

**QUALITY OF NURSING CARE FOR PATIENTS WITH MYOCARDIAL
INFARCTION IN ACCIDENT AND EMERGENCY KENYATTA NATIONAL
HOSPITAL**

INVESTIGATOR: ANGELA WAITHERA MOTANYA

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NOVEMBER, 2020

DECLARATION

I Angela Waithera Motanya, declare that this research thesis is has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the research itself.



Signature Date: 1st December 2020

Angela Waithera Motanya

CERTIFICATE OF APPROVAL

This is to certify that this thesis was supervised and approved by

Dr Angeline Kirui

Senior Lecturer, School of Nursing

College of Health Sciences

University of Nairobi

Signature  Date 1st December 2020

Mrs. Eve Rajula

Lecturer, School of Nursing

College of Health Sciences

University of Nairobi

Signature  Date: 1st December 2020

DEDICATION

I dedicate this work to my husband Daniel Motanya and my children: Collins, Isaack and Mark Thank you for walking through the laborious journey with me.

ACKNOWLEDGEMENT

Firstly, I would wish to thank the Almighty God, for granting me the ability to undertake the research. I appreciate it. Special thanks to go to my supervisors, Dr Angeline Kirui and Mrs. Eve Rajula for their expansive guidance, support, and wisdom throughout the research period without which I would not have made it thus far. I would also like to appreciate the Mbagathi County Hospital for the release to undertake this study.

God bless you all.

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LIST OF ABBREVIATIONS AND ACRONYMS

AMI	–	Acute Myocardial Infarction
ACD	–	Acute Coronary Disease
A and E	–	Accident and Emergency
CAD	–	Coronary Artery Disease
CTN	–	Troponin T and I
ERC/UON	–	Ethics and Research Commission / University of Nairobi
HR	–	Hours
KNH	–	Kenyatta National Hospital
MI	–	Myocardial Infarction
MIP	–	Myocardial Infarction Patients
NSTEMI	–	Non-ST Segment Elevation Myocardial Infarction
STEMI	–	ST-Elevation Myocardial Infarction
PCI	–	Percutaneous Coronary Intervention
UON	–	University of Nairobi
WHO	–	World Health Organization

DEFINITION OF TERMS

Myocardial Infarction – is the death (necrosis) of a portion of the heart muscle secondary to prolonged ischemia, due to acute reduction or cessation of blood supply.

Quality of care – the scope to which health care services provided to MI patients enhance expected health results.

Patient Satisfaction – is the measure of the extent to which a patient is contented with the health care received from healthcare providers.

Cardiac Arrest – is a sudden loss of blood flow resulting from failure of the heart to pump effectively.

Competence – the ability to do something successfully or efficiently.

Knowledge – the theoretical or concrete understanding of a subject. Facts, information, and skills acquired through experience or education.

Practice – a way of doing something.

ABSTRACT

Background: Every year around the world, 32.4 million cases of myocardial infarctions occurs, most of these occur in lower- and middle-income countries. (WHO, 2013). Additionally, a report by WHO in 2017 showed that 25% of hospital admissions and 13% of deaths in Kenya are due to Myocardial infarctions (MI). Nurse's knowledge concerning the signs and symptoms of MI may help them in quickly assessing and determining whether the patient has a life-threatening condition and provide appropriate and possible lifesaving care. Nurse's competence in obtaining vital signs help them to assess the hemodynamic status, determine the clinical severity of the patient's health status and prioritizing medical attention to the victim. This study, therefore, sought to determine the quality of nursing care for patients with MI in A and E at KNH whereby: the study assessed the nurse's competences in provision of care to MI patients in A and E at KNH

Methods: A cross sectional study research design was used. A random sample of 118 nurses were selected. The Fisher formula was utilized for sample size determination (n=70). Systematic sampling was used to choose the caregivers who were to undertake the study. Ethical considerations was observed. The data collection tool used was a questionnaires and an observation checklist. The data was coded and entered in Epi Data, a data entry software and analyzed using SPSS (Statistical Software Package for Social Sciences) version 25 for both inferential and descriptive statistics. Analytic tests like chi-square and t-test were used to depict relationships between variables. Data was presented in tables.

Result: Most of the respondents were females (53.6%) aged between 31 to 40 years (44.9%). No respondent had a certificate a PhD qualification in nursing. 98.6% of the nurses had a formal training on MI and 100% had not trained in the past three months.

94.2% had taken a life support course and all respondents adhere to the MONA protocol. 94.2% had been training on Basic Life Support (BLS), 31.9% had trained on Advanced Trauma Life Support (ATLS) and 17.4% had been trained on GRASPIT. 46.4% often encountered patients with MI with 94.2% never had any training on assessment and immediate care of MI patients in the last one year with 5.8 stating otherwise.

Conclusion: Nurses had an assorted approach to task execution both in initial assessment and in management of MI patients that was ascribed to lack of proper and relevant training and lack of administrative support.

Recommendations: Nurses require more training/ specifically on performing a 12 lead ECG on a patient without the directive from the doctor and proper interpretation of the ECG. Due to the effect of COVID-19, this training could be delivered virtually. The nurses also required immense administrative support to boost productivity and eventually quality of care to MI patients. Nurses working in the accident and emergency department need clinical rotation to other units.

CHAPTER ONE

1.0 Background of the study

Myocardial infarction (MI) alludes to the death of heart muscle cells because of prolonged or notable ischemia. It is mostly a consequence from the acute coronary syndrome which entails the blockage of the flow of blood reason being blood vessels harden and arteries get blockage from a thrombus (Deaton et al., 2017; Mendis et al., 2011).

Aside from ischemic heart disease, coronary thrombosis, cardiac arrest and sudden death, MI is also the leading exhibition of congestive heart failure. Every year around the world, 32.4 million cases of myocardial infarctions occurs, most of these occur in lower- and middle-income countries (WHO, 2013). This is so because, a wide range population is vulnerable to chances of developing the disease. Worldwide an approximated 17.7million human beings succumb to MI each year constituting to 31% of all deaths (WHO 2017).

In the United States of America, acute myocardial infarction (AMI) is the frequent reason of hospital admissions associated with both ad hoc and abiding deaths and rate of being diseased. It is approximated that one American suffers AMI every 42 seconds and that the incidence of the new and recurrent MI is 550,000 and 200,000 respectively (Addison et al., 2017). With these very high statistics of the MI, nurses working in emergency department needs to be highly knowledgeable and be ready to offer high quality care to save lives of these victims.

The quality of care offered to the patients with myocardial infarction varies around the world despite the existence of the guideline on the management of the same (Rehman et al., 2019). There is lack of accurate burden assessment of the victims with MI in

impoverished and average income nations though crude estimates indicate an increasing burden.

Evaluating the quality of care offered to victims of MI is challenging, complex as it is based on the wide broad variety of factors not restricted to positive clinical results only. Nurses working in accident and emergency department (A and E) must have high suspicion index since most of the MI patient presents with arm pain, jaw pain, syncope and sudden chest pain (Addison et al., 2017).

While dealing with victims with ST- segment elevation myocardial infarction (STEMI) patients, efficient triaging and early perfusion therapies has been shown to decrease the mortality rate (Kimeu & Kariuki, 2016). Health care givers play a major part in the triaging of patients in A and E thereby being able to recognize these patients early and intervene accordingly.

In non-STEMI the initial strategies in its management by the A and E staff is to relieve ischemia and its traits by using drugs such as anti-ischemic agents, antiplatelets, anticoagulants, to observe the victim connected to a 12-lead ECG, and perform repeated myocardial necrosis measurement of markers (Kimeu & Kariuki, 2016). Most of these roles can be played by A and E nurses in collaboration with the rest of the staff.

1.1 Statement of the Problem

Globally an estimated 17.7 million human beings die from MI each year constituting 31% of all worldwide mortality (WHO, 2017). In the United States of America, acute myocardial infarction (AMI) is the frequent cause of hospital admissions is associated with both short-term and long-term mortality and morbidity. It is approximated that one American suffers AMI every 42 seconds and that the incidence of the new and recurrent MI is 550,000 and 200,000 respectively (Addison et al., 2017). With these very high

statistics of the MI, nurses working in emergency department needs to be highly knowledgeable and be ready to offer high quality care to save lives of these victims.

A study done in Uganda on developing cardiovascular care for the 45 million population found that nurses in the A and E were not well versed with guidelines on how to assess patients and hardly distinguished MI from other heart conditions (Lwabi,Namuyonga,Lubega,2019).

In KNH there is a rise in the number of MI patients seeking health care in A and E, the rise is from 1 to 2 patients per day. In the A and E, the myocardial infarction trend, between the year 2014-2019 shows that there has been an average of 49 MI cases in a month.34 cases survived and 17 died translating to a 35% death rate (KNH Statistics, 2020).

The effect of quality of care provided by nurses to MI patients, reduces mortality and morbidity, complications, and recurrence, while ineffective quality of care leads to increased mortality and morbidity, poor compliance, and adherence to cardiac rehabilitation program. (Mampuya, 2012)

This sought to ascertain the quality of health care delivered by caregivers to MI victims.

1.2 Research questions

- i. What are the nurse's competences in diagnosing MI patients in A and E at KNH?
- ii. What is the ability of the nurse to identify and manage an MI patient in the A and E at KNH?
- iii. What are the institutional factors that influences the quality of care provided by nurses to MI patient in A and E at KNH?

1.3 Research objectives

1.3.1 Broad objective

To determine the quality of care provided by nurses to MI patients in A and E at KNH

1.3.2 Specific objectives

- i. To assess the nurse's competences in provision of care to MI patients in A and E at KNH.
- ii. To determine the ability of the nurse to identify and manage MI patients in A and E at KNH.
- iii. To establish institutional elements that influence the nurses in provision of care to MI patients in A and E at KNH.

1.4 Hypothesis

Null hypothesis – The quality of care provided by nurses to patients with myocardial infarction has no association with the competency of the nurses and institutional elements.

1.5 Justification of the Study

There is a rise in the number of MI patients seeking health care in A and E, the rise is from one to two patients per day and an average of 49 patients per month with a mortality rate of 35%. There is lack of accurate burden assessment of the victims with MI and this indicates there is an increasing burden. Evaluating the quality of care offered to victims of MI is challenging, complex as it is based on the wide broad variety of factors not restricted to positive clinical results only. Immediate identification and management of MI is an important public health concern which requires focused attention by nurses who are the first-hand providers of quality health care. Nurses definite assessment and initial intervention of MI is crucial as “time is muscle”,

therefore early reperfusion, recovery, and prognosis of patients with MI is important. Hence, the study seeks to determine that improving the ability of the nurses to rapidly assess and intervene to patients with MI can optimize quality care of MI patients who seek care in A and E at KNH.

1.6 Theoretical Framework

The foundation of the study is on Ida Jean Orlando deliberate nursing process model, stating that professional nurse's role is to use knowledge, skills, and positive attitude towards the patient. Through finding out the needs of the patient, who have their own interpretation of status, therefore professional caregiver must make meaning to their inferences, analyze with the patient upfront defining the conclusion. The nurse must investigate and intervene the patients presenting behavior or situation and implement immediately to relieve patients from distress. Orlando stresses on the use of observation skill, which is paramount, either shared or observed with the patient and provide immediate help he/she needs at that point in time. Orlando's nursing model functions around five analogous paradigm of professional caregiver, patient observable traits, expeditious behavior, nursing problem solving discipline and enhancement (Faust, 2002)

1.7 Limitations and Delimitations of the Study

The research was confined to Kenyatta National Hospital, Accident and Emergency, hence nurses outside of accident and emergency and in other units did not participate in the study.

1.8 Conceptual framework

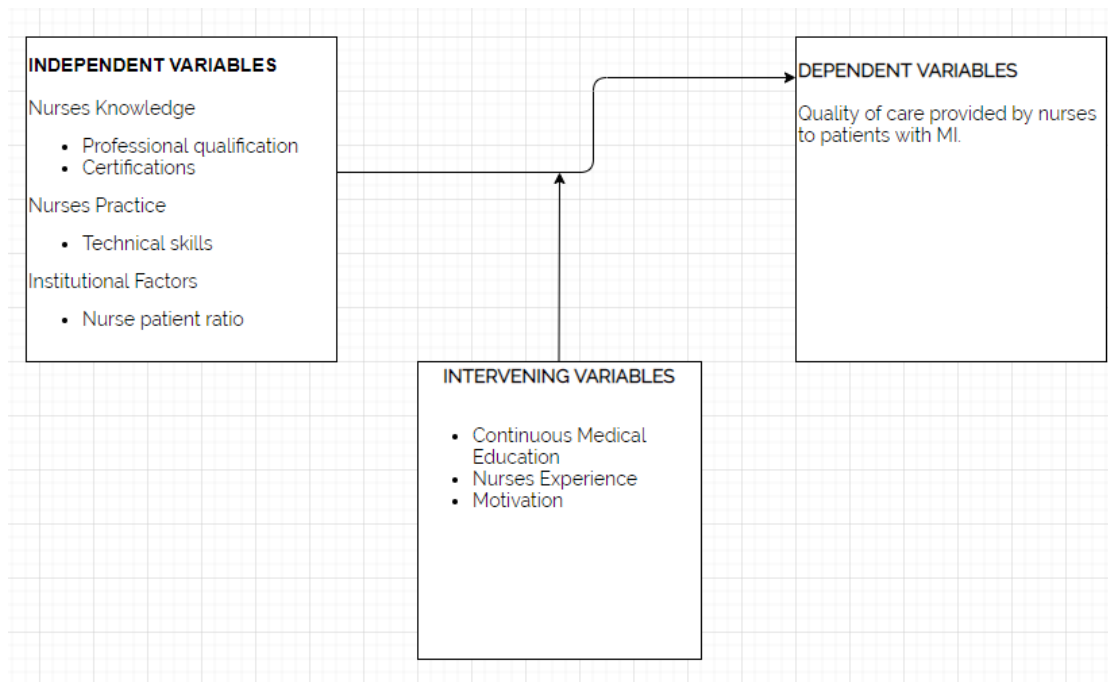


Figure 2.1: Conceptual Framework

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

Myocardial infarction alludes to the death of heart muscle cells because of prolonged or notable ischemia. It is mostly a consequence from the acute coronary syndrome which entails the blockage of the flow of blood reason being blood vessels harden and arteries get blockage from a thrombus. Often than not, angiospasm (abrupt vasospasm) of a coronary artery is rare (Acharya et al., 2017). The intensive care interventions of victims with myocardial infarction, is dynamic process comprising of pre-historic period, early stages of hospital care in emergency department before they are admitted to A and E. MI is classified into two: STEMI and NSTEMI (McManus et al., 2011). STEMI is a very fatal type of MI whereby heart muscle is deprived for oxygen and nutrients. ST-segment elevation is atypically detectable on the 12-lead EKG. Contrarily, NSTEMI is a kind of MI though less harmful to the heart.

2.1 Epidemiology

“Time is muscle” is the thoughtfulness of insistence for suitable medications to enhance victims aftermath. Annually in the United States, approximately 1 million human beings suffer from acute MIs. A fourth of the victims succumb to this condition. Half the victims of MI are brought in dead to the hospital (Choudhury & Marsh, 2004).

Trends in preference of coronary heart disease in developing nations in Africa is not well explained, notwithstanding recognition of escalating implication of cardiovascular disease in low most of these occur in Sub-Saharan Africa’s (Hertz, Reardon, Rodrigues, de Andrade, 2014). A study on the pattern of myocardial infarction in Kenya showed the importance of preventive strategies but information on acute myocardial infarction is scarce. Acute myocardial infarction is common occurring in

ages over 50 years and younger affecting more males than females with high risk morbidity from heart attack (Aronow et al., 2013).

2.2 Physiology and Pathophysiology of Myocardial Infarction

Contraction (heartbeat) of heart muscle (myocardium) is responsible for pumping blood with oxygen to the body for proper function and as well pumps deoxygenated blood into the lungs for replacement of oxygen to be used again (Pellico, 2005).

Death of myocardial tissue stimulates intense metabolic and ionic disturbance in the affected heart muscle causing fast suppression of systolic role. Overdue myocardial ischemia agitates a "wave front" of cardiomyocyte apoptosis running all the way from the sub endocardium to the sub epicardium (Richardson et al., 2015). Mitochondrial disruptions are basically associated in cell death and necrosis of cardiomyocytes in the affected cardio, healing occurs with scar formation. MI healing relies on an inflammatory process, stimulated by normal cell-constituent disseminated by dying away cells. Scavenging of dead cells by invading phagocytes stimulates anti-inflammatory cascade resulting in depression of cytokine and chemokine signaling. Induction of the renin-angiotensin-aldosterone system and release of changing growth factor- β commence conversion of fibroblasts into myofibroblasts, allowing growth of extracellular matrix proteins. Infarct healing is associated with anatomical reconstruction of the chamber, manifested by widening, overgrowth of living portions, and increasing malfunction (Richardson et al., 2015).

2.3 Risk factors

Risk factors comprise of a combination of non-communicable diseases (diabetes and hypertension) coexisting with infections, alcohol consumption and cigarette smoking (Ogeng'o et al., 2011).

2.4 Etiology

The origin of MI basically STEM is from the blood vessel, angio-spasm which is the abrupt constriction of the coronary arterial. Minimized oxygen supply is caused by acute hemorrhage, chlorosis, or decrease in blood pressure whereas intensified oxygen requirement is as result of tachycardia, hyperthyroidism, or cocaine use hence intensified in oxygen requirement (Choudhury & Marsh, 2004).

2.5 Clinical manifestation

Victim's history is important in making a diagnosis of myocardial infarction (MI) and often than not depicts clues that results in to diagnosing the first phase in the victim's manifestation (Johnson & Ghassemzadeh, 2019). Patient exhibiting chest pain, antecedent symptoms like general malaise, chest aches in days before the event; on the other hand, typical STEMI may occur rapidly with no alarming sign.

2.6 Diagnosis

2.6.1 12 Lead ECG

Elevation of ST portion is an evidence of death of a myocardium, inverted T or peaked upright stipulates injury to the myocardium while the growth of Q waves stipulates prolonged necrosis or ischemia (Smith & Whitwam, 2006).

2.6.2 Cardiac enzymes and isoenzymes.

Cardiac enzymes like CPK-MB (isoenzyme in cardiac muscle): rises in 4–8 hours, climaxes in 12–20 hours and normalizes in 48–72 hours.

2.6.3 LDH.

Rises within 8–24 hours, climaxes within 72 to 144 hours, prolonged for 14 days to normalize. Elevated LDH levels ascertain MI diagnosis and is evident even when MI is not detected in acute phase (Smith & Whitwam, 2006).

2.6.4 Troponins.

Troponin I (cTnI) and troponin T (cTnT): elevated between 4 to 6 hours, climaxes at 14 to 18 hours, normalizes in 6 to 7 days. These agitators have intensified distinctiveness for dying and are consequently applicable in detecting postoperative acute coronary syndrome and on the other hand MB-CPK may be raised, identified to skeletal trauma (Choudhury & Marsh, 2004).

2.6.5 Hematin.

This is a small molecular weighted haem protein that is speedily extricated from mutilated tissue with advancement in 2 hours after a myocardial infarction occurrence. Climax levels between 3-15hrs (Natsuaki et al., 2019).

2.6.6 Coronary angiography

This is an invasive procedure that visualizes constriction of coronary arteries and is used together with measurement of chamber pressures and evaluation of left ventricular function that is commonly known as ejection fraction. This course of action is not done in the acute phase only with the exception of emergency heart surgeries.

2.7 Nurses competencies in provision of quality of care to patients with MI

This section explored the knowledge level among nurses who manage myocardial infarction patients in A and E.

An explanatory study done on patients with acute coronary syndrome's knowledge: victims, households, caregivers' perception was geared to pick out and match victims with acute coronary syndrome during drastic, sub-drastic and post-drastic stage. Resulting findings depicted that myocardial infarction patients had high learning needs based on the perceptions given by the caregivers, family members and the MI victims.

Discrepancies were noted in the prime concern of learning that the patients needed in relation to the condition on convalescence period (Huriani, 2019).

A study done by Sayed et al., 2017 aimed at explaining competency of care givers in the A and E unit showed that the principal groupings were clinical proficiency, (routine care, emergency care, care agreeable to victims requirements), professional proficiency (personal growth, collaboration, professional morality) and productiveness in the A and E. The advantage of their competence lead to enhancement of patients' quality care, contentment of the victims and caregivers helped raise the standards of the health care profession, improving nursing edification and scientific health care.

In Madurai, a comparative study was performed to evaluate the knowhow on electrocardiogram among degree and diploma care givers. The study inferred that degree staff care givers were more knowledgeable on electrocardiogram as compared to the diploma staff nurses (Alanezi, 2018).

A study conducted on Nurses' knowledge and practice regarding victim's safety Post Cardiac Catheterization assessed cardiac nurses' knowledge and practice regarding patient safety. This study revealed that the mean score of knowledge of nurses more than five years of experience was better than those less than five years of experience. The mean practice score of nurses more than five years of experience was better than those less than five years of experience. Baccalaureate nurses had higher mean scores of knowledge than that of a diploma and technical institute nurses also the mean practice score of Baccalaureate nurses was better than institute and diploma nurses. There was relationship between staff nurses' practice and knowledge with their years of experience and practice. Knowledge level and practice of cardiac catheterization staff nurses regarding patient safety, increase with years of experience.

In Uganda, Lwabi et al., 2019 in a study on Developing cardiovascular care for the 45 million population found that most nurses in the A and E were not well versed with guidelines on how to assess patients and hardly distinguished MI from other heart conditions. In Tanzania, Hertz et al (2019) established that nurses were provided with guidelines on initial intervention towards symptoms associated with MI. Additionally, it was found that nurses were frequently involved in workshops to improve on their skills. A study carried out on deduction of care givers practice in evaluating and firsthand management of cardiac related angina pectoris among adult victims at A and E, KNH. One of the studies aims was to evaluate the level of care givers knowledge on interpreting assessment findings. Results showed that the nurses knowledge influenced the way they conducted initial intervention (Chege, 2018).

A study done on gauging of care givers' knowledge regarding quality care offered to victims with AMI in Al-Najaf City applied a descriptive investigation to determine the nurses' knowledge about the care provided to patients with myocardial infarction. Results of the study showed that the care givers care did not meet the optimal degree because of lack in the degree of knowhow and implementation of the care giver which reflected on the quality of care offered to the MI victims (Al - Ftlawy, 2012).

A study done Myocardial infarction in A and E which reviewed diagnosis and treatment examined the proof concerning diagnosis and medical attention of patients with MI in the A and E. A systematic review was done to spot applicable studies. 19 studies regarding the utilization of ECG, cardiac enzymes, echocardiography, and angiography were picked out. 4 studies contemplated on medical attention of myocardial infarction. Constant 12 lead ECG or 12 lead ECG observation is more delicate than 2 lead observation, uniform measurement of cardiac enzymes is more delicate than when triggered by manifestations. Coronary angiography hardly singles out treatable

swellings, without regional wall motion atypical on echocardiography. Proof correlating with medical attention was scarce. A prospective plan of action to diagnose myocardial infarctions in the A and E is suggested (Carroll et al., 2016).

Writings from various nations agreed to the necessity to survey the definition of excellent health care. Coulon et al., 1996 singles out the subject of expertise, comprehensive safe keeping, implementation, and goodwill in Australian caregivers' pursuit for quality. The significance of these components was aided by the culmination that excellent care giving corresponds to capability in the reasoning, intuitive, and body process domains amidst USA care givers (Alligood & Tomey, 2010).

Scheife et al., 2000) contended that excellent health care in British health care givers is impacted mainly by practicability and that the basic advancement in implementation is through motivational propensities.

Van den Heede et al., 2013 detailed, the existence of executive surroundings in the USA corresponded to excellent health care. Social relationship with victims and constructive guidance was each singled out as powerful level.

The focal point of care givers evaluating quality is evaluating, arrangement, or the efficacy and expertise with which therapies and prescriptions are delivered. Care givers assessment of excellence may focus on evaluating, arrangement, or the success and expertise with which medical attention is provided. Contrary to, victims are expected to be concerned further on the transmission, pay attention, warm-heartedness together with receptiveness of each victims' care givers.

As a guideline, direct treatment for intense MI is equipped to reinstatement of perfusion quickly to recover however much of the jeopardized myocardium as could reasonably be expected. This might be accomplished through treatment or specialized

intercessions, for example, percutaneous coronary intervention (PCI), or coronary supply artery bypass graft (CABG) medical procedure. Regardless of the way that the underlying clinical consideration of the fluctuated kinds of myocardial localized necrosis may give off an impression of being the equivalent, it is critical to decide if the unfortunate casualty is having STEMI or NSTEMI, in light of the fact that definitive cures vary between these two sorts of MI. Explicit considerations and differentiations requires the need of treatment and the degree of confirmation with respect to shifted pharmacologic other options. Grimness and mortality from MI are eminently decreased if unfortunate casualties and non-members note early indications and enact the emergency medical service (EMS) framework, in this manner diminishing the opportunity to convincing treatment. On the off chance that the patients create MI, at that point prepared prehospital staff can give life-sparing contribution. The way to bettering endurance is the accessibility of early defibrillation.

Regarding the training sessions the investigation revealed significant in the relationship with level of knowledge. This finding agreed with the study of (Uretsky et al., 2000) who revealed that training course was successful for every stage of an education ranking and was crucial to improve new details for the care giver.

2.8 Identification and management of patients with MI

It is critical that A and E recognizes that nursing does occur in collaboration with the whole health occurrence. Nurses and health care leaders undertake important functions in this occurrence through personal professional capacity, responsibilities, and leadership. We are all partakers of the health care group and we ought to work hand in hand to offer and enhance health care (Finkelman & Kenner, 2013).

Quality measures, extracted from evidence-based practice protocols, are appearing as an essential component of modern healthcare. Victims, care givers, managers are all progressively looking for quality measures to enlighten their healthcare resolutions. In the USA, obedience to these measures is being bound to institutional rankings and remunerating frameworks. Universally, acquisition of quality measures has been sluggish, with consequent downtime in enhancement of patient end result (Jones, 2016)

Acute coronary syndrome (ACS) is an ideal target for universal application of quality measures, as the exemplary care for patients with AMI is well expounded by a great number of self-assertive control preliminaries. The American Heart Association (AHA) and the American College of Cardiology (ACC) have put together this fact into an abstract declaration profiling best practices, focusing to come up with comprehensive performance metrics than can be used to enhance care. This includes aiming at areas with the most promise for influence, along with we-built accord about best practice (Krumholz et al., 2008). Likely observational investigations have indicated a strong alliance between organizational cohesion to these counsel and enhanced patient end results in the USA and on a small scale in Brazil (Solla et al., 2013).

An investigation conducted by France et al., 2020, shows speedy risk delamination and up to date medical attention are critical to advantageous end results for MI patients. The investigation reveals the quality measures for STEMI and NSTEMI includes ECG readout time, laboratory turnaround time (TAT) , therapeutic turnaround time (TTAT), accident and emergency boarding time and accident and emergency length of stay.

2.9 Institutional Factors

The investigation revealed institutional factors affect the quality of health care. This institutional factors include: ancillary staff utilization, staffing provisions, equipment and supplies availability (France et al., 2020).

CHAPTER THREE: METHODOLOGY

3.0 Study Design

A descriptive cross sectional research study design was used to obtain data to establish nurses' competencies, ability to identify and manage patients with MI and institutional factors in management of myocardial infarction patients.

3.1 Study Site

The study site was Kenyatta Hospital in Nairobi, which has a bed capacity of 1,800. Kenyatta National Hospital is the largest Hospital in East and Central Africa. Located in the west of Upper Hill, Nairobi the capital city. KNH has 50 wards, 22 outpatient clinics, 24 theaters (16 specialized) and Accident and Emergency Department.

Kenyatta National Hospital, Accident and Emergency department, which was the site of study, receives emergencies on a 24-hour basis and attends to approximately 135 patients daily (KNH Statistics, 2019). The department attended to 48,977 patients in the financial year 2018/2019 and out of the number, 3,258 are referral cases (KNH Statistics, 2019). KNH A and E provides emergency medical treatment to all patients brought to the facility as emergencies. It also handles referrals from within and outside the country, responds to national disasters and mass casualty incidences that happen in the country.

3.2 Study Population

The target population for this study composed of nurses at A and E. A sample of 118 nurses were recruited, who were registered nurses, trained and worked in the A and E for a period exceeding 6 months.

3.3 Sample Size Determination

Due to the population size being less than 10,000, the fisher et al, (2003) formula was utilized.

The Fisher formula:

$$n = \frac{z^2 p(1 - p)}{d^2}$$

Where;

n= specimen size

z= the number of deviations from the mean value of the reference population set at 95% level of confidence and equal to 1.96

d= margin of error at 0.05 for confidence interval at 95%

p= proportion to be estimated, p is assumable to p=0.13

Therefore, sample size was arrived at as follows:

$$n = \frac{(1.96^2)(0.13)(1 - 0.13)}{(0.05)^2}$$

$$n = 174$$

The population being less than 10,000, the sample size was further manipulated as:

$$n_0 = n / (1 + ((n - 1) / N))$$

$$n_0 = 174 / (1 + ((174 - 1) / 118))$$

$$n_0 = 70$$

Consequently, a subset of 70 nurses working in the A and E unit in Kenyatta National Hospital were enrolled in this investigation.

3.4 Sampling Method

Systematic sampling was utilized to choose the caregivers who undertook the study. It aided in obtaining a subset of 70 nurses who undertook the study. This targeted nurses on duty during the period of data collection. This method was favorable since the respondents were not coming to the A and E unit at the same time. The first respondent was selected randomly on the first day of data collection. A random number was obtained between 1 and 3 of the first visitors to determine the first subject who was recruited. There were 118 nurses in the A and E unit in KNH and the researcher planned for 5 days to collect data. Therefore, $118 \times 5 = 590 / 174 = 3$. Thus, every 3rd nurse was recruited to the study from a duty rota of nurses who were working during the study period until the sample size of 70 was achieved.

3.5 Inclusion Criteria and Exclusion Criteria

3.5.1 Inclusion criteria

1. Registered Nurses who worked in A and E for more than 6 months
2. Registered Nurses who were in-attendance.
3. Registered Nurses who agreed to participate

3.5.2 Exclusion criteria

1. Nurse who were not on duty at the A and E
2. Nurse who were trained to work at the A and E
3. Nurse who had not undergone an A and E short course

3.6 Data Collection Instrument

Questionnaires have been known to be very important tool of data collection for both qualitative and quantitative data because of their ease of administration, low cost, and versatility.

Quantitative information was sourced, and questionnaires were filled by the respondents. Questionnaires had four parts. Section A carried the bio data, section B the Nurses competence, section C questions on ability of nurses to identify and manage MI and section D institutional factors questions.

3.7 Data Analysis

The data was coded, and entered in Epi Data, a data entry software. Descriptive statistical analysis was carried out in accordance with the study objectives and hypothesis. The data was analysed using SPSS version 25. Descriptive statistics such as frequencies, percentages mean, median, and mode were used to present data in tables to illustrate the results. The knowledge and practice questions were scored and summed up and used to obtain overall mean scores of knowledge and practice of nurses on MI management. The scores were categorized into adequate and inadequate knowledge while practices were categorized into good or poor. Level of knowledge and the practices were correlated with independent variables using the Chi-square test of association for definite data and t test for comparison of means. Statistical significance was interpreted at a level of significance of 5% (0.05 is equal to or greater than the p value).

3.8 Dummy Tables

The dummy table showed crucial relationships between our variables

Table 3. 1: Dummy Tables

SECTION A: DEMOGRAPHIC DATA

Respondent characteristics	n	%
Age Below 30 years 31-40 years 41-50 years 51-60 years		
Gender Male Female		
Marital status Certificate Diploma Higher Diploma Bachelor's degree Master's degree PhD		
Number of years you have worked as a nurse Below 5 years 5-10 years 11-15 years 16-20 years Over 20 years		
Years have you worked as a nurse in the A and E Unit Below 5 years 5-10 years 11-15 years 16-20 years Over 20 years		
Currently undertaking any course related to nursing field Yes No		
Ever had any formal training on the management of myocardial infarction since you first qualified as a nurse Yes No		
In the past three months, have you attended any workshop that corresponds with line of duty? Yes No		
Are there standard protocol guidelines for handling patients in the unit? Yes No		

<p>Have you been trained on any life support course?</p> <p>Yes</p> <p>No</p> <p>If yes, please specify which one?</p> <p>Basic Life Support (BLS)</p> <p>Advanced Trauma Life Support (ATLS)</p> <p>Pediatric Advanced Life Support (PALS)</p> <p>Advanced Cardiac Life Support (ACLS)</p> <p>GRASPIT</p>		
<p>How often do you encounter patients with myocardial infarction</p> <p>Always</p> <p>Very Often</p> <p>Sometimes</p> <p>Rarely Never</p>		
<p>Ever had any training on assessment and immediate care of myocardial infarction in the last one year?</p> <p>Yes</p> <p>No</p>		

SECTION B : NURSES COMPETENCE

Question statement	True n(%)	False n(%)	I don't know n(%)
Myocardial infarction is a life-threatening condition that occurs when blood flow to the heart muscle is abruptly cut off, causing tissue damage.			
Having high levels of cholesterol in your blood puts you at risk for acute myocardial infarction			
Men and women do not always experience the same Myocardial infarction symptoms.			
A patient with Myocardial infarction must die			
Women under the age of 50 are twice as likely to die of a Myocardial infarction than men of the same age,			
A patient with a large acute myocardial infarction may be concurrently treated with aspirin, streptokinase, heparin and an ACE inhibitor			
The complete blockage of a coronary artery caused by a rupture of an atherosclerotic plaque is usually the underlying mechanism of an MI			
Aspirin is not an appropriate immediate treatment for a suspected Myocardial infarction			
	Ability of nurses to identify and manage MI patients		Statistical test X²(P-Value)

	Agree n(%)	Disagree n(%)	
Age Below 30 years 31-40 years 41-50 years 51-60 years			
Gender Male Female			
Marital status Certificate Diploma Higher Diploma Bachelor's degree Master's degree PhD			
Number of years you have worked as a nurse Below 5 years 5-10 years 11-15 years 16-20 years Over 20 years			
Years have you worked as a nurse in the A and E Unit Below 5 years 5-10 years 11-15 years 16-20 years Over 20 years			
Currently undertaking any course related to nursing field Yes No			
Ever had any formal training on the management of myocardial infarction since you first qualified as a nurse Yes No			
In the past three months, have you attended any workshop that corresponds with line of duty? Yes No			
Are there standard protocol guidelines for handling patients in the unit? Yes			

No			
Have you been trained on any life support course? Yes No If yes, please specify which one? Basic Life Support (BLS) Advanced Trauma Life Support (ATLS) Pediatric Advanced Life Support (PALS) Advanced Cardiac Life Support (ACLS) GRASPIT			
How often do you encounter patients with myocardial infarction Always Very Often Sometimes Rarely Never			
Ever had any training on assessment and immediate care of myocardial infarction in the last one year? Yes No			
Nurses Competence True False I don't know			
Institutional factors Strongly Agree Agree Neutral Disagree Strongly Disagree			

3.9 Minimization of Errors and Biases

3.9.1 Pre-testing

Pretesting of the questionnaire was carried out in the casualty department in Mbagathi hospital and 7 questionnaires were used. According to Mugenda and Mugenda (2013), a tenth (10%) of the sample size is enough for pretesting. This process involved testing for rationality and precision. Rationality is referred to as the degree to which the test computes what it is likely to be computed while precision alludes to the consistence, strength, or reliability of the information.

To safeguard content rationality, the questionnaire was submitted to thorough scrutiny by the two supervisors in the study. They were mandated to assess the declarations in the questionnaire for applicability meaningfulness, clarity and consider ability. Considering the evaluation, the instrument was controlled pertinently before regulating it to the last information assortment process. To guarantee that the substance was normal, their assessment comments was utilized. Cronbach alpha as a coefficient of interior consistency was applied to quantify precision. Inner consistency gauged the relationship between variation things on a similar test and whether a few things that promoted to quantify a similar general build produced comparable scores. Castillio (2009) provided the following rules of thumb: >0.9 – Excellent, >0.8 – Good, >0.7 – Acceptable, >0.6 – Questionable, >0.5 – Poor and <0.5 – Unacceptable. The acceptable value of 0.7 was used as a cut–off reliability for this investigation.

3.9.2 Training of Research Assistants

Two research assistants were trained and (Registered Nurse /Critical care Nurse) on how to administer the questionnaire. To avoid biasness, the questionnaire was administered individually and privately.

3.9.3 Data Management

Data management is storage, access, and preservation of data to ensure quality of results. In our study, data management covered planning, design development, data review, analysis, and filling. It involved everyday management of data throughout the research period and decisions on how data collected was preserved and shared after the research period and backed up. Data was shared and suppose there were need for re-use, this required new ethical approval. The study ensured high data integrity, security, and data privacy.

3.10 Limitations

Some nurses may have had perceptions about the availability of myocardial infarction protocol(s), medicines, and machines. This influenced the responses in gauging the availability of myocardial infarctions apparatus and medicines. A portion of the care givers had trouble in sharing the hospital data, with the fear of losing their jobs for telling on the hospital management. In such an occurrence, the care givers were guaranteed anonymity and confidentiality in that no care givers personal data that would link them to the participants was to be used, instead study digits were produced, and coded data applied. The data collected was utilized for objectivity in the investigation. Collection of data took more time because of the COVID-19 pandemic and delay in laboratory results.

3.11 Ethical considerations

Approval to undertake the investigation was obtained from the Kenyatta National Hospital/ University of Nairobi Ethics and Research Committee. Authorization to access, conduct the investigation at Kenyatta National Hospital A and E unit was obtained from the KNH research and programs department. An informed consent was obtained from each respondent before data collection and only those who agreed took

part in the study. Participants were not coerced to take part in the study. Information gathered during the investigation was held with maximum observation of privacy and confidentiality, therefore anonymity was observed. In addition, no personal identifiers were used. Participants were issued with codes which were used throughout the investigation process. The researcher and research assistant ensured that participants' sole responses were not linked to their personal identifiers, that meant that there was no direct benefit for those who participated in the study, either monetary or materially.

CHAPTER FOUR: RESULTS

4.1 Introduction

This research chapter offered an analysis and findings of the study as established in research methodology based on the data collected in relation to the research objectives.

This chapter therefore focused on the findings and discussions of the study and highlighted key areas such as response rate, demographic characteristics, validity and reliability and discussions on study objectives.

4.2 Training on Myocardial Infarction

Table 4.1: Training on Myocardial Infarction

Statement	Response	Frequency (n)	Percent (%)
Are you currently taking a course related to your field	Yes	64	92.8
	No	5	7.2
Formal training on myocardial infarction	Yes	68	98.6
	No	1	1.4
In the past three months, have you attended any workshop that corresponds with line of duty	Yes	-	-
	No	69	100
Are there standard protocol guidelines for handling patients in the unit?	Yes	69	100
	No	-	-
Have you been trained on any life support course	Yes	65	94.2
	No	4	5.8
Life support training course	Basic Life Support (BLS)	65	94.2
	Advanced Trauma Life Support (ATLS)	22	31.9
	Pediatric Advanced Life Support (PALS)	58	84.1
	Advanced Cardiac Life Support	58	84.1

	Support (ACLS)		
	GRASPIT	12	17.4
How often do you encounter patients with myocardial infarction	Always	9	13.0
	Very Often	32	46.4
	Sometimes	28	40.6
	Rarely Never	-	-
Have you ever had any training on assessment and immediate care of myocardial infarction in the last one year	Yes	4	5.8
	No	65	94.2

Table 5 above showed respondent competences gained in various stages as they provided care. Study findings revealed that 92.8% (n=64) were currently taking a course related to their field with 7.2% stating otherwise. Of the participants, 98.6% (n=68) had a formal training on myocardial infarction with 100% had not trained in the past three months. Lack of training was as a result of the COVID-19 pandemic as the government was forced to put containment measures, restrict movement, and reduce interaction. All the respondents indicated that there existed standard protocol guidelines for handling patients in the unit with 94.2% stating that they had received training on any life support course. The respondents unanimously indicated that they adhered to MONA protocol which is an officially approved protocol at the unit.

Respondents were further requested to specify the life support course they attended. According to the study, 94.2% had trained on Basic Life Support (BLS), 84.1% (n=58) stated that they attended either Pediatric Advanced Life Support (PALS) or Advanced Cardiac Life Support (ACLS). Almost a third (31.9%, n=22) attended Advanced Trauma Life Support (ATLS) and less than a fifth (17.4%, n=12) had trained on GRASPIT. Notably, almost half of the respondents (46.4%, n=32) very often encountered patients with myocardial infarction, 40.6% stating sometimes, 13% always. 94.2% (n=65) had never received any training or assessment and immediate

care of myocardial infarction in the last one year with 5.8% (n=4) who stated otherwise. This clearly implied that there was need for training on assessment and immediate care of myocardial infarction patients.

4.3 Reliability and Validity Tests

4.3.1 Test for reliability

In order to determine the degree to which the research construct was consistent in testing the intended test, the researcher conducted reliability analysis. A pilot study was undertaken to determine the validity of the data collection tool. The pilot study involved random distribution of 7 questionnaires at Mbagathi County Hospital Casualty Department. Reliability analysis yielded a Cronbach’s Alpha index of which measured the internal consistency through the determination of certain items within the scale measured. A Cronbach’s Alpha index of more than 0.7 indicated that the data collection instruments had high level of internal consistency (Sekaran, 2003) thus formed a basis for benchmarking and conclusion.

Table 4.2: Test for reliability

Variable	No. of items	Cronbach’s Alpha index	Remarks
Nurses competence	7	0.834	Reliable
Ability of nurses to identify and manage MI patients	10	0.901	Reliable
Institutional factors	5	0.964	Reliable

Source: Primary Data (2020)

Findings revealed that Cronbach’s Alpha index for the three (3) variables were reported as Nurses competence 0.834; Ability of nurses to identify and manage MI patients 0.901; and Institutional factors 0.964. It was therefore concluded that the study construct was reliable due to high index of over 0.7 between the related items in the study variables.

4.4 Response Rate

The study sample was 70 participants from Registered Nurses who had worked or were working at the A and E for more than 6 months at Kenyatta National Hospital; Out of the 70 questionnaires distributed, 98.6% (n=69) were completed, accurately filled and returned. A response rate of 98.6% was considered high enough for data analysis. Black (2008) opined that response rate of 70% and above was adequate for analysis and generalization of study findings. Table below shows response rate.

Table 4.2: Response rate

Response	Frequency (n)	Percent (%)
Returned forms	69	98.6
Unreturned forms	1	1.4
Total	70	100

Source: Primary Data (2020)

4.4.1 Kaiser Meyer Olkin (KMO) and Bartlett’s test

The researcher conducted validity analysis of the study variables; tests of sample adequacy were performed. The results showed that the scales had values more than 0.5 as opined by Brown, Williams and Onsmann (2012) that a KMO score of 0.5 is acceptable degree of sampling adequacy with values above 0.5 thus good. Bartlett’s test of sphericity which analyzed whether respondents were from a population with homogeneous variances produced p-values less than 0.5. Test for sphericity using

Bartlett test had a consistent significant value of $p < 0.05$ which was depicted and confirmed sampling adequacy.

Table 4.4.: Kaiser Meyer Olkin (KMO) and Bartlett's test

Scale	KMO	Bartlett's test	Test for sphericity	
		Approximate square	Df	Sign.
Nurses competence	0.810	66.7	391	0.001
Ability of nurses to identify and manage MI patients	0.902	77.2	393	0.001
Institutional factors	0.772	89.4	395	0.001

Source: Primary Data (2020)

4.5 Nurses' competences in provision of care to MI patients

Table 4.5: Nurses' competences in provision of care to MI patients

Question statement	True	False	I don't know
	% (n)		
Myocardial infarction is a life-threatening condition that occurs when blood flow to the heart muscle is abruptly cut off, causing tissue damage.	97.1% (67)	2.9% (2)	-
Having high levels of cholesterol in your blood puts you at risk for acute myocardial infarction	95.7% (66)	4.3% (3)	-
Men and women do not always experience the same Myocardial infarction symptoms.	21.7% (15)	78.3% (54)	
A patient with Myocardial infarction must die	2.9% (2)	97.1% (67)	

Women under the age of 50 are twice as likely to die of a Myocardial infarction than men of the same age,	39.1% (27)	60.9% (42)	
A patient with a large acute myocardial infarction may be concurrently treated with aspirin, streptokinase, heparin and an ACE inhibitor	92.8% (64)	7.2% (5)	
The complete blockage of a coronary artery caused by a rupture of an atherosclerotic plaque is usually the underlying mechanism of an MI	97.1% (67)	2.9% (2)	
Aspirin is not an appropriate immediate treatment for a suspected Myocardial infarction	17.4% (12)	82.6% (57)	
Overall scoring	85%		-

Respondents were asked to indicate the Nurses' competences in provision of care to MI patients. Majority (97.1%, n=67) of the respondents indicated that myocardial infarction was a life-threatening condition that occurred when blood flow to the heart muscle was abruptly cut off, that caused tissue damage. 95.7% (n=66) revealed that having high levels of cholesterol in your blood puts you at risk for acute myocardial infarction, 21.7% (n=15) indicated that men and women do not always experience the same Myocardial infarction symptoms. 2.9% stated that a patient with Myocardial infarction must die with 39.1% who stated that women under the age of 50 were twice as likely to die of a Myocardial infarction than men of the same age. The likelihood of a patient with a large acute myocardial infarction to be concurrently treated with aspirin, streptokinase, heparin and an ACE inhibitor is high (0.928) and the complete blockage of a coronary artery caused by a rupture of an atherosclerotic plaque was usually the underlying mechanism of an MI (97.1%). Majority (82.6%) of the respondents indicated that aspirin was not an appropriate immediate treatment for a suspected Myocardial infarction. The overall competence level of health care works at the unit was reported as 85%.

4.6 Identification and management of MI patients

Table 4.6: Identification and management of MI patients

Statement	Agree	Disagree
	% (n)	
I have professional skills to handle patients with Myocardial infarction	100% (69)	-
I need more training/education pertaining to the management of Myocardial infarction	100% (69)	-
I continue with monitoring vital sign and obtain ECG trace	98.6% (68)	1.4(1)
It is necessary to develop procedures for improving the identification and management of Myocardial infarction patients?	97.1% (67)	2.9% (2)
I give aspirin, oxygen, nitroglycerin or morphine before patient is seen by a doctor	94.2% (65)	5.8% (4)
I perform 12 lead ECG after its ordered for by the doctor	5.8% (4)	94.2% (65)
I immediately attach patient on a cardiac monitor and observe signs of Myocardial infarction	76.8 (53)	23.2% (16)
I take the ECG to the doctor once I have done it	98.6% (68)	1.4% (1)
I evaluate all patients with chest pain not relieved by rest or medication	100% (69)	-
I have certification in basic life support / advanced cardiac life support	97.1% (67)	2.9% (2)
I educate patients on the necessary discharge guidelines known as cardiac rehabilitation program. (education about heart healthy living, follow-up appointments, adherence to medication and dietary restrictions)	98.6% (68)	1.4(1)

The study in a bid to determine the ability of nurses to identify and manage MI patients at the unit were asked to rate various statements using a liker scale of two where 1 was

disagree and 2 agree. The study findings revealed that all (100%) the workers at the unit had professional skills to handle patients with Myocardial infarction, required more training/education pertaining to the management of Myocardial infarction and workers evaluated all patients with chest pain not relieved by rest or medication. 98.6% (n=68) either agreed that they continued monitoring vital signs and obtained ECG trace or took the ECG to the doctor once they were done with it. Further, 97.1% either developed procedures for improving the identification and management of Myocardial infarction patients or had certification in basic life support / advanced cardiac life support. Less than a tenth of the participants revealed that they performed 12 lead ECG after it was ordered for by the doctor.

The study findings are consistent with a study by Wakaba (2014) who revealed that all MI patients with chest pain not relieved by rest or medication are evaluated. Similarly, Gregory (2015) opined that nurses who provided MI care required consistent training and knowledge upgrade. However, a study by Wagoro (2016) on having certification in basic life support / advanced cardiac life support was not the only requirement for improved care. Infrastructural advancements and continuous upgrade of skills that related to emergency was inexorable.

4.6.1 Interpretation of a 12 Lead ECG

		Freq.	Percent
ECG LEAD I			
Is the ECG Normal	Yes	101	92.7%
	No	8	7.3%
Which rhythm can you identify in lead V4, V5 and V6	Yes	99	90.8%
	No	10	9.2%
ECG LEAD I			
Is the ECG Normal	Yes	106	97.2%
	No	3	2.8%
Which rhythm can you identify in lead VI to V6	Yes	103	94.5%
	No	6	5.5%
ECG LEAD III			
Is the ECG Normal	Yes	101	92.7%
	No	8	7.3%
Which rhythm can you identify in lead VI to V6	Yes	99	90.8%
	No	10	9.2%

The overall understanding of the ECG reading was 93.8%, this meant that the percentage of those who could not read the ECG was 6.2%.

4.6.2 Assessment of chest pain

Information	Always		Very Often		Sometimes		Rarely	Never
Onset of chest pain	94	86.2%	7	6.4%	3	2.8%	5	4.6%
Location of pain	81	74.3%	13	11.9%	10	9.2%	5	4.6%
Duration of pain	94	86.2%	9	8.3%	6	5.5%	0	0.0%
Characteristics of chest pain	92	84.4%	7	6.4%	6	5.5%	4	3.7%
Aggravating factors	93	85.3%	8	7.3%	5	4.6%	3	2.8%
Relieving Factors	97	89.0%	11	10.1%	0	0.0%	1	0.9%
Relating(associated) Symptoms,	87	79.8%	15	13.8%	5	4.6%	2	1.8%
Any Treatment given or by self	100	91.7%	7	6.4%	1	0.9%	1	0.9%
Severity of chest pain	99	90.8%	6	5.5%	3	2.8%	0	0.0%
Risk factors of MI	106	97.2%	1	0.9%	1	0.9%	1	0.9%

The respondents who revealed that they attended to risk factors of MI always were 97.2% while those who gave any treatment given or by self were 91.7%. The least information included location of pain (74.3%) and relating(associated) symptoms (79.8%).

4.7 Institutional elements that influence the nurses in provision of care to MI patients

The study sought to determine the respondents view on compensation practices in the target population. A Likert scale of 1 to 5 was used such that 5 = strongly agree, 4 = Agree, 3 = Neutral, 2 = Disagree and 1 = Strongly Disagree. The results were summarized in Table 8 below.

Table 4.7: Institutional Elements That Influence the Nurses in Provision of Care to MI Patients

Question statement	1	2	3	4	5	Mean	SD
The number of patients allocated per nurse is achievable	1.4% (1)	1.4% (1)	1.4% (1)	95.7% (66)	-	3.91	0.445
The number of working hours per day is friendly	17.4% (12)	53.6% (37)	10 (14.5%)	8.7% (6)	5.8% (4)	2.06	0.338
All nurses are provided with supplies to carry out clinical procedures	4.3% (3)	18.8% (13)	42% (29)	31.9% (22)	2.9% (2)	2.03	0.169
Resources available in the critical care units are adequate	1.4% (1)	7.2% (5)	82.6% (57)	5.8% (4)	2.9% (2)	2.96	0.318
The timelines for assigned tasks are realistic and achievable	1.4% (1)	1.4% (1)	23.2% (16)	73.9% (51)	-	3.70	0.577
Overall rating						2.93	0.37

The study sought to establish the institutional elements that influenced the nurses in provision of care to MI patients. On responding to the number of patients allocated per nurse was achievable, 95.7% (n=66) agreed, 1.4% either strongly disagree, neutral, or strongly disagree. The mean response was reported a Mean=3.91 with a variation of 0.445. Majority of the participants disagreed on the friendliness of working hours with mean of 2.06 and variation of 0.169. Most of the nurses had inadequate supplies with a mean of 2.03. The timelines for assigned tasks were realistic and achievable was rated on average as 3.70 with a variation of 0.577. There was low degree of variation among respondents, an indication that the participants agreed with most of the responses. This is indicated by a standard deviation of 0.445, 0.338, 0.169, 0.318 and 0.577.

4.8 Demographic characteristics

Table 3.8: Demographic characteristics

Independent variable	Respondent response	Frequency (n)	Percent (%)
Age	Below 30 years	15	21.7
	31-40 years	31	44.9
	41-50 years	18	26.1
	51-60 years	5	7.2
Gender	Male	32	46.4
	Female	37	53.6
Highest professional qualification	Certificate	-	-
	Diploma	10	14.5
	Higher Diploma	19	27.5
	Bachelor's degree	34	49.3
	Master's degree	6	8.7

	PhD	-	-
Years of experience as a nurse	Below 5 years	15	21.7
	5-10 years	17	24.6
	11-15 years	19	27.5
	16-20 years	13	18.8
	Over 20 years	5	7.2
Years of experience at A and E unit	Below 5 years	16	23.2
	5-10 years	20	29.0
	11-15 years	20	29.0
	16-20 years	8	11.6
	Over 20 years	5	7.2

Study results revealed that majority (44.9%, n=31) of the respondents were aged between 31 to 40 years, followed by 26.1% (n=18) aged 41 to 50 years, 21.7% (n=15) aged below 30 years, and 7.2% (n=5) aged between 51 to 60 years. 53.6% (n=37) were females and 46.4% (n=32) males. None of the respondents had a certificate or PhD in nursing training, with 49.3% (n=34) bachelor's degree holders, 27.5% higher diploma holders and 8.7% were master's degree holders. On reviewing the respondent's years of experience, 27.5% had worked 11 to 15 years, 24.6% 5 to 10 years, 21.7% below 5 years, 18.8% 16 to 20 years. Further, the findings revealed that of the study respondents, 29% (n=20) had worked either 5 to 10 years or 11 to 15 years. Notably, 7.2% (n=5) had worked at the Accident and Emergency unit for over 20 years.

4.9 Association between the competency of the nurses, institutional elements, and ability of nurses to identify and manage MI patients

Table 4.4: Association between the competency of the nurses, institutional elements, and ability of the nurses to identify and manage MI patients

Parameter	Ability of nurses to identify and manage MI patients(%)		X ² (P-Value)
	Disagree	Agree	
Age			2.397(0.494)
Below 30 years	1	14	
31-40 years	5	26	
41-50 years	1	17	
51-60 years	0	5	
Gender			3.63 (0.417)
Male	4	28	
Female	3	34	
Marital status			2.337(0.505)
Certificate	-	-	
Diploma	2	8	
Higher Diploma	1	18	
Bachelor's degree	4	30	
Master's degree	0	6	
PhD	-	-	
Number of years you have worked as a nurse			1.366 (0.000)
Below 5 years	2	13	
5-10 years	2	15	
11-15 years	2	17	
16-20 years	1	12	
Over 20 years	0	5	

Parameter	Ability of nurses to identify and manage MI patients(%)		X ² (P-Value)
	Disagree	Agree	
Years have you worked as a nurse in the A and E			5.099 (0.022)
Below 5 years	2	14	
5-10 years	4	16	
11-15 years	0	20	
16-20 years	1	7	
Over 20 years	0	5	
Currently undertaking any course related to nursing field			5.74(0.424)
Yes	6	58	
No	1	4	
Ever had any formal training on the management of myocardial infarction since you first qualified as a nurse			1.15 (0.899)
Yes	7	61	
No	0	1	
In the past three months, have you attended any workshop that corresponds with line of duty?			2.16 (0.177)
Yes	0	0	
No	7	62	
Are there standard protocol guidelines for handling patients in the unit?			2.16 (0.177)
Yes	0	0	
No	7	62	
Have you been trained on any life support course?			1.028(0.355)
Yes	6	59	

Parameter	Ability of nurses to identify and manage MI patients(%)		X ² (P-Value)
	Disagree	Agree	
No	1	3	
If yes, please specify which one?			4.412(0.001)
Basic Life Support (BLS)	3	62	
Advanced Trauma Life Support (ATLS)	1	21	
Pediatric Advanced Life Support (PALS)	3	55	
Advanced Cardiac Life Support (ACLS)	2	56	
GRASPIT	1	11	
How often do you encounter patients with myocardial infarction			1.983(0.371)
Always	2	7	
Very Often	2	30	
Sometimes	3	25	
Rarely Never	2	7	
Ever had any training on assessment and immediate care of myocardial infarction in the last one year?			7.399(0.048)
Yes	2	2	
No	5	60	
Nurses Competence			7.19(0.001)
True	4	61	
False	1	3	
I don't know	-	-	
Institutional factors			13.955(0.062)
Strongly Agree	1	14	
Agree	5	26	
Neutral	1	17	
Disagree	0	5	

Parameter	Ability of nurses to identify and manage MI patients(%)		X ² (P-Value)
	Disagree	Agree	
Strongly Disagree			

P<0.005 statistically significant

According to the study findings, nurses' competence was reported as statistically significant (Chi=7.19, 0.001), any training on assessment and immediate care of myocardial infarction (Chi=7.399, 0.048)), training on any life support course (Chi=4.412, p=0.001), number of years worked as a nurse (Chi=1.366, p=0.00) and years worked as a nurse in the A and E were reported (Chi=5.099, p<0.05) as statistically significant (p<0.05).

4.10 Observational Checklist

CONTENT	Frequency (n)	Percent (%)
STABLE ANGINA		
Angina with strenuous or prolonged exertion	67	97.1
Angina on walking or climbing stairs rapidly, walking/stair climbing after meals, during the first few hours after awakening, walking more than 2 blocks on level or climbing more than one flight of ordinary stairs at a normal pace and conditions	69	100.0
UNSTABLE ANGINA		
New onset severe angina, no rest pain	69	100.0
Angina at rest within preceding month, but not past 48 hours	69	100.0
Angina at rest within the preceding 48 hours	69	100.0
HOSPITAL CARE		
Identification of chest pain as one of the symptoms by the triage team in the hospital system.	69	100.0
Victims should be connected to the ECG monitor and interpretation should be performed within 10 minutes	69	100.0
Vital signs should be assessed every 15 minutes	68	98.6
Presence of resuscitation trolleys to take care of STEMI patients	68	98.6

Collaboration with emergency team and attending cardiologist	69	100.0
TBC, renal functional tests and electrolytes, RBS , blood gas analysis and portable chest Xray should be performed too	69	100.0
Management of pain with morphine	69	100.0
STEMI / NSTEMI		
Oxygen therapy with saturations less than 92% (Aspirin 300mg orally stat, Clopidogrel 300mg stat and Enoxaparin 1mg/kg sc stat)	69	100.0
Thrombolysis (heparin LMWH) should be administered within 30 minutes of diagnosis	69	100.0
Defibrillation	69	100.0
Coronary angiography	69	100.0
Percutaneous coronary intervention		
TREATMENT FOR CHRONIC ISCHEMIC HEART DISEASE		
Make diagnosis using coronary angiography		
If management for stable ischemic heart disease consists of: Statin, Aspirin, Short and Long acting nitrates, Beta blockers If these are insufficient then are the following being considered for symptom control. Nicoradil, Ranolazine, Trimetazidine and Procorolan	69	100.0
CONCLUSION		
Is admission recommended for all the above named cases?	69	100.0

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarized all findings of the study and provided useful conclusions and recommendations. In this chapter, findings of the study were discussed in line with the study objectives. The results of the study were also compared with other study findings both locally and internationally. Conclusions from the study findings, recommendations and areas for further research had also been outlined in this chapter.

5.2 Discussion

5.2.1 Demographic findings of the respondents

Study results revealed that majority (44.9%, n=31) of the respondents were aged between 31 to 40 years, followed by 26.1% (n=18) aged 41 to 50 years, 21.7% (n=15) aged below 30 years, and 7.2% (n=5) aged between 51 to 60 years. 53.6% (n=37) were females and 46.4% (n=32) males. None of the participants had a certificate or PhD holder, with 49.3% (n=34) bachelor's degree holders, 27.5% higher diploma and 8.7% master's degree. On responding to the respondent's years of experience, 27.5% had worked 11 to 15 years, 24.6% 5 to 10 years, 21.7% below 5 years, 18.8% 16 to 20 years. Further, the findings revealed that of the study participants, 29% (n=20) had worked either 5 to 10 years or 11 to 15 years. Notably, 7.2% (n=5) had worked at the Accident and Emergency unit for over 20 years. This results were in congruence with a comparative study done in Madurai to evaluate the nurses knowledge, practice and experience which showed that baccalaureate nurses had higher mean scores of knowledge than institute and diploma nurses (Alanezi, 2018).. Therefore, there was a relationship between staff nurses practice and knowledge with their years of experience.

5.2.2 Training on Myocardial Infarction

According to the study, 94.2% had been trained on Basic Life Support (BLS), 84.1% (n=58) stating that they had attended either Pediatric Advanced Life Support (PALS) or Advanced Cardiac Life Support (ACLS). Almost a third (31.9%, n=22) had attended Advanced Trauma Life Support (ATLS) and less than a fifth (17.4%, n=12) had been trained on GRASPIT. Notably, almost half of the respondents (46.4%, n=32) very often encountered patients with myocardial infarction, 40.6% stating sometimes, 13% always. 94.2% (n=65) had never received any training on assessment and immediate care of myocardial infarction in the last one year with 5.8% (n=4) stating otherwise. Therefore, the investigation findings above revealed a significant relationship with the level of knowledge that was affirmative of the study done by Uretsky et al.

5.2.3 Nurses' competences in provision of care to MI patients

95.7% (n=66) revealed that having high levels of cholesterol in your blood puts you at risk for acute myocardial infarction, 21.7% (n=15) indicated that men and women do not always experience the same Myocardial infarction symptoms. 2.9% stated that a patient with Myocardial infarction must die with 39.1% and suggested that women under the age of 50 are twice as likely to die of a Myocardial infarction than men of the same age. The likelihood of a patient with a large acute myocardial infarction to be concurrently treated with aspirin, streptokinase, heparin and an ACE inhibitor was high (0.928) and the complete blockage of a coronary artery caused by a rupture of an atherosclerotic plaque is usually the underlying mechanism of an MI (97.1%). Majority (82.6%) of the respondents indicated that aspirin was not an appropriate immediate treatment for a suspected Myocardial infarction. The overall competence level of health care workers at the unit was reported as 85%. However, it was noted that there was a 15% incompetence level of health care workers which implied that there

was a significant percent of nurses who were not competent thereby directly affecting the ability of nurses to identify and manage MI patients.

5.2.4 Ability of nurses to identify and manage MI patients

The study findings revealed that all of the nurses at the unit had professional skills to handle patients with Myocardial infarction, however they required more training/education pertaining to the management of Myocardial infarction and workers evaluate all patients with chest pain not relieved by rest or medication where 98.6% (n=68) either agreed that they continue with monitoring vital signs and obtained ECG trace or took the ECG to the doctor once they were done with it. Further, 97.1% either developed procedures for improving the identification and management of Myocardial infarction patients or had certification in basic life support or advanced cardiac life support. Less than a tenth of the participants revealed that they performed 12 lead ECG after it was ordered for by the doctor. Therefore, this directly impacted the quality of caregiving because it did not correspond to capability in reasoning, intuitive and body process domains as highlighted by Aligood & Tomey, 2010.

The respondents who revealed that they attended to risk factors of MI always were 97.2% while those who gave any treatment given or by self were 91.7%. The least information included location of pain (74.3%) and relating (associated) symptoms (79.8%). This showed that some of the respondents were not able to identify the location of pain and related (associated) symptoms hence affected the nurses ability to identify and manage MI patients as it did not correspond to proper chest evaluation as stated by Johnson & Ghassemzadeh, 2019.

The overall understanding of the ECG reading was 93.8%, this meant that the percentage of those who could not read the ECG was 6.2%. This showed that there was still a number of respondents who were not able to correctly read and interpret an ECG,

which was crucial for the early diagnosis and correct treatment of MI as stated by Yahalom et al., 2013.

5.2.5 Institutional elements that influence the nurses in provision of care to MI patients

Majority of the participants disagreed on the friendliness of working hours with mean of 2.06 and variation of 0.169. Most of the nurses had inadequate supplies with a mean of 2.03. The timelines for assigned tasks were realistic and achievable rated on average as 3.70 with a variation of 0.577. There was low degree of variation among respondents, an indication that the participants agreed with most of the responses. This institutional factors mentioned above affected the quality of health care as highlighted by France et al., 2020.

5.3 Conclusion

The results of the study showed that there were 15% incompetence level of health care workers which implied a significant percent of nurses who were not competent thereby directly affecting the ability of nurses to identify and manage MI patients.

The findings of the study showed that health workers regularly came across patients with myocardial infarction. Although there was a significant percentage of nurses who were competent in dealing with MI, they were generally not able to intuitively take and interpret a 12 lead ECG without the doctors directive and were not able to identify and interpret an ECG.

This study revealed that nurses working in the accident and emergency department dealt with the issue of inadequate supplies and equipment as well as unfriendly working hours which directly affected the ability of nurses to identify and manage MI patients.

5.4 Recommendation

All the nurses at the unit had professional skills to handle patients with MI, however they required more training/ specifically on performing a 12 lead ECG on a patient without the directive from the doctor and proper interpretation of the ECG. Due to the effect of COVID-19, this training could be delivered virtually.

Based on the findings there was a need for clinical rotation of the nurses working in the accident and emergency department to other units.

There was need for support by the management to avail more supplies and equipment (ECG machines) and come up with a plan to ensure that the nurses have flexible and friendlier working hours.

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APPENDICES

APPENDIX: I: LETTER TO KNH/UON ETHICS AND RESEARCH COMMITTEE

Letter to KNH/UON Ethics and Research Committee

Angela Waithera Motanya

University of Nairobi

School of Nursing Science

To

The Chairperson

KNH Ethics and Research Committee

P.O.Box 20723 – 00202

Nairobi

Dear Sir/Madam,

RE: RESEARCH AUTHORISATION REQUEST

I'm a second-year student, pursuing masers in Critical Care Nursing (MSCN). I am writing to request for your permission to carry out research on quality of nursing care for patients with myocardial infarction. The study will be carried out at A and E unit (KNH).

Your consideration will be highly appreciated and will facilitate the completion of my study and research findings will be used both intentionally and locally in provision of optimal patient care.

Yours faithfully,

Angela W Motanya

APPENDIX II: TO THE KENYATTA MANAGEMENT

Letter to the Kenyatta Management A and E unit

Angela Waithera Motanya

University of Nairobi

School of Nursing Sciences

To

The Director,

Kenyatta National Hospital

P.O.BOX 20723-00202

Nairobi,

RE: RESEARCH AUTHORISATION REQUEST

I'm a second-year student, pursuing masers in Critical Care Nursing (MSCN). I am writing to request for your permission to carry out research on quality of nursing care for patients with myocardial infarction. The study will be carried out in A and E (KNH).

Your consideration will be highly appreciated and will facilitate the completion of my study and research findings will be used both intentionally and locally in provision of optimal patient care.

Yours faithfully,

Angela W Motanya

APPENDIX III: CONSENT EXPLANATION

Introduction: My name is Angela Waithera Motanya, a post graduate student at The University of Nairobi, college of health sciences pursuing a master's degree in critical care nursing. You have been chosen at random to be in a study about **QUALITY OF NURSING CARE FOR PATIENTS WITH MYOCARDIAL INFARCTION, A and E KENYATTA NATIONAL HOSPITAL.**

Background and objective: the purpose of this study is to determine the quality of nursing care for patients with MI in A and E at KNH whereby: the study assess the nurse's competences in provision of care to MI patients in A and E at KNH; Determines the ability of nurses to identify and manage MI patients in A and E at KNH and it establishes institutional elements that influence the nurses in provision of care to MI patients in A and E at KNH.

Participation: Participation in this study will include answering a questionnaire which will take 10 min of your time.

Benefits and risks: There are no foreseeable risks or benefits to you for participating in this study. There is no cost or payment to you. If you have questions while taking part, feel free to air them out.

Confidentiality: I will do my best to keep your information confidential. Moreover, your name and personal details will not be required on any of the forms or during final report publication thereby ensuring you anonymity. All materials used during the study will be kept under lock and key and only the personnel involved in this study will have access to them.

Voluntary participation: Participation in this study is voluntary. Refusal to take part will not attract any penalty. You retain the right to withdraw from the study without any consequences. You are free not to answer any question in the questionnaire

Compensation: There is no compensation for participating in the study.

Conflict of interest: The researcher and the supervisors confirm that there is no conflict of interest amongst them.

Questions : If you have questions about this research study, you may contact

Researcher Name: Angela Waithera Motanya

Researcher Mobile Number: 0722363797

Email: angela.motanya540@gmail.com

If you feel you were not treated well during this study, or have questions concerning your rights as a research participant call the Secretary/Chairperson KNH-UoN ERC on Tel. No. 2726300 Ext 44102.

I certify that I have consented the participant (code no.) _____

Researcher's name: _____

Signature: _____

Date: _____

APPENDIX IV : INFORMED CONSENT

If you assent to participate in the study, please inscribe beneath.

I hereby assent to participate in this study. I have been enlightened on the nature of the investigation being tackled and possible risks described to me. I also acknowledge that my engagement in the study is optional and the commitment to engage or not to engage will not influence employment position at this amenity in any process.

I may potentially select to quit my participation in the study at any phase without any negative action. I have also been reinsured that my individual and data that I will share will remain private and confidential. I verify that all my worries concerning my involvement in the study have been sufficiently responded to by the inquirer, who has questioned me to find out my understanding of the information provided.

Signature of Participant Date:

I ascertain that I have precisely expounded to the participant the nature of the investigation and details of this consent form and the participant has resolved to take part freely without any compulsion whatsoever.

Signature of Investigator Date:

P.O.Box: 19678 Code: 00202

Telephone (254 – 020)2726300

Email : uonknh_erc@uonbi.ac.ke

Thankyou very much .

APPENDIX V : QUESTIONNAIRE

QUALITY OF NURSING CARE FOR PATIENTS WITH MYOCARDIAL INFARCTION

QUESTIONNAIRE NUMBER _____

INSTRUCTIONS

SECTION A : DEMOGRAPHIC DATA

Please answer all the following questions in the space provided or tick in the box provided at the end of each choice respectively.

1. Indicate your age
 - A. Below 30 years ()
 - B. 31-40 years ()
 - C. 41-50 years ()
 - D. 51-60 years ()
2. Indicate your gender.
 - A. Male ()
 - B. Female ()
3. What is your highest professional qualification?
 - A. Certificate ()
 - B. Diploma ()
 - C. Higher Diploma ()
 - D. Bachelor's degree ()
 - E. Master's degree ()
 - F. PhD ()
4. Kindly indicate the number of years you have worked as a nurse.

- A. Below 5 years ()
- B. 5-10 years ()
- C. 11-15 years ()
- D. 16-20 years ()
- E. Over 20 years ()

5. How many years have you worked as a nurse in the A and E Unit?

- A. Below 5 years()
- B. 5-10 years()
- C. 11-15 years()
- D. 16-20 years ()
- E. Over 20 years ()

6. Are you currently undertaking any course related to your nursing field?

- A. Yes ()
- B. No ()

7. Have you had any formal training on the management of myocardial infarction since you first qualified as a nurse?

- A. Yes ()
- B. No ()

8. In the past three months, have you attended any workshop that corresponds with line of duty?

- A. Yes ()
- B. No ()

If yes how many?.....

9. Are there standard protocol guidelines for handling patients in the unit?

- A. Yes ()

B. No ()

If yes please state them

10. Have you been trained on any life support course?

A. Yes ()

B. No ()

If yes, please specify which one?

A. Basic Life Support (BLS) ()

B. Advanced Trauma Life Support (ATLS) ()

C. Pediatric Advanced Life Support (PALS) ()

D. Advanced Cardiac Life Support (ACLS) ()

E. GRASPIT ()

11. How often do you encounter patients with myocardial infarction?

A. Always ()

B. Very Often ()

C. Sometimes ()

D. Rarely Never ()

12. Have you ever had any training on assessment and immediate care of myocardial infarction in the last one year?

A. Yes ()

B. No ()

SECTION B : NURSES COMPETENCE

13. Indicate your opinion on the following statements regarding myocardial infarction. Tick the correct response in the space provided.

Question statement	True	False	I don't know
Myocardial infarction is a life-threatening condition that occurs when blood flow to the heart muscle is abruptly cut off, causing tissue damage.			
Having high levels of cholesterol in your blood puts you at risk for acute myocardial infarction			
Men and women do not always experience the same Myocardial infarction symptoms.			
A patient with Myocardial infarction must die			
Women under the age of 50 are twice as likely to die of a Myocardial infarction than men of the same age,			
A patient with a large acute myocardial infarction may be concurrently treated with aspirin, streptokinase, heparin and an ACE inhibitor			
The complete blockage of a coronary artery caused by a rupture of an atherosclerotic plaque is usually the underlying mechanism of an MI			
Aspirin is not an appropriate immediate treatment for a suspected Myocardial infarction			

Indicate your opinion on the following statements regarding chest pain in an MI patient. Tick the correct response in the space provided.

	Information	Always	Very Often	Sometimes	Rarely	Never
	Onset of chest pain					
	Location of pain					
	Duration of pain					
	Characteristics of chest pain					
	Aggravating factors					
	Relieving Factors					
	Relating(associated) Symptoms,					
	Any Treatment given or by self					
	Severity of chest pain					
	Risk factors of MI					

Nurses task performance during evaluation of MI related chest pains	Always	Often	Sometimes	Rarely	Never
I take 3-5 minutes to obtain history of chest pain from patient					
I enquire about the risk factors associated with ischemic heart disease when assessing patient for cardiac chest pain					

I evaluate all patients with chest pain for symptoms suggestive of acute coronary syndrome					
I obtain vital signs of all patients with chest pain					
I assign all patients suspected to have cardiac related chest pain an emergency triage category					
I attach patient with acute chest pain on cardiac monitor					
I ensure that patient suspected with cardiac related chest pain are attached on pulse oximetry					
I fast track patients I suspect to have chest pain which is cardiac in nature to ensure immediate evaluation and treatment by the doctor					
I perform intravenous cannulation once I suspect that a patient has cardiac related chest pain					
I obtain blood for cardiac enzymes and other lab works in patients I					

suspect to have cardiac related chest pain					
I perform ECG procedure on patient once I suspect that he/she/has cardiac chest pain					
I interpret electrocardiogram for any ischemic changes before patient is seen by the doctor					
I perform ECG within 10 minutes of admission to A& E					

Nurses potential to interpret chest pain rating findings suggestive of

MI. Specify if the chest pain is cardiac or non-cardiac

Clinical Feature of Acute Chest Pain	CARDIAC	NOT CARDIAC
a) A female patient who present to you with sharp pain that usually occur with inhalation or cough		
b) A male patient who present with severe central chest pain that radiates to the left arm and neck		
c) A 47-year-old man with pain that is be localized by the tip of one finger, particularly over the left ventricular apex or a		

costochondral junction		
d) A 42-year-old woman with a very brief episode of chest pain that lasts a few seconds		
e) A female patient who present to you with pain that occur when he moves or when his chest is palpated		
f) A patient who present with a crushing chest pain and has dyspnea that radiates to the left arm and says “help I will die”		
g) A 26-year-old patient with abdominal pain and headache and has vomited once		
h) A 46-year-old patient who present to you with chest pain and is sweating and has cool clammy skin		
i) A 62-year-old female patient who present Epigastric fullness and Indigestion and slight chest discomfort		
j) A 47-year-old known diabetic patient man with dyspepsia and epigastric pain		

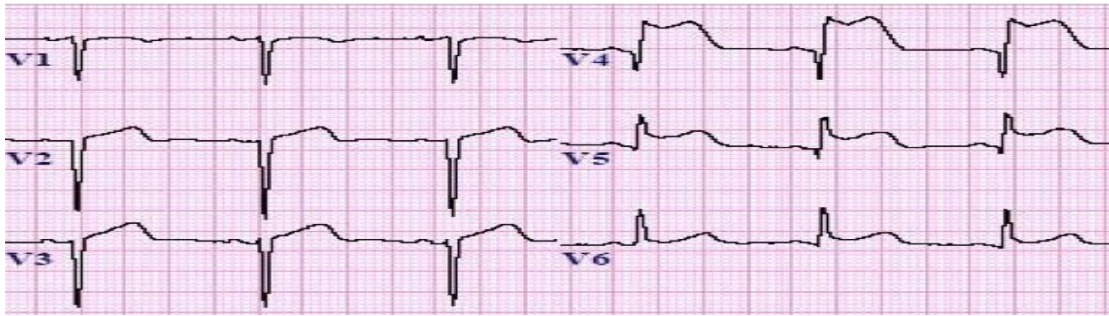
SECTION C: ABILITY OF NURSES TO IDENTIFY AND MANAGE MI PATIENTS

Indicate your opinion on the following statements regarding myocardial infarction. Tick the correct response in the space provided.

Question statement	Agree	Disagree
I have professional skills to handle patients with Myocardial infarction		
I need more training/education pertaining to the management of Myocardial infarction		
I continue with monitoring vital sign and obtain ECG trace		
It is necessary to develop procedures for improving the identification and management of Myocardial infarction patients ?		
I give aspirin, oxygen, nitroglycerin, or morphine before patient is seen by a doctor		
I perform 12 lead ECG after its ordered for by the doctor		
I immediately attach patient on a cardiac monitor and observe signs of Myocardial infarction		
I take the ECG to the doctor once I have done it		
I evaluate all patients with chest pain not relieved by rest or medication		
I have certification in basic life support / advanced cardiac life support		
I educate patients on the necessary discharge guidelines known as cardiac rehabilitation program. (education about heart healthy living, follow-up appointments, adherence to medication and dietary restrictions)		

For the questions below, answer by indicating whether the 12 lead ECG is normal and identify the ECG

12 ECG LEAD I



A. Is the ECG Normal? YES NO

B. Which rhythm can you identify in lead V4, V5 and V6?

Normal Sinus Rhythm ST

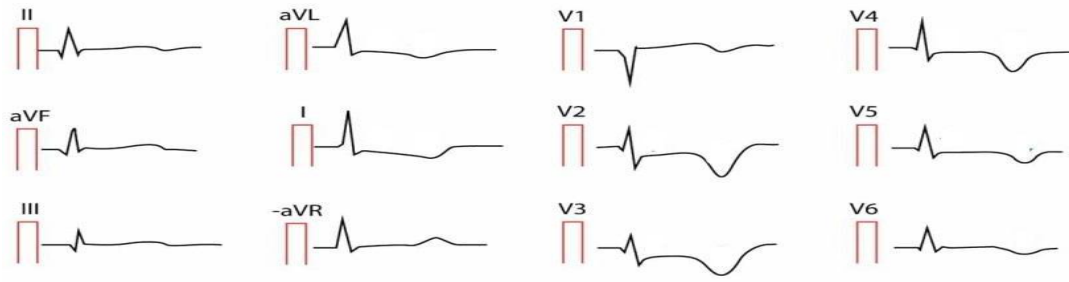
Elevation

ST Depression

T wave inversion

Both ST depression and T wave inversion

12 LEAD ECG II

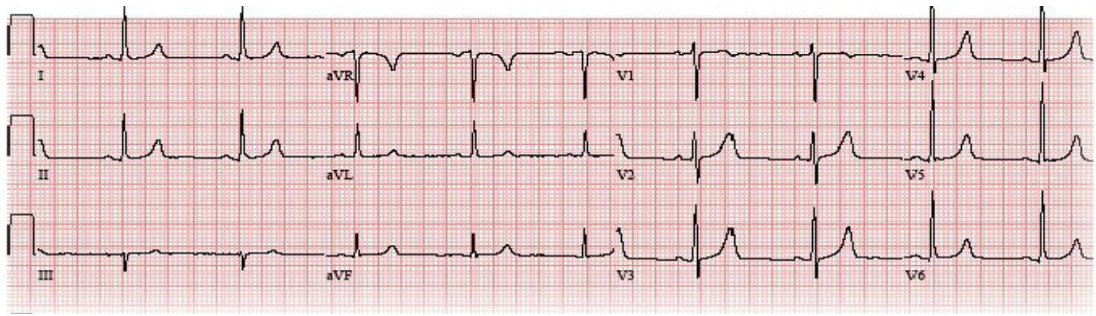


C. Is the ECG normal? YES NO

D. Which rhythm can you identify in lead VI to V6?

- Normal Sinus Rhythm ST
- Elevation
- ST Depression
- T wave inversion
- Both ST depression and T wave inversion

12 ECG LEAD III



E. Is the ECG normal? YES NO

F. Which rhythm can you identify in lead VI to V6?

Normal Sinus Rhythm

ST Elevation

ST Depression

T wave inversion

Both ST depression and T wave inversion

SECTION D: INSTITUTIONAL FACTORS

Indicate your opinion on the following statements regarding myocardial infarction. Tick the correct response in the space provided.

Question statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The number of patients allocated per nurse is achievable					
The number of working hours per day is friendly					
All nurses are provided with supplies to carry out clinical procedures					
Resources available in the critical care units are adequate					
The timelines for assigned tasks are realistic and achievable					

OBSERVATION CHECKLIST FOR MYORCARDIAL INFARCTION

Please tick where appropriate

CONTENT	YES	NO
1. STABLE ANGINA		
Angina with strenuous or prolonged exertion		
Angina on walking or climbing stairs rapidly, walking/stair climbing after meals, during the first few hours after awakening, walking more than 2 blocks on level or climbing more than one flight of ordinary stairs at a normal pace and conditions		
2. UNSTABLE ANGINA		
New onset severe angina, no rest pain		
Angina at rest within preceding month, but not past 48 hours		
Angina at rest within the preceding 48 hours		
3. HOSPITAL CARE		
Identification of chest pain as one of the symptoms by the triage team in the hospital system.		
Victims should be connected to the ECG monitor and interpretation should be performed within 10 minutes		
Vital signs should be assessed every 15 minutes		
Presence of resuscitation trolleys to take care of STEMI patients		
Collaboration with emergency team and attending cardiologist		
TBC, renal functional tests and electrolytes, RBS , blood gas analysis and portable chest Xray should be performed too		
Management of pain with morphine		
4. STEMI / NSTEMI		
Oxygen therapy with saturations less than 92%		
Aspirin 300mg orally stat		
Clopidogrel 300mg stat		

Enoxaparin 1mg/kg sc stat		
Thrombolysis (heparin LMWH) should be administered within 30 minutes of diagnosis		
Defibrillation		
Coronary angiography		
Percutaneous coronary intervention		
5. TREATMENT FOR CHRONIC ISCHEMIC HEART DISEASE		
Make diagnosis using coronary angiography		
<p>If management for stable ischemic heart disease consists of:</p> <p>Statin</p> <p>Aspirin</p> <p>Short and Long acting nitrates</p> <p>Beta blockers</p> <p>If these are insufficient then are the following being considered for symptom control.</p> <p>a. Nicoradil</p> <p>b. Ranolazine</p> <p>c. Trimetazidine</p> <p>d. Procorolan</p>		
6. CONCLUSION		
Is admission recommended for all the above named cases?		

APPENDIX VI: RESEARCH BUDGET

Item	Unit cost (Ksh.)	Quantity	Cost (Ksh.)	Total cost (Ksh.)
HUMAN RESOURCE				
Principal Researcher	3000	2*3000	6000	
Principle research transport and upkeep	1,800	2*1800	36000	
Sub total				42000
MATERIALS AND RESOURCES				
Biro pens (2 dozen)	180	180*2	360	
Pencils (2 dozen)	60	60*2	120	
Rubbers (6)	10	10*6	60	
Folders (3)	100	100*3	300	
Field books	65	65*2*3	390	
Flash disks	2	2*600	1200	
Sub-total				2430
PROPOSAL AND THESIS				
Proposal typing and printing (69 pages)	3	3*65	195	
Photocopying final report (3copies)	2	2*610	1220	
Proposal paper binding	4	4*65	260	
Ethics committee fee	1	1*2000	2000	
DATA ANALYSIS AND PRESENTATION	1	1*5000	5000	
Data processing and analysis	30,000	1	30,000	
Research book binding	15000	1	15,000	
Sub-total				53,000
TOTAL				106,000

APPENDIX VII: WORK PLAN IN GANTT CHART

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUNE 2020	JULY 2020	AUG 2020	SEPT 2020	OCT 2020	NOV 2020
Topic Selection & Approval													
Supervisor appointment													
Concept development													
Incorporate supervisors reviews													
Proposal development													
Proposal ready for presentation													
Incorporation of panel comments / Ethics													
Data collection													
Data processing and analysis and writing of report													
Submission and defense													

APPENDIX VIII: APPROVAL FROM ETHICS



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19678 Code 00202
Telegrams: varsity
Tel: (254-020) 2726300 Ext 44355

Ref. KNH-ERC/A/235

Angela Waihera Motariya
Reg. No.H56/12087/2018
School of Nursing Sciences
College of Health Sciences
University of Nairobi

Dear Angela

RESEARCH PROPOSAL – QUALITY OF NURSING CARE FOR PATIENTS WITH MYOCARDIAL INFARCTION IN ACCIDENT AND EMERGENCY KENYATTA NATIONAL HOSPITAL (P128102/2020)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above research proposal. The approval period is 21st July 2020 – 20th July 2021.

This approval is subject to compliance with the following requirements:

- Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.
- Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
- Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
- Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
- Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (Attach a comprehensive progress report to support the renewal).
- Submission of an executive summary report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

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KENYATTA NATIONAL HOSPITAL
P O BOX 28723 Code 00202
Tel: 728300-8
Fax: 725272
Telegrams: MEDSUP, Nairobi

21st July 2020





KENYATTA NATIONAL HOSPITAL
P.O. Box 20723-00202 Nairobi

Tel.: 2726300/2726450/2726565
Research & Programs: Ext. 44705
Fax: 2725272
Email: knhresearch@gmail.com

Study Registration Certificate

1. Name of the Principal Investigator/Researcher
ANGELA WATHERA MOTAMBA
2. Email address: angela.wathera@knh.ac.ke Tel No. 0722282797
3. Contact person (if different from PI): N/A
4. Email address: _____ Tel No. _____
5. Study Title
QUALITY OF NURSING CARE FOR PATIENTS WITH MYOCARDIAL INFARCTION, A&E, KENYATTA NATIONAL HOSPITAL
6. Department where the study will be conducted ACCIDENT AND EMERGENCY, KNH
(Please attach copy of Abstract)
7. Endorsed by Research Coordinator of the KNH Department where the study will be conducted.
Name: Dr. Robert Signature _____ Date 4/8/2020
8. Endorsed by KNH Head of Department where study will be conducted.
Name: Dr. Wambui Njiru Signature _____ Date 4/8/2020
9. KNH UoN Ethics Research Committee approved study number KNH-ERC/A/235
(Please attach copy of ERC approval)
10. I ANGELA WATHERA MOTAMBA commit to submit a report of my study findings to the Department where the study will be conducted and to the Department of Research and Programs.
Signature: [Signature] Date 30/07/2020
11. Study Registration number (Dept/Number/Year)
(To be completed by Research and Programs Department) A&E 04 AUG 29 / 2020
12. Research and Program Stamp _____

All studies conducted at Kenyatta National Hospital **must** be registered with the Department of Research and Programs and investigators **must commit** to share results with the hospital.

APPENDIX IX: Plagiarism Report

Dr. Angelina Othman
02/12/2020

Turnitin Originality Report

- Processed on: 11-Nov-2020 09:34 EAT
- ID: 1447742398
- Word Count: 10301
- Submitted: 1

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APPENDIX X: MAP OF KENYATTA NATIONAL HOSPITAL

