provision of optimal patient care.

Thank you.

Yours faithfully

Japheth K Rutto



**Appendix VIII:  
Committee.**

**Letter from KNH/ UoN Ethics and Research**



Ref: KNH-ERC/ A/73

Japheth Kipkosgei Rutto  
Dept. of Nursing  
University of Nairobi

Dear Kipkosgei,

**RESEARCH PROPOSAL: "NURSE'S KNOWLEDGE, ATTITUDE AND PRACTICE ON THE INITIAL MANAGEMENT OF ACUTE POISONING AMONG ADULT CASUALTIES: A STUDY AT ACCIDENT AND EMERGENCY DEPARTMENT, KENYATTA NATIONAL HOSPITAL" (P47/2/2011)**

This is to inform you that the KNH/UON-Ethics & Research Committee has reviewed and **approved** your above revised research proposal for the period 31<sup>st</sup> March 2011 – 30<sup>th</sup> March 2012.

You will be required to request for a renewal of the approval if you intend to continue with the study beyond the deadline given. Clearance for export of biological specimens must also be obtained from KNH/UON-Ethics & Research Committee for each batch.

On behalf of the Committee, I wish you a fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of the data base that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely,

**PROF. A. N. GUANTAI**  
**SECRETARY, KNH/UON-ERC**

- c.c. The Deputy Director CS, KNH  
The HOD, Records, KNH  
The Dean, School of Nursing  
The Chairman, Dept of Nursing, UON  
Supervisors: Dr. James Mwaura, School of Nursing, UON  
Mrs. Angelina Kirui, School of Nursing, UON  
Mrs. Theresa Odero, School of Nursing, UON

**Appendix IX: Letter from Ministry of Education, Science and Technology**

REPUBLIC OF KENYA



**NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY**

Telegrams: "SCIENCETECH", Nairobi  
Telephone: 254-020-241349, 2213102  
254-020-310571, 2213123.  
Fax: 254-020-2213215, 318245, 318249

When replying please quote

**NCST/RRI/12/1/MED-011/52 /4**

P.O. Box 30623-00100  
NAIROBI-KENYA  
Website: [www.ncst.go.ke](http://www.ncst.go.ke)  
**28<sup>th</sup> April, 2011**  
Date:

Our Ref:

Japheth Kipkosgei Rutto  
University of Nairobi  
P.O Box 30197  
**NAIROBI**

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on **"Nurse's knowledge, attitude & practice on the initial management of acute poisoning among adult casualties: A study at accident & emergency department, Kenyatta National Hospital, Kenya"** I am pleased to inform you that you have been authorized to undertake research in **Kenyatta National Hospital** for a period ending **31<sup>st</sup> March, 2012**.

You are advised to report to **the Director, Kenyatta National Hospital, Nairobi** before embarking on the research project.

On completion of the research, you are expected to submit **one hard copy and one soft copy** of the research report/thesis to our office.

**P. N. NYAKUNDI**  
**FOR: SECRETARY/CEO**

Copy to:

The Director  
Kenyatta National Hospital  
NAIROBI